APPENDIX A

CALEEMOD RESULTS

Stockton & T

Sacramento County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	96.00	Space	0.00	38,400.00	0
Unenclosed Parking with Elevator	78.00	1000sqft	0.00	78,000.00	0
Apartments Mid Rise	214.00	Dwelling Unit	2.92	214,000.00	571
Single Family Housing	24.00	Dwelling Unit	2.00	43,200.00	64
Regional Shopping Center	6.00	1000sqft	0.00	6,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - based on project description

Construction Phase - based on info from applicant

Demolition -

Grading - based on info from applicant

Vehicle Trips - based on info from Transportation Impact Study

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	348.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	8.00	16.00
tblConstructionPhase	NumDays	18.00	11.00
tblConstructionPhase	PhaseEndDate	5/16/2019	1/29/2018
tblConstructionPhase	PhaseStartDate	1/16/2018	9/29/2016
tblGrading	AcresOfGrading	8.00	2.90
tblGrading	MaterialImported	0.00	2,000.00
tblLandUse	LotAcreage	0.86	0.00
tblLandUse	LotAcreage	1.79	0.00
tblLandUse	LotAcreage	5.63	2.92
tblLandUse	LotAcreage	7.79	2.00
tblLandUse	LotAcreage	0.14	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	4.32
tblVehicleTrips	ST_TR	49.97	28.11
tblVehicleTrips	ST_TR	10.08	8.15
tblVehicleTrips	SU_TR	6.07	4.32
tblVehicleTrips	SU_TR	25.24	28.11
tblVehicleTrips	SU_TR	8.77	8.15
tblVehicleTrips	WD_TR	6.59	4.32
tblVehicleTrips	WD_TR	42.94	28.11
tblVehicleTrips	WD_TR	9.57	8.15

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	18.0121	54.6972	41.9739	0.0644	18.2032	2.9397	21.1429	9.9670	2.7045	12.6715	0.0000	5,965.6739	5,965.6739	1.2331	0.0000	5,991.5690
2017	17.4839	32.6909	36.9047	0.0644	2.2253	2.0195	4.2447	0.5955	1.9060	2.5015	0.0000	5,838.9954	5,838.9954	0.7770	0.0000	5,855.3125
2018	16.8411	28.9622	34.4666	0.0643	2.2252	1.7053	3.9305	0.5955	1.6110	2.2065	0.0000	5,717.2379	5,717.2379	0.7556	0.0000	5,733.1062
Total	**52.3371**	**116.3503**	**113.3452**	**0.1931**	**22.6537**	**6.6645**	**29.3182**	**11.1580**	**6.2215**	**17.3796**	**0.0000**	**17,521.9072**	**17,521.9072**	**2.7657**	**0.0000**	**17,579.9876**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	18.0121	54.6972	41.9739	0.0644	18.2032	2.9397	21.1429	9.9670	2.7045	12.6715	0.0000	5,965.6738	5,965.6738	1.2331	0.0000	5,991.5690
2017	17.4839	32.6909	36.9047	0.0644	2.2253	2.0195	4.2447	0.5955	1.9060	2.5015	0.0000	5,838.9954	5,838.9954	0.7770	0.0000	5,855.3125
2018	16.8411	28.9622	34.4666	0.0643	2.2252	1.7053	3.9305	0.5955	1.6110	2.2065	0.0000	5,717.2379	5,717.2379	0.7556	0.0000	5,733.1062
Total	**52.3371**	**116.3503**	**113.3452**	**0.1931**	**22.6537**	**6.6645**	**29.3182**	**11.1580**	**6.2215**	**17.3796**	**0.0000**	**17,521.9071**	**17,521.9071**	**2.7657**	**0.0000**	**17,579.9876**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.9410	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Energy	0.0869	0.7430	0.3200	4.7400e-003		0.0600	0.0600		0.0600	0.0600		947.8553	947.8553	0.0182	0.0174	953.6238
Mobile	4.4477	7.9851	42.6133	0.0990	6.5850	0.1178	6.7027	1.7591	0.1085	1.8675		8,018.4718	8,018.4718	0.3017		8,024.8075
Total	**14.4756**	**8.9578**	**62.7260**	**0.1048**	**6.5850**	**0.2858**	**6.8708**	**1.7591**	**0.2765**	**2.0356**	**0.0000**	**9,001.7219**	**9,001.7219**	**0.3550**	**0.0174**	**9,014.5642**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.3337	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Energy	0.0690	0.5898	0.2540	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.4113	752.4113	0.0144	0.0138	756.9904
Mobile	4.4477	7.9851	42.6133	0.0990	6.5850	0.1178	6.7027	1.7591	0.1085	1.8675		8,018.4718	8,018.4718	0.3017		8,024.8075
Total	**13.8504**	**8.8046**	**62.6600**	**0.1038**	**6.5850**	**0.2734**	**6.8584**	**1.7591**	**0.2641**	**2.0232**	**0.0000**	**8,806.2779**	**8,806.2779**	**0.3513**	**0.0138**	**8,817.9308**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.32**	**1.71**	**0.11**	**0.94**	**0.00**	**4.33**	**0.18**	**0.00**	**4.48**	**0.61**	**0.00**	**2.17**	**2.17**	**1.06**	**20.66**	**2.18**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	8/1/2016	5	44	
2	Site Preparation	Site Preparation	8/2/2016	8/8/2016	5	5	
3	Grading	Grading	8/9/2016	8/30/2016	5	16	
4	Paving	Paving	8/31/2016	9/14/2016	5	11	
5	Building Construction	Building Construction	9/15/2016	1/15/2018	5	348	
6	Architectural Coating	Architectural Coating	9/29/2016	1/29/2018	5	348	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.9

Acres of Paving: 0

Residential Indoor: 520,830; Residential Outdoor: 173,610; Non-Residential Indoor: 127,728; Non-Residential Outdoor: 42,576 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	546.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	198.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	214.00	46.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7989	0.0000	2.7989	0.4238	0.0000	0.4238			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**	**2.7989**	**2.2921**	**5.0910**	**0.4238**	**2.1365**	**2.5603**		**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2954	3.0519	3.8938	8.9600e-003	0.2151	0.0474	0.2625	0.0589	0.0436	0.1024		900.0200	900.0200	6.2800e-003		900.1520
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		119.9145	119.9145	5.7900e-003		120.0362
Total	**0.3555**	**3.1060**	**4.6177**	**0.0104**	**0.3292**	**0.0483**	**0.3775**	**0.0891**	**0.0444**	**0.1335**		**1,019.9346**	**1,019.9346**	**0.0121**		**1,020.1882**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7989	0.0000	2.7989	0.4238	0.0000	0.4238			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**	**2.7989**	**2.2921**	**5.0910**	**0.4238**	**2.1365**	**2.5603**	**0.0000**	**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2954	3.0519	3.8938	8.9600e-003	0.2151	0.0474	0.2625	0.0589	0.0436	0.1024		900.0200	900.0200	6.2800e-003		900.1520
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		119.9145	119.9145	5.7900e-003		120.0362
Total	**0.3555**	**3.1060**	**4.6177**	**0.0104**	**0.3292**	**0.0483**	**0.3775**	**0.0891**	**0.0444**	**0.1335**		**1,019.9346**	**1,019.9346**	**0.0121**		**1,020.1882**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0649	0.8686	1.7500e-003	0.1369	1.0100e-003	0.1379	0.0363	9.2000e-004	0.0373		143.8975	143.8975	6.9500e-003		144.0434
Total	**0.0721**	**0.0649**	**0.8686**	**1.7500e-003**	**0.1369**	**1.0100e-003**	**0.1379**	**0.0363**	**9.2000e-004**	**0.0373**		**143.8975**	**143.8975**	**6.9500e-003**		**144.0434**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0721	0.0649	0.8686	1.7500e-003	0.1369	1.0100e-003	0.1379	0.0363	9.2000e-004	0.0373		143.8975	143.8975	6.9500e-003		144.0434
Total	**0.0721**	**0.0649**	**0.8686**	**1.7500e-003**	**0.1369**	**1.0100e-003**	**0.1379**	**0.0363**	**9.2000e-004**	**0.0373**		**143.8975**	**143.8975**	**6.9500e-003**		**144.0434**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2143	0.0000	6.2143	3.3310	0.0000	3.3310			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225		3,093.7889	3,093.7889	0.9332		3,113.3860
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.2143**	**2.1984**	**8.4127**	**3.3310**	**2.0225**	**5.3535**		**3,093.7889**	**3,093.7889**	**0.9332**		**3,113.3860**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2946	3.0435	3.8831	8.9400e-003	0.2145	0.0473	0.2618	0.0587	0.0435	0.1022		897.5474	897.5474	6.2700e-003		897.6790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		119.9145	119.9145	5.7900e-003		120.0362
Total	**0.3547**	**3.0976**	**4.6070**	**0.0104**	**0.3286**	**0.0481**	**0.3768**	**0.0890**	**0.0442**	**0.1332**		**1,017.4620**	**1,017.4620**	**0.0121**		**1,017.7152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2143	0.0000	6.2143	3.3310	0.0000	3.3310			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225	0.0000	3,093.7889	3,093.7889	0.9332		3,113.3860
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.2143**	**2.1984**	**8.4127**	**3.3310**	**2.0225**	**5.3535**	**0.0000**	**3,093.7889**	**3,093.7889**	**0.9332**		**3,113.3860**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2946	3.0435	3.8831	8.9400e-003	0.2145	0.0473	0.2618	0.0587	0.0435	0.1022		897.5474	897.5474	6.2700e-003		897.6790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0601	0.0541	0.7239	1.4600e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		119.9145	119.9145	5.7900e-003		120.0362
Total	**0.3547**	**3.0976**	**4.6070**	**0.0104**	**0.3286**	**0.0481**	**0.3768**	**0.0890**	**0.0442**	**0.1332**		**1,017.4620**	**1,017.4620**	**0.0121**		**1,017.7152**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7956	18.3417	12.5623	0.0186		1.1065	1.1065		1.0198	1.0198		1,902.2212	1,902.2212	0.5588		1,913.9557
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7956**	**18.3417**	**12.5623**	**0.0186**		**1.1065**	**1.1065**		**1.0198**	**1.0198**		**1,902.2212**	**1,902.2212**	**0.5588**		**1,913.9557**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0802	0.0721	0.9651	1.9500e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414		159.8861	159.8861	7.7200e-003		160.0483
Total	**0.0802**	**0.0721**	**0.9651**	**1.9500e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**		**159.8861**	**159.8861**	**7.7200e-003**		**160.0483**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7956	18.3417	12.5623	0.0186		1.1065	1.1065		1.0198	1.0198	0.0000	1,902.2212	1,902.2212	0.5588		1,913.9557
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7956**	**18.3417**	**12.5623**	**0.0186**		**1.1065**	**1.1065**		**1.0198**	**1.0198**	**0.0000**	**1,902.2212**	**1,902.2212**	**0.5588**		**1,913.9557**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0802	0.0721	0.9651	1.9500e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414		159.8861	159.8861	7.7200e-003		160.0483
Total	**0.0802**	**0.0721**	**0.9651**	**1.9500e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**		**159.8861**	**159.8861**	**7.7200e-003**		**160.0483**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.6 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5558	3.6946	6.4823	9.6200e-003	0.2702	0.0606	0.3308	0.0769	0.0556	0.1325		960.4036	960.4036	7.5600e-003		960.5623
Worker	0.8576	0.7715	10.3270	0.0208	1.6279	0.0120	1.6399	0.4318	0.0110	0.4428		1,710.7808	1,710.7808	0.0827		1,712.5164
Total	**1.4134**	**4.4660**	**16.8093**	**0.0304**	**1.8981**	**0.0725**	**1.9706**	**0.5087**	**0.0666**	**0.5753**		**2,671.1844**	**2,671.1844**	**0.0902**		**2,673.0786**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.6 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5558	3.6946	6.4823	9.6200e-003	0.2702	0.0606	0.3308	0.0769	0.0556	0.1325		960.4036	960.4036	7.5600e-003		960.5623
Worker	0.8576	0.7715	10.3270	0.0208	1.6279	0.0120	1.6399	0.4318	0.0110	0.4428		1,710.7808	1,710.7808	0.0827		1,712.5164
Total	**1.4134**	**4.4660**	**16.8093**	**0.0304**	**1.8981**	**0.0725**	**1.9706**	**0.5087**	**0.0666**	**0.5753**		**2,671.1844**	**2,671.1844**	**0.0902**		**2,673.0786**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4793	3.2720	5.8049	9.6000e-003	0.2703	0.0510	0.3213	0.0770	0.0469	0.1238		944.2413	944.2413	7.0400e-003		944.3892
Worker	0.7647	0.6896	9.2450	0.0208	1.6279	0.0116	1.6395	0.4318	0.0107	0.4425		1,643.3041	1,643.3041	0.0754		1,644.8874
Total	**1.2439**	**3.9617**	**15.0499**	**0.0304**	**1.8982**	**0.0626**	**1.9608**	**0.5088**	**0.0575**	**0.5663**		**2,587.5454**	**2,587.5454**	**0.0824**		**2,589.2766**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4793	3.2720	5.8049	9.6000e-003	0.2703	0.0510	0.3213	0.0770	0.0469	0.1238		944.2413	944.2413	7.0400e-003		944.3892
Worker	0.7647	0.6896	9.2450	0.0208	1.6279	0.0116	1.6395	0.4318	0.0107	0.4425		1,643.3041	1,643.3041	0.0754		1,644.8874
Total	**1.2439**	**3.9617**	**15.0499**	**0.0304**	**1.8982**	**0.0626**	**1.9608**	**0.5088**	**0.0575**	**0.5663**		**2,587.5454**	**2,587.5454**	**0.0824**		**2,589.2766**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

3.6 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	2.9494	5.0655	9.5600e-003	0.2702	0.0469	0.3171	0.0769	0.0431	0.1200		926.8135	926.8135	6.8700e-003		926.9577
Worker	0.6860	0.6213	8.3387	0.0208	1.6279	0.0113	1.6392	0.4318	0.0105	0.4423		1,581.2992	1,581.2992	0.0694		1,582.7562
Total	**1.0843**	**3.5708**	**13.4042**	**0.0304**	**1.8981**	**0.0582**	**1.9563**	**0.5087**	**0.0536**	**0.5623**		**2,508.1127**	**2,508.1127**	**0.0763**		**2,509.7139**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

3.6 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	2.9494	5.0655	9.5600e-003	0.2702	0.0469	0.3171	0.0769	0.0431	0.1200		926.8135	926.8135	6.8700e-003		926.9577
Worker	0.6860	0.6213	8.3387	0.0208	1.6279	0.0113	1.6392	0.4318	0.0105	0.4423		1,581.2992	1,581.2992	0.0694		1,582.7562
Total	**1.0843**	**3.5708**	**13.4042**	**0.0304**	**1.8981**	**0.0582**	**1.9563**	**0.5087**	**0.0536**	**0.5623**		**2,508.1127**	**2,508.1127**	**0.0763**		**2,509.7139**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**13.0201**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1723	0.1550	2.0751	4.1800e-003	0.3271	2.4000e-003	0.3295	0.0868	2.2100e-003	0.0890		343.7550	343.7550	0.0166		344.1038
Total	**0.1723**	**0.1550**	**2.0751**	**4.1800e-003**	**0.3271**	**2.4000e-003**	**0.3295**	**0.0868**	**2.2100e-003**	**0.0890**		**343.7550**	**343.7550**	**0.0166**		**344.1038**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**13.0201**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1723	0.1550	2.0751	4.1800e-003	0.3271	2.4000e-003	0.3295	0.0868	2.2100e-003	0.0890		343.7550	343.7550	0.0166		344.1038
Total	**0.1723**	**0.1550**	**2.0751**	**4.1800e-003**	**0.3271**	**2.4000e-003**	**0.3295**	**0.0868**	**2.2100e-003**	**0.0890**		**343.7550**	**343.7550**	**0.0166**		**344.1038**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**12.9839**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1537	0.1386	1.8576	4.1800e-003	0.3271	2.3200e-003	0.3294	0.0868	2.1400e-003	0.0889		330.1966	330.1966	0.0152		330.5148
Total	**0.1537**	**0.1386**	**1.8576**	**4.1800e-003**	**0.3271**	**2.3200e-003**	**0.3294**	**0.0868**	**2.1400e-003**	**0.0889**		**330.1966**	**330.1966**	**0.0152**		**330.5148**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**12.9839**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1537	0.1386	1.8576	4.1800e-003	0.3271	2.3200e-003	0.3294	0.0868	2.1400e-003	0.0889		330.1966	330.1966	0.0152		330.5148
Total	**0.1537**	**0.1386**	**1.8576**	**4.1800e-003**	**0.3271**	**2.3200e-003**	**0.3294**	**0.0868**	**2.1400e-003**	**0.0889**		**330.1966**	**330.1966**	**0.0152**		**330.5148**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**12.9503**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1378	0.1249	1.6755	4.1800e-003	0.3271	2.2800e-003	0.3294	0.0868	2.1100e-003	0.0889		317.7377	317.7377	0.0139		318.0304
Total	**0.1378**	**0.1249**	**1.6755**	**4.1800e-003**	**0.3271**	**2.2800e-003**	**0.3294**	**0.0868**	**2.1100e-003**	**0.0889**		**317.7377**	**317.7377**	**0.0139**		**318.0304**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**12.9503**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1378	0.1249	1.6755	4.1800e-003	0.3271	2.2800e-003	0.3294	0.0868	2.1100e-003	0.0889		317.7377	317.7377	0.0139		318.0304
Total	**0.1378**	**0.1249**	**1.6755**	**4.1800e-003**	**0.3271**	**2.2800e-003**	**0.3294**	**0.0868**	**2.1100e-003**	**0.0889**		**317.7377**	**317.7377**	**0.0139**		**318.0304**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	4.4477	7.9851	42.6133	0.0990	6.5850	0.1178	6.7027	1.7591	0.1085	1.8675		8,018.4718	8,018.4718	0.3017		8,024.8075
Unmitigated	4.4477	7.9851	42.6133	0.0990	6.5850	0.1178	6.7027	1.7591	0.1085	1.8675		8,018.4718	8,018.4718	0.3017		8,024.8075

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	924.48	924.48	924.48	2,372,316	2,372,316
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	168.66	168.66	168.66	235,669	235,669
Single Family Housing	195.60	195.60	195.60	501,931	501,931
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,288.74	1,288.74	1,288.74	3,109,917	3,109,917

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Unenclosed Parking with	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504263	0.068212	0.178684	0.146863	0.044671	0.006294	0.020946	0.016568	0.002299	0.002275	0.006187	0.000564	0.002174

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

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	0.0690	0.5898	0.2540	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.4113	752.4113	0.0144	0.0138	756.9904
NaturalGas Unmitigated	0.0869	0.7430	0.3200	4.7400e-003		0.0600	0.0600		0.0600	0.0600		947.8553	947.8553	0.0182	0.0174	953.6238

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5849.8	0.0631	0.5391	0.2294	3.4400e-003		0.0436	0.0436		0.0436	0.0436		688.2123	688.2123	0.0132	0.0126	692.4006
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	92.8767	1.0000e-003	9.1100e-003	7.6500e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004		10.9267	10.9267	2.1000e-004	2.0000e-004	10.9932
Single Family Housing	2114.09	0.0228	0.1948	0.0829	1.2400e-003		0.0158	0.0158		0.0158	0.0158		248.7164	248.7164	4.7700e-003	4.5600e-003	250.2300
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0869**	**0.7430**	**0.3200**	**4.7300e-003**		**0.0600**	**0.0600**		**0.0600**	**0.0600**		**947.8553**	**947.8553**	**0.0182**	**0.0174**	**953.6238**

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					
Apartments Mid Rise	4.63891	0.0500	0.4275	0.1819	2.7300e-003		0.0346	0.0346		0.0346	0.0346		545.7540	545.7540	0.0105	0.0100	549.0753
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0734795	7.9000e-004	7.2000e-003	6.0500e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004		8.6446	8.6446	1.7000e-004	1.6000e-004	8.6973
Single Family Housing	1.68311	0.0182	0.1551	0.0660	9.9000e-004		0.0125	0.0125		0.0125	0.0125		198.0127	198.0127	3.8000e-003	3.6300e-003	199.2178
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0690**	**0.5898**	**0.2540**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.4113**	**752.4113**	**0.0144**	**0.0138**	**756.9904**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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	9.3337	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Unmitigated	9.9410	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.2062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6113	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080		35.3948	35.3948	0.0352		36.1329
Total	**9.9410**	**0.2297**	**19.7928**	**1.0400e-003**		**0.1080**	**0.1080**		**0.1080**	**0.1080**	**0.0000**	**35.3948**	**35.3948**	**0.0352**	**0.0000**	**36.1329**

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	lb/day										lb/day					
Architectural Coating	1.2062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.5161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6113	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080		35.3948	35.3948	0.0352		36.1329
Total	**9.3337**	**0.2297**	**19.7928**	**1.0400e-003**		**0.1080**	**0.1080**		**0.1080**	**0.1080**	**0.0000**	**35.3948**	**35.3948**	**0.0352**	**0.0000**	**36.1329**

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

Stockton & T

Sacramento County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	96.00	Space	0.00	38,400.00	0
Unenclosed Parking with Elevator	78.00	1000sqft	0.00	78,000.00	0
Apartments Mid Rise	214.00	Dwelling Unit	2.92	214,000.00	571
Single Family Housing	24.00	Dwelling Unit	2.00	43,200.00	64
Regional Shopping Center	6.00	1000sqft	0.00	6,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - based on project description

Construction Phase - based on info from applicant

Demolition -

Grading - based on info from applicant

Vehicle Trips - based on info from Transportation Impact Study

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	348.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	8.00	16.00
tblConstructionPhase	NumDays	18.00	11.00
tblConstructionPhase	PhaseEndDate	5/16/2019	1/29/2018
tblConstructionPhase	PhaseStartDate	1/16/2018	9/29/2016
tblGrading	AcresOfGrading	8.00	2.90
tblGrading	MaterialImported	0.00	2,000.00
tblLandUse	LotAcreage	0.86	0.00
tblLandUse	LotAcreage	1.79	0.00
tblLandUse	LotAcreage	5.63	2.92
tblLandUse	LotAcreage	7.79	2.00
tblLandUse	LotAcreage	0.14	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	4.32
tblVehicleTrips	ST_TR	49.97	28.11
tblVehicleTrips	ST_TR	10.08	8.15
tblVehicleTrips	SU_TR	6.07	4.32
tblVehicleTrips	SU_TR	25.24	28.11
tblVehicleTrips	SU_TR	8.77	8.15
tblVehicleTrips	WD_TR	6.59	4.32
tblVehicleTrips	WD_TR	42.94	28.11
tblVehicleTrips	WD_TR	9.57	8.15

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	18.0564	54.7128	41.8894	0.0613	18.2032	2.9397	21.1429	9.9670	2.7045	12.6715	0.0000	5,706.6281	5,706.6281	1.2331	0.0000	5,732.5232
2017	17.5046	33.1227	38.7152	0.0613	2.2253	2.0202	4.2455	0.5955	1.9067	2.5022	0.0000	5,589.6672	5,589.6672	0.7772	0.0000	5,605.9890
2018	16.8329	29.3484	36.3649	0.0612	2.2252	1.7060	3.9312	0.5955	1.6117	2.2072	0.0000	5,476.9666	5,476.9666	0.7559	0.0000	5,492.8397
Total	**52.3940**	**117.1839**	**116.9695**	**0.1838**	**22.6537**	**6.6659**	**29.3196**	**11.1580**	**6.2229**	**17.3809**	**0.0000**	**16,773.2618**	**16,773.2618**	**2.7662**	**0.0000**	**16,831.3519**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	18.0564	54.7128	41.8894	0.0613	18.2032	2.9397	21.1429	9.9670	2.7045	12.6715	0.0000	5,706.6281	5,706.6281	1.2331	0.0000	5,732.5232
2017	17.5046	33.1227	38.7152	0.0613	2.2253	2.0202	4.2455	0.5955	1.9067	2.5022	0.0000	5,589.6672	5,589.6672	0.7772	0.0000	5,605.9890
2018	16.8329	29.3484	36.3649	0.0612	2.2252	1.7060	3.9312	0.5955	1.6117	2.2072	0.0000	5,476.9666	5,476.9666	0.7559	0.0000	5,492.8397
Total	**52.3940**	**117.1839**	**116.9695**	**0.1838**	**22.6537**	**6.6659**	**29.3196**	**11.1580**	**6.2229**	**17.3809**	**0.0000**	**16,773.2618**	**16,773.2618**	**2.7662**	**0.0000**	**16,831.3519**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.9410	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Energy	0.0869	0.7430	0.3200	4.7400e-003		0.0600	0.0600		0.0600	0.0600		947.8553	947.8553	0.0182	0.0174	953.6238
Mobile	4.1197	9.0919	44.5722	0.0893	6.5850	0.1185	6.7035	1.7591	0.1092	1.8683		7,263.0016	7,263.0016	0.3020		7,269.3426
Total	**14.1476**	**10.0646**	**64.6849**	**0.0951**	**6.5850**	**0.2865**	**6.8715**	**1.7591**	**0.2772**	**2.0363**	**0.0000**	**8,246.2518**	**8,246.2518**	**0.3553**	**0.0174**	**8,259.0993**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.3337	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Energy	0.0690	0.5898	0.2540	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.4113	752.4113	0.0144	0.0138	756.9904
Mobile	4.1197	9.0919	44.5722	0.0893	6.5850	0.1185	6.7035	1.7591	0.1092	1.8683		7,263.0016	7,263.0016	0.3020		7,269.3426
Total	**13.5223**	**9.9114**	**64.6189**	**0.0941**	**6.5850**	**0.2742**	**6.8591**	**1.7591**	**0.2648**	**2.0239**	**0.0000**	**8,050.8078**	**8,050.8078**	**0.3515**	**0.0138**	**8,062.4659**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.42**	**1.52**	**0.10**	**1.03**	**0.00**	**4.32**	**0.18**	**0.00**	**4.47**	**0.61**	**0.00**	**2.37**	**2.37**	**1.06**	**20.66**	**2.38**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	8/1/2016	5	44	
2	Site Preparation	Site Preparation	8/2/2016	8/8/2016	5	5	
3	Grading	Grading	8/9/2016	8/30/2016	5	16	
4	Paving	Paving	8/31/2016	9/14/2016	5	11	
5	Building Construction	Building Construction	9/15/2016	1/15/2018	5	348	
6	Architectural Coating	Architectural Coating	9/29/2016	1/29/2018	5	348	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.9

Acres of Paving: 0

Residential Indoor: 520,830; Residential Outdoor: 173,610; Non-Residential Indoor: 127,728; Non-Residential Outdoor: 42,576 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	546.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	198.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	214.00	46.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7989	0.0000	2.7989	0.4238	0.0000	0.4238			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365		4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**	**2.7989**	**2.2921**	**5.0910**	**0.4238**	**2.1365**	**2.5603**		**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3668	3.3239	5.0754	8.9600e-003	0.2151	0.0476	0.2627	0.0589	0.0437	0.1026		897.8296	897.8296	6.3700e-003		897.9634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		105.2835	105.2835	5.7900e-003		105.4052
Total	**0.4192**	**3.3909**	**5.7288**	**0.0102**	**0.3292**	**0.0484**	**0.3776**	**0.0891**	**0.0445**	**0.1336**		**1,003.1131**	**1,003.1131**	**0.0122**		**1,003.3686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7989	0.0000	2.7989	0.4238	0.0000	0.4238			0.0000			0.0000
Off-Road	4.2876	45.6559	35.0303	0.0399		2.2921	2.2921		2.1365	2.1365	0.0000	4,089.2841	4,089.2841	1.1121		4,112.6374
Total	**4.2876**	**45.6559**	**35.0303**	**0.0399**	**2.7989**	**2.2921**	**5.0910**	**0.4238**	**2.1365**	**2.5603**	**0.0000**	**4,089.2841**	**4,089.2841**	**1.1121**		**4,112.6374**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3668	3.3239	5.0754	8.9600e-003	0.2151	0.0476	0.2627	0.0589	0.0437	0.1026		897.8296	897.8296	6.3700e-003		897.9634
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		105.2835	105.2835	5.7900e-003		105.4052
Total	**0.4192**	**3.3909**	**5.7288**	**0.0102**	**0.3292**	**0.0484**	**0.3776**	**0.0891**	**0.0445**	**0.1336**		**1,003.1131**	**1,003.1131**	**0.0122**		**1,003.3686**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036		4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**		**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0805	0.7841	1.5400e-003	0.1369	1.0100e-003	0.1379	0.0363	9.2000e-004	0.0373		126.3402	126.3402	6.9500e-003		126.4862
Total	**0.0629**	**0.0805**	**0.7841**	**1.5400e-003**	**0.1369**	**1.0100e-003**	**0.1379**	**0.0363**	**9.2000e-004**	**0.0373**		**126.3402**	**126.3402**	**6.9500e-003**		**126.4862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.0771	54.6323	41.1053	0.0391		2.9387	2.9387		2.7036	2.7036	0.0000	4,065.0053	4,065.0053	1.2262		4,090.7544
Total	**5.0771**	**54.6323**	**41.1053**	**0.0391**	**18.0663**	**2.9387**	**21.0049**	**9.9307**	**2.7036**	**12.6343**	**0.0000**	**4,065.0053**	**4,065.0053**	**1.2262**		**4,090.7544**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0629	0.0805	0.7841	1.5400e-003	0.1369	1.0100e-003	0.1379	0.0363	9.2000e-004	0.0373		126.3402	126.3402	6.9500e-003		126.4862
Total	**0.0629**	**0.0805**	**0.7841**	**1.5400e-003**	**0.1369**	**1.0100e-003**	**0.1379**	**0.0363**	**9.2000e-004**	**0.0373**		**126.3402**	**126.3402**	**6.9500e-003**		**126.4862**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2143	0.0000	6.2143	3.3310	0.0000	3.3310			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225		3,093.7889	3,093.7889	0.9332		3,113.3860
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.2143**	**2.1984**	**8.4127**	**3.3310**	**2.0225**	**5.3535**		**3,093.7889**	**3,093.7889**	**0.9332**		**3,113.3860**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3658	3.3147	5.0614	8.9400e-003	0.2145	0.0475	0.2620	0.0587	0.0436	0.1023		895.3630	895.3630	6.3600e-003		895.4965
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		105.2835	105.2835	5.7900e-003		105.4052
Total	**0.4182**	**3.3818**	**5.7148**	**0.0102**	**0.3286**	**0.0483**	**0.3769**	**0.0890**	**0.0444**	**0.1333**		**1,000.6466**	**1,000.6466**	**0.0122**		**1,000.9017**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2143	0.0000	6.2143	3.3310	0.0000	3.3310			0.0000			0.0000
Off-Road	3.6669	38.4466	26.0787	0.0298		2.1984	2.1984		2.0225	2.0225	0.0000	3,093.7889	3,093.7889	0.9332		3,113.3860
Total	**3.6669**	**38.4466**	**26.0787**	**0.0298**	**6.2143**	**2.1984**	**8.4127**	**3.3310**	**2.0225**	**5.3535**	**0.0000**	**3,093.7889**	**3,093.7889**	**0.9332**		**3,113.3860**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.3658	3.3147	5.0614	8.9400e-003	0.2145	0.0475	0.2620	0.0587	0.0436	0.1023		895.3630	895.3630	6.3600e-003		895.4965
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0524	0.0671	0.6534	1.2800e-003	0.1141	8.4000e-004	0.1149	0.0303	7.7000e-004	0.0310		105.2835	105.2835	5.7900e-003		105.4052
Total	**0.4182**	**3.3818**	**5.7148**	**0.0102**	**0.3286**	**0.0483**	**0.3769**	**0.0890**	**0.0444**	**0.1333**		**1,000.6466**	**1,000.6466**	**0.0122**		**1,000.9017**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7956	18.3417	12.5623	0.0186		1.1065	1.1065		1.0198	1.0198		1,902.2212	1,902.2212	0.5588		1,913.9557
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7956**	**18.3417**	**12.5623**	**0.0186**		**1.1065**	**1.1065**		**1.0198**	**1.0198**		**1,902.2212**	**1,902.2212**	**0.5588**		**1,913.9557**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0895	0.8712	1.7100e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414		140.3780	140.3780	7.7200e-003		140.5402
Total	**0.0699**	**0.0895**	**0.8712**	**1.7100e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**		**140.3780**	**140.3780**	**7.7200e-003**		**140.5402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7956	18.3417	12.5623	0.0186		1.1065	1.1065		1.0198	1.0198	0.0000	1,902.2212	1,902.2212	0.5588		1,913.9557
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7956**	**18.3417**	**12.5623**	**0.0186**		**1.1065**	**1.1065**		**1.0198**	**1.0198**	**0.0000**	**1,902.2212**	**1,902.2212**	**0.5588**		**1,913.9557**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0895	0.8712	1.7100e-003	0.1521	1.1200e-003	0.1533	0.0404	1.0300e-003	0.0414		140.3780	140.3780	7.7200e-003		140.5402
Total	**0.0699**	**0.0895**	**0.8712**	**1.7100e-003**	**0.1521**	**1.1200e-003**	**0.1533**	**0.0404**	**1.0300e-003**	**0.0414**		**140.3780**	**140.3780**	**7.7200e-003**		**140.5402**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.6 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7316	3.9611	9.4631	9.5900e-003	0.2702	0.0615	0.3317	0.0769	0.0564	0.1334		952.0359	952.0359	7.7800e-003		952.1994
Worker	0.7482	0.9572	9.3220	0.0183	1.6279	0.0120	1.6399	0.4318	0.0110	0.4428		1,502.0449	1,502.0449	0.0827		1,503.7805
Total	**1.4798**	**4.9184**	**18.7851**	**0.0279**	**1.8981**	**0.0734**	**1.9715**	**0.5087**	**0.0674**	**0.5762**		**2,454.0809**	**2,454.0809**	**0.0904**		**2,455.9798**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

3.6 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7316	3.9611	9.4631	9.5900e-003	0.2702	0.0615	0.3317	0.0769	0.0564	0.1334		952.0359	952.0359	7.7800e-003		952.1994
Worker	0.7482	0.9572	9.3220	0.0183	1.6279	0.0120	1.6399	0.4318	0.0110	0.4428		1,502.0449	1,502.0449	0.0827		1,503.7805
Total	**1.4798**	**4.9184**	**18.7851**	**0.0279**	**1.8981**	**0.0734**	**1.9715**	**0.5087**	**0.0674**	**0.5762**		**2,454.0809**	**2,454.0809**	**0.0904**		**2,455.9798**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6250	3.5054	8.7737	9.5600e-003	0.2703	0.0518	0.3221	0.0770	0.0476	0.1245		935.9820	935.9820	7.2700e-003		936.1346
Worker	0.6606	0.8548	8.2805	0.0183	1.6279	0.0116	1.6395	0.4318	0.0107	0.4425		1,442.5697	1,442.5697	0.0754		1,444.1530
Total	**1.2856**	**4.3603**	**17.0542**	**0.0278**	**1.8982**	**0.0634**	**1.9615**	**0.5088**	**0.0582**	**0.5670**		**2,378.5517**	**2,378.5517**	**0.0827**		**2,380.2876**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6250	3.5054	8.7737	9.5600e-003	0.2703	0.0518	0.3221	0.0770	0.0476	0.1245		935.9820	935.9820	7.2700e-003		936.1346
Worker	0.6606	0.8548	8.2805	0.0183	1.6279	0.0116	1.6395	0.4318	0.0107	0.4425		1,442.5697	1,442.5697	0.0754		1,444.1530
Total	**1.2856**	**4.3603**	**17.0542**	**0.0278**	**1.8982**	**0.0634**	**1.9615**	**0.5088**	**0.0582**	**0.5670**		**2,378.5517**	**2,378.5517**	**0.0827**		**2,380.2876**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048		2,609.9390	2,609.9390	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**		**2,609.9390**	**2,609.9390**	**0.6387**		**2,623.3517**

3.6 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5091	3.1578	8.0808	9.5200e-003	0.2702	0.0476	0.3178	0.0769	0.0437	0.1207		918.6739	918.6739	7.1000e-003		918.8230
Worker	0.5869	0.7694	7.4086	0.0183	1.6279	0.0113	1.6392	0.4318	0.0105	0.4423		1,388.0066	1,388.0066	0.0694		1,389.4636
Total	**1.0961**	**3.9272**	**15.4894**	**0.0278**	**1.8981**	**0.0589**	**1.9570**	**0.5087**	**0.0542**	**0.5630**		**2,306.6806**	**2,306.6806**	**0.0765**		**2,308.2866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6687	23.2608	17.5327	0.0268		1.4943	1.4943		1.4048	1.4048	0.0000	2,609.9389	2,609.9389	0.6387		2,623.3517
Total	**2.6687**	**23.2608**	**17.5327**	**0.0268**		**1.4943**	**1.4943**		**1.4048**	**1.4048**	**0.0000**	**2,609.9389**	**2,609.9389**	**0.6387**		**2,623.3517**

3.6 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5091	3.1578	8.0808	9.5200e-003	0.2702	0.0476	0.3178	0.0769	0.0437	0.1207		918.6739	918.6739	7.1000e-003		918.8230
Worker	0.5869	0.7694	7.4086	0.0183	1.6279	0.0113	1.6392	0.4318	0.0105	0.4423		1,388.0066	1,388.0066	0.0694		1,389.4636
Total	**1.0961**	**3.9272**	**15.4894**	**0.0278**	**1.8981**	**0.0589**	**1.9570**	**0.5087**	**0.0542**	**0.5630**		**2,306.6806**	**2,306.6806**	**0.0765**		**2,308.2866**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**13.0201**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1503	0.1923	1.8731	3.6700e-003	0.3271	2.4000e-003	0.3295	0.0868	2.2100e-003	0.0890		301.8128	301.8128	0.0166		302.1615
Total	**0.1503**	**0.1923**	**1.8731**	**3.6700e-003**	**0.3271**	**2.4000e-003**	**0.3295**	**0.0868**	**2.2100e-003**	**0.0890**		**301.8128**	**301.8128**	**0.0166**		**302.1615**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**13.0201**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1503	0.1923	1.8731	3.6700e-003	0.3271	2.4000e-003	0.3295	0.0868	2.2100e-003	0.0890		301.8128	301.8128	0.0166		302.1615
Total	**0.1503**	**0.1923**	**1.8731**	**3.6700e-003**	**0.3271**	**2.4000e-003**	**0.3295**	**0.0868**	**2.2100e-003**	**0.0890**		**301.8128**	**301.8128**	**0.0166**		**302.1615**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**12.9839**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1327	0.1718	1.6638	3.6700e-003	0.3271	2.3200e-003	0.3294	0.0868	2.1400e-003	0.0889		289.8621	289.8621	0.0152		290.1803
Total	**0.1327**	**0.1718**	**1.6638**	**3.6700e-003**	**0.3271**	**2.3200e-003**	**0.3294**	**0.0868**	**2.1400e-003**	**0.0889**		**289.8621**	**289.8621**	**0.0152**		**290.1803**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**12.9839**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1327	0.1718	1.6638	3.6700e-003	0.3271	2.3200e-003	0.3294	0.0868	2.1400e-003	0.0889		289.8621	289.8621	0.0152		290.1803
Total	**0.1327**	**0.1718**	**1.6638**	**3.6700e-003**	**0.3271**	**2.3200e-003**	**0.3294**	**0.0868**	**2.1400e-003**	**0.0889**		**289.8621**	**289.8621**	**0.0152**		**290.1803**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.0102
Total	**12.9503**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1179	0.1546	1.4886	3.6700e-003	0.3271	2.2800e-003	0.3294	0.0868	2.1100e-003	0.0889		278.8985	278.8985	0.0139		279.1913
Total	**0.1179**	**0.1546**	**1.4886**	**3.6700e-003**	**0.3271**	**2.2800e-003**	**0.3294**	**0.0868**	**2.1100e-003**	**0.0889**		**278.8985**	**278.8985**	**0.0139**		**279.1913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	12.6516					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.0102
Total	**12.9503**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.0102**

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1179	0.1546	1.4886	3.6700e-003	0.3271	2.2800e-003	0.3294	0.0868	2.1100e-003	0.0889		278.8985	278.8985	0.0139		279.1913
Total	**0.1179**	**0.1546**	**1.4886**	**3.6700e-003**	**0.3271**	**2.2800e-003**	**0.3294**	**0.0868**	**2.1100e-003**	**0.0889**		**278.8985**	**278.8985**	**0.0139**		**279.1913**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	4.1197	9.0919	44.5722	0.0893	6.5850	0.1185	6.7035	1.7591	0.1092	1.8683		7,263.0016	7,263.0016	0.3020		7,269.3426
Unmitigated	4.1197	9.0919	44.5722	0.0893	6.5850	0.1185	6.7035	1.7591	0.1092	1.8683		7,263.0016	7,263.0016	0.3020		7,269.3426

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	924.48	924.48	924.48	2,372,316	2,372,316
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	168.66	168.66	168.66	235,669	235,669
Single Family Housing	195.60	195.60	195.60	501,931	501,931
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,288.74	1,288.74	1,288.74	3,109,917	3,109,917

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Unenclosed Parking with	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504263	0.068212	0.178684	0.146863	0.044671	0.006294	0.020946	0.016568	0.002299	0.002275	0.006187	0.000564	0.002174

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

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	0.0690	0.5898	0.2540	3.7600e-003		0.0477	0.0477		0.0477	0.0477		752.4113	752.4113	0.0144	0.0138	756.9904
NaturalGas Unmitigated	0.0869	0.7430	0.3200	4.7400e-003		0.0600	0.0600		0.0600	0.0600		947.8553	947.8553	0.0182	0.0174	953.6238

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	5849.8	0.0631	0.5391	0.2294	3.4400e-003		0.0436	0.0436		0.0436	0.0436		688.2123	688.2123	0.0132	0.0126	692.4006
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	92.8767	1.0000e-003	9.1100e-003	7.6500e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004		10.9267	10.9267	2.1000e-004	2.0000e-004	10.9932
Single Family Housing	2114.09	0.0228	0.1948	0.0829	1.2400e-003		0.0158	0.0158		0.0158	0.0158		248.7164	248.7164	4.7700e-003	4.5600e-003	250.2300
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0869**	**0.7430**	**0.3200**	**4.7300e-003**		**0.0600**	**0.0600**		**0.0600**	**0.0600**		**947.8553**	**947.8553**	**0.0182**	**0.0174**	**953.6238**

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					
Apartments Mid Rise	4.63891	0.0500	0.4275	0.1819	2.7300e-003		0.0346	0.0346		0.0346	0.0346		545.7540	545.7540	0.0105	0.0100	549.0753
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.0734795	7.9000e-004	7.2000e-003	6.0500e-003	4.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004		8.6446	8.6446	1.7000e-004	1.6000e-004	8.6973
Single Family Housing	1.68311	0.0182	0.1551	0.0660	9.9000e-004		0.0125	0.0125		0.0125	0.0125		198.0127	198.0127	3.8000e-003	3.6300e-003	199.2178
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0690**	**0.5898**	**0.2540**	**3.7600e-003**		**0.0477**	**0.0477**		**0.0477**	**0.0477**		**752.4113**	**752.4113**	**0.0144**	**0.0138**	**756.9904**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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	9.3337	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329
Unmitigated	9.9410	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080	0.0000	35.3948	35.3948	0.0352	0.0000	36.1329

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.2062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.1234					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6113	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080		35.3948	35.3948	0.0352		36.1329
Total	**9.9410**	**0.2297**	**19.7928**	**1.0400e-003**		**0.1080**	**0.1080**		**0.1080**	**0.1080**	**0.0000**	**35.3948**	**35.3948**	**0.0352**	**0.0000**	**36.1329**

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	lb/day										lb/day					
Architectural Coating	1.2062					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	7.5161					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.6113	0.2297	19.7928	1.0400e-003		0.1080	0.1080		0.1080	0.1080		35.3948	35.3948	0.0352		36.1329
Total	**9.3337**	**0.2297**	**19.7928**	**1.0400e-003**		**0.1080**	**0.1080**		**0.1080**	**0.1080**	**0.0000**	**35.3948**	**35.3948**	**0.0352**	**0.0000**	**36.1329**

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

Stockton & T

Sacramento County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	96.00	Space	0.00	38,400.00	0
Unenclosed Parking with Elevator	78.00	1000sqft	0.00	78,000.00	0
Apartments Mid Rise	214.00	Dwelling Unit	2.92	214,000.00	571
Single Family Housing	24.00	Dwelling Unit	2.00	43,200.00	64
Regional Shopping Center	6.00	1000sqft	0.00	6,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2018
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	590.31	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - based on project description

Construction Phase - based on info from applicant

Demolition -

Grading - based on info from applicant

Vehicle Trips - based on info from Transportation Impact Study

Area Mitigation -

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	348.00
tblConstructionPhase	NumDays	230.00	348.00
tblConstructionPhase	NumDays	20.00	44.00
tblConstructionPhase	NumDays	8.00	16.00
tblConstructionPhase	NumDays	18.00	11.00
tblConstructionPhase	PhaseEndDate	5/16/2019	1/29/2018
tblConstructionPhase	PhaseStartDate	1/16/2018	9/29/2016
tblGrading	AcresOfGrading	8.00	2.90
tblGrading	MaterialImported	0.00	2,000.00
tblLandUse	LotAcreage	0.86	0.00
tblLandUse	LotAcreage	1.79	0.00
tblLandUse	LotAcreage	5.63	2.92
tblLandUse	LotAcreage	7.79	2.00
tblLandUse	LotAcreage	0.14	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblVehicleTrips	ST_TR	7.16	4.32
tblVehicleTrips	ST_TR	49.97	28.11
tblVehicleTrips	ST_TR	10.08	8.15
tblVehicleTrips	SU_TR	6.07	4.32
tblVehicleTrips	SU_TR	25.24	28.11
tblVehicleTrips	SU_TR	8.77	8.15
tblVehicleTrips	WD_TR	6.59	4.32
tblVehicleTrips	WD_TR	42.94	28.11
tblVehicleTrips	WD_TR	9.57	8.15

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.7813	3.0150	2.7789	3.9900e-003	0.2483	0.1681	0.4165	0.0855	0.1573	0.2428	0.0000	349.8431	349.8431	0.0627	0.0000	351.1600
2017	2.2593	4.2842	4.7503	8.0500e-003	0.2795	0.2626	0.5421	0.0750	0.2478	0.3228	0.0000	665.7887	665.7887	0.0917	0.0000	667.7133
2018	0.1574	0.1713	0.2050	3.7000e-004	0.0134	0.0102	0.0236	3.5900e-003	9.6300e-003	0.0132	0.0000	30.1748	30.1748	3.9600e-003	0.0000	30.2579
Total	**3.1979**	**7.4705**	**7.7342**	**0.0124**	**0.5412**	**0.4408**	**0.9821**	**0.1641**	**0.4147**	**0.5788**	**0.0000**	**1,045.8066**	**1,045.8066**	**0.1583**	**0.0000**	**1,049.1312**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2016	0.7813	3.0150	2.7789	3.9900e-003	0.2483	0.1681	0.4165	0.0855	0.1573	0.2428	0.0000	349.8428	349.8428	0.0627	0.0000	351.1597
2017	2.2593	4.2842	4.7503	8.0500e-003	0.2795	0.2626	0.5421	0.0750	0.2478	0.3228	0.0000	665.7883	665.7883	0.0917	0.0000	667.7129
2018	0.1574	0.1713	0.2050	3.7000e-004	0.0134	0.0102	0.0236	3.5900e-003	9.6300e-003	0.0132	0.0000	30.1748	30.1748	3.9600e-003	0.0000	30.2579
Total	**3.1979**	**7.4705**	**7.7342**	**0.0124**	**0.5412**	**0.4408**	**0.9821**	**0.1641**	**0.4147**	**0.5788**	**0.0000**	**1,045.8059**	**1,045.8059**	**0.1583**	**0.0000**	**1,049.1305**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.7791	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974
Energy	0.0159	0.1356	0.0584	8.6000e-004		0.0110	0.0110		0.0110	0.0110	0.0000	500.8399	500.8399	0.0199	6.3700e-003	503.2333
Mobile	0.7132	1.5654	7.3537	0.0166	1.1576	0.0215	1.1791	0.3101	0.0198	0.3299	0.0000	1,224.6562	1,224.6562	0.0498	0.0000	1,225.7014
Waste						0.0000	0.0000		0.0000	0.0000	25.9382	0.0000	25.9382	1.5329	0.0000	58.1291
Water						0.0000	0.0000		0.0000	0.0000	5.6435	30.6979	36.3414	0.0209	0.0126	40.6823
Total	**2.5082**	**1.7297**	**9.8862**	**0.0176**	**1.1576**	**0.0459**	**1.2036**	**0.3101**	**0.0442**	**0.3544**	**31.5817**	**1,760.2077**	**1,791.7894**	**1.6275**	**0.0190**	**1,831.8436**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6682	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974
Energy	0.0126	0.1076	0.0464	6.9000e-004		8.7000e-003	8.7000e-003		8.7000e-003	8.7000e-003	0.0000	461.0917	461.0917	0.0189	5.7000e-003	463.2573
Mobile	0.7132	1.5654	7.3537	0.0166	1.1576	0.0215	1.1791	0.3101	0.0198	0.3299	0.0000	1,224.6562	1,224.6562	0.0498	0.0000	1,225.7014
Waste						0.0000	0.0000		0.0000	0.0000	25.9382	0.0000	25.9382	1.5329	0.0000	58.1291
Water						0.0000	0.0000		0.0000	0.0000	5.6435	30.6979	36.3414	0.0210	0.0126	40.6886
Total	**2.3941**	**1.7018**	**9.8742**	**0.0174**	**1.1576**	**0.0437**	**1.2013**	**0.3101**	**0.0420**	**0.3521**	**31.5817**	**1,720.4595**	**1,752.0412**	**1.6266**	**0.0183**	**1,791.8739**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.55**	**1.62**	**0.12**	**0.97**	**0.00**	**4.92**	**0.19**	**0.00**	**5.11**	**0.64**	**0.00**	**2.26**	**2.22**	**0.06**	**3.43**	**2.18**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	6/1/2016	8/1/2016	5	44	
2	Site Preparation	Site Preparation	8/2/2016	8/8/2016	5	5	
3	Grading	Grading	8/9/2016	8/30/2016	5	16	
4	Paving	Paving	8/31/2016	9/14/2016	5	11	
5	Building Construction	Building Construction	9/15/2016	1/15/2018	5	348	
6	Architectural Coating	Architectural Coating	9/29/2016	1/29/2018	5	348	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 2.9

Acres of Paving: 0

Residential Indoor: 520,830; Residential Outdoor: 173,610; Non-Residential Indoor: 127,728; Non-Residential Outdoor: 42,576 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	125	0.42
Paving	Paving Equipment	2	6.00	130	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	546.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	198.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	214.00	46.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	43.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	1.0044	0.7707	8.8000e-004		0.0504	0.0504		0.0470	0.0470	0.0000	81.6142	81.6142	0.0222	0.0000	82.0803
Total	**0.0943**	**1.0044**	**0.7707**	**8.8000e-004**	**0.0616**	**0.0504**	**0.1120**	**9.3200e-003**	**0.0470**	**0.0563**	**0.0000**	**81.6142**	**81.6142**	**0.0222**	**0.0000**	**82.0803**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0300e-003	0.0715	0.0947	2.0000e-004	4.5900e-003	1.0400e-003	5.6300e-003	1.2600e-003	9.6000e-004	2.2200e-003	0.0000	17.9443	17.9443	1.3000e-004	0.0000	17.9470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.3200e-003	0.0138	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1630	2.1630	1.2000e-004	0.0000	2.1654
Total	**8.1400e-003**	**0.0729**	**0.1085**	**2.3000e-004**	**7.0100e-003**	**1.0600e-003**	**8.0700e-003**	**1.9000e-003**	**9.8000e-004**	**2.8800e-003**	**0.0000**	**20.1073**	**20.1073**	**2.5000e-004**	**0.0000**	**20.1124**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0616	0.0000	0.0616	9.3200e-003	0.0000	9.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0943	1.0044	0.7707	8.8000e-004		0.0504	0.0504		0.0470	0.0470	0.0000	81.6141	81.6141	0.0222	0.0000	82.0802
Total	**0.0943**	**1.0044**	**0.7707**	**8.8000e-004**	**0.0616**	**0.0504**	**0.1120**	**9.3200e-003**	**0.0470**	**0.0563**	**0.0000**	**81.6141**	**81.6141**	**0.0222**	**0.0000**	**82.0802**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0300e-003	0.0715	0.0947	2.0000e-004	4.5900e-003	1.0400e-003	5.6300e-003	1.2600e-003	9.6000e-004	2.2200e-003	0.0000	17.9443	17.9443	1.3000e-004	0.0000	17.9470
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1100e-003	1.3200e-003	0.0138	3.0000e-005	2.4200e-003	2.0000e-005	2.4400e-003	6.4000e-004	2.0000e-005	6.6000e-004	0.0000	2.1630	2.1630	1.2000e-004	0.0000	2.1654
Total	**8.1400e-003**	**0.0729**	**0.1085**	**2.3000e-004**	**7.0100e-003**	**1.0600e-003**	**8.0700e-003**	**1.9000e-003**	**9.8000e-004**	**2.8800e-003**	**0.0000**	**20.1073**	**20.1073**	**2.5000e-004**	**0.0000**	**20.1124**

3.3 Site Preparation - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1366	0.1028	1.0000e-004		7.3500e-003	7.3500e-003		6.7600e-003	6.7600e-003	0.0000	9.2193	9.2193	2.7800e-003	0.0000	9.2777
Total	**0.0127**	**0.1366**	**0.1028**	**1.0000e-004**	**0.0452**	**7.3500e-003**	**0.0525**	**0.0248**	**6.7600e-003**	**0.0316**	**0.0000**	**9.2193**	**9.2193**	**2.7800e-003**	**0.0000**	**9.2777**

3.3 Site Preparation - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.8000e-004	1.8900e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2950	0.2950	2.0000e-005	0.0000	0.2953
Total	**1.5000e-004**	**1.8000e-004**	**1.8900e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2950**	**0.2950**	**2.0000e-005**	**0.0000**	**0.2953**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.1366	0.1028	1.0000e-004		7.3500e-003	7.3500e-003		6.7600e-003	6.7600e-003	0.0000	9.2193	9.2193	2.7800e-003	0.0000	9.2777
Total	**0.0127**	**0.1366**	**0.1028**	**1.0000e-004**	**0.0452**	**7.3500e-003**	**0.0525**	**0.0248**	**6.7600e-003**	**0.0316**	**0.0000**	**9.2193**	**9.2193**	**2.7800e-003**	**0.0000**	**9.2777**

3.3 Site Preparation - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.8000e-004	1.8900e-003	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2950	0.2950	2.0000e-005	0.0000	0.2953
Total	**1.5000e-004**	**1.8000e-004**	**1.8900e-003**	**0.0000**	**3.3000e-004**	**0.0000**	**3.3000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2950**	**0.2950**	**2.0000e-005**	**0.0000**	**0.2953**

3.4 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0497	0.0000	0.0497	0.0267	0.0000	0.0267	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3076	0.2086	2.4000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	22.4531	22.4531	6.7700e-003	0.0000	22.5953
Total	**0.0293**	**0.3076**	**0.2086**	**2.4000e-004**	**0.0497**	**0.0176**	**0.0673**	**0.0267**	**0.0162**	**0.0428**	**0.0000**	**22.4531**	**22.4531**	**6.7700e-003**	**0.0000**	**22.5953**

3.4 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5500e-003	0.0259	0.0343	7.0000e-005	1.6600e-003	3.8000e-004	2.0400e-003	4.6000e-004	3.5000e-004	8.0000e-004	0.0000	6.5073	6.5073	5.0000e-005	0.0000	6.5082
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0300e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7866	0.7866	4.0000e-005	0.0000	0.7874
Total	**2.9500e-003**	**0.0264**	**0.0394**	**8.0000e-005**	**2.5400e-003**	**3.9000e-004**	**2.9300e-003**	**6.9000e-004**	**3.6000e-004**	**1.0400e-003**	**0.0000**	**7.2938**	**7.2938**	**9.0000e-005**	**0.0000**	**7.2957**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0497	0.0000	0.0497	0.0267	0.0000	0.0267	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0293	0.3076	0.2086	2.4000e-004		0.0176	0.0176		0.0162	0.0162	0.0000	22.4531	22.4531	6.7700e-003	0.0000	22.5953
Total	**0.0293**	**0.3076**	**0.2086**	**2.4000e-004**	**0.0497**	**0.0176**	**0.0673**	**0.0267**	**0.0162**	**0.0428**	**0.0000**	**22.4531**	**22.4531**	**6.7700e-003**	**0.0000**	**22.5953**

3.4 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.5500e-003	0.0259	0.0343	7.0000e-005	1.6600e-003	3.8000e-004	2.0400e-003	4.6000e-004	3.5000e-004	8.0000e-004	0.0000	6.5073	6.5073	5.0000e-005	0.0000	6.5082
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	4.8000e-004	5.0300e-003	1.0000e-005	8.8000e-004	1.0000e-005	8.9000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7866	0.7866	4.0000e-005	0.0000	0.7874
Total	**2.9500e-003**	**0.0264**	**0.0394**	**8.0000e-005**	**2.5400e-003**	**3.9000e-004**	**2.9300e-003**	**6.9000e-004**	**3.6000e-004**	**1.0400e-003**	**0.0000**	**7.2938**	**7.2938**	**9.0000e-005**	**0.0000**	**7.2957**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.1009	0.0691	1.0000e-004		6.0900e-003	6.0900e-003		5.6100e-003	5.6100e-003	0.0000	9.4912	9.4912	2.7900e-003	0.0000	9.5497
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.1009**	**0.0691**	**1.0000e-004**		**6.0900e-003**	**6.0900e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**9.4912**	**9.4912**	**2.7900e-003**	**0.0000**	**9.5497**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	4.4000e-004	4.6100e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7210	0.7210	4.0000e-005	0.0000	0.7218
Total	**3.7000e-004**	**4.4000e-004**	**4.6100e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.1000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7210**	**0.7210**	**4.0000e-005**	**0.0000**	**0.7218**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8800e-003	0.1009	0.0691	1.0000e-004		6.0900e-003	6.0900e-003		5.6100e-003	5.6100e-003	0.0000	9.4912	9.4912	2.7900e-003	0.0000	9.5497
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.8800e-003**	**0.1009**	**0.0691**	**1.0000e-004**		**6.0900e-003**	**6.0900e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**9.4912**	**9.4912**	**2.7900e-003**	**0.0000**	**9.5497**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	4.4000e-004	4.6100e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7210	0.7210	4.0000e-005	0.0000	0.7218
Total	**3.7000e-004**	**4.4000e-004**	**4.6100e-003**	**1.0000e-005**	**8.1000e-004**	**1.0000e-005**	**8.1000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7210**	**0.7210**	**4.0000e-005**	**0.0000**	**0.7218**

3.6 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1311	1.0975	0.7125	1.0300e-003		0.0757	0.0757		0.0712	0.0712	0.0000	93.2291	93.2291	0.0231	0.0000	93.7147
Total	**0.1311**	**1.0975**	**0.7125**	**1.0300e-003**		**0.0757**	**0.0757**		**0.0712**	**0.0712**	**0.0000**	**93.2291**	**93.2291**	**0.0231**	**0.0000**	**93.7147**

3.6 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0237	0.1500	0.2918	3.7000e-004	0.0101	2.3500e-003	0.0125	2.8900e-003	2.1500e-003	5.0400e-003	0.0000	33.4209	33.4209	2.7000e-004	0.0000	33.4265
Worker	0.0276	0.0330	0.3455	7.2000e-004	0.0605	4.6000e-004	0.0610	0.0161	4.2000e-004	0.0165	0.0000	54.0030	54.0030	2.8900e-003	0.0000	54.0636
Total	**0.0513**	**0.1829**	**0.6373**	**1.0900e-003**	**0.0706**	**2.8100e-003**	**0.0734**	**0.0190**	**2.5700e-003**	**0.0216**	**0.0000**	**87.4239**	**87.4239**	**3.1600e-003**	**0.0000**	**87.4901**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1311	1.0975	0.7125	1.0300e-003		0.0757	0.0757		0.0712	0.0712	0.0000	93.2290	93.2290	0.0231	0.0000	93.7146
Total	**0.1311**	**1.0975**	**0.7125**	**1.0300e-003**		**0.0757**	**0.0757**		**0.0712**	**0.0712**	**0.0000**	**93.2290**	**93.2290**	**0.0231**	**0.0000**	**93.7146**

3.6 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0237	0.1500	0.2918	3.7000e-004	0.0101	2.3500e-003	0.0125	2.8900e-003	2.1500e-003	5.0400e-003	0.0000	33.4209	33.4209	2.7000e-004	0.0000	33.4265
Worker	0.0276	0.0330	0.3455	7.2000e-004	0.0605	4.6000e-004	0.0610	0.0161	4.2000e-004	0.0165	0.0000	54.0030	54.0030	2.8900e-003	0.0000	54.0636
Total	**0.0513**	**0.1829**	**0.6373**	**1.0900e-003**	**0.0706**	**2.8100e-003**	**0.0734**	**0.0190**	**2.5700e-003**	**0.0216**	**0.0000**	**87.4239**	**87.4239**	**3.1600e-003**	**0.0000**	**87.4901**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3228	311.3228	0.0766	0.0000	312.9319
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3228**	**311.3228**	**0.0766**	**0.0000**	**312.9319**

3.6 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0687	0.4481	0.9010	1.2500e-003	0.0341	6.6800e-003	0.0408	9.7500e-003	6.1300e-003	0.0159	0.0000	110.9491	110.9491	8.4000e-004	0.0000	110.9667
Worker	0.0827	0.0994	1.0406	2.4400e-003	0.2043	1.5000e-003	0.2058	0.0543	1.3900e-003	0.0557	0.0000	175.1340	175.1340	8.8900e-003	0.0000	175.3208
Total	**0.1514**	**0.5475**	**1.9416**	**3.6900e-003**	**0.2384**	**8.1800e-003**	**0.2466**	**0.0641**	**7.5200e-003**	**0.0716**	**0.0000**	**286.0831**	**286.0831**	**9.7300e-003**	**0.0000**	**286.2875**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4033	3.4327	2.3568	3.4900e-003		0.2316	0.2316		0.2175	0.2175	0.0000	311.3225	311.3225	0.0766	0.0000	312.9315
Total	**0.4033**	**3.4327**	**2.3568**	**3.4900e-003**		**0.2316**	**0.2316**		**0.2175**	**0.2175**	**0.0000**	**311.3225**	**311.3225**	**0.0766**	**0.0000**	**312.9315**

3.6 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0687	0.4481	0.9010	1.2500e-003	0.0341	6.6800e-003	0.0408	9.7500e-003	6.1300e-003	0.0159	0.0000	110.9491	110.9491	8.4000e-004	0.0000	110.9667
Worker	0.0827	0.0994	1.0406	2.4400e-003	0.2043	1.5000e-003	0.2058	0.0543	1.3900e-003	0.0557	0.0000	175.1340	175.1340	8.8900e-003	0.0000	175.3208
Total	**0.1514**	**0.5475**	**1.9416**	**3.6900e-003**	**0.2384**	**8.1800e-003**	**0.2466**	**0.0641**	**7.5200e-003**	**0.0716**	**0.0000**	**286.0831**	**286.0831**	**9.7300e-003**	**0.0000**	**286.2875**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0147	0.1279	0.0964	1.5000e-004		8.2200e-003	8.2200e-003		7.7300e-003	7.7300e-003	0.0000	13.0223	13.0223	3.1900e-003	0.0000	13.0893
Total	**0.0147**	**0.1279**	**0.0964**	**1.5000e-004**		**8.2200e-003**	**8.2200e-003**		**7.7300e-003**	**7.7300e-003**	**0.0000**	**13.0223**	**13.0223**	**3.1900e-003**	**0.0000**	**13.0893**

3.6 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-003	0.0171	0.0344	5.0000e-005	1.4400e-003	2.6000e-004	1.7000e-003	4.1000e-004	2.4000e-004	6.5000e-004	0.0000	4.6073	4.6073	3.0000e-005	0.0000	4.6080
Worker	3.1200e-003	3.7800e-003	0.0396	1.0000e-004	8.6400e-003	6.0000e-005	8.7100e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.1294	7.1294	3.5000e-004	0.0000	7.1367
Total	**5.5200e-003**	**0.0209**	**0.0739**	**1.5000e-004**	**0.0101**	**3.2000e-004**	**0.0104**	**2.7100e-003**	**3.0000e-004**	**3.0100e-003**	**0.0000**	**11.7367**	**11.7367**	**3.8000e-004**	**0.0000**	**11.7447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0147	0.1279	0.0964	1.5000e-004		8.2200e-003	8.2200e-003		7.7300e-003	7.7300e-003	0.0000	13.0223	13.0223	3.1900e-003	0.0000	13.0892
Total	**0.0147**	**0.1279**	**0.0964**	**1.5000e-004**		**8.2200e-003**	**8.2200e-003**		**7.7300e-003**	**7.7300e-003**	**0.0000**	**13.0223**	**13.0223**	**3.1900e-003**	**0.0000**	**13.0892**

3.6 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4000e-003	0.0171	0.0344	5.0000e-005	1.4400e-003	2.6000e-004	1.7000e-003	4.1000e-004	2.4000e-004	6.5000e-004	0.0000	4.6073	4.6073	3.0000e-005	0.0000	4.6080
Worker	3.1200e-003	3.7800e-003	0.0396	1.0000e-004	8.6400e-003	6.0000e-005	8.7100e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.1294	7.1294	3.5000e-004	0.0000	7.1367
Total	**5.5200e-003**	**0.0209**	**0.0739**	**1.5000e-004**	**0.0101**	**3.2000e-004**	**0.0104**	**2.7100e-003**	**3.0000e-004**	**3.0100e-003**	**0.0000**	**11.7367**	**11.7367**	**3.8000e-004**	**0.0000**	**11.7447**

3.7 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.0795	0.0631	1.0000e-004		6.5900e-003	6.5900e-003		6.5900e-003	6.5900e-003	0.0000	8.5534	8.5534	1.0100e-003	0.0000	8.5746
Total	**0.4362**	**0.0795**	**0.0631**	**1.0000e-004**		**6.5900e-003**	**6.5900e-003**		**6.5900e-003**	**6.5900e-003**	**0.0000**	**8.5534**	**8.5534**	**1.0100e-003**	**0.0000**	**8.5746**

3.7 Architectural Coating - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8300e-003	5.7600e-003	0.0604	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8900e-003	0.0000	9.4418	9.4418	5.0000e-004	0.0000	9.4524
Total	**4.8300e-003**	**5.7600e-003**	**0.0604**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8900e-003**	**0.0000**	**9.4418**	**9.4418**	**5.0000e-004**	**0.0000**	**9.4524**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4238					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.0795	0.0631	1.0000e-004		6.5900e-003	6.5900e-003		6.5900e-003	6.5900e-003	0.0000	8.5534	8.5534	1.0100e-003	0.0000	8.5746
Total	**0.4362**	**0.0795**	**0.0631**	**1.0000e-004**		**6.5900e-003**	**6.5900e-003**		**6.5900e-003**	**6.5900e-003**	**0.0000**	**8.5534**	**8.5534**	**1.0100e-003**	**0.0000**	**8.5746**

3.7 Architectural Coating - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8300e-003	5.7600e-003	0.0604	1.3000e-004	0.0106	8.0000e-005	0.0107	2.8100e-003	7.0000e-005	2.8900e-003	0.0000	9.4418	9.4418	5.0000e-004	0.0000	9.4524
Total	**4.8300e-003**	**5.7600e-003**	**0.0604**	**1.3000e-004**	**0.0106**	**8.0000e-005**	**0.0107**	**2.8100e-003**	**7.0000e-005**	**2.8900e-003**	**0.0000**	**9.4418**	**9.4418**	**5.0000e-004**	**0.0000**	**9.4524**

3.7 Architectural Coating - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**1.6879**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.7 Architectural Coating - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0166	0.0200	0.2091	4.9000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112	0.0000	35.1905	35.1905	1.7900e-003	0.0000	35.2280
Total	**0.0166**	**0.0200**	**0.2091**	**4.9000e-004**	**0.0411**	**3.0000e-004**	**0.0414**	**0.0109**	**2.8000e-004**	**0.0112**	**0.0000**	**35.1905**	**35.1905**	**1.7900e-003**	**0.0000**	**35.2280**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.6447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0432	0.2841	0.2429	3.9000e-004		0.0225	0.0225		0.0225	0.0225	0.0000	33.1923	33.1923	3.5000e-003	0.0000	33.2659
Total	**1.6879**	**0.2841**	**0.2429**	**3.9000e-004**		**0.0225**	**0.0225**		**0.0225**	**0.0225**	**0.0000**	**33.1923**	**33.1923**	**3.5000e-003**	**0.0000**	**33.2659**

3.7 Architectural Coating - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0166	0.0200	0.2091	4.9000e-004	0.0411	3.0000e-004	0.0414	0.0109	2.8000e-004	0.0112	0.0000	35.1905	35.1905	1.7900e-003	0.0000	35.2280
Total	**0.0166**	**0.0200**	**0.2091**	**4.9000e-004**	**0.0411**	**3.0000e-004**	**0.0414**	**0.0109**	**2.8000e-004**	**0.0112**	**0.0000**	**35.1905**	**35.1905**	**1.7900e-003**	**0.0000**	**35.2280**

3.7 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1400e-003	0.0211	0.0195	3.0000e-005		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	2.6809	2.6809	2.5000e-004	0.0000	2.6863
Total	**0.1360**	**0.0211**	**0.0195**	**3.0000e-005**		**1.5800e-003**	**1.5800e-003**		**1.5800e-003**	**1.5800e-003**	**0.0000**	**2.6809**	**2.6809**	**2.5000e-004**	**0.0000**	**2.6863**

3.7 Architectural Coating - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	1.4500e-003	0.0152	4.0000e-005	3.3200e-003	2.0000e-005	3.3400e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.7349	2.7349	1.3000e-004	0.0000	2.7377
Total	**1.2000e-003**	**1.4500e-003**	**0.0152**	**4.0000e-005**	**3.3200e-003**	**2.0000e-005**	**3.3400e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.7349**	**2.7349**	**1.3000e-004**	**0.0000**	**2.7377**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1328					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1400e-003	0.0211	0.0195	3.0000e-005		1.5800e-003	1.5800e-003		1.5800e-003	1.5800e-003	0.0000	2.6809	2.6809	2.5000e-004	0.0000	2.6863
Total	**0.1360**	**0.0211**	**0.0195**	**3.0000e-005**		**1.5800e-003**	**1.5800e-003**		**1.5800e-003**	**1.5800e-003**	**0.0000**	**2.6809**	**2.6809**	**2.5000e-004**	**0.0000**	**2.6863**

3.7 Architectural Coating - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	1.4500e-003	0.0152	4.0000e-005	3.3200e-003	2.0000e-005	3.3400e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.7349	2.7349	1.3000e-004	0.0000	2.7377
Total	**1.2000e-003**	**1.4500e-003**	**0.0152**	**4.0000e-005**	**3.3200e-003**	**2.0000e-005**	**3.3400e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**2.7349**	**2.7349**	**1.3000e-004**	**0.0000**	**2.7377**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7132	1.5654	7.3537	0.0166	1.1576	0.0215	1.1791	0.3101	0.0198	0.3299	0.0000	1,224.6562	1,224.6562	0.0498	0.0000	1,225.7014
Unmitigated	0.7132	1.5654	7.3537	0.0166	1.1576	0.0215	1.1791	0.3101	0.0198	0.3299	0.0000	1,224.6562	1,224.6562	0.0498	0.0000	1,225.7014

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	924.48	924.48	924.48	2,372,316	2,372,316
Parking Lot	0.00	0.00	0.00		
Regional Shopping Center	168.66	168.66	168.66	235,669	235,669
Single Family Housing	195.60	195.60	195.60	501,931	501,931
Unenclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,288.74	1,288.74	1,288.74	3,109,917	3,109,917

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Parking Lot	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Regional Shopping Center	10.00	5.00	6.50	16.30	64.70	19.00	54	35	11
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3
Unenclosed Parking with	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.504263	0.068212	0.178684	0.146863	0.044671	0.006294	0.020946	0.016568	0.002299	0.002275	0.006187	0.000564	0.002174

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

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	336.5215	336.5215	0.0165	3.4200e-003	337.9290
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	343.9118	343.9118	0.0169	3.5000e-003	345.3502
NaturalGas Mitigated	0.0126	0.1076	0.0464	6.9000e-004		8.7000e-003	8.7000e-003		8.7000e-003	8.7000e-003	0.0000	124.5701	124.5701	2.3900e-003	2.2800e-003	125.3283
NaturalGas Unmitigated	0.0159	0.1356	0.0584	8.6000e-004		0.0110	0.0110		0.0110	0.0110	0.0000	156.9281	156.9281	3.0100e-003	2.8800e-003	157.8831

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.13518e+006	0.0115	0.0984	0.0419	6.3000e-004		7.9500e-003	7.9500e-003		7.9500e-003	7.9500e-003	0.0000	113.9413	113.9413	2.1800e-003	2.0900e-003	114.6347
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	33900	1.8000e-004	1.6600e-003	1.4000e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.8090	1.8090	3.0000e-005	3.0000e-005	1.8200
Single Family Housing	771642	4.1600e-003	0.0356	0.0151	2.3000e-004		2.8700e-003	2.8700e-003		2.8700e-003	2.8700e-003	0.0000	41.1778	41.1778	7.9000e-004	7.5000e-004	41.4284
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0159**	**0.1356**	**0.0584**	**8.7000e-004**		**0.0110**	**0.0110**		**0.0110**	**0.0110**	**0.0000**	**156.9281**	**156.9281**	**3.0000e-003**	**2.8700e-003**	**157.8831**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	26820	1.4000e-004	1.3100e-003	1.1000e-003	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.4312	1.4312	3.0000e-005	3.0000e-005	1.4399
Single Family Housing	614334	3.3100e-003	0.0283	0.0121	1.8000e-004		2.2900e-003	2.2900e-003		2.2900e-003	2.2900e-003	0.0000	32.7832	32.7832	6.3000e-004	6.0000e-004	32.9827
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	1.6932e+006	9.1300e-003	0.0780	0.0332	5.0000e-004		6.3100e-003	6.3100e-003		6.3100e-003	6.3100e-003	0.0000	90.3557	90.3557	1.7300e-003	1.6600e-003	90.9056
Total		**0.0126**	**0.1076**	**0.0464**	**6.9000e-004**		**8.7000e-003**	**8.7000e-003**		**8.7000e-003**	**8.7000e-003**	**0.0000**	**124.5701**	**124.5701**	**2.3900e-003**	**2.2900e-003**	**125.3283**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	774335	207.3362	0.0102	2.1100e-003	208.2033
Parking Lot	33792	9.0482	4.4000e-004	9.0000e-005	9.0860
Regional Shopping Center	77820	20.8371	1.0200e-003	2.1000e-004	20.9242
Single Family Housing	178495	47.7939	2.3500e-003	4.9000e-004	47.9938
Unenclosed Parking with Elevator	219960	58.8965	2.8900e-003	6.0000e-004	59.1429
Total		**343.9118**	**0.0169**	**3.5000e-003**	**345.3502**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	757083	202.7166	9.9600e-003	2.0600e-003	203.5644
Parking Lot	33792	9.0482	4.4000e-004	9.0000e-005	9.0860
Regional Shopping Center	71850	19.2386	9.5000e-004	2.0000e-004	19.3190
Single Family Housing	174117	46.6217	2.2900e-003	4.7000e-004	46.8167
Unenclosed Parking with Elevator	219960	58.8965	2.8900e-003	6.0000e-004	59.1429
Total		**336.5215**	**0.0165**	**3.4200e-003**	**337.9290**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

Use Low VOC Cleaning Supplies

	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	1.6682	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974
Unmitigated	1.7791	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0764	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974
Total	**1.7791**	**0.0287**	**2.4741**	**1.3000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**4.0137**	**4.0137**	**3.9900e-003**	**0.0000**	**4.0974**

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	0.2201					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.3717					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0764	0.0287	2.4741	1.3000e-004		0.0135	0.0135		0.0135	0.0135	0.0000	4.0137	4.0137	3.9900e-003	0.0000	4.0974
Total	**1.6682**	**0.0287**	**2.4741**	**1.3000e-004**		**0.0135**	**0.0135**		**0.0135**	**0.0135**	**0.0000**	**4.0137**	**4.0137**	**3.9900e-003**	**0.0000**	**4.0974**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	36.3414	0.0210	0.0126	40.6886
Unmitigated	36.3414	0.0209	0.0126	40.6823

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.943 / 8.79013	31.7727	0.0183	0.0110	35.5671
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.444435 / 0.272396	1.0055	5.8000e-004	3.5000e-004	1.1264
Single Family Housing	1.5637 / 0.985809	3.5633	2.0500e-003	1.2300e-003	3.9888
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**36.3414**	**0.0209**	**0.0126**	**40.6823**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	13.943 / 8.79013	31.7727	0.0184	0.0110	35.5726
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.444435 / 0.272396	1.0055	5.8000e-004	3.5000e-004	1.1266
Single Family Housing	1.5637 / 0.985809	3.5633	2.0600e-003	1.2400e-003	3.9895
Unenclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**36.3414**	**0.0210**	**0.0126**	**40.6886**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	25.9382	1.5329	0.0000	58.1291
Unmitigated	25.9382	1.5329	0.0000	58.1291

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.44	19.9824	1.1809	0.0000	44.7819
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	6.3	1.2788	0.0756	0.0000	2.8660
Single Family Housing	23.04	4.6769	0.2764	0.0000	10.4813
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**25.9382**	**1.5329**	**0.0000**	**58.1291**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	98.44	19.9824	1.1809	0.0000	44.7819
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	6.3	1.2788	0.0756	0.0000	2.8660
Single Family Housing	23.04	4.6769	0.2764	0.0000	10.4813
Unenclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		**25.9382**	**1.5329**	**0.0000**	**58.1291**

9.0 Operational Offroad

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

10.0 Vegetation

Stockton & T

Sacramento County, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	2	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	4	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	11	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	5.86800E-002	3.84580E-001	3.25430E-001	5.20000E-004	3.07000E-002	3.07000E-002	0.00000E+000	4.44266E+001	4.44266E+001	4.77000E-003	0.00000E+000	4.45267E+001
Cement and Mortar Mixers	4.90000E-004	3.05000E-003	2.54000E-003	1.00000E-005	1.20000E-004	1.20000E-004	0.00000E+000	3.78080E-001	3.78080E-001	4.00000E-005	0.00000E+000	3.78900E-001
Concrete/Industrial Saws	1.42200E-002	1.01680E-001	8.30500E-002	1.40000E-004	7.64000E-003	7.64000E-003	0.00000E+000	1.18285E+001	1.18285E+001	1.14000E-003	0.00000E+000	1.18525E+001
Cranes	1.00650E-001	1.19460E+000	4.25960E-001	8.60000E-004	5.34400E-002	4.91700E-002	0.00000E+000	7.99622E+001	7.99622E+001	2.44300E-002	0.00000E+000	8.04752E+001
Excavators	2.87300E-002	3.27880E-001	2.53700E-001	3.90000E-004	1.61300E-002	1.48400E-002	0.00000E+000	3.69169E+001	3.69169E+001	1.11400E-002	0.00000E+000	3.71508E+001
Forklifts	1.11420E-001	9.63880E-001	6.53010E-001	8.00000E-004	7.97000E-002	7.33300E-002	0.00000E+000	7.42161E+001	7.42161E+001	2.26700E-002	0.00000E+000	7.46922E+001
Generator Sets	1.01500E-001	7.89110E-001	6.57590E-001	1.14000E-003	5.35300E-002	5.35300E-002	0.00000E+000	9.83461E+001	9.83461E+001	8.16000E-003	0.00000E+000	9.85175E+001
Graders	8.15000E-003	8.30400E-002	3.94200E-002	5.00000E-005	4.67000E-003	4.29000E-003	0.00000E+000	4.71306E+000	4.71306E+000	1.42000E-003	0.00000E+000	4.74291E+000
Pavers	2.21000E-003	2.48200E-002	1.56900E-002	2.00000E-005	1.23000E-003	1.13000E-003	0.00000E+000	2.34022E+000	2.34022E+000	7.10000E-004	0.00000E+000	2.35504E+000
Paving Equipment	2.53000E-003	2.94300E-002	2.09800E-002	3.00000E-005	1.46000E-003	1.34000E-003	0.00000E+000	3.11858E+000	3.11858E+000	9.40000E-004	0.00000E+000	3.13833E+000
Rollers	2.78000E-003	2.56800E-002	1.66100E-002	2.00000E-005	1.89000E-003	1.74000E-003	0.00000E+000	2.03930E+000	2.03930E+000	6.20000E-004	0.00000E+000	2.05222E+000
Rubber Tired Dozers	7.36800E-002	8.25310E-001	6.23850E-001	5.30000E-004	3.84000E-002	3.53300E-002	0.00000E+000	4.98446E+001	4.98446E+001	1.50300E-002	0.00000E+000	5.01603E+001
Tractors/Loaders/Backhoes	1.59820E-001	1.53423E+000	1.18976E+000	1.54000E-003	1.16040E-001	1.06750E-001	0.00000E+000	1.43898E+002	1.43898E+002	4.39100E-002	0.00000E+000	1.44820E+002
Welders	8.91900E-002	3.04920E-001	3.34700E-001	4.40000E-004	2.27000E-002	2.27000E-002	0.00000E+000	3.27504E+001	3.27504E+001	7.25000E-003	0.00000E+000	3.29027E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	5.86800E-002	3.84580E-001	3.25430E-001	5.20000E-004	3.07000E-002	3.07000E-002	0.00000E+000	4.44266E+001	4.44266E+001	4.77000E-003	0.00000E+000	4.45267E+001
Cement and Mortar Mixers	4.90000E-004	3.05000E-003	2.54000E-003	1.00000E-005	1.20000E-004	1.20000E-004	0.00000E+000	3.78080E-001	3.78080E-001	4.00000E-005	0.00000E+000	3.78900E-001
Concrete/Industrial Saws	1.42200E-002	1.01680E-001	8.30500E-002	1.40000E-004	7.64000E-003	7.64000E-003	0.00000E+000	1.18285E+001	1.18285E+001	1.14000E-003	0.00000E+000	1.18525E+001
Cranes	1.00650E-001	1.19460E+000	4.25960E-001	8.60000E-004	5.34400E-002	4.91700E-002	0.00000E+000	7.99621E+001	7.99621E+001	2.44300E-002	0.00000E+000	8.04751E+001
Excavators	2.87300E-002	3.27880E-001	2.53700E-001	3.90000E-004	1.61300E-002	1.48400E-002	0.00000E+000	3.69169E+001	3.69169E+001	1.11400E-002	0.00000E+000	3.71507E+001
Forklifts	1.11420E-001	9.63880E-001	6.53010E-001	8.00000E-004	7.97000E-002	7.33300E-002	0.00000E+000	7.42160E+001	7.42160E+001	2.26700E-002	0.00000E+000	7.46921E+001
Generator Sets	1.01500E-001	7.89110E-001	6.57590E-001	1.14000E-003	5.35300E-002	5.35300E-002	0.00000E+000	9.83460E+001	9.83460E+001	8.16000E-003	0.00000E+000	9.85174E+001
Graders	8.15000E-003	8.30400E-002	3.94200E-002	5.00000E-005	4.67000E-003	4.29000E-003	0.00000E+000	4.71305E+000	4.71305E+000	1.42000E-003	0.00000E+000	4.74290E+000
Pavers	2.21000E-003	2.48200E-002	1.56900E-002	2.00000E-005	1.23000E-003	1.13000E-003	0.00000E+000	2.34021E+000	2.34021E+000	7.10000E-004	0.00000E+000	2.35504E+000
Paving Equipment	2.53000E-003	2.94300E-002	2.09800E-002	3.00000E-005	1.46000E-003	1.34000E-003	0.00000E+000	3.11857E+000	3.11857E+000	9.40000E-004	0.00000E+000	3.13833E+000
Rollers	2.78000E-003	2.56800E-002	1.66100E-002	2.00000E-005	1.89000E-003	1.74000E-003	0.00000E+000	2.03930E+000	2.03930E+000	6.20000E-004	0.00000E+000	2.05221E+000
Rubber Tired Dozers	7.36800E-002	8.25310E-001	6.23850E-001	5.30000E-004	3.84000E-002	3.53300E-002	0.00000E+000	4.98445E+001	4.98445E+001	1.50300E-002	0.00000E+000	5.01602E+001
Tractors/Loaders/Backhoes	1.59820E-001	1.53422E+000	1.18976E+000	1.54000E-003	1.16030E-001	1.06750E-001	0.00000E+000	1.43898E+002	1.43898E+002	4.39100E-002	0.00000E+000	1.44820E+002
Welders	8.91900E-002	3.04920E-001	3.34700E-001	4.40000E-004	2.27000E-002	2.27000E-002	0.00000E+000	3.27504E+001	3.27504E+001	7.25000E-003	0.00000E+000	3.29027E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.12545E-006	1.12545E-006	0.00000E+000	0.00000E+000	1.12292E-006
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.45419E-007	8.45419E-007	0.00000E+000	0.00000E+000	8.43704E-007
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.25059E-006	1.25059E-006	0.00000E+000	0.00000E+000	1.24262E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.08351E-006	1.08351E-006	0.00000E+000	0.00000E+000	1.34587E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21268E-006	1.21268E-006	0.00000E+000	0.00000E+000	1.20495E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22018E-006	1.22018E-006	0.00000E+000	0.00000E+000	1.21806E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.12176E-006	2.12176E-006	0.00000E+000	0.00000E+000	2.10841E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.27310E-006	4.27310E-006	0.00000E+000	0.00000E+000	0.00000E+000
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	3.20659E-006	3.20659E-006	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	4.87277E-006
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20374E-006	1.20374E-006	0.00000E+000	0.00000E+000	1.19617E-006
Tractors/Loaders/Backhoes	0.00000E+000	6.51793E-006	0.00000E+000	0.00000E+000	8.61772E-005	0.00000E+000	0.00000E+000	1.18139E-006	1.18139E-006	0.00000E+000	0.00000E+000	1.24292E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.22136E-006	1.22136E-006	0.00000E+000	0.00000E+000	1.21570E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.05	0.01	0.05	0.01	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.32	0.09	0.32	0.09	0.00	0.00
Demolition	Fugitive Dust	0.06	0.01	0.06	0.01	0.00	0.00
Demolition	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Grading	Fugitive Dust	0.05	0.03	0.05	0.03	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.05	0.02	0.05	0.02	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	7.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.15	2.15	2.13	2.29	2.15
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	20.63	20.63	20.63	20.69	20.55	20.55	0.00	20.62	20.62	20.33	20.21	20.62
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.33	-0.16	-0.02
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	0.17	0.43		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
Yes	Only Natural Gas Hearth	
No	No Hearth	
Yes	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	150.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
Yes	Exceed Title 24	25.00	
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00

DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value
Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX B

DIESEL PARTICULATE MATTER RISK EVALUATION

Environmental Consultants and Contractors
3117 Fite Circle Suite 108 Sacramento, CA 95827
916 361-1297 FAX 916 361-1299 www.scsengineers.com

SCS ENGINEERS

October 27, 2014
File No: 01214018.00

Mr. Rod Stinson
Raney Planning and Management
1501 Sports Drive
Sacramento, CA 95834

Subject: Diesel Particulate Matter Risk Evaluation for Proposed Stockton and T Residential Development, California

Dear Mr. Stinson:

SCS Engineers (SCS) hereby transmits this focused health risk screening conducted to evaluate health risks associated with planned development of residential property in Sacramento (Stockton and T Project or Project), bounded by Stockton Boulevard, 37th Street, S Street, 39th Street, and United States Highway 50 (US-50) (Site). This analysis evaluated the potential air quality impacts at the Site from vehicles on US-50.

To evaluate the potential health risks from traffic on US-50, SCS used the *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* protocol (Roadway Protocol) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD).

BACKGROUND

Evergreen Management Company (Evergreen) has proposed the construction of a mixed use development at the Site. The Site is approximately two acres. Proposed use includes retail space, apartments, and single family homes. Due to the proximity of US-50, there is potential for excessive health risk impacts to residents at the Site resulting from exposure to vehicle exhaust from US-50. To evaluate the magnitude of the risk, SCS followed the Roadway Protocol. The purpose of the Roadway protocol is to allow developers, reviewers, and interested parties to evaluate health risk at a proposed development without requiring the use of complex air dispersion modeling. The Roadway Protocol is a stepwise process that indicates when dispersion modeling is required.

The Roadway Protocol establishes the cancer risk evaluation criterion of individual risk corresponding to a 70 percent reduction from the highest roadway risk in Sacramento County, as calculated on a hypothetical receptor located 50 feet from the nearest travel lane for the highest peak traffic volume in Sacramento County. This risk evaluation criterion is 276 in a million and was be used in this assessment.

STEP 1 – TRAFFIC VOLUME

The first evaluation criterion in the Roadway Protocol is to determine the traffic count of major roadways near the Site. Project locations without a high traffic volume roadway within 500 feet require no further analysis. For the purposes of the Project, a high traffic volume roadway is a freeway with a traffic volume greater than 100,000 annual average daily trip count (AADT). US-50 is located near the Site and had an AADT of 205,000 in 2013 per Caltrans data, so the analysis must proceed to the next step.

STEP 2 – SCREENING TABLES

The second step of the Roadway Protocol screening uses more site specific characteristics to estimate the cancer risk. In the second step, the direction of the freeway, the trip count, and distance to the Site are considered. This information is used to look up the cancer risk from tables in the Roadway Protocol.

US-50 runs east-west near the Site, and the Site is located to the south of the freeway. Therefore, the bottom half of Table 1 from the Roadway Protocol should be consulted to evaluate cancer risk. The relevant section of ***Table 1*** is reproduced below.

Table 1: 2011 Diesel PM Cancer Risk
(Potential Incremental Cancer Chances per Million People)
North and South of an East-West Roadway

PROJECTS NORTH AND SOUTH OF AN EAST-WEST ROADWAY Version 2.4
EMFAC2007 (Analysis Year 2011)

Peak Hour Traffic (vehicle/hr)	Receptor Distance from Edge of Nearest Travel Lane (feet)							
	10	25	50	100	200	300	400	500
4,000	102	86	67	48	32	22	19	16
8,000	207	172	137	99	64	48	38	32
12,000	305	254	200	143	92	70	54	48
16,000	423	353	277	200	127	95	76	64
20,000	531	442	347	248	159	121	95	80
24,000	636	531	417	299	191	143	114	95

The cancer risk is then determined by looking up the peak hour traffic and the distance from the roadway to the Project site. The Project includes the proposed building locations, so it is appropriate and consistent with the Roadway Protocol to use the location of the nearest building rather than the property line to determine the distance. The distance between the roadway and the building nearest the roadway is 75 feet, and the peak hourly traffic on US-50 adjacent to the roadway is 18,000 vehicles per Caltrans data.

The parameters of 18,000 AADT and 75 feet from the roadway are not shown in ***Table 1***; however, the values can be interpolated from the risk values shown in ***Table 1***. ***Table 2*** shows the values from Table 1 but with a column added for a site 75 feet from the roadway and a row added for 18,000 AADT.

Table 2: 2011 Diesel PM Cancer Risk
(Potential Incremental Cancer Chances per Million People)
North and South of an East-West Roadway – With Interpolated Site Values

PROJECTS NORTH AND SOUTH OF AN EAST-WEST ROADWAY Version 2.4
EMFAC2007 (Analysis Year 2011)

Peak Hour Traffic (vehicle/hr)	Receptor Distance from Edge of Nearest Travel Lane (feet)								
	10	25	50	**75**	100	200	300	400	500
4,000	102	86	67	58	48	32	22	19	16
8,000	207	172	137	118	99	64	48	38	32
12,000	305	254	200	172	143	92	70	54	48
16,000	423	353	277	239	200	127	95	76	64
18,000	477	398	312	***268***	224	143	108	86	72
20,000	531	442	347	298	248	159	121	95	80
24,000	636	531	417	358	299	191	143	114	95

This linear interpolation yields a cancer risk of 268 in a million, which is less than the SMAQMD risk threshold of 276 in a million.

RISK SCREENING RESULTS

The cancer risk at the Site from US-50 is less than the SMAQMD Roadway Protocol threshold of 276; therefore, a site specific health risk assessment (HRA), including dispersion modeling, is not required. SCS notes the screening procedure in the Roadway Protocol is a conservative process and that dispersion modeling with updated emission factors is likely to produce a lower cancer risk for the Project than that the 268 in a million calculated in this evaluation.

SMAQMD notes in the Roadway Protocol that the threshold of 276 in a million is not characterized as an “acceptable” level of risk and that the Roadway Protocol does not establish which land use projects are acceptable or not. Rather, the Roadway Protocol is a stepwise process that indicates when dispersion modeling and a HRA is required.

CLOSING

Thank you for the opportunity to assist you with this evaluation. Please don't hesitate to call John Henkelman or Patrick Sullivan at 916-361-1297 if you have any questions or need any additional information.

Sincerely,

John Henkelman
Senior Project Professional
SCS ENGINEERS

Patrick S. Sullivan
Senior Vice President
SCS ENGINEERS

APPENDIX C

CAP CONSISTENCY REVIEW CHECKLIST

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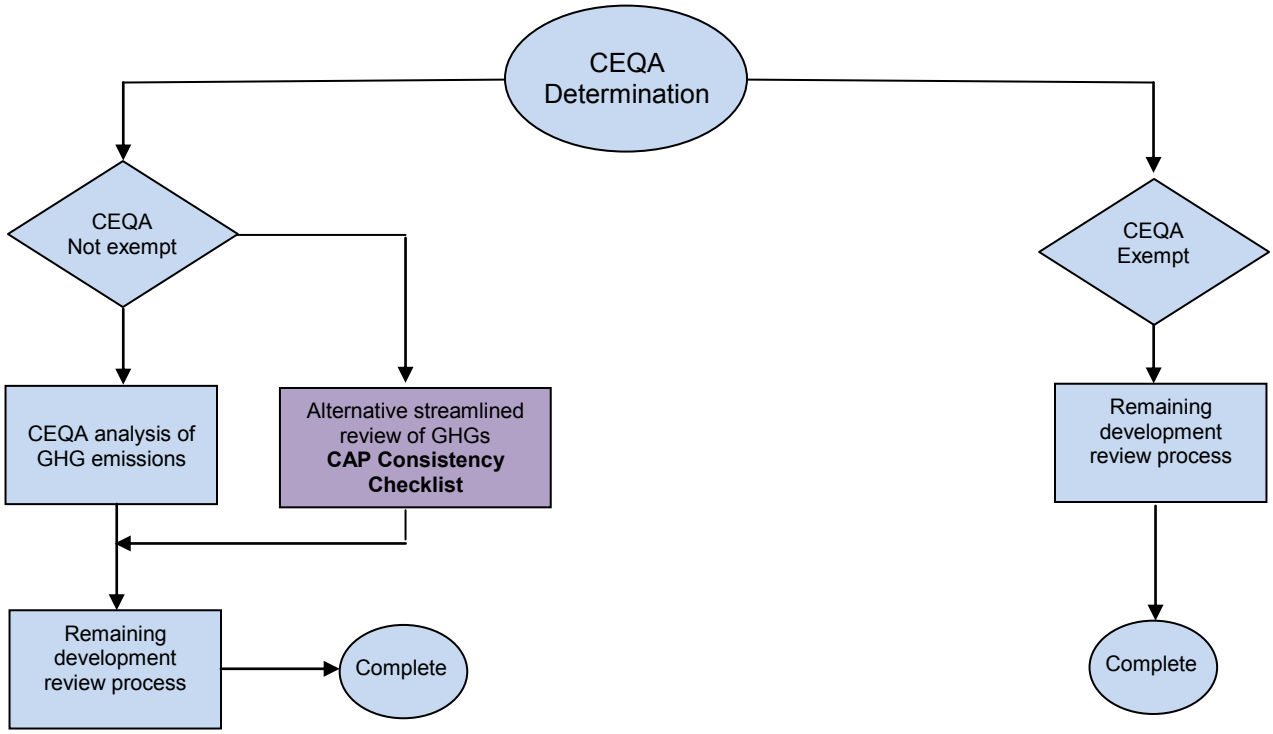
CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

The purpose of the Climate Action Plan Consistency Review Checklist (CAP Consistency Review Checklist) is to provide a streamlined review process for proposed new development projects which are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA)..

CEQA Guidelines require the analysis of greenhouse gas (GHG) emissions and potential climate change impacts from new development. The Sacramento Climate Action Plan qualifies under section 15183.5 of the CEQA Guidelines as a plan for the reduction of GHG emissions for use in cumulative impact analysis pertaining to development projects. This allows projects that demonstrate consistency with the CAP to be eligible for this streamlining procedure. Projects that demonstrate consistency with the CAP and the Sacramento 2030 General Plan may be able to answer "No additional significant environmental effect" in the City's initial study checklist. Projects that do not demonstrate consistency may, at the City's discretion, prepare a more comprehensive project-specific analysis of GHG emissions consistent with CEQA requirements. (See FAQ about the CAP Consistency Review Checklist for more details.)

The diagram below shows the context for the CAP Consistency Review Checklist within the planning review process framework.

Streamlined Review of GHG Emissions in Development Projects



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CLIMATE ACTION PLAN – CONSISTENCY REVIEW CHECKLIST

Application Submittal Requirements

1. The CAP Consistency Review Checklist is required only for proposed new development projects which are subject to CEQA review (non-exempt projects)
2. If required, the CAP Consistency Review Checklist must be submitted in addition to the basic set of requirements set forth in the Universal Application and the Planning Application Submittal Matrix.
3. The applicant shall work with staff to meet the requirements of this checklist. These requirements will be reflected in the conditions of approval and/or mitigation measures.
4. All conditions of approval and mitigation measures from this checklist shall be shown on full-size sheets for building plan check submittals.

Application Information

Project Number: _____

Address of Property: 3675 T Street, Sacramento, CA 95816

Was a special consultant retained to complete this checklist? ■ Yes ☐ No. If yes, complete following

Consultant Name*: Rod Stinson

Company: Raney Planning & Management, Inc.

Phone: 916-372-6100 E-Mail: rods@raneymanagement.com

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CAP Consistency Checklist Form for Projects that are Not Exempt from CEQA

Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	No*
1. Is the proposed project substantially consistent with the City's over-all goals for land use and urban form, allowable floor area ratio (FAR) and/or density standards in the City's 2030 General Plan, as it currently exists?	X	

Please explain how proposed project compares to 2030 General Plan with respect to density standards, FAR, land use and urban form. (See directions for filling out CAP Checklist)

The site is designated Urban Corridor Low in the City's General Plan, which provides for a mix of horizontal and vertical mixed-use development and single-sues commercial and residential development. For residential development that is part of a mixed-use building, the development shall comply with the allowed FAR range of a minimum FAR of 0.30 and a maximum FAR of 3.00, and is not subject to allowed density range. The proposed project is a mixed-use development that includes residential and commercial uses with a FAR of approximately 1.75, which falls within the FAR range. Thus, the project would be considered consistent with the 2030 General Plan with respect to density standards, FAR, land use, and urban form.

2. Would the project reduce average vehicle miles traveled (VMT) per capita of the proposed residents, employees, and/or visitors to the project by a minimum of 35% compared to the statewide average?	Yes	No*	NA
			X

Please explain how proposed project meets this requirement. If "not applicable", explain why this was not required. If project does not meet this requirement, see Directions for filling out CAP Consistency Review Checklist for alternatives to meeting checklist requirements.

Because the project is a transit priority project pursuant to Public Resources Code Section 21155, per SB 375, impacts from light vehicle traffic on the regional transportation network and on global warming are not required to be addressed. Nonetheless, according to Exhibit 1 provided below, the project would be expected to meet the 35% reduction standard.

(Attach a copy of the VMT model input and output. Record the model and version here _____)

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project, and incorporated into conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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Checklist Item (Check the appropriate box, and provide explanation for your answer).	Yes	NA
3. Would the project incorporate traffic calming measures? *(Examples of traffic calming measures include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.)*		X

Please explain how the proposed project meets this requirement (list traffic calming measures). If "not applicable", explain why traffic calming measures were not required.

The proposed project is infill development and does not involve any modifications to the existing surrounding roadway network, and sufficient infrastructure already exists in the area. As such, traffic calming measures are not necessary or applicable for the proposed project.

4. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan?	Yes	NA
	X	

Please explain how the proposed project meets this requirement. If "not applicable", explain why this was not required.

The proposed project is infill development and does not involve any modifications to the existing surrounding roadway network. The project is considered a transit priority project, which requires that no more than 25% of the project area be farther than 1/2 mile from a major transit stop or high-quality transit corridor, and no more than 10% of residential units or 100 units (whichever is less) be farther than 1/2 mile from a stop or corridor. As such, the project would incorporate connections to public transportation and would be consistent with the City's Pedestrian Master Plan.

*If "No", equivalent or better GHG reduction must be demonstrated as part of the project and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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5. Would the project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen?	Yes	NA
		X

Please explain how the proposed project meets this requirement. If "not applicable", explain why this was not required.

Existing bikeways are already present in the area and consistent with the Bikeway Master Plan. The project is infill development and would not modify the existing roadway network.

6. For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., photovoltaic systems) that would generate at least a minimum of 15% of the project's total energy demand on-site? (CAP Actions: 3.4.1 and 3.4.2)	Yes	No*	NA
	x		

Please explain how the proposed project meets this requirement. If "not applicable", explain why this was not required. If project does not meet requirements, see DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST re: alternatives to meeting checklist requirements.

A renewable energy system that generates at least 15% of total project energy is required. Or, as a substitution, the project must exceed 2013 Title 24 energy efficiency standards by 10% (residential portion) and by 5% (commercial portion). The requirements will be included and demonstrated on project building plans subject to review and approval by the City, pursuant to Mitigation Measure I-1 of the SCEA IS.

Attach a copy of the CalEEMod input and output. Record the model and version here _____. Do NOT select the "use historical" box in CalEEMod for energy demand analysis related to this requirement.

7. Would the project (if constructed on or after January 1, 2014) comply with minimum CALGreen Tier I water efficiency standards?	Yes	NA
	X	

Please explain how the proposed project meets this requirement. If "not applicable", explain why this was not required.

Submittal of a CALGreen checklist showing how the proposed project would meet the CALGreen Tier 1 water efficiency and conservation standards, which would be reviewed and approved by the City, is required per Mitigation Measure I-2 of the SCEA.

*If "No", equivalent or better GHG reduction must be demonstrated as part and incorporated into the conditions of approval.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

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Certification

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

Signature: _____ Date: _____

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DIRECTIONS FOR FILLING OUT CAP CONSISTENCY REVIEW CHECKLIST

General Plan Consistency

1. **Is the proposed project substantially consistent with the land use and urban form designation, allowable floor area ratio (FAR) and/or density standards in the City's 2030 General Plan?**

   Consistency with the General Plan land use and urban form designation, FAR and/or density standards is a key determining factor in whether or not the CAP Consistency Review procedure can be used. This is because future growth and development consistent with the General Plan was used to estimate business as usual emission forecasts, as well as emission reductions from actions that would be applicable to new development.

   Refer to the 2030 General Plan, Land Use and Urban Form Designations and Development Standards starting on page 2-29. If a project is not fully consistent with the General Plan, the project still may qualify for consistency with the CAP, but this determination will need to be closely coordinated with the City. The City will determine whether the proposed land uses under consideration could be found consistent with the growth projections and assumptions used to develop the GHG emissions inventory and projections in the CAP.

Sustainable Land Use

2. **Would the project reduce average vehicle miles traveled (VMT) per capita of the proposed residents, employees, and/or visitors to the project by a minimum of 35% compared to the statewide average? (Applicable CAP Action: 1.1.1)**

   The statewide VMT/capita in 2009 was 8,937 VMT/capita/year, which is approximately 24.5 VMT/capita/day[1,2]. A 35% reduction below the 2009 statewide average would be 5,809 VMT/capita/year, or about 15.9 VMT/capita/day.

   Steps to Determine if Proposed Project is Consistent with CAP Action 1.1.1:

   Step 1: Consult VMT/Capita Screening Map:

   The map below can be used as a quick screening tool to determine whether or not a proposed project is likely to meet the 35% reduction standard based on its geographic location.

   If the proposed project is located in the green area of the map, it can be assumed to have a VMT/capita/day below 16, and no further action related to VMT is necessary. If the proposed project is located within one of the red areas, or in a white area adjacent to any red parcel, it cannot be assumed to achieve the standard, and further analysis is required to show that the project is below 16 VMT/capita/day. Proceed to Step 2, and estimate the project VMT using one of the computer modeling tools below.

[1] Federal Highway Administration. 2009. Table VM-2 - Highway Statistics 2009. http://www.fhwa.dot.gov/policyinformation/statistics/2009/vm2.cfm.
[2] U.S. Census Bureau, 2005-2009 American Community Survey. http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&_lang=en&_sse=on&geo_id=04000US06&_state=04000US06

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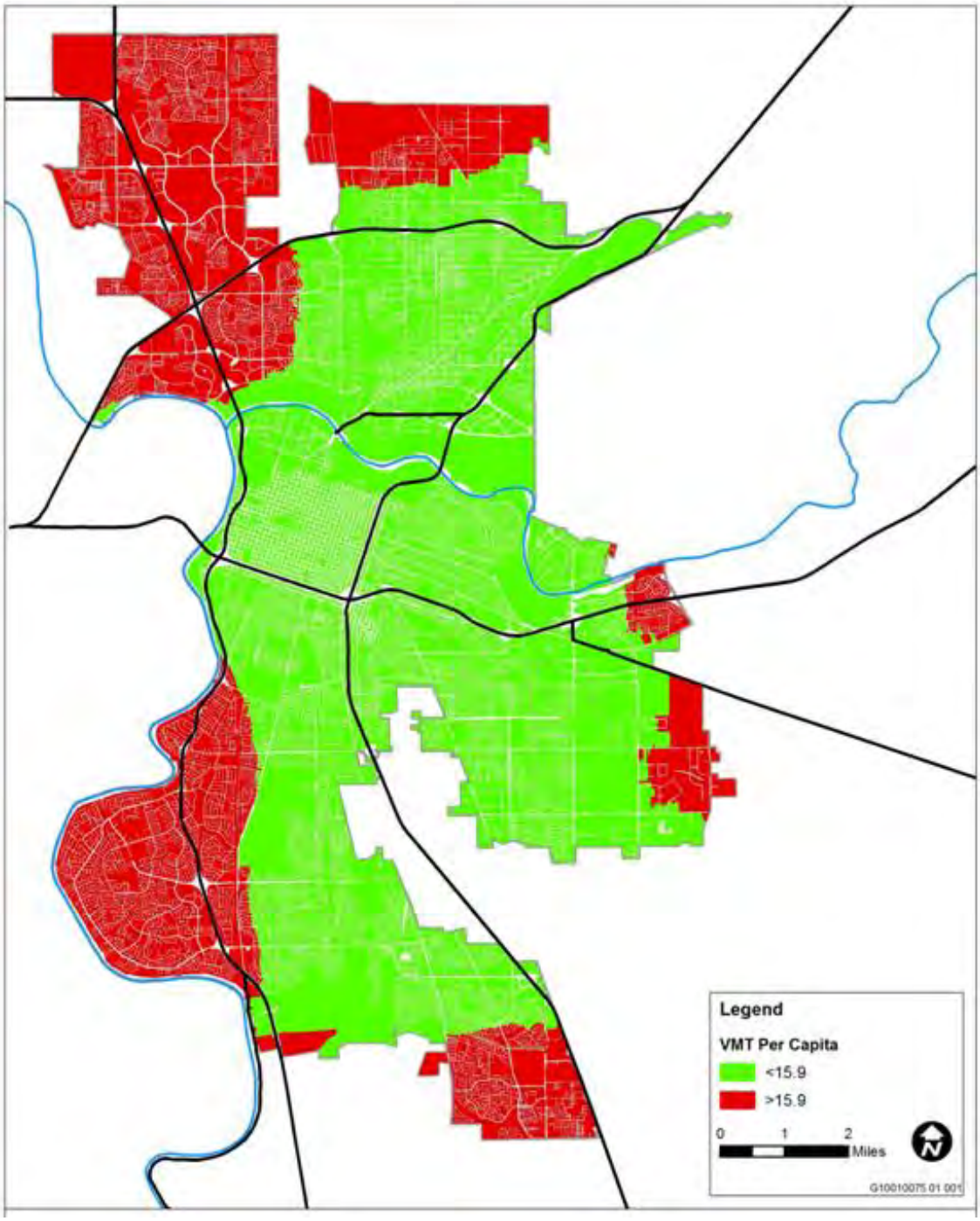
Exhibit 1: City of Sacramento Daily VMT/Capita, 2008 Base Year
Source: SACOG, SACSIM Model, 2012.



Step 2: VMT Modeling

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Download one of computer modeling tools from the following links and follow the user guide for the tool that you have selected. Select the year 2020 as the year of project operation and compare the modeled VMT/capita/day with the City's standard of 15.9 VMT/capita/day. If the result of the computer modeling supports the project's consistency with the City's VMT/capita standard, then the project is considered to comply with CAP Action 1.1.1. If the project's estimated VMT/capita exceeds the City's standard of 15.9, proceed to Step 3.

California Emission Estimator Model (CalEEMod 2013.2 or most recent version)
CalEEMod is a statewide land use emissions computer model that provides a comprehensive estimate of development project criteria pollutants and GHG emissions associated with both construction and operations from a variety of land use project types.

Sketch 7 VMT Estimation Tool (Contact SACOG for most recent version)
The Sketch 7 model is a web-based, parcel-level, scenario planning tool that allows users to input land uses and project attributes such as demographic data, design, density, quality of public transit, mix of land uses, and other planning-related features. Sketch 7 estimates VMT/capita and other environmental indicators based on region-specific parameters, local land use plans and the SACSIM model. Sketch 7 also accounts for the interaction of the project's proposed land uses with the surrounding land uses.

Step 3: Additional Mitigation and Further Analysis

If the proposed project does not pass Steps 1 and 2, additional mitigation from another category (such as building energy efficiency) can be substituted as long as this GHG reduction does not "double count" GHG reductions already taken by the CAP. In other words, mitigation will be necessary to reduce GHG emissions from the project beyond what is already accounted for in the CAP (to avoid double-counting).

Step 3(a) - Determine the increment of total VMT by which the project exceeds the City's 15.9 VMT/capita/day standard. For example, if the project would result in 18 VMT/capita/day and proposes to accommodate 400 new residents, the increment that the project would exceed the City's standard would be 306,600 VMT, which equals: (18 – 15.9 VMT/capita/day) * 400 residents *365 days/year.
Step 3(b) - Convert VMT into metric tons carbon dioxide equivalent per year (MT CO_2e/year) by use of a vehicle emission factor. The City recommends using an emission factor of 0.000452 MT CO_2e/VMT, which was obtained from the California Air Resources Board's (ARB's) Mobile-Source Emission Factor Model (EMFAC) and was used to develop the City's GHG inventory in its CAP. In the above example, the project would be required to mitigate approximately 139 MT CO_2e/year through additional mitigation.

Additional mitigation may include equivalent or better GHG reduction from individual measures or a combination of:

- Exceeding energy efficiency standards of Title 24, part 6 of the California Building Code (using 2008 T24 standards as a baseline)
- Generation of greater than 15% of the project's energy on-site through installation of solar panels or other on-site renewable energy technology
- Other land use (e.g., additional amenities), transportation, bicycle, or pedestrian improvements that would reduce VMT not already accounted for in Sketch 7 modeling under Step 2.

The applicant should provide documentation (e.g., California Emissions Estimator Model [CalEEMod]) that the combination of mitigation selected would achieve the equivalent GHG emission reduction necessary to close the gap between the proposed project's VMT/capita/day and the City's standard of 15.9 VMT/capita/day. If the project applicant can present equivalent mitigation as defined by this section, the City would consider the project consistent with CAP Action 1.1.1. If the project applicant could not identify sufficient surplus mitigation to reduce equivalent project-generated GHG emissions, the project would not be consistent with CAP Action 1.1.1.

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Mobility

3. Would the project incorporate traffic calming measures? (Applicable CAP Action: 2.1.1)

List the traffic calming measures that have been incorporated into the project. These may include, but are not limited to: curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers.

The project proponent and City staff should consult with staff in the Department of Public Works-Transportation Division to verify that traffic calming measures are adequate and in compliance with the City's Street Design Standards.

If the proposed project does not include any roadway or facility improvements, traffic calming measures may not apply. For example, certain infill projects may not result in on-street or transportation facility improvements because sufficient infrastructure already exists

4. Would the project incorporate pedestrian facilities and connections to public transportation consistent with the City's Pedestrian Master Plan? (Applicable CAP Action: 2.2.1)

List the pedestrian facilities and connections to public transportation that have been included in the proposed project on the Checklist. These may include, but are not limited to: sidewalks on both sides of streets, marked crosswalks, count-down signal timers, curb extensions, median islands, transit shelters, street lighting.

The project proponent and City staff should consult with Department of Public Works-Transportation Division staff to verify that pedestrian facilities are consistent with the Pedestrian Master Plan. As in the previous example, if "not applicable", an explanation shall be documented in the Checklist. The "Pedestrian Review Process Guide" (Appendix A to the Master Plan) will be used to determine consistency, as follows:

- For typical infill development projects where existing streets will serve the site (no new streets are proposed): the level of pedestrian improvements necessary to determine Pedestrian Master Plan consistency will be measured according to the "Basic, Upgrade or Premium" categories defined in Appendix A to the Pedestrian Master Plan, which are based on project location, surrounding land uses, proximity to transit, etc. If the proposed project does not include the minimum level of improvements per the assigned category for the project's location, the project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.

- For new "greenfield" projects and/or larger infill development projects where new streets are proposed as part of the project, the following will apply:
    - "Basic, Upgrade or Premium" levels of improvement will be required based on the proposed project's location and context, where applicable, consistent with the criteria defined in the Master Plan. If the proposed project does not include the minimum level of improvements per the assigned category, the

      project will be required as a condition of approval to include appropriate features, per the approval of the Department of Public Works-Transportation Division.
    - The "Pedestrian Smart Growth Scorecard" (Appendix A to the Master Plan) will be required to be completed for the project, and a minimum score of 3 or better will need to be achieved. If the proposed

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project cannot achieve the minimum score, changes to the proposed project may be required, and/or the project may be required as a condition of approval to include certain improvements such that the average score will meet 3 or better. (Note: an Excel version of the Pedestrian Smart Growth Scorecard is available, to assist in automating the rating & scoring process)

5. **Would the project incorporate bicycle facilities consistent with the City's Bikeway Master Plan, and meet or exceed minimum standards for bicycle facilities in the Zoning Code and CALGreen? (Applicable CAP Action: 2.3.1)**

   List the bicycle facilities that are incorporated into the proposed project on the Checklist. In addition, list bicycle facilities. These include, but are not limited to: Class I bike trails and Class II bike lanes connecting the project site to an existing bike network and transit stations, bike parking [bike racks, indoor secure bike parking, bike lockers], end-of-trip facilities at non-residential land uses [showers, lockers]).

   The project proponent and City staff should consult with staff in the Transportation Division of the Department of Public Works to verify that such facilities are consistent with the Bikeway Master Plan and meet or exceed Zoning Code and CALGreen standards. Generally, the following guidelines will be used:

   - If existing on-street and off-street bikeways are already present and determined to be consistent with the Bikeway Master Plan, no additional on-street bikeways will be required. Check the "not applicable" box if appropriate. However, on-site facilities shall still be required to meet or exceed minimum Zoning and CALGreen requirements.
   - If not applicable, fully document the reasons why using the Checklist.
   - If on-street bicycle facilities are not present or are only partially consistent with the Master Plan, the project will be required as a condition of approval to construct or pay for its fair-share of on-street and/or off-street bikeways described in the Master Plan, in addition to meeting or exceeding minimum on-site facilities.
   - In some cases, a combination of new or upgraded on-street and off-street bikeways may be used to determine consistency with the Master Plan, at the discretion of the Department of Public Works-Transportation Division staff.

Energy Efficiency and Renewable Energy

6. **For residential projects of 10 or more units, commercial projects greater than 25,000 square feet, or industrial projects greater than 100,000 square feet, would the project include on-site renewable energy systems (e.g., solar photovoltaic, solar water heating etc.) that would generate at least 15% of the project's total energy demand? (CAP Actions: 3.4.1 and 3.4.2)**

   For projects of the minimum size specified in this measure, a commitment in the project description or in a mitigation measure that the project shall generate a minimum of 15% of the project's energy demand on-site is sufficient to demonstrate consistency with this measure. However, the project conditions of approval or mitigation measures should specify the intended renewable energy technology to be used (e.g. solar photovoltaic, solar water heating, wind, etc.) and estimated size of the systems to meet project demand based on the project description.

   "Total energy demand" refers to the energy (electricity and natural gas) consumed by the built environment (including HVAC systems, water heating systems, and lighting systems) as well as uses that are independent of the construction of buildings, such as office equipment and other plug-ins.

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Applicants may estimate the total energy demand of their projects using California Emissions Estimator Model (CalEEMod 2013.2), the same software used to estimate greenhouse gas emissions. ***For CalEEMod estimates of energy demand to meet this specific requirement, the user should NOT select the "use historical" box, otherwise they will be "double-counting" emissions reductions that have already been counted***. CalEEMod outputs for electricity demand are provided in annual kWh, and natural gas demand is provided in annual kBTU.

The energy demand estimate by CalEEMod is based on two datasets:

- The California Commercial End Use Survey (CEUS);
- The Residential Appliance Saturation Survey (RASS

CalEEMod takes energy use intensity data (above) and forecasts energy demand based on climate zone, land use subtype (such as "hospital", "arena", or "apartments, mid rise"), building area, and the number of buildings or units. This is an appropriate level of analysis for use at the planning submittal stage, but it may not provide an accurate picture of actual project energy demand because it does not factor project specifics such as building design.

Therefore, the applicant is advised (but not required) to run a more comprehensive energy simulation once project-specific details are known: basic building design, square-footage, building envelope, lighting design (at least rudimentary), and the mechanical system (at least minimally zoned). Some of the energy simulation programs that are appropriate for this level of analysis include: DOE 2.2, Trace 700, and Energy Pro.

The U.S. DOE maintains a list of energy simulation programs that are available.
http://apps1.eere.energy.gov/buildings/tools_directory/subjects.cfm/pagename=subjects/pagename_menu=whole_building_analysis/pagename_submenu=energy_simulation

The applicant may then work with City staff to revise the estimate and make a final determination regarding the size of the PV system that is required.

Substitutions: Projects may substitute a quantity of energy efficiency for renewable energy, as long as the substituted GHG reduction does not "double count" GHG reductions already taken by the CAP. In other words, substitutions must reduce GHG emissions from the project beyond what is already accounted for in the CAP (to avoid double-counting).

- Additional mitigation may include equivalent or better GHG reduction from individual measures or a combination of:
- Exceeding energy efficiency standards of Title 24, part 6 of the California Building Code by 15% or better using 2008 T24 standards as a baseline. (Please note that due to more rigorous minimum energy efficiency standards, after January 1, 2014, residential projects will need to exceed the new minimum building code standards by 10% and commercial projects will need to exceed the new minimum building code by 5%).

- Other land use (e.g., additional amenities), transportation, bicycle, or pedestrian improvements that would reduce VMT not already accounted for in VMT models under Step 2.

7. Would the project comply with minimum CALGreen Tier I water efficiency standards? (CAP Action: 5.1.1)

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The California Green Building Standards Code (CALGreen) includes mandatory green building measures, as well as voluntary measures that local jurisdictions may choose to adopt to achieve higher performance tiers, at either Tier 1 or Tier 2 compliance levels. Sacramento has adopted Tier 1 Water Efficiency Standards to be required on or after January 1, 2014 Currently, in order to meet the Tier 1 Water Efficiency Standards, buildings are required to implement all mandatory water efficiency and conservation measures as well as certain Tier 1 specific measures that exceed minimum mandatory measures (e.g. 30% increase in indoor water efficiency). Specific Tier 1 provisions can be found in the CALGreen Code at http://www.bsc.ca.gov/Home/CALGreen.aspx.

The City recognizes that project construction details are often not known at the environmental review stage, and it may be premature for a project proponent to identify compliance with precise requirements of CALGreen. A condition of approval requiring the project to comply with minimum CALGreen Tier 1 water efficiency and conservation standards is sufficient to demonstrate consistency with this criterion.

Planning approval of your project will include the following condition:
Project must meet CALGreen Tier 1 water efficiency and conservation standards. Copies of the appropriate CalGreen checklist (see FAQ) shall be included on the full-size sheets for building plan check submittals.

Note: Requirements from this checklist should be incorporated into the conditions of approval, and shown on the full-size plans submitted for building plan check.

APPENDIX D

ENVIRONMENTAL NOISE ASSESSMENT

Environmental Noise Assessment

Stockton and T Street Project

City of Folsom, California

Job # 2014-197

Prepared For:

Raney Planning & Management, Inc.

1501 Sports Drive
Sacramento, California 95834

Attn: Mr. Rod Stinson

Prepared By:

j.c. brennan & associates, Inc.

Luke Saxelby, INCE Bd. Cert.
Senior Consultant

j.c. brennan & associates
consultants in acoustics

P.O. Box 6748 -1287 High Street - Auburn, California 95603 -p: (530) 823-0960 -f: (530) 823-0961

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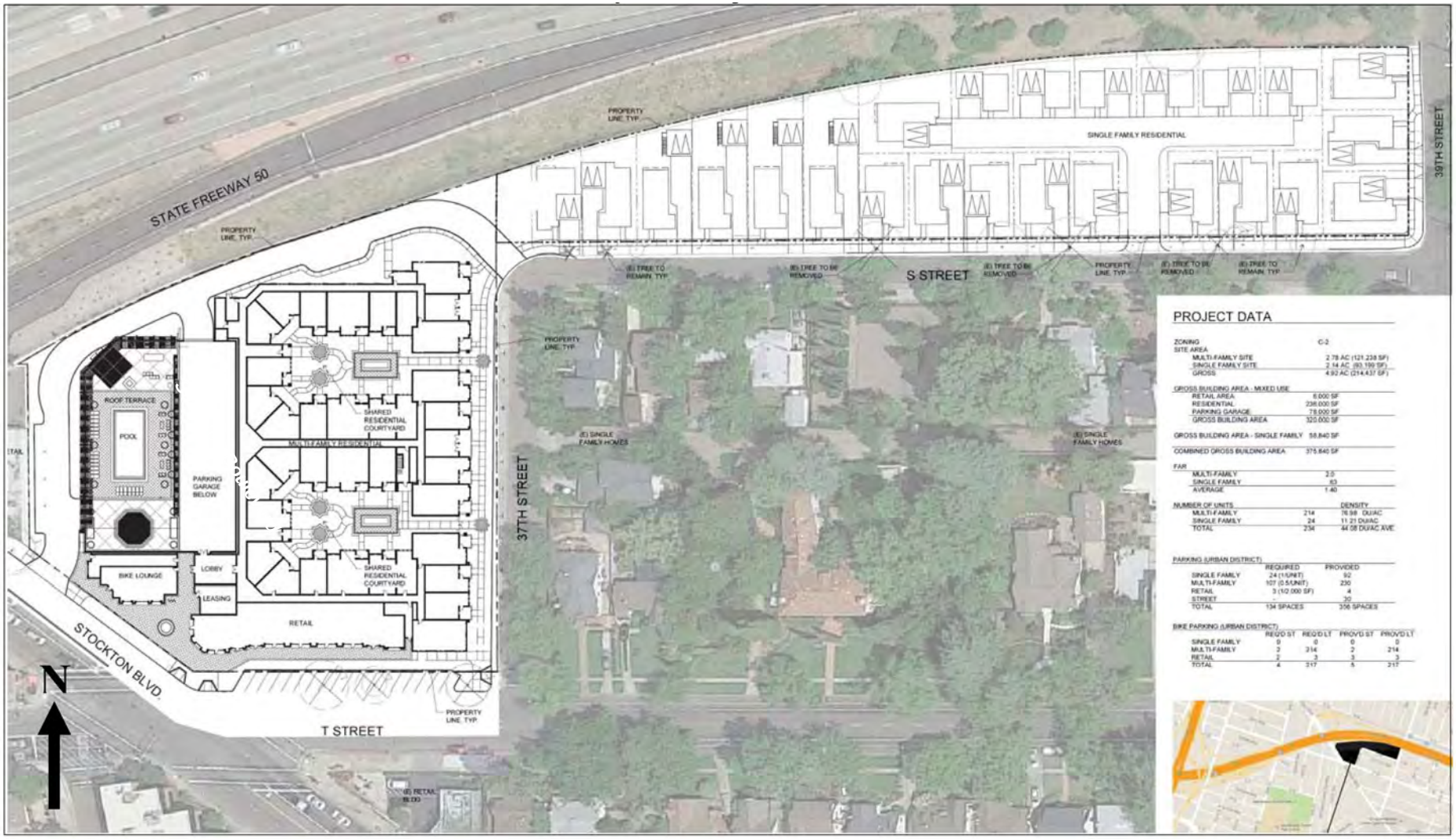
INTRODUCTION

This report has been prepared to address the noise impacts due to and upon the proposed Stockton and T Street project. The proposed project site is located within the City of Sacramento, California.

Figure 1 shows the project site plan and location.

PROJECT DESCRIPTION

The proposed project would remove the existing 120,000-square foot (sf) vacant office building (formerly AT&T) and associated parking lot and subdivide the property for construction of a mixed-use residential and commercial development. The proposed project includes a 214-unit, four-story, multi-family housing complex with ground floor commercial and parking garage, on the corner of Stockton Boulevard and T Street. In addition, the proposed project includes construction of approximately 24 single-family homes between S Street and U.S. Highway 50 (US 50).



Stockton and T Street Project

Figure 1: Project Site Plan

j.c. brennan & associates
consultants in acoustics

Figure Prepared December 2014

ENVIRONMENTAL SETTING

Background Information on Noise and Vibration

Fundamentals of Acoustics

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

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

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

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

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

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

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn}

represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November, 2009.		

Effects of Noise on People

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

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

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

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

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

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

EXISTING CONDITIONS

Existing Land Uses

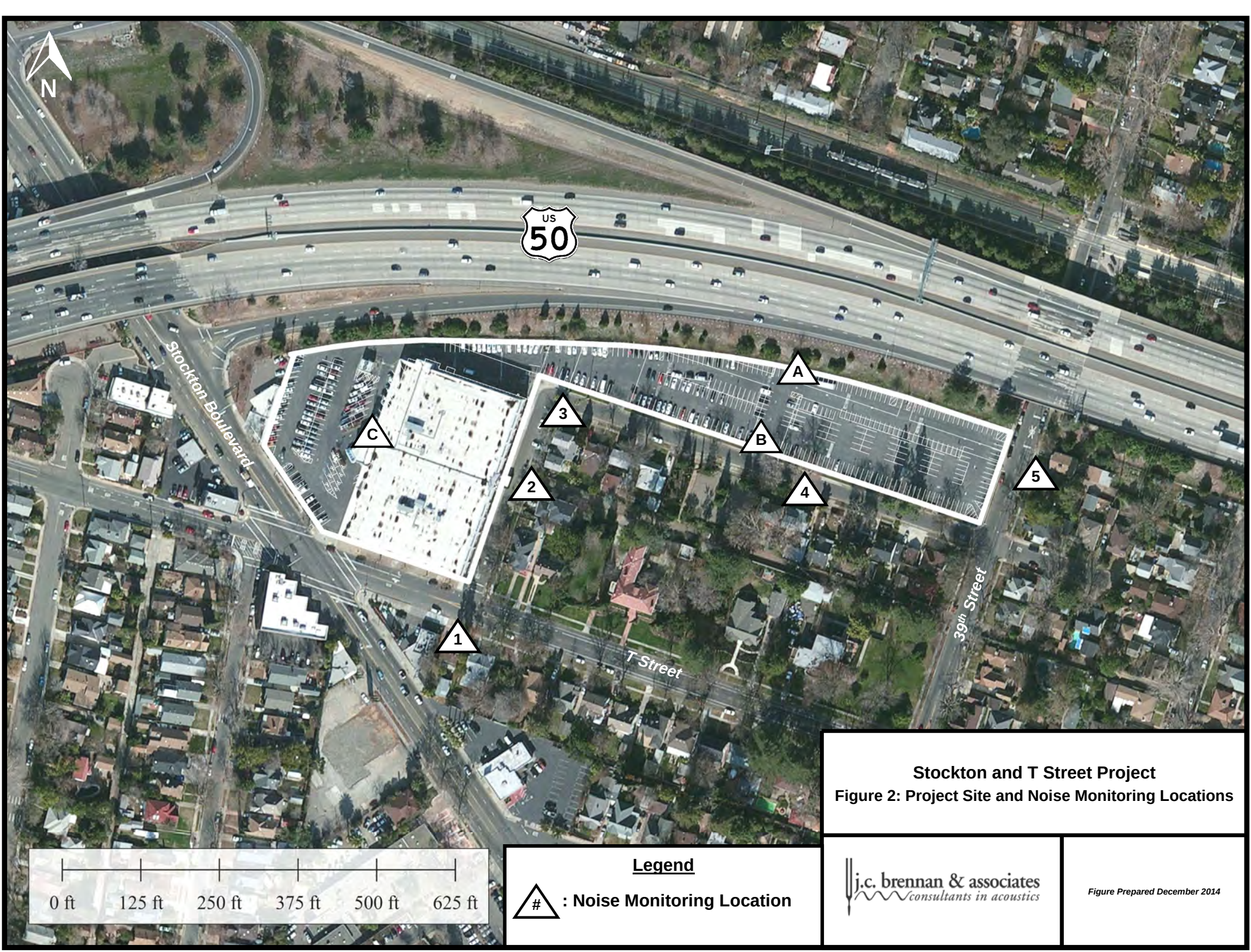
The project is in the City of Sacramento, Center and Corridor Community, the Folsom-line light rail group, and specifically within the half mile buffer around the existing 39th Street stop. The project is close to the central city area and bounded by US 50 to the north, Stockton Boulevard to the west, T Street to the south, and an existing single-family residential neighborhood to the west.

Existing Ambient Noise Levels

To quantify the existing ambient noise environment in the project vicinity, continuous 24 hour noise level measurements were conducted on the project site on Thursday September 18th - Friday September 19th, 2014. The noise measurement locations are shown on **Figure 2**. The continuous noise level measurement survey results are provided in **Table 2**. **Table 3** provides a summary of the short-term ambient noise level survey. **Appendix B** provides the complete results of the continuous noise level measurement survey.

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

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



Legend

: Noise Monitoring Location

Stockton and T Street Project

Figure 2: Project Site and Noise Monitoring Locations

j.c. brennan & associates
consultants in acoustics

Figure Prepared December 2014

TABLE 2: SUMMARY OF CONTINUOUS AMBIENT NOISE MEASUREMENTS

Site	Location	Date	L_{dn}	Average Measured Hourly Noise Levels, dB					
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
				L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous (24-hour) Noise Level Measurements									
A	On Project Site – At Caltrans R.OW.	9/18-9/19 2014	72	68	66	77	65	63	75
B	On Project Site – At south boundary of project site	9/18-9/19 2014	73	69	67	72	66	64	76
C	On Project Site – Roof of existing two-story building. 315 feet to US-50 centerline	9/18-9/19 2014	77	73	72	84	70	68	81
Source: j.c. brennan & associates, Inc., 2014.									

TABLE 3: SUMMARY OF SHORT-TERM AMBIENT NOISE MONITORING

Site	Location	Date - Time[1]	Measured Sound Level, dB			Estimated Day/Night Level (Ldn)*	Notes
			L_{eq}	L_{50}	L_{max}		
ST-1	T Street & 37th South Side	9/19/14 - 11:31 a.m.	63	61	74	67 dB	US 50 & T Street Traffic is the Primary Noise Source, Background Noise is Stockton Blvd Traffic
ST-2	S Street / T Street Alley @ 37th	9/19/14 - 11:46 a.m.	62	62	67	66 dB	US 50 Traffic is Primary Noise Source
ST-3	SE Corner of 37th & S Street	9/19/14 - 11:58 a.m.	68	68	74	72 dB	US 50 Traffic is Primary Noise Source
ST-4	3870 S Street, South Side	9/19/14 - 12:20 p.m.	68	68	71	72 dB	US 50 Traffic is Primary Noise Source
ST-5	1841 39th Street	9/19/14 - 12:33 p.m.	68	68	66	72 dB	US 50 & 39th Street Traffic is the Primary Noise source, Light Rail is Audible but not Significant
* L_{dn} is estimated based upon the difference between L_{eq} and L_{dn} as measured at continuous Site B for the 11:00 and 12:00 hours. The L_{dn} offset was measured to be equal to L_{eq} + 4 dB at 11:00 and 12:00. Source: j.c. brennan & associates, Inc., 2014.							

Existing Roadway Noise Levels

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

Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

Table 4 shows the existing traffic noise levels in terms of L_{dn} at closest sensitive receptors along each roadway segment. This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in **Appendix C.**

TABLE 4: EXISTING TRAFFIC NOISE LEVELS

Roadway	Segment	Exterior Traffic Noise Level, dB L_{dn}
35th Street	West of Stockton Blvd.	70.2
Stockton Blvd.	US 50 EB Ramp to T Street	70.2
Stockton Blvd.	South of T Street	63.2
T Street	West of Stockton Blvd.	67.5
T Street	Stockton Blvd to 37th St.	67.5
T Street	37th St. to 39th St.	59.7
T Street	East of 39th St.	59.8
39th St.	North of S Street	70.3
39th St.	S Street to T Street	61.5
39th St.	South of T Street	60.3
S Street	East of 39th St.	37.2
S Street	39th St. to 37 St.	72.0
37th St.	T Street to S Street.	66.1
Gerber Ave.	South of T Street	48.0

Notes: Traffic noise levels include estimated contribution from US-50 where traffic noise from US-50 was observed to be a primary contributor to overall noise levels.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2014.

REGULATORY CONTEXT

Federal

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

State

California Environmental Quality Act

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

California State Building Codes

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

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

City of Sacramento General Plan

The City of Sacramento General Plan Noise Element provides the following goals and policies relative to noise.

Goal EC 3.1

Noise Reduction. Minimize noise impacts on human activity to ensure the health and safety of the community.

Policies

EC 3.1.1 **Exterior Noise Standards.** The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in Table EC 1 [**Table 5**], to the extent feasible. (RDR)

TABLE 5: CITY OF SACRAMENTO GENERAL PLAN NOISE COMPATIBILITY STANDARDS

Table EC 1 Exterior Noise Compatibility Standards for various Land Uses	
Land Use Type	Highest Level of Noise Exposure That Is Regarded as "Normally Acceptable" [a] (Ldn [b] or CNEL [c])
Residential – Low Density Single Family, Duplex, Mobile Homes	60 dBA [d,c]
Residential – Multi-family	65 dBA
Urban Residential Infill and Mixed-Use Projects	70 dBA
Transient Lodging – Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office buildings – business, Commercial and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA

Source: governor's Office of Planning and Research, *State of California General Plan Guidelines 2003*, October 2003.

a. As defied in the *Guidelines*, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements."
b. Ldn or Day Night Average Level is an average 24-hour noise measurement that factors in day and night noise levels.
c. CNEL or Community Noise Equivalent Level measurements are a weighted average of sound levels gathered throughout a 24-hour period.
d. dBA or A-weighted decibel scale is a measurement of noise levels.
e. The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA.
f. With land use designations of Central Business District, Urban Neighborhood (Low, Medium, or High) Urban Center (Low or High).
g. All mixed-use projects located anywhere in the City of Sacramento.

EC 3.1.2 **Exterior Incremental Noise Standards**. The City shall require mitigation for all development that increases existing noise levels by more than the allowable increment as shown in Table EC 2 [**Table 6**], to the extent feasible. (RDR)

TABLE 6: CITY OF SACRAMENTO GENERAL PLAN INCREMENTAL NOISE STANDARDS

Table EC 2 Exterior Incremental Noise impact Standards for Noise-Sensitive Uses (dBA)			
Residences and Buildings where people normally sleep [a]		Institutional land uses with primarily daytime and evening uses [b]	
Existing Ldn	Allowable Noise Increment	Existing Peak Hour Leq	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment*, Mat 2006.

[a] This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

[b] This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, mediation, and concentration on reading material.

EC 3.1.3 **Interior noise Standards.** The City shall require new development to include noise mitigation to assure acceptable interior noise levels appropriate to the land use type: 45 dBA Ldn for residential, transient lodgings, hospitals, nursing homes and other uses where people normally sleep; and 45 dBA Leq (peak hour) for office buildings and similar uses. (RDR)

EC 3.1.4 **Interior Noise Standards for Single Events.** The City may require new development in areas subject to frequent, high-noise events (such as aircraft over-flights and trains) to meet the following interior noise standards during single noise events: 50 dBA SEL in bedrooms and 55 dBA SEL in other habitable rooms. In areas where high-noise events are especially frequent (e.g., near major truck routes), the City can require a more stringent standard of 45 dBA SEL in bedrooms unless it is demonstrated that sleep disturbance can be kept within acceptable limits at 50 dBA SEL. (RDR)

EC 3.1.5 **Interior Vibration Standards.** The City shall require construction projects anticipated to generate a significant amount of vibration to ensure acceptable interior vibration levels at nearby residential and commercial uses based on the current City or Federal Transit Administration (FTA) criteria. (RDR)

EC 3.1.6 **Vibration Screening Distances.** The City shall require new residential and commercial projects located adjacent to major freeways, hard rail lines, or light rail lines to follow the FTA screening distance criteria. (RDR)

EC 3.1.7 **Vibration.** The City shall require an assessment of the damage potential of vibration-induced construction activities, highways, and rail lines in close proximity to historic buildings and archaeological sites and require all feasible mitigation measures be implemented to ensure no damage would occur. (RDR)

EC 3.1.8 **Operational Noise.** The City shall require mixed-use, commercial, and industrial projects to mitigate operational noise impacts to adjoining sensitive uses when operational noise thresholds are exceeded. (RDR)

EC 3.1.9 **Compatibility with Park and Recreation Uses.** The City shall limit the hours of operation for parks and active recreation areas in residential areas to minimize disturbance to residences. (RDR/SO)

EC 3.1.10 **Construction Noise.** The City shall require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on these uses, to the extent feasible. (RDR)

EC 3.1.11 **Alternatives to Sound Walls.** The City shall encourage the use of design strategies and other noise reduction methods along transportation corridors in lieu of sound walls to mitigate noise impacts and enhance aesthetics. (RDR)

EC 3.1.12 **Residential Streets.** The City shall discourage widening streets or converting streets to one-way in residential areas where the resulting increased traffic volumes would raise ambient noise levels. (MPSP/SO)

EC 3.1.13 **Vehicle Purchase.** The City shall purchase vehicles and equipment with low noise generation and maintain them to minimize noise. (SO)

Sacramento City Municipal Code

Article II. Noise Standards

8.68.060 Exterior noise standards.

A. The following noise standards unless otherwise specifically indicated in this article shall apply to all agricultural and residential properties.

1. From seven a.m. to ten p.m. the exterior noise standard shall be fifty-five (55) dBA.

2. From ten p.m. to seven a.m. the exterior noise standard shall be fifty (50) dBA.

B. It is unlawful for any person at any location to create any noise which causes the noise levels when measured on agricultural or residential property to exceed for the duration of time set forth following, the specified exterior noise standards in any one hour by:

Cumulative Duration of the Intrusive Sound **Allowance Decibels**

1. Cumulative period of 30 minutes per hour……0 dB
2. Cumulative period of 15 minutes per hour……+5 dB
3. Cumulative period of 5 minutes per hour……+10 dB
4. Cumulative period of 1 minute per hour……+15 dB
5. Level not to be exceeded for any time per hour…….+20 dB

C. Each of the noise limits specified in subsection B of this section shall be reduced by five dBA for impulsive or simple tone noises, or for noises consisting of speech or music.

D. If the ambient noise level exceeds that permitted by any of the first four noise limit categories specified in subsection B of this section, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category. (Prior code § 66.02.201)

8.68.070 Interior noise standards.

A. In any apartment, condominium, townhouse, duplex or multiple dwelling unit it is unlawful for any person to create any noise from inside his or her unit that causes the noise level when measured in a neighboring unit during the periods ten p.m. to seven a.m. to exceed:

1. Forty-five (45) dBA for a cumulative period of more than five minutes in any hour;
2. Fifty (50) dBA for a cumulative period of more than one minute in any hour;
3. Fifty-five (55) dBA for any period of time.

B. If the ambient noise level exceeds that permitted by any of the noise level categories specified in subsection A of this section, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. (Prior code § 66.02.202)

8.68.080 Exemptions.

The following activities shall be exempted from the provisions of this chapter:

A. School bands, school athletic and school entertainment events. School entertainment events shall not include events sponsored by student organizations;

B. Activities conducted on parks and public playgrounds, provided such parks and public playgrounds are owned and operated by a public entity;

C. Any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work;

D. Noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections, may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work;

E. Noise sources associated with agricultural operations provided such operations take place between the hours of six a.m. and eight p.m.; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order;

F. Any mechanical device, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during period of adverse weather conditions or when the use of mobile noise sources is necessary for pest control; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order;

G. Noise sources associated with maintenance of street trees and residential area property provided said activities take place between the hours of seven a.m. and six p.m.;

H. Tree and park maintenance activities conducted by the city department of parks and community services; provided, however, that use of portable gasoline-powered blowers within two hundred (200) feet of residential property shall comply with the requirements of Section 8.68.150 of this chapter;

I. Any activity to the extent provisions of Chapter 65 of Title 42 of the United States Code, and Articles 3 and 3.5 of Chapter 4 of Division 9 of the Public Utilities Code of the state of California preempt local control of noise regulations and land use regulations related to noise control of airports and their surrounding geographical areas, any noise source associated with the construction, development, manufacture, maintenance, testing or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated or under the jurisdiction of the United States, any other activity to the extent regulation thereof has been preempted by state or federal law or regulation;

J. Any noise sources associated with the maintenance and operation of aircraft or airports which are owned or operated by the United States. (Ord. 2010-021 § 10; prior code § 66.02.203)

Vibration Standards

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

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

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

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 7** indicates that the threshold for damage to structures ranges

from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

TABLE 7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/sec.	in./sec.		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage.
Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601 February 20, 2002.			

IMPACTS AND MITIGATION MEASURES

Method of Analysis

Traffic Noise Impact Assessment Methodology

To describe future noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. Direct inputs to the model included ADT traffic volumes provided by Fehr & Peers. The FHWA model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict L_{dn}/CNEL values, it is necessary to determine the day/night distribution of traffic and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Construction Noise and Vibration Impact Methodology

Construction noise and vibration was analyzed using data compiled for various pieces of construction equipment at a representative distance of 50 feet. Construction activities are discussed relative to the applicable City of Sacramento noise policies. Potential impacts and mitigation measures are discussed.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guideline, and the City's General Plan and Noise Ordinance, the project will have a significant impact related to noise if it will result in:

A. Exposure of persons to, or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Specifically, 70 dB L_{dn} for urban infill residential at exterior outdoor use areas and 45 dB L_{dn} at interior residential areas.

B. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Specifically, a limit of 0.1 in/sec p.p.v., as discussed above;

C. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, as defined by **Table 6** above;

D. A substantial temporary or periodic increase in ambient noise levels in the project vicinity, as defined by **Table 6** above, beyond levels permissible under the City's General Plan and Noise Ordinance;

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels within two miles of a public airport or public use airport; or

F. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The proposed project is not located within two miles of a public or private airport or airstrip. Therefore, aircraft noise is not discussed further in this analysis.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1 Construction Noise at Sensitive Receptors

Construction of the Proposed Project would temporarily increase noise levels during construction. This would be a ***less than significant*** impact.

During the construction of the project including water and sewer lines and related infrastructure, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in **Table 8**, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A substantial project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours. It should also be noted that existing ambient noise levels in the project vicinity are influenced substantially by traffic on US-50 during daytime and nighttime hours. Existing ambient noise levels due to traffic on US-50 were found to be approximately 66-72 dB L_{dn} around the project site, as shown in **Table 3**.

TABLE 8 : CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.	

The City of Sacramento Municipal Code Section 8.68.080 exempts construction-generated noise as outlined below:

> *Noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections, may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work;*

These exemptions are typical of City and County Noise Ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens, etc.).

Construction activities would be temporary in nature, will occur during normal daytime working hours listed above, and will comply with the requirements of the City of Sacramento Noise Ordinance. Therefore, construction noise will be a **less than significant** impact.

Impact 2 Transportation Noise at Existing Sensitive Receptors

Traffic generated by the Proposed Project could generate traffic noise increases exceeding the substantial increase criteria as outlined in the Thresholds of Significance criteria above. This would be a ***less than significant*** impact.

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

Traffic volumes for existing conditions were obtained from the traffic study prepared for the project (Fehr & Peers). Truck percentages and vehicle speeds on the local area roadways were estimated from field observations.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may be located at distances which vary from the assumed calculation distance and may experience shielding from intervening barriers or sound walls. However, the traffic noise analysis is believed to be representative of the majority of sensitive receptors located closest to the project-area roadway segments analyzed in this report.

Table 9 shows the predicted traffic noise level increases on the local roadway network for existing and existing plus project conditions.

Appendix C provides the complete inputs and results of the FHWA traffic noise modeling.

TABLE 9: EXISTING AND EXISTING + PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Noise Levels (L_{dn}, dB) at Nearest Sensitive Receptors		
		Existing	Existing + Project	Change
35th Street	West of Stockton Blvd.	70.2	70.2	0.0
Stockton Blvd.	US 50 EB Ramp to T St.	70.2	70.2	0.0
Stockton Blvd.	South of T Street	63.2	63.4	0.2
T Street	West of Stockton Blvd.	67.5	67.5	0.0
T Street	Stockton Blvd to 37th St.	67.5	67.8	0.3
T Street	37th St. to 39th St.	59.7	59.8	0.1
T Street	East of 39th St.	59.8	59.8	0.0
39th St.	North of S Street	70.3	70.3	0.0
39th St.	S Street to T Street	61.5	61.6	0.1
39th St.	South of T Street	60.3	60.3	0.0
S Street	East of 39th St.	37.2	37.2	0.0
S Street	39th St. to 37 St.	72.0	72.0	0.0
37th St.	T Street to S Street.	66.1	66.2	0.1
Gerber Ave.	South of T Street	48.0	49.0	1.0

Notes: Traffic noise levels include estimated contribution from US-50 where traffic noise from US-50 was observed to be a primary contributor to overall noise levels.
Source: j.c. brennan & associates, Inc. 2014.

Some noise sensitive receptors located along the project-area roadways are currently exposed to exterior traffic noise levels exceeding the City of Sacramento 60 dB L_{dn} exterior noise level standard for residential uses, as shown in **Table 9**. These receptors will continue to experience elevated exterior noise levels with implementation of the proposed project. The proposed project's contribution to traffic noise increases is predicted to be 1.0 dBA L_{dn}, or less. This is less than the City's allowable increase threshold of 5 dB where existing noise levels are 50 dB L_{dn} or less, as outlined in **Table 6**. Therefore, the increase of 1.0 dB L_{dn} is considered less than significant relative to the substantial increase threshold.

The proposed project would not cause increased noise levels exceeding the City of Sacramento 60 dB L_{dn} exterior noise level standard at existing noise-sensitive residential receptors. Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (a). Additionally, the noise level increases associated with the proposed project do not exceed the City's substantial increase criteria outlined above. Therefore, this would be a less-than-significant impact relative to the CEQA checklist threshold (b).

This impact is considered **less than significant** relative to the project's significance criteria.

Mitigation for Impact 2: **None required**

Impact 3: Transportation Noise at New Sensitive Receptors

The proposed project could expose new noise-sensitive uses to transportation noise levels that exceed the City of Sacramento exterior and interior noise level standards. This is considered to be a ***potentially significant*** *impact.*

Exterior Traffic Noise Level Impacts:

The FHWA traffic noise prediction model was used to predict Cumulative + Project traffic noise levels at the proposed residential land uses associated with the project. Future traffic projections for US-50 were obtained from the Sacramento County General Plan Update EIR Appendix E. Truck percentages were obtained from Caltrans vehicle counts.

Table 10 shows the predicted traffic noise levels at the proposed residential uses adjacent to US-50. **Table 10** also indicates the property line noise barrier heights required to achieve compliance with an exterior noise level standard of 60 dB L_{dn}.

Appendix D provides the complete inputs and results to the FHWA traffic noise prediction model and barrier calculations. The modeled noise barriers are relative to building pad elevations.

TABLE 10: TRANSPORTATION NOISE LEVELS AT PROPOSED RESIDENTIAL USES

Noise Source	Receptor Description	Approximate Residential Setback, feet[1]	ADT	Predicted Noise Levels, dBA L_{dn}[2]			
Traffic Noise				No Wall	8' Wall	10' Wall	12' Wall
Highway 50	SF Backyards	170	275,700	72 dB	66 dB	65 dB	65 dB
Highway 50	MF Roof Pool Deck	285	275,700	78 dB	67 dB	66 dB	65 dB

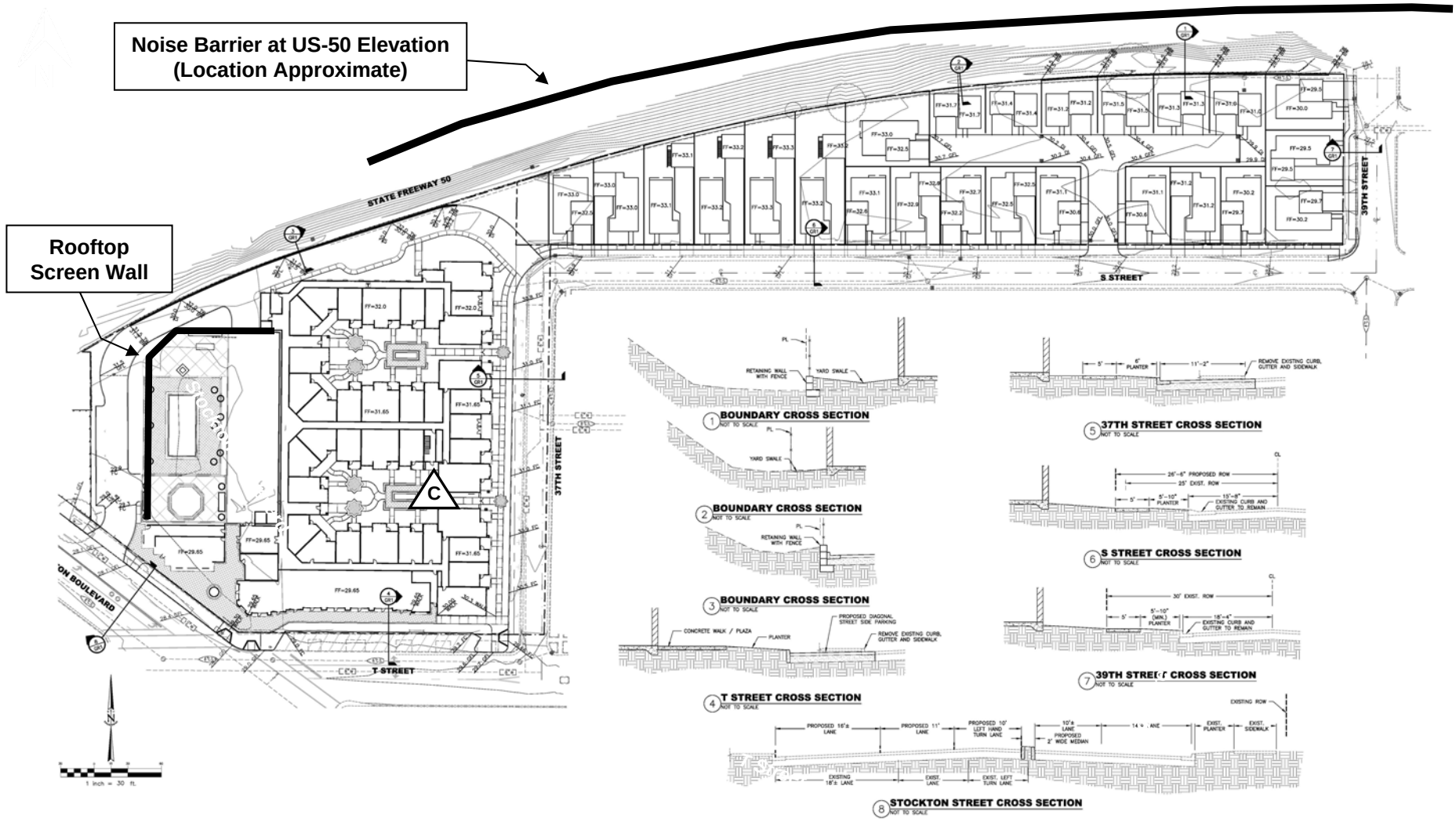
[1] Setback distances are measured in feet from the centerlines of the roadways to the center of residential backyards.
-- Meets the City of Sacramento exterior noise standard without mitigation. Standard does not apply to second floor facades.
Source: FHWA-RD-77-108 with inputs from Fehr & Peers, and j.c. brennan & associates, Inc. 2014.

The **Table 10** data indicate that noise barriers 8-feet in height would be sufficient to reduce exterior noise levels to less than 70 dB L_{dn} at sensitive receptors located adjacent to US-50.

It should be noted that this analysis assumes that a noise barrier for the single-family residential portion of the project would be constructed on the US-50 berm at the roadway edge, within the Caltrans right-of-way. It is our understanding that Caltrans is currently reviewing plans to install a 10-foot tall barrier at this location, associated with a high-occupancy vehicle lane project.

For the multi-family residential project, this analysis assumes that a rooftop screen wall would be constructed to a minimum height of 8-feet relative to the pool deck. This wall may consist of glass, metal or wood-framed stucco construction, or any combination of these materials. It is our understanding that the project currently includes this wall as a design feature of the project.

Figure 3 shows the noise barrier locations reviewed in this analysis.



Stockton and T Street Project

Figure 3: Project Site Plan and Recommended Noise Barrier Locations

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Figure Prepared December 2014

Interior Noise Impacts:

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

The proposed single-family residential uses are predicted to be exposed to exterior noise levels of 79 dB L_{dn} or 80 dB L_{dn} for the multi-family uses, as shown in **Appendix D**. It should be noted that this assessment is conservative as no shielding is assumed for second or third floor facades. Depending on the final barrier design along US-50, some second or third floor shielding could occur which would result in lower exterior and interior noise levels.

Based upon a 25 dB exterior-to-interior noise level reduction interior traffic noise levels are predicted to range between 54-55 dB L_{dn} at these uses, without special construction techniques. Therefore, interior noise control measures would be required for the residential uses adjacent to US-50.

At this time no building plans are available for the proposed project. Therefore, specific interior noise control measures cannot be recommended at this time. However, it is likely that windows having a sound transmission class (STC) rating of 40-45 would be required for any facades with direct exposure to US-50 traffic noise. These facades may also require the use of resilient channels (RC) for exterior walls, or similar wall type construction. Additional acoustic treatments to ventilation openings and HVAC mechanical penetrations may also be required. Such measures should be reviewed when building plans are available.

Facades which are separated by an exterior corridor wall, such as is currently proposed for the multi-family site would not require extensive acoustical upgrades.

Mitigation for Impact 3:

MM 3a: A sound wall 8-feet in height (minimum) shall be constructed along US-50, at the location shown on **Figure 3**. Noise barrier walls shall be constructed of concrete panels, concrete masonry units, earthen berms, or any combination of these materials.

MM3b: The multifamily pool deck screen wall shall be constructed to a minimum height of 8-feet.

MM 3c: A detailed analysis of interior noise levels shall be conducted when building plans are available for the residential uses with direct exposure to US-50 traffic noise. The analysis shall detail noise control measures that are required to achieve compliance with the City of Sacramento 45 dB L_{dn} interior noise level standard. Such analysis shall be conducted by a qualified acoustical consultant recognized by the City of Sacramento.

MM 3d: Mechanical ventilation shall be installed in all residential uses to allow residents to keep doors and windows closed, as desired for acoustical isolation.

Significance after Mitigation: **Less than significant**.

Impact 4: Construction Vibration at Sensitive Receptors

*The proposed project has the potential to expose sensitive receptors to substantial vibration associated with construction activities. This would be a **less than significant** impact.*

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. **Table 11** shows the typical vibration levels produced by construction equipment.

Sensitive receptors could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest receptors are located approximately 50 feet or further from any areas of the project site that might require grading or paving. At this distance construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

TABLE 11: VIBRATION LEVELS FOR VARYING CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006			

The **Table 11** data indicate that construction vibration levels anticipated for the project are less than the 0.1 in/sec criteria at distances of 50 feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors which are located 500 feet from the project site. Implementation of the proposed project would have a **less than significant** impact.

Mitigation for Impact 4: **None required**

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the “Maximum” level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B
2014-198
24hr Continuous Noise Monitoring - Meter 1 - Site A
9/18/14 - 9/19/14

Hour	Leq	Lmax	L50	L90
12:00	67	74	67	65
13:00	67	76	67	65
14:00	67	76	67	65
15:00	68	81	67	65
16:00	60	73	59	56
17:00	59	73	58	55
18:00	68	79	67	66
19:00	67	78	67	65
20:00	66	75	66	64
21:00	66	75	66	64
22:00	65	76	65	62
23:00	64	73	63	60
0:00	64	88	62	58
1:00	61	71	60	56
2:00	60	69	59	53
3:00	61	75	60	55
4:00	63	72	63	57
5:00	68	74	67	64
6:00	70	79	70	68
7:00	71	79	71	69
8:00	70	76	70	68
9:00	69	78	69	68
10:00	68	83	68	66
11:00	68	77	67	65

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71	59	68	70	60	65
Lmax (Maximum)	83	73	77	88	69	75
L50 (Median)	71	58	66	70	59	63
L90 (Background)	69	55	64	68	53	59

Computed Ldn, dB	72
% Daytime Energy	74%
% Nighttime Energy	26%

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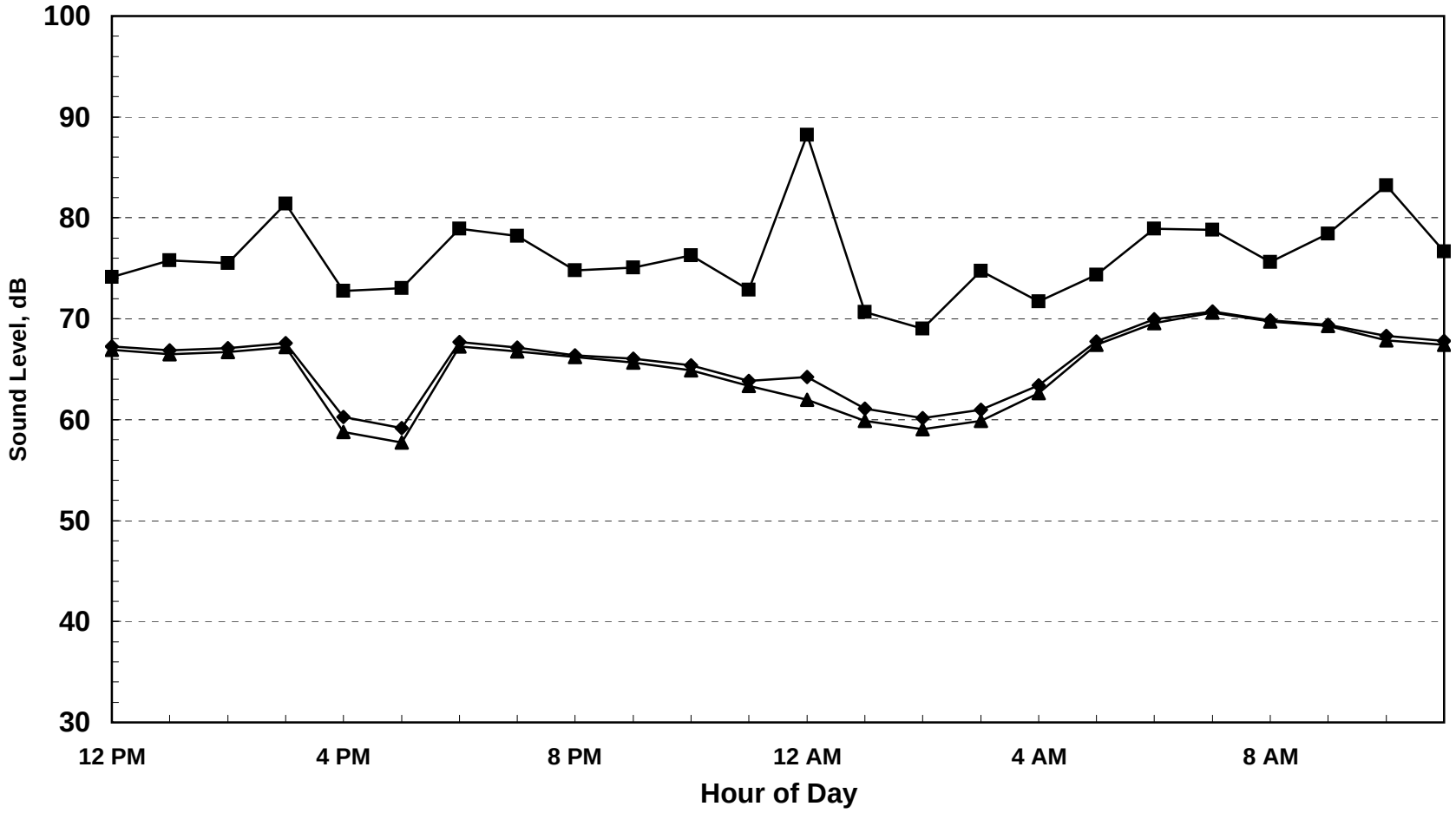
Appendix B

2014-198

24hr Continuous Noise Monitoring - Meter 1 - Site A

9/18/14 - 9/19/14



Ldn = 72 dB

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Appendix B
2014-198
24hr Continuous Noise Monitoring - Meter 3 - Site B
9/18/14 - 9/19/14

Hour	Leq	Lmax	L50	L90
12:00	69	74	69	67
13:00	68	76	68	66
14:00	69	77	68	67
15:00	69	82	69	67
16:00	62	72	61	58
17:00	61	79	60	57
18:00	69	80	68	67
19:00	68	82	68	66
20:00	67	72	67	65
21:00	67	75	67	64
22:00	66	74	66	63
23:00	65	72	64	61
0:00	65	87	63	58
1:00	62	71	61	56
2:00	61	70	60	54
3:00	62	80	61	56
4:00	64	73	64	59
5:00	68	74	68	65
6:00	70	79	70	68
7:00	71	78	71	69
8:00	70	75	70	69
9:00	70	77	70	68
10:00	69	80	69	67
11:00	69	76	69	67

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71	61	68	70	61	66
Lmax (Maximum)	82	72	77	87	70	76
L50 (Median)	71	60	67	70	60	64
L90 (Background)	69	57	66	68	54	60

Computed Ldn, dB	73
% Daytime Energy	75%
% Nighttime Energy	25%

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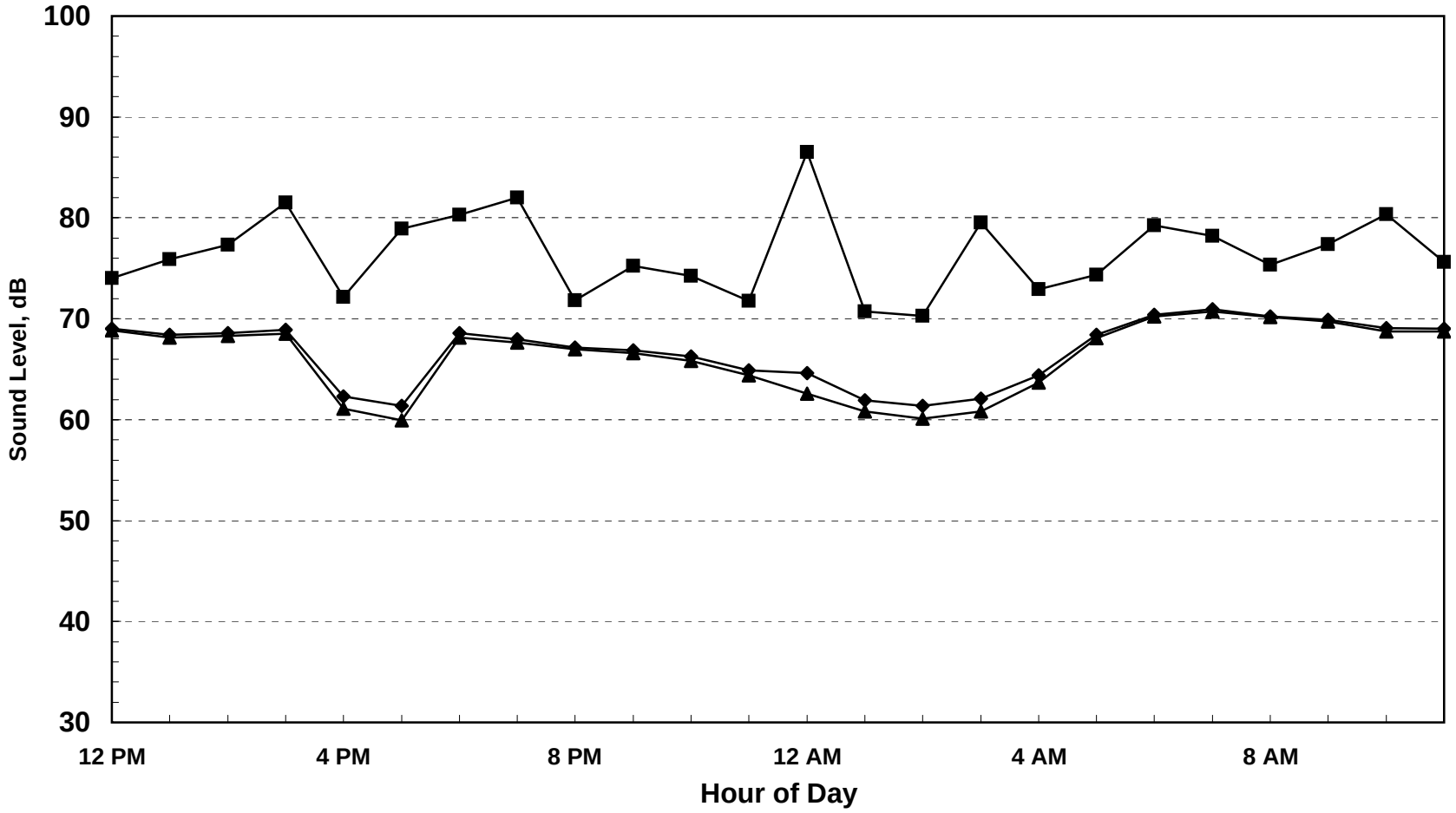
Appendix B
2014-198
24hr Continuous Noise Monitoring - Meter 3 - Site B
9/18/14 - 9/19/14



Ldn = 73 dB

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Appendix B
2014-198
24hr Continuous Noise Monitoring - Meter 2 - Site C
9/18/14 - 9/19/14

Hour	Leq	Lmax	L50	L90
12:00	74	80	73	72
13:00	74	91	73	72
14:00	73	86	73	72
15:00	73	82	73	72
16:00	68	78	67	64
17:00	68	95	65	63
18:00	73	89	72	71
19:00	72	91	72	71
20:00	72	76	71	70
21:00	71	80	71	69
22:00	71	87	70	68
23:00	69	82	69	66
0:00	69	92	67	63
1:00	66	74	65	61
2:00	66	73	65	59
3:00	66	79	65	60
4:00	69	75	68	63
5:00	72	77	72	69
6:00	75	91	74	72
7:00	75	84	74	73
8:00	74	81	74	73
9:00	74	79	74	72
10:00	73	83	73	72
11:00	74	88	73	72

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	75	68	73	75	66	70
Lmax (Maximum)	95	76	84	92	73	81
L50 (Median)	74	65	72	74	65	68
L90 (Background)	73	63	70	72	59	65

Computed Ldn, dB	77
% Daytime Energy	76%
% Nighttime Energy	24%

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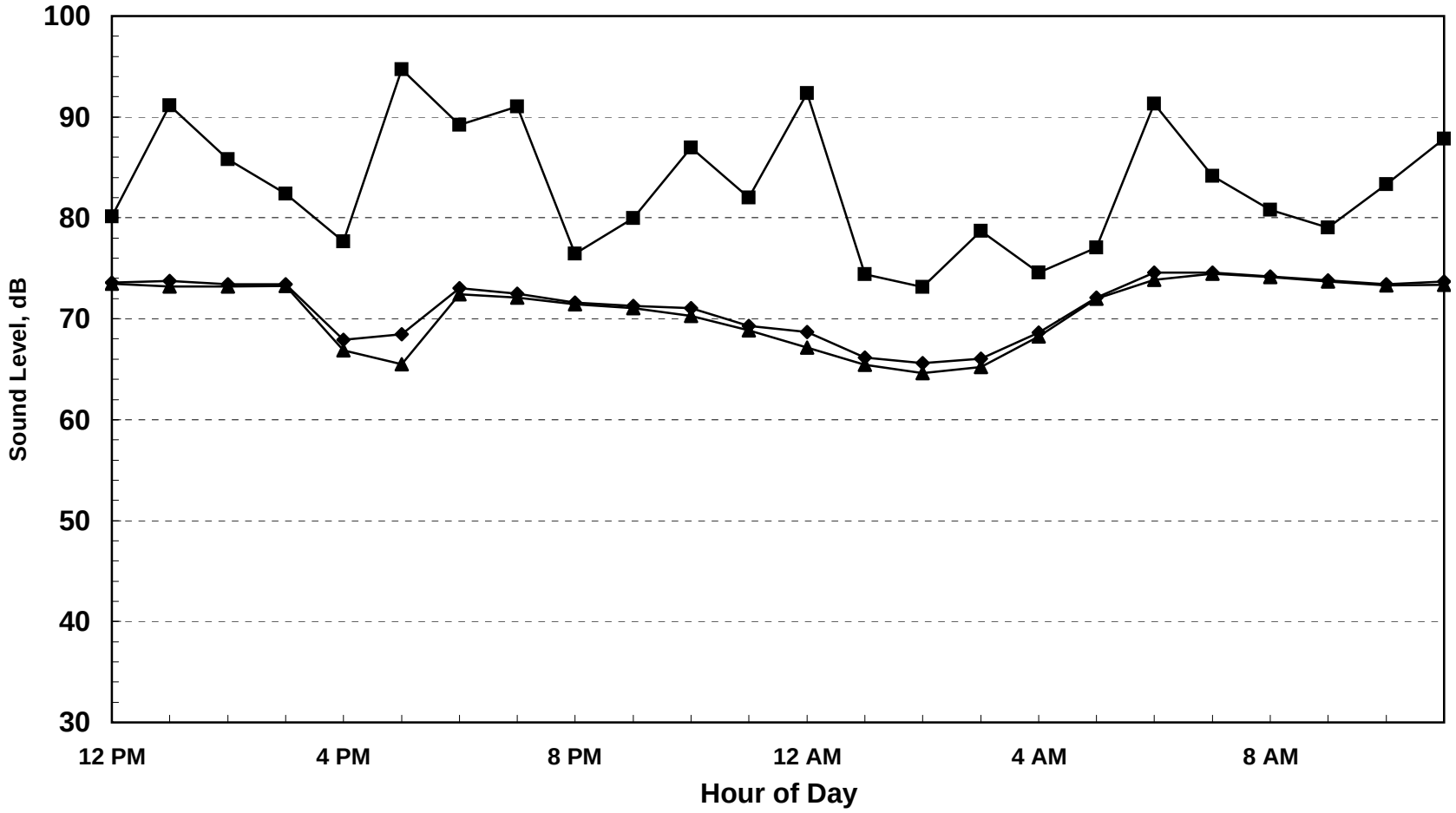
Appendix B

2014-198

24hr Continuous Noise Monitoring - Meter 2 - Site C

9/18/14 - 9/19/14



Ldn = 77 dB

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Appendix C

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

Data Input Sheet

Project #: 2014-197 T Street Residential
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	35th Street	West of Stockton Blvd.	2,420	83		17	1	0.5	30	50	
2	Stockton Blvd.	US 50 EB Ramp to T Street	15,870	83		17	2	0.5	30	100	-5
3	Stockton Blvd.	South of T Street	18,770	83		17	2	0.5	30	75	
4	T Street	West of Stockton Blvd.	9,130	83		17	1	0.5	30	40	
5	T Street	Stockton Blvd to 37th St.	4,640	83		17	1	0.5	30	60	
6	T Street	37th St. to 39th St.	6,410	83		17	1	0.5	30	60	
7	T Street	East of 39th St.	6,520	83		17	1	0.5	30	60	
8	39th St.	North of S Street	5,350	83		17	1	0.5	30	60	
9	39th St.	S Street to T Street	5,270	83		17	1	0.5	30	40	
10	39th St.	South of T Street	4,010	83		17	1	0.5	30	40	
11	S Street	East of 39th St.	30	83		17	1	0.5	25	40	
12	S Street	39th St. to 37 St.	210	83		17	1	0.5	25	40	
13	37th St.	T Street to S Street	300	83		17	1	0.5	25	40	
14	Gerber Ave.	South of T Street	360	83		17	1	0.5	25	40	

Appendix C

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

Project #: 2014-197 T Street Residential
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Local	Hwy 50	Total
1	35th Street	West of Stockton Blvd.	55	46	50	56.7	70.0	70.2
2	Stockton Blvd.	US 50 EB Ramp to T Street	54	47	49	55.6	70.0	70.2
3	Stockton Blvd.	South of T Street	61	55	56	63.2		63.2
4	T Street	West of Stockton Blvd.	62	53	57	63.9	65.0	67.5
5	T Street	Stockton Blvd to 37th St.	57	47	52	58.3	67.0	67.5
6	T Street	37th St. to 39th St.	58	49	53	59.7		59.7
7	T Street	East of 39th St.	58	49	53	59.8		59.8
8	39th St.	North of S Street	57	48	52	58.9	70.0	70.3
9	39th St.	S Street to T Street	60	51	55	61.5		61.5
10	39th St.	South of T Street	59	49	54	60.3		60.3
11	S Street	East of 39th St.	35	27	32	37.2		37.2
12	S Street	39th St. to 37 St.	44	35	40	45.7	72.0	72.0
13	37th St.	T Street to S Street	45	37	42	47.2	66.0	66.1
14	Gerber Ave.	South of T Street	46	38	42	48.0		48.0

Appendix C

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

Data Input Sheet

Project #: 2014-197 T Street Residential
Description: Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	35th Street	West of Stockton Blvd.	2,420	83		17	1	0.5	30	50	
2	Stockton Blvd.	US 50 EB Ramp to T Street	20,510	83		17	2	0.5	30	100	-5
3	Stockton Blvd.	South of T Street	19,520	83		17	2	0.5	30	75	
4	T Street	West of Stockton Blvd.	9,360	83		17	1	0.5	30	40	
5	T Street	Stockton Blvd to 37th St.	7,320	83		17	1	0.5	30	60	
6	T Street	37th St. to 39th St.	6,510	83		17	1	0.5	30	60	
7	T Street	East of 39th St.	6,590	83		17	1	0.5	30	60	
8	39th St.	North of S Street	5,500	83		17	1	0.5	30	60	
9	39th St.	S Street to T Street	5,360	83		17	1	0.5	30	40	
10	39th St.	South of T Street	4,050	83		17	1	0.5	30	40	
11	S Street	East of 39th St.	30	83		17	1	0.5	25	40	
12	S Street	39th St. to 37 St.	370	83		17	1	0.5	25	40	
13	37th St.	T Street to S Street	920	83		17	1	0.5	25	40	
14	Gerber Ave.	South of T Street	450	83		17	1	0.5	25	40	

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Appendix C

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

Project #: 2014-197 T Street Residential
Description: Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment	Autos	Medium Trucks	Heavy Trucks	Local	Hwy 50	Total
1	35th Street	West of Stockton Blvd.	55	46	50	56.7	70.0	70.2
2	Stockton Blvd.	US 50 EB Ramp to T Street	55	49	50	56.7	70.0	70.2
3	Stockton Blvd.	South of T Street	62	55	56	63.4		63.4
4	T Street	West of Stockton Blvd.	62	53	57	64.0	65.0	67.5
5	T Street	Stockton Blvd to 37th St.	59	49	54	60.3	67.0	67.8
6	T Street	37th St. to 39th St.	58	49	53	59.8		59.8
7	T Street	East of 39th St.	58	49	53	59.8		59.8
8	39th St.	North of S Street	58	48	52	59.0	70.0	70.3
9	39th St.	S Street to T Street	60	51	55	61.6		61.6
10	39th St.	South of T Street	59	49	54	60.3		60.3
11	S Street	East of 39th St.	35	27	32	37.2		37.2
12	S Street	39th St. to 37 St.	46	38	42	48.1	72.0	72.0
13	37th St.	T Street to S Street	50	42	46	52.1	66.0	66.2
14	Gerber Ave.	South of T Street	47	39	43	49.0		49.0

Appendix D

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2014-198
Project Name: T Street Residential
Roadway Name: US 50

Traffic Data:

Year:	Existing
Average Daily Traffic Volume:	230,000
Percent Daytime Traffic:	75
Percent Nighttime Traffic:	25
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	2
Assumed Vehicle Speed (mph):	65
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				----------L_{dn}, dB----------			
Location:	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
A	24-hr Site A - Measured 72 dBA Ldn	160	-7.0	71	60	64	72
B	24-hr Site B - Measured 73 dBA Ldn	285	-2.5	72	61	65	73
C	24-hr Site C - Measured 77 dBA Ldn	320	2.6	76	65	69	77

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	298
70	643
65	1385
60	2983

Notes:

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Appendix D

FHWA Traffic Noise Prediction Model (FHWA-RD-77-108)
Noise Prediction Worksheet

Project Information:

Job Number: 2014-198
Project Name: T Street Residential
Roadway Name: US 50

Traffic Data:

Year:	Cumulative - Sac County GP
Average Daily Traffic Volume:	275,700
Percent Daytime Traffic:	75
Percent Nighttime Traffic:	25
Percent Medium Trucks (2 axle):	2
Percent Heavy Trucks (3+ axle):	2
Assumed Vehicle Speed (mph):	65
Intervening Ground Type (hard/soft):	**Soft**

Traffic Noise Levels:

				----------L_{dn}, dB----------			
Location:	**Description**	**Distance**	**Offset (dB)**	**Autos**	**Medium Trucks**	**Heavy Trucks**	**Total**
1	SF Backyards	170	-7	71	61	64	72
2	MF Roof Pool	285	2	77	66	70	78
3	SF Facades	170	0	78	68	71	79
4	MF Facades	200	2	79	69	72	80

Traffic Noise Contours (No Calibration Offset):

L_{dn} Contour, dB	Distance from Centerline, (ft)
75	337
70	725
65	1562
60	3366

Notes:

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Appendix D

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

Project Information:

Job Number: 2014-198
Project Name: T Street Residential
Roadway Name: US 50
Location(s): SF Backyards

Noise Level Data:

Year: Cumulative - Sac County GP
Auto L_{dn}, dB: 78
Medium Truck L_{dn}, dB: 68
Heavy Truck L_{dn}, dB: 71

Site Geometry:

Receiver Description: SF Backyards
Centerline to Barrier Distance (C_1): 120
Barrier to Receiver Distance (C_2): 50
Automobile Elevation: 15
Medium Truck Elevation: 17
Heavy Truck Elevation: 23
Pad/Ground Elevation at Receiver: 0
Receiver Elevation[1]: 5
Base of Barrier Elevation: 15
Starting Barrier Height 8

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB: Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
23	8	65	54	59	**66**	Yes	Yes	Yes
24	9	64	54	58	**66**	Yes	Yes	Yes
25	10	64	54	58	**65**	Yes	Yes	Yes
26	11	64	53	57	**65**	Yes	Yes	Yes
27	12	64	53	57	**65**	Yes	Yes	Yes
28	13	63	52	57	**64**	Yes	Yes	Yes
29	14	63	52	57	**64**	Yes	Yes	Yes
30	15	62	52	56	**64**	Yes	Yes	Yes
31	16	62	52	56	**64**	Yes	Yes	Yes

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

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Appendix D

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

Project Information:

Job Number: 2014-198
Project Name: T Street Residential
Roadway Name: US 50
Location(s): MF Roof Pool

Noise Level Data:

Year: Cumulative - Sac County GP
Auto L_{dn}, dB: 77
Medium Truck L_{dn}, dB: 66
Heavy Truck L_{dn}, dB: 70

Site Geometry:

Receiver Description: MF Roof Pool
Centerline to Barrier Distance (C_1): 200
Barrier to Receiver Distance (C_2): 50
Automobile Elevation: 15
Medium Truck Elevation: 17
Heavy Truck Elevation: 23
Pad/Ground Elevation at Receiver: 50
Receiver Elevation[1]: 55
Base of Barrier Elevation: 50
Starting Barrier Height 8

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height[2] (ft)	L_{dn}, dB: Autos	Medium Trucks	Heavy Trucks	Total	Barrier Breaks Line of Sight to… Autos?	Medium Trucks?	Heavy Trucks?
58	8	66	55	60	**67**	Yes	Yes	Yes
59	9	65	55	59	**67**	Yes	Yes	Yes
60	10	65	54	59	**66**	Yes	Yes	Yes
61	11	64	54	58	**65**	Yes	Yes	Yes
62	12	64	53	57	**65**	Yes	Yes	Yes
63	13	63	53	57	**65**	Yes	Yes	Yes
64	14	63	52	56	**64**	Yes	Yes	Yes
65	15	63	52	56	**64**	Yes	Yes	Yes
66	16	62	52	56	**64**	Yes	Yes	Yes

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

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APPENDIX E

TRANSPORTATION IMPACT STUDY

Final Transportation Impact Study for the Stockton Boulevard/T Street Mixed-Use Project

Prepared for
City of Sacramento

February 25, 2015

FEHR & PEERS

TABLE OF CONTENTS

APPENDICES

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EXECUTIVE SUMMARY

This study analyzes the transportation impacts associated with the proposed Stockton Boulevard/T Street Mixed-Use project, which would consist of the following:

- Demolition of a 120,000 square-foot vacant office building (and associated surface parking areas) located in the northeast quadrant of the Stockton Boulevard/T Street intersection.
- Construction of a mixed-use project consisting of the following land uses:
    - 214 apartment units
    - 24 single-family dwelling units
    - 6,000 square feet of retail

The potential off-site traffic impacts of the project are analyzed under existing and cumulative conditions. Impacts to transit, bicycle, parking, and pedestrian circulation are also evaluated. Access to the project site is analyzed for all modes of travel. Temporary impacts during project construction are also evaluated.

Since this project is consistent with the City's 2030 General Plan, the cumulative impacts on roadway segments, freeway segments, transit, bicycle facilities, pedestrian circulation, and parking from development associated with the General Plan were identified and analyzed in the Master EIR, and this study reviews such issues on a project-specific basis only. The proposed project qualifies as a Transit Priority Project (TPP) under Senate Bill (SB) 375. TPPs may be reviewed through a Sustainable Communities Environmental Assessment (SCEA), which eliminates the need for certain environmental reviews including analysis of the regional transportation network (i.e., US 50).

EXISTING CONDITIONS

Roadway System

Six intersections along the Stockton Boulevard, T Street, and 39th Street corridors were selected for analysis for weekday AM and PM peak hours. All intersections were analyzed using a state-of-the-practice SimTraffic micro-simulation model. Each intersection operates at an acceptable level of service (LOS) E or better during both peak hours. The northbound direction of Stockton Boulevard is congested during the PM peak period due, in part, to ramp metering of the US 50/Stockton Boulevard westbound loop on-ramp.

The Stockton Boulevard/T Street/Gerber Avenue intersection is complex based on its lane configurations, traffic signal timings, turn movement prohibitions, and volume of vehicles, bicyclists, and pedestrians. Refer to Figure 5 for an illustration of existing conditions at this intersection, which operates at Level of Service (LOS) C during the AM peak hour and LOS E during the PM peak hour.

Transit System

Public transit service within the study area is provided by light rail and bus. The 39th Street Light Rail Station, which is a stop along the Gold line, is less than ½-mile from the project site. Regional Transit (RT) bus routes 38, 212, 213, and 214 include stops within a ½-mile walk of the project site. The Capital City Hospital Shuttle service stops at the 39th Street Light Rail station. This free shuttle transports employees, patients, and visitors to the Mercy, Sutter, UC Davis Medical Centers located in Midtown and East Sacramento.

Bicycle/Pedestrian System

The study area includes a variety of bicycle and pedestrian facilities including Class II bike lanes on portions of T Street, sidewalks along most public streets, and crosswalks at the signalized Stockton Boulevard/T Street intersection.

EXISTING PLUS PROJECT CONDITIONS

The proposed project would generate 83 new AM peak hour vehicle trips, 109 new PM peak hour vehicle trips, and 1,180 new average daily vehicle trips. These are new trips that are not currently on the roadway network. These estimates account for internal trips between the residential and retail uses and external trips made by walking, bicycling, and transit.

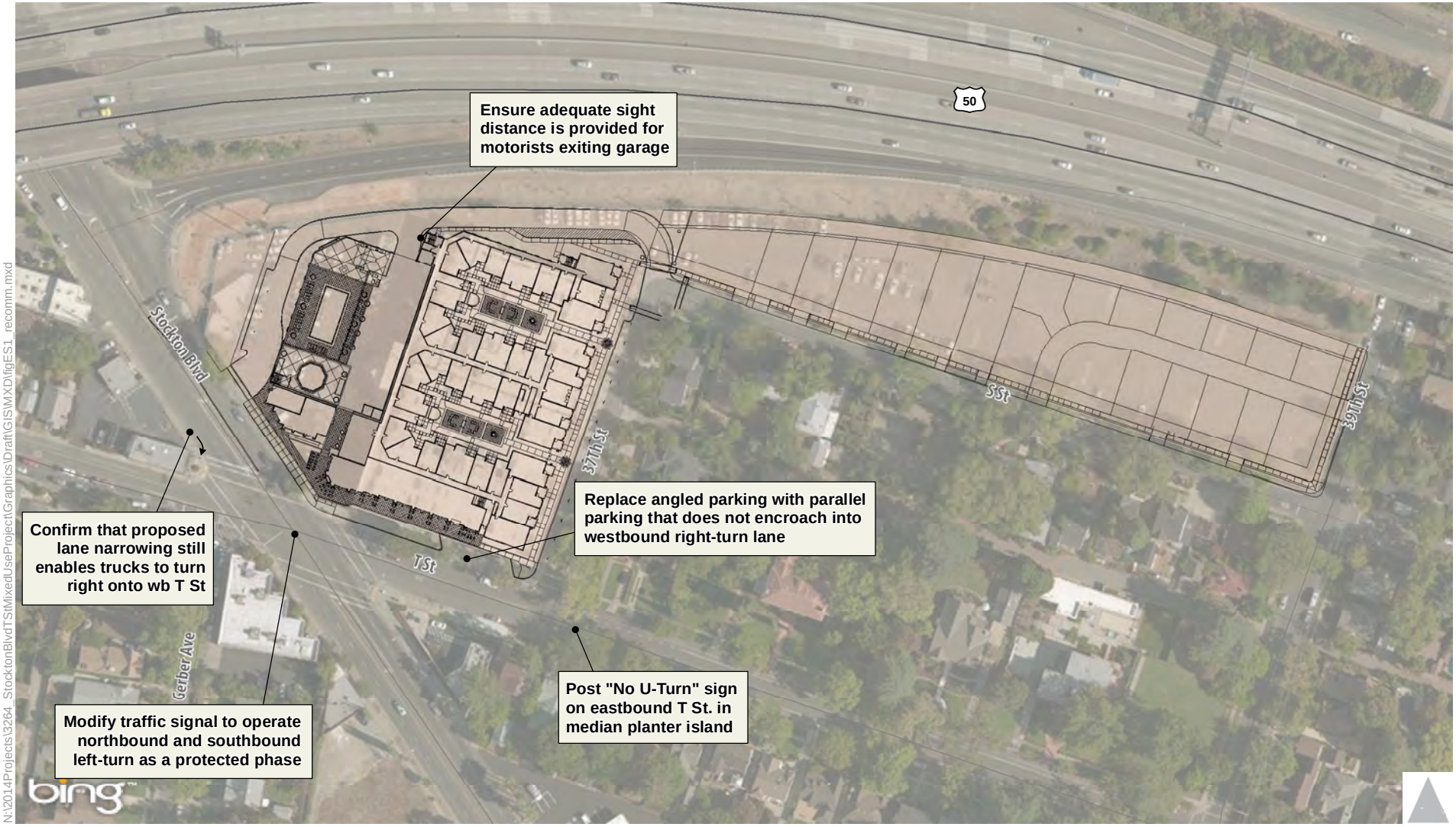
The project would cause the average delay at the Stockton Boulevard/T Street intersection to increase from 56 to 71 seconds per vehicle during the PM peak hour. Since LOS E operations would be maintained and are considered acceptable at this location, the added delay, in and of itself, is not considered a significant impact. However, *the effects of the project on increased vehicle queuing and the ability to safely pass through the Stockton Boulevard/T Street intersection are considered significant.*

CUMULATIVE CONDITIONS

The Stockton Boulevard/T Street intersection would operate at LOS F during the PM peak hour under Cumulative Plus Project Conditions. This occurs as a result of background traffic growth. Project impacts at this intersection under cumulative conditions are considered less than significant because the No Project condition (i.e., office building remains and is occupied by tenants) would experience more delays due to its greater trip generation when compared to the proposed project.

PROJECT ACCESS AND ON-SITE CIRCULATION

A comprehensive review of project access was performed including driveways, proposed on-street parking, internal circulation, and other considerations. Several recommendations were offered to improve access to the project site for all users, conform with City design standards, and better accommodate circulation within the project site. These recommendations are illustrated on **Figure ES-1**.



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Project Site

Figure ES-1

IMPACTS AND MITIGATION MEASURES

The project would cause two project-specific and cumulatively considerable significant impacts on the transportation system. Each impact is described below followed by a recommended mitigation measure, which would reduce each impact to less than significant.

Impact TR-1: The addition of project traffic would cause adverse queuing effects and safety concerns in the southbound left-turn lane at the Stockton Boulevard/T Street intersection.

Mitigation Measure TR-1

The project applicant shall work with the City of Sacramento to modify the traffic signal at the Stockton Boulevard/T Street intersection to operate the northbound and southbound left-turns with protected phasing.

Refer to Table 11 for a detailed discussion of Mitigation Measure TR-1 including timing, responsibility, and operational benefits. The project would not cause any adverse effects at other study intersections.

Impact TR-2: Construction of the proposed project could potentially cause a temporary but prolonged impact due to construction-related travel activities.

Mitigation TR-2

The project applicant shall develop a Construction Traffic Management Plan to the satisfaction of the City's Transportation Department. The plan would include items such as: the number and size of trucks per day, expected arrival/departure times, truck circulation patterns, location of truck staging areas, location/amount of employee parking, and the proposed use of traffic control/partial street closures on public streets. The overall goal of the Construction Traffic Management Plan would be to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users. The Construction TMP shall adhere to the following performance standards throughout project construction:

1) *Delivery trucks do not idle/stage on Stockton Boulevard and T Street.*
2) *With the exception of trucks coming from local destinations via 39th Street, all delivery trucks shall use Stockton Boulevard to access the site.*
3) *Any lane closures on northbound Stockton Boulevard during the demolition of the existing office building or proposed project construction are limited to a single lane during off-peak hours (9:00 AM to 2:30 PM).*
4) *Roadways, sidewalks, crosswalks, and bicycle facilities shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.*

Table ES-1 summarizes the evaluation of project impacts on all travel modes, emergency access, and construction-related activities. With implementation of Mitigation Measures TR-1 and TR-2, all impacts are considered less than significant.

TABLE ES-1:
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact Type	Discussion	Impact Significant?	Mitigation	Residual Significance
Roadway System	Adverse queuing effects and safety concerns in the southbound left-turn lane at the Stockton Boulevard/T Street intersection.	Yes	TR-1	LTS
Bicycle Network	Continuous Class II bike lanes present on portions of T Street. On-site bicycle parking provided.	No	None	LTS
Pedestrian Facilities	Continuous sidewalks and crosswalks are present (including to bus/light rail stops).	No	None	LTS
Transit System and Facilities	39th Street light rail (Gold Line) station, and multiple bus stops less than ½-mile walk from project site.	No	None	LTS
Emergency Vehicle Access	Emergency vehicle pre-emption provided at Stockton Boulevard/T Street intersection.	No	None	LTS
Construction-Related	Temporary, but prolonged traffic impacts could occur due to construction-related activities.	Yes	TR-2	LTS

LTS = Less Than Significant.
Source: Fehr & Peers, 2015.

1. INTRODUCTION

PURPOSE

This study analyzes the transportation impacts associated with the proposed Stockton Boulevard/T Street Mixed-Use project, which would consist of the following:

- Demolition of a 120,000 square-foot vacant office building (and associated surface parking areas) located in the northeast quadrant of the Stockton Boulevard/T Street intersection.
- Construction of a mixed-use project consisting of the following land uses:
    - 214 apartment units
    - 24 single-family dwelling units
    - 6,000 square feet of retail

The potential off-site traffic impacts of the project are analyzed under existing and cumulative conditions. Impacts to transit, bicycle, parking, and pedestrian circulation are also evaluated. Access to the project site is analyzed for all modes of travel. Temporary impacts during project construction are also evaluated.

The cumulative impacts on roadway segments, freeway segments, transit, bicycle facilities, pedestrian circulation, and parking from development associated with the general plan were identified and analyzed in the Master EIR, and this study reviews such issues on a project-specific basis only. Project impacts on intersections were included in the traffic study to determine the project's conformity with the Mobility Element of the 2030 General Plan and to confirm that no substantial new or additional information shows that the impacts on the roadway system are more significant than as described in the Master EIR.

The proposed project qualifies as a Transit Priority Project (TPP) under Senate Bill (SB) 375. Environmental documents for TPPs are not required to reference, describe or discuss: 1) growth inducing impacts, 2) impacts from car and light-duty truck trips on climate change or regional transportation network, or a 3) reduced density alternative to the project. TPPs may be reviewed through a Sustainable Communities Environmental Assessment (SCEA). Accordingly, it was not necessary to analyze project effects on US 50 within the study area because this freeway is part of the regional transportation network. Refer to Page 5 for further details.

The project is situated within the green area of Exhibit 1 of the City's Climate Action Plan (CAP). Projects located within the green area are known to generate 35 percent less Vehicle Miles of Travel (VMT) per capita when compared to the statewide average, which is one of the conditions that must be met to conclude that the project is consistent with the City's CAP. Since the project is located within the green area, no further analysis of VMT is presented in this report. Refer to the City's website (at http://portal.cityofsacramento.org/Community-Development/Resources/Online-Library/Sustainability) for additional information on this topic. The project is also being evaluated for its consistency with SACOG's Sustainable Communities Strategy (SCS). Projects that achieve this distinction are granted certain CEQA streamlining benefits under Senate Bill 375.

STUDY AREA

In urban environments such as the study area, roadway capacity is governed by the operations of intersections. For this reason and because roadway segments were included in the traffic analysis for the 2030 General Plan, the City of Sacramento determines impacts on the roadway system based upon the operations of intersections.

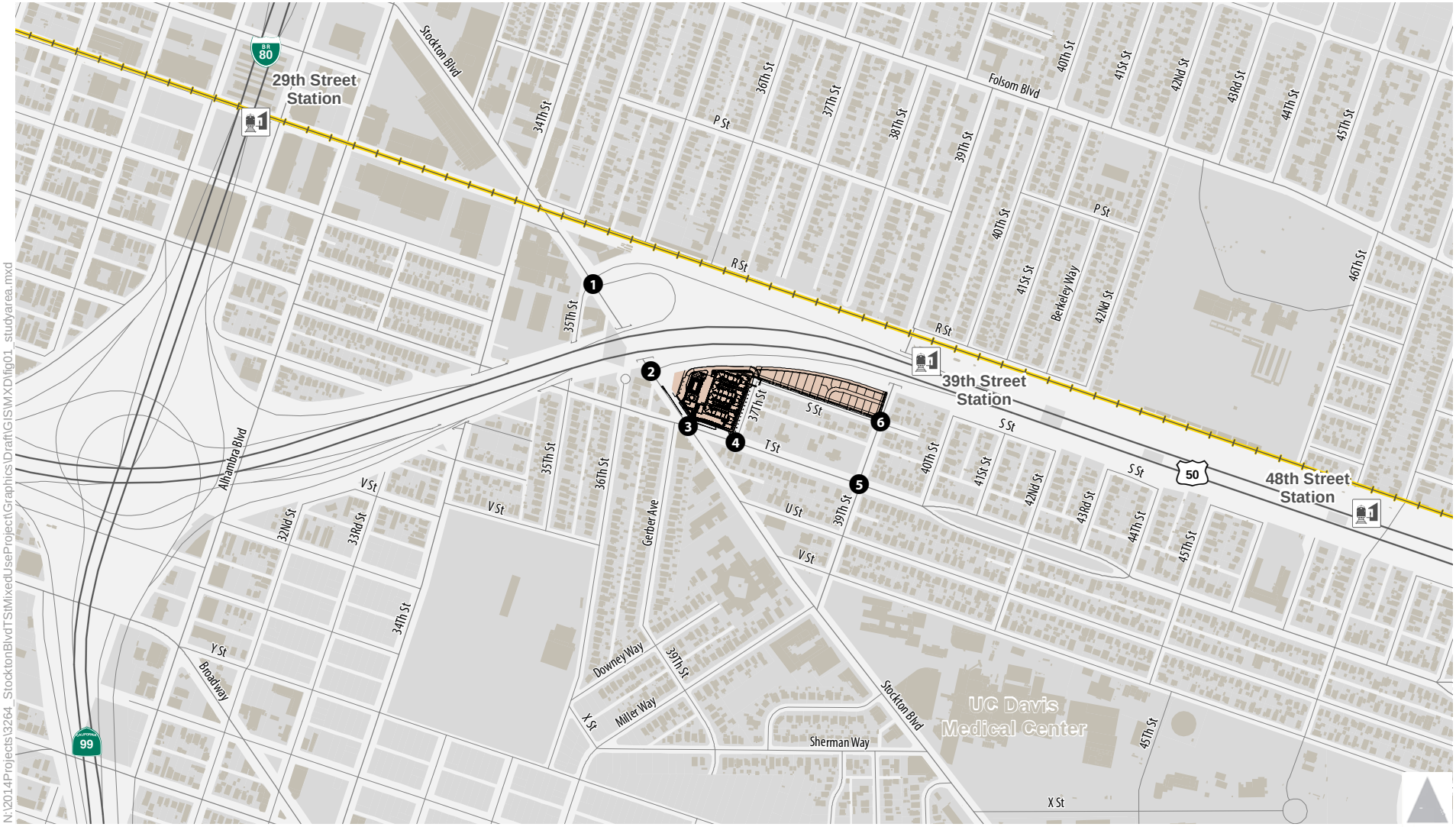
The study area includes the following six intersections along the Stockton Boulevard, T Street, and 39th Street corridors. These intersections were selected based on their proximity to the project site, expected usage by project traffic, and susceptibility for being impacted. The list was reviewed and approved by the City's Public Works Department. Refer to **Figure 1** for a map showing the study intersections. The study area also includes bicycle, pedestrian, and transit facilities within the project vicinity.

1. Stockton Boulevard/35th Street/US 50 WB Ramps
2. Stockton Boulevard/US 50 EB On-ramp
3. Stockton Boulevard/T Street/Gerber Avenue
4. T Street/37th Street
5. T Street/39th Street
6. S Street/39th Street

PROJECT DESCRIPTION

Figure 2 shows the project site plan (*Stockton Boulevard and T Street Mixed-Use Project*, RSC Engineering 1/22/2015). The project land uses are described below.

- The apartment building would be situated nearest the Stockton Boulevard/T Street intersection in a mid-rise (five-floor) configuration. Below ground parking consisting of 230 spaces would be provided. Vehicular access to the apartments would be provided as follows:
    - Right-turn only driveway located on Stockton Boulevard approximately 100 feet north of the Stockton Boulevard/T Street intersection. In conjunction, a narrow raised median would be constructed on Stockton Boulevard to prohibit left-turns at this driveway.
    - Full-access driveway located at the intersection of S Street and 37th Street.
- The 24 single-family dwelling units would be situated along S Street between 37th and 39th Streets. These units would feature vehicular driveways on S Street and also along a new internal street that extends from S Street to 39th Street.
- Ground floor retail (6,000 square feet) would be situated along T Street directly east of Stockton Boulevard. Parking for this use is proposed via eight (8) traditional angled parking spaces, which would require removal and reconstruction of existing curb, gutter, and sidewalk along the project frontage. In addition, a narrow raised median would be constructed on T Street to physically prohibit wrong-way vehicle entry into these spaces.



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1 Study Intersection

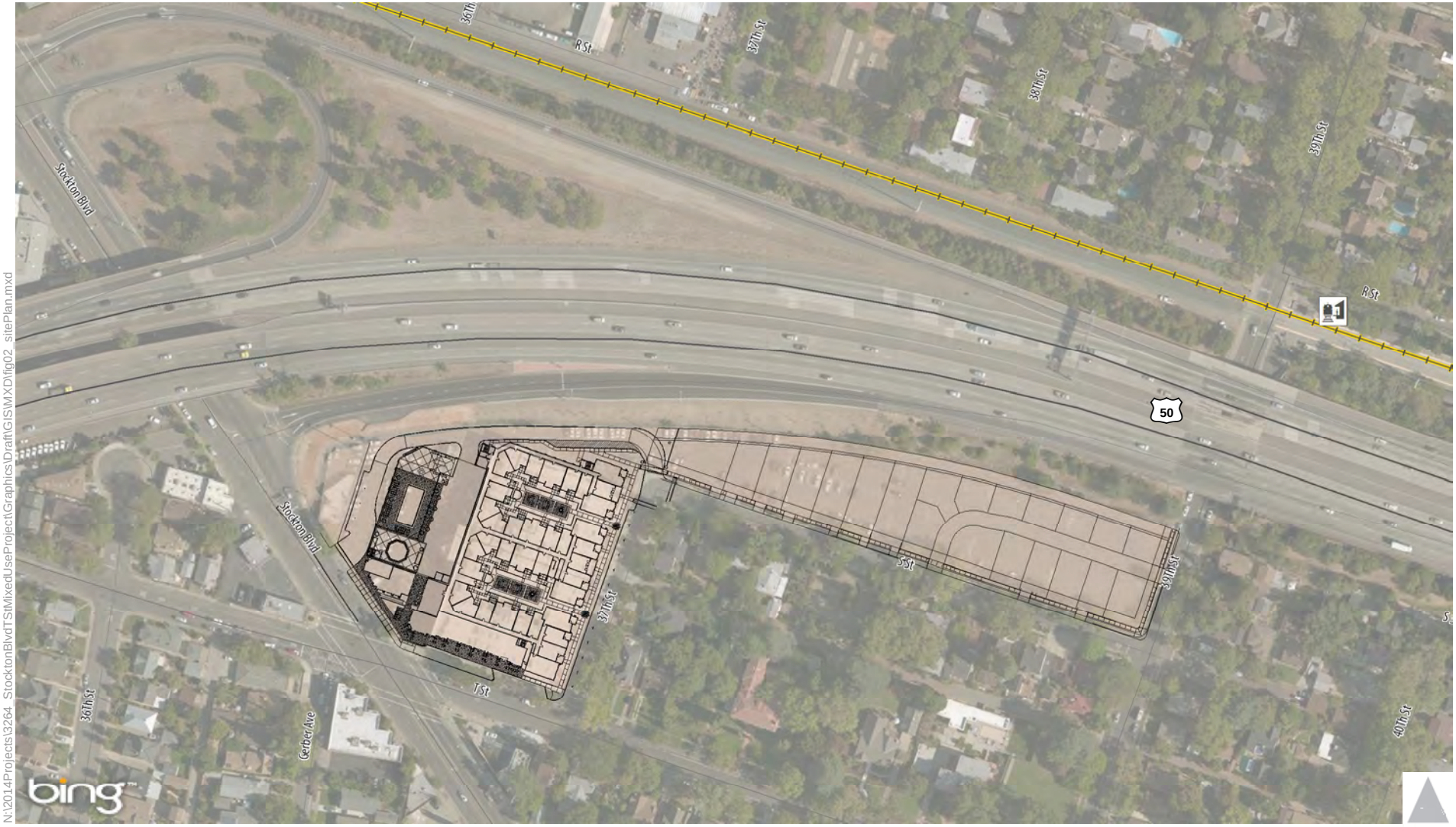
Project Site

Light Rail Station

LRT Gold Line Tracks

Figure 1

Study Area



39th St. LRT Station

Project Site

LRT Gold Line Tracks

Figure 2

Project Site Plan

The project would not alter the lane configurations at the Stockton Boulevard/T Street intersection. However, by virtue of constructing narrow raised medians as described above, movements to/from adjacent businesses on Stockton Boulevard and T Street would also be restricted to right-turns. Although signage is not present to prohibit u-turns at the Stockton Boulevard/T Street intersection, field observations indicate that such movements are difficult to accomplish given the configuration of the intersection.

ANALYSIS SCENARIOS

The following scenarios are analyzed in this study:

- Existing Conditions – represents the baseline condition, upon which project impacts are measured. The baseline condition represents conditions in Fall 2014 (i.e., traffic counts were collected in October 2014).
- Existing Plus Project Conditions – reflects changes in travel conditions associated with implementation of the proposed project.
- Cumulative Plus Project Conditions – Analyzes conditions for a cumulative scenario, which includes reasonably foreseeable land uses and proposed project implementation. Refer to Chapter 4 for a discussion of specific assumptions for this scenario.

The proposed project qualifies as a Transit Priority Project (TPP) under Senate Bill (SB) 375. Public Resources Code section 21155 sets forth the requirements for a project to qualify as a TPP. The following qualifications must be met to be considered a TPP:

1. At least 50 percent of total building square footage for residential use OR if 26-50% of total building square footage is nonresidential, a minimum FAR of 0.75;

2. Minimum net density of 20 du/acre;

3. Within 0.5 miles of major transit stop or high-quality transit corridor included in the regional transportation plan (No parcel more than 25% further, and less than 10% of units or no more than 100 units further than 0.5 miles); and

4. Consistent with the use designation, density, building intensity, and applicable policies of an SCS or APS.

Criterion 1 is met since all but 6,000 square feet of the 240,000 square foot apartment building will be dedicated to residential. Criterion 2 is met since 238 dwelling units are proposed on the 4.92-acre site (48 units per gross acre implies the net density will exceed 20 units per acre). Criterion 3 is met since the 39th Street light rail station is situated within ½-mile of the project site. Criterion 4 is met since the project is consistent with the existing General Plan designation of "Urban Corridor Low" and located within a Transit Priority Area in the SACOG 2035 MTP/SCS.

Guidance for environmental reviews of TPPs is provided at: http://sacog.org/mtpscs/implementation/. Environmental documents for TPPs are not required to reference, describe or discuss: 1) growth inducing

impacts, 2) impacts from car and light-duty truck trips on climate change or regional transportation network, or a 3) reduced density alternative to the project. TPPs may be reviewed through a Sustainable Communities Environmental Assessment (SCEA). (Pub. Res. Code, § 21155.2, subd. (b)). The standard of review for the SCEA is the "substantial evidence" standard, which is deferential to the agency. Thus, once an SCEA is deemed appropriate, the burden of proof for a legal challenge to the agency's analysis is presumed to be adequate and the burden of proof is on a petitioner/plaintiff to demonstrate otherwise.

According to the above, it was not necessary to analyze project effects on the US 50 freeway within the study area because this freeway is part of the regional transportation network.

ANALYSIS METHODOLOGY

Traffic operations at all study intersections were analyzed for weekday AM and PM peak hour conditions using procedures and methodologies contained in the *Highway Capacity Manual* (Transportation Research Board, 2010) for calculating delay at intersections. These methodologies were applied using the SimTraffic software program, which considers the effects of lane utilization, turn pocket storage lengths, upstream/downstream queue spillbacks, and coordinated signal timings on intersection queuing and delays. The SimTraffic model was validated against observed queues. Reported results are based on an average of 10 runs. The following procedures and assumptions were applied in the development of the SimTraffic model:

- Roadway geometric data were gathered using aerial photographs and field observations.
- Peak hour traffic volumes were entered into the model according to the peak hour of the study area.
- The peak hour factor (PHF) was set at 1.0 in accordance with City of Sacramento Traffic Impact Study Guidelines.
- The counted pedestrian and bicycle volumes were entered into the model according to the peak hour measurements.
- Signal phasing and timings were based on existing signal timing plans provided by the City of Sacramento and field observations.
- Speeds for the model network were based on the posted speed limits.

Level of service is a qualitative measure of traffic operating conditions whereby a letter grade, from A (the best) to F (the worst), is assigned. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving. In general, LOS A represents free-flow conditions with no congestion, and LOS F represents severe congestion and delay under stop-and-go conditions. **Table 1** displays the average delay ranges associated with each LOS category.

TABLE 1:
INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Average Control Delay (seconds/vehicle)[1]	
	Signalized	Unsignalized
A	0 – 10.0	0 – 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	> 80.0	> 50.0

Notes:
[1] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay based on *Highway Capacity Manual* (Transportation Research Board, 2010).
Source: Fehr & Peers, 2015

For signalized intersections, the LOS is based on the average delay experienced by all vehicles passing through the intersection. For side-street stop controlled intersections, the delay and LOS for the worst case movement is reported along with the average delay for the entire intersection.

LEVEL OF SERVICE STANDARDS

The Mobility Element of the City of Sacramento's *2030 General Plan* outlines goals and policies that coordinate the transportation and circulation system with planned land uses. The following LOS policy is relevant to this study:

Policies:

- **M 1.2.2** The City shall allow for flexible Level of Service (LOS) standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.

    a. Core Area Level of Service Exemption—LOS F conditions are acceptable during peak hours in the Core Area bounded by C Street, the Sacramento River, 30th Street, and X Street. If a Traffic Study is prepared and identifies a LOS impact that would otherwise be considered significant to a roadway or intersection that is in the Core Area as described above, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the citywide transportation system in order to improve transportation-system-wide roadway capacity, to make intersection improvements, or

to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to road segments in order to conform to the General Plan. This exemption does not affect the implementation of previously approved roadway and intersection improvements identified for the Railyards or River District planning areas.

b. Level of Service Standards for Multi-Modal Districts – The City shall seek to maintain the following standards in multi-modal districts including the Central Business District, areas within ½ mile walking distance of light rail stations, and in areas designated for urban scale development (Urban Centers, Urban Corridors, and Urban Neighborhoods as designated in the Land Use and Urban Form Diagram). These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher-density development.

- Maintain operations on all roadways and intersections at LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.

c. Base Level of Service Standard – The City shall seek to maintain the following standards for all areas outside of multi-modal districts:

- Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or City-initiated project.

M 1.2.2 applies to the study area intersections as follows:

- Since the project site and all six study intersections are located within a ½-mile walk of the 29th Street or 39th Street light rail stations, LOS E is considered an acceptable LOS for this study. As noted above, the City may conclude that maintaining LOS E conditions may be infeasible and/or conflict with the achievement of other goals. In such instances, LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.

SIGNIFICANCE CRITERIA

The following describes the significance criteria used to identify project-specific and cumulatively considerable impacts to the transportation system.

Intersections

Impacts to the roadway system are considered significant if:

- The traffic generated by the project degrades LOS from acceptable (without the project) to unacceptable (with the project);
- The LOS (without project) is already (or projected to be) unacceptable and project generated traffic increases the average vehicle delay by 5 seconds or more.

The project site and all six study intersections are located within a ½-mile walk of the 29th Street or 39th Street light rail stations. Accordingly, the study area is situated within a Multi-Modal District. According to Policy M 1.2.2(b), these intersections should:

> Maintain operations LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.

Transit

Impacts to the transit system are considered significant if the Proposed Project would:

- Adversely affect public transit operations; or
- Fail to adequately provide access to transit.

Bicycle Facilities

Impacts to bicycle facilities are considered significant if the Proposed Project would:

- Adversely affect existing or planned bicycle facilities; or
- Fail to adequately provide for access by bicycle.

Pedestrian Circulation

Impacts to pedestrian circulation are considered significant if the Proposed Project would:

- Adversely affect existing or planned pedestrian facilities; or
- Fail to adequately provide for access by pedestrians.

Emergency Access

Impacts to emergency access are considered significant if the Proposed Project would:

- Result in inadequate emergency access.

Construction-Related Traffic Impacts

The project would have a temporarily significant impact during construction if it would:

- Degrade an intersection or roadway to an unacceptable level;
- Cause inconveniences to motorists due to prolonged road closures; or
- Result in increased frequency of potential conflicts between vehicles, pedestrians, and bicyclists.

2. EXISTING CONDITIONS

This chapter describes the existing physical and operational characteristics of the transportation system within the study area including the roadway, transit, bicycle, and pedestrian components of the system.

ROADWAY SYSTEM

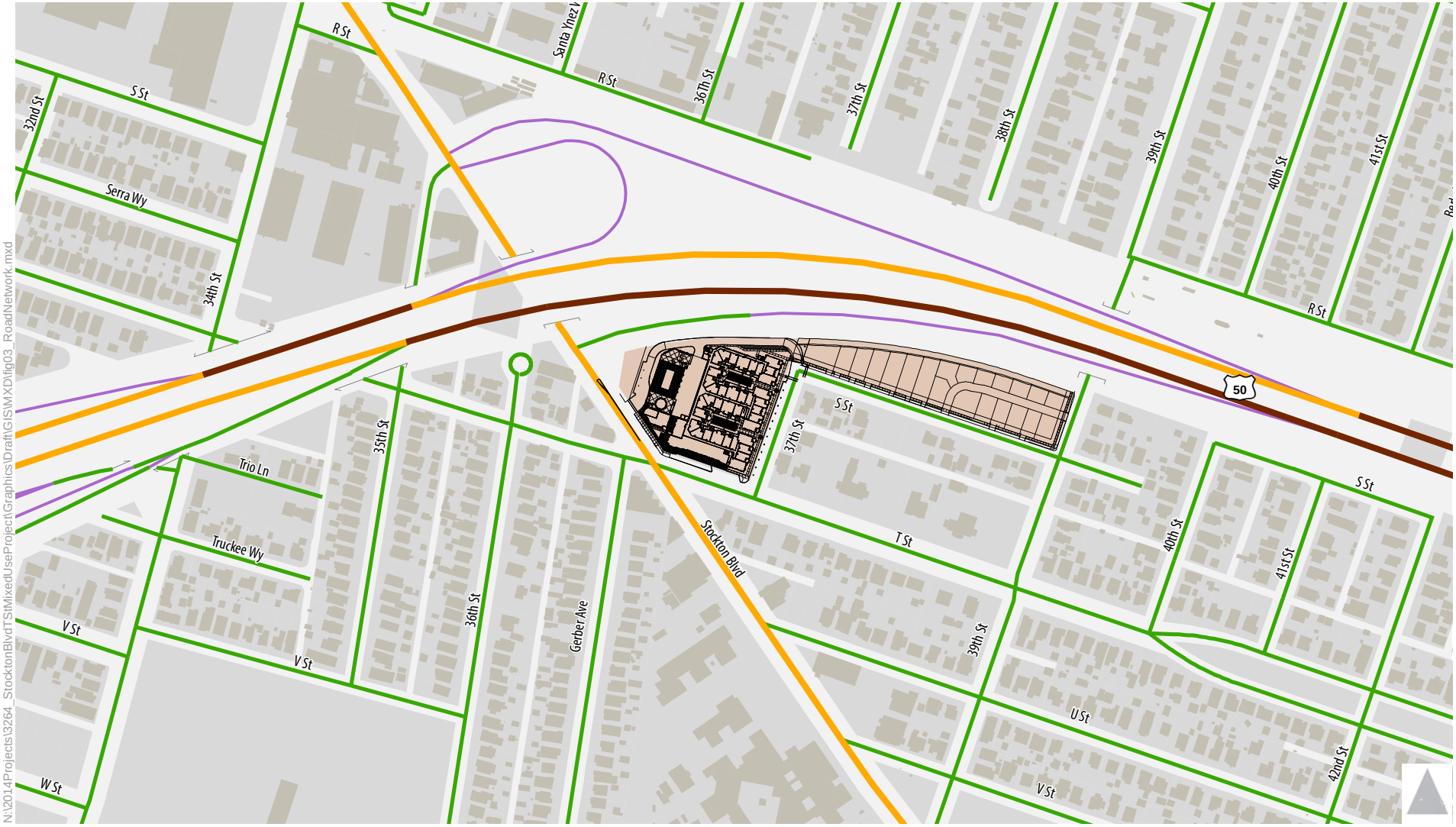
Figure 3 shows the study area roadway network. Key roadways in the study area include:

- **Stockton Boulevard** is an arterial street that begins at Alhambra Boulevard and extends in a generally southern direction through the City of Sacramento. Within the study area, it consists of two lanes in each direction separated by either a left-turn pocket or a two-way left-turn lane. It has a posted speed limit of 30 mph. Stockton Boulevard has a partial interchange with US Highway 50 (US 50) including an eastbound diagonal on-ramp, westbound diagonal off-ramp, and westbound loop on-ramp. On-street parking is permitted on Stockton Boulevard under the US 50 overcrossing, but prohibited south of the interchange.
- **T Street** extends in an easterly direction from Midtown into East Sacramento, terminating near 65th Street. Within the study area, it is a two-lane undivided roadway with a posted speed limit of 30 mph. On-street parking is permitted on portions of T Street east of Stockton Boulevard. Speed lumps (undulations with advisory speeds of 15 mph) are situated on T Street between 37th and 39th Streets.

The residential area in the vicinity of T Street, 37th Street, S Street, and 39th Street has a residential permit parking program. This program prohibits on-street parking between the hours of 8 AM and 6 PM unless vehicles are equipped with a B Parking Permit.

Traffic counts were collected at all study intersections on Tuesday, October 21, 2014 during the AM (7 – 9 AM) and PM (4 – 6:30 PM) peak periods. Due to the importance of the Stockton Boulevard/T Street intersection to overall corridor operations, it was also counted during the PM peak period on October 22nd. Traffic volumes varied by less than three percent between the two days. Schools were in session at the time of the counts, weather conditions were dry, and no unusual traffic conditions were observed.

Figure 4 displays the existing AM and PM peak hour traffic volumes, lane configurations, and traffic controls at each intersection. At the Stockton Boulevard/T Street intersection, the AM peak hour occurred from 7:15 to 8:15 AM and the PM peak hour occurred from 4:30 to 5:30 PM. Figure 4 shows that three of the six study intersections are controlled by traffic signals.



Number of Travel Lanes

(Both directions excluding turn lanes)

1

2

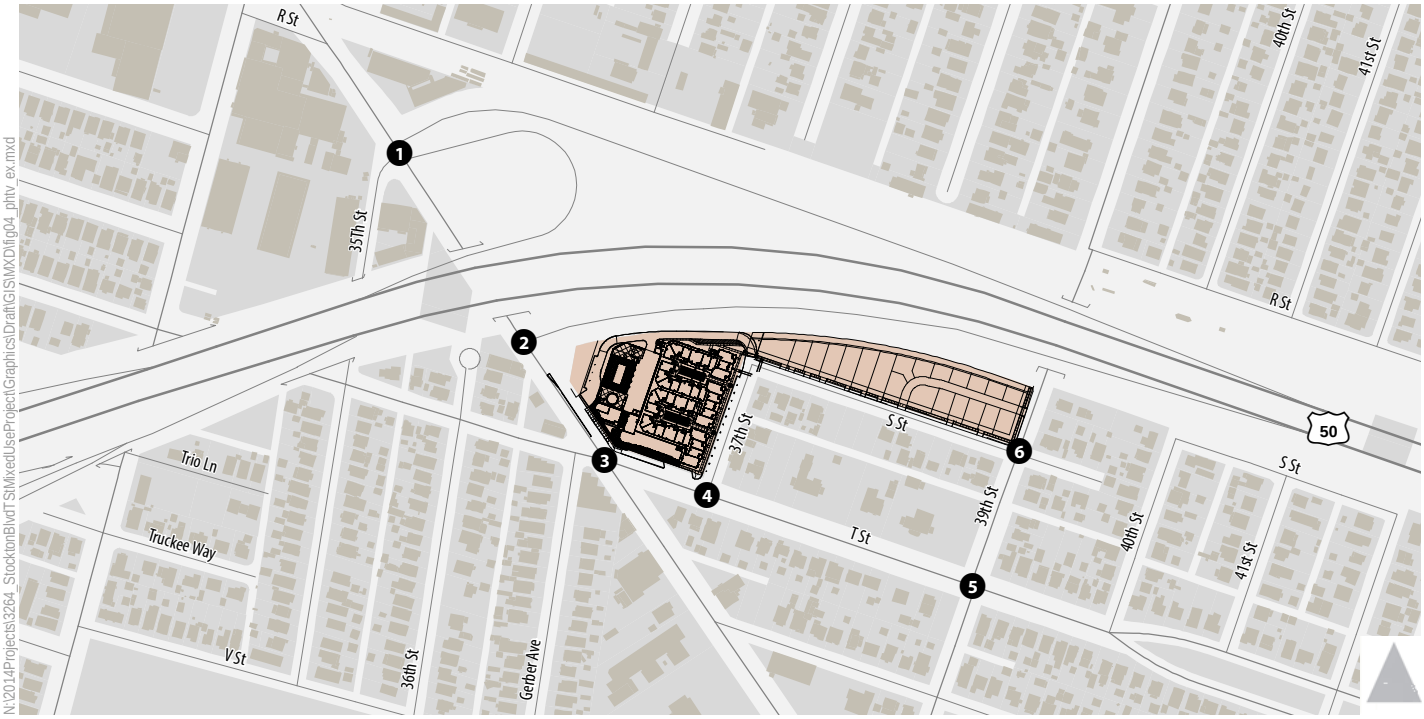
4

5

Project Site

Figure 3

Existing Roadway Network



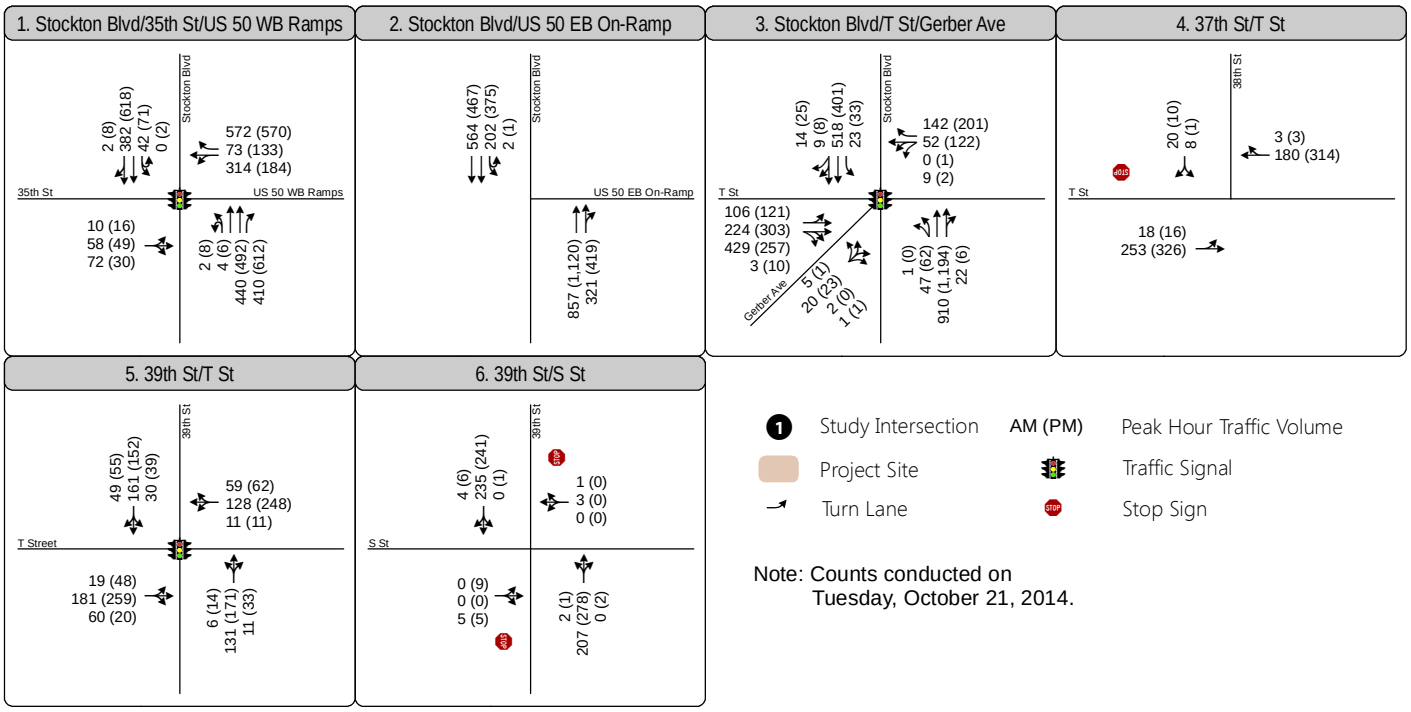


Figure 4

Peak Hour Traffic Volumes and Lane Configurations - Existing Conditions

The study area experiences considerable congestion during the PM peak period. This occurs, in part, due to the effects of ramp metering of the US 50/Stockton Boulevard westbound loop on-ramp. This on-ramp features a single, metered lane that accommodates two vehicles per green cycle, with successive green cycles being about 9 to 10 seconds apart. Assuming optimal usage, between 720 and 800 vehicles per hour are able to pass through this ramp meter. The traffic counts revealed 732 vehicles during the PM peak hour that entered the loop on-ramp. Field observations revealed lengthy vehicle queues and imbalanced lane utilization on northbound Stockton Boulevard resulting from the ramp meter. [1] Below is a photo illustrating the extent of northbound vehicle queuing.

View of vehicle queues on northbound Stockton Boulevard (extending to T Street) due to ramp metering of the westbound US 50 loop on-ramp

A ramp meter also exists on the US 50 eastbound on-ramp from Stockton Boulevard. However, it was not operational at the time of the traffic counts.

---

[1] The loop on-ramp becomes a westbound US 50 auxiliary lane that terminates at the Capital City Freeway off-ramp. Although the general purpose lanes along this segment of US 50 were congested during recent field observations, the auxiliary lane was not. This implies that the source of the surface street queuing is due to the effects of the ramp meter and not freeway congestion.

Figure 5 shows the following at the Stockton Boulevard/T Street intersection:

- Lane Configurations
- Crosswalk lengths
- Traffic signal phasing
- Turn movement prohibitions
- AM and PM peak hour vehicle, bicycle, and pedestrian volumes

Field observations indicate that the intersection operates with a 90-second cycle length during peak hours. The pedestrian WALK / DON'T WALK indications are operational on all legs regardless of the presence of a pedestrian. As shown on Figure 5, the north-south movements operate with permitted phasing, as do the east-west movements. When a vehicle arrives at the Gerber Avenue approach, it has its own (actuated) phase. If vehicle(s) are not present on this approach, its phase is skipped.

Vehicles on westbound T Street are prohibited (by signage) from turning right on red. Eastbound T Street features left/through and through/right lanes approaching Stockton Boulevard (though the limit line is at Gerber Avenue). Directly beyond the intersection, T Street is approximately 24 feet wide but does not include striping for two receiving lanes. An advisory 'lanes merge' sign is posted.

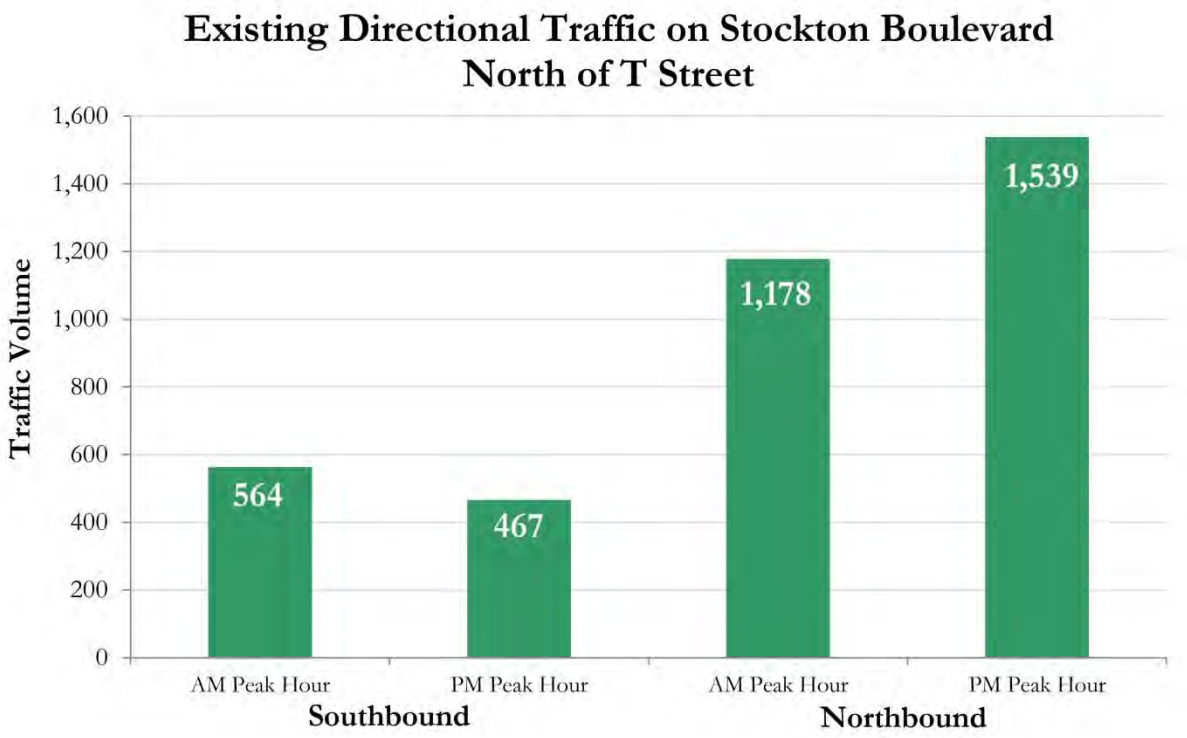
Figure 5 shows that the crosswalk on the south leg of the intersection (i.e., across Stockton Boulevard) is the most heavily utilized among all the crosswalks. T Street east of Stockton Boulevard accommodates the greatest number of bicyclists passing through the intersection.

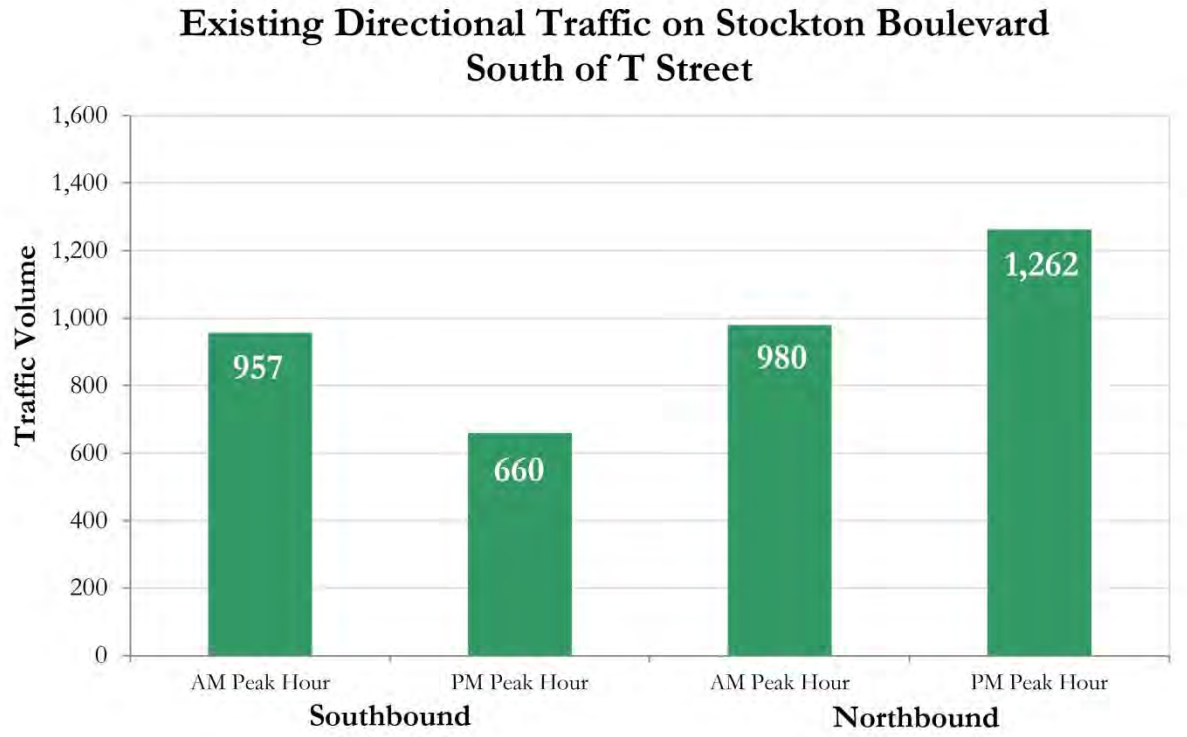
The following page contains charts that display the directional, peak hour traffic volumes on Stockton Boulevard north and south of T Street. These charts reveal the following travel characteristics in the corridor:

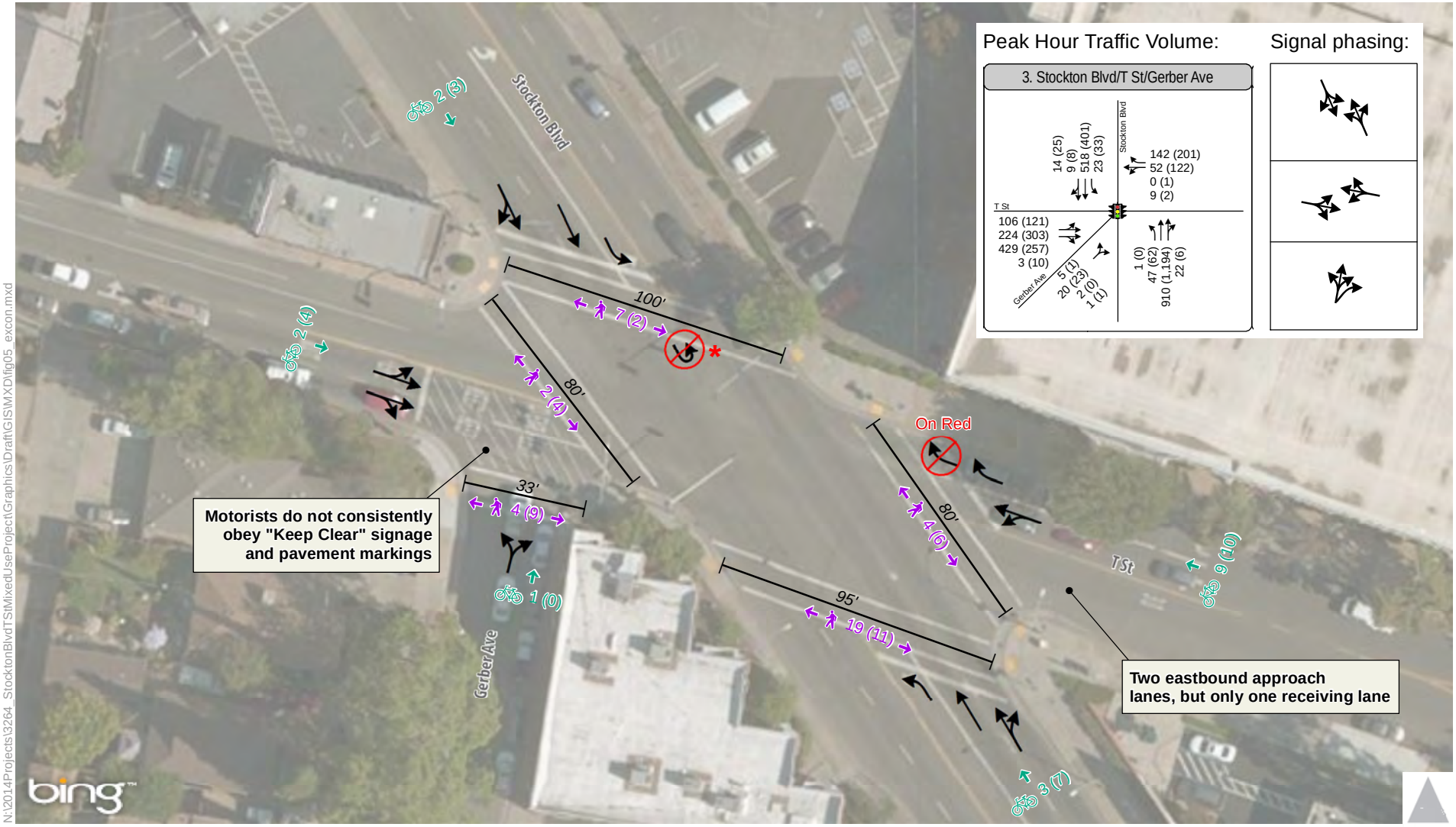
1. During the AM Peak Hour, traffic volumes on Stockton Boulevard south of T Street are much heavier than volumes north of T Street. This is due to the heavy eastbound right-turn movement (430 vehicles) from T Street. Many of these trips likely originate from Midtown or the US 50 eastbound off-ramp and are destined for UC Davis Medical Center.

2. The segment of Stockton Boulevard north of T Street carries substantially more northbound traffic than southbound traffic. During the PM peak hour, 77 percent of all traffic on this segment is northbound. This occurs as a consequence of typical commute patterns in the area, and the presence of two on-ramps, but only one off-ramp (from WB direction) at the US 50/Stockton Boulevard interchange.

It is important that the SimTraffic model be adequately validated to existing conditions so that it can accurately predict "plus project" conditions. Model validation often consists of measures relating to volume served, queue lengths, and average travel time. Given the modest size of the study area but considerable levels of congestion, vehicle queuing is considered the most important validation parameter.


Existing Directional Traffic on Stockton Boulevard
North of T Street
Traffic Volume
1,600
1,400
1,200
1,000
800
600
400
200
0
564
467
1,178
1,539
AM Peak Hour
PM Peak Hour
AM Peak Hour
PM Peak Hour
Southbound
Northbound


Existing Directional Traffic on Stockton Boulevard
South of T Street
Traffic Volume
1,600
1,400
1,200
1,000
800
600
400
200
0
957
660
980
1,262
AM Peak Hour
PM Peak Hour
AM Peak Hour
PM Peak Hour
Southbound
Northbound



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Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

AM (PM) Peak Hour Pedestrians

AM (PM) Peak Hour Bicyclists

* Signs do not prohibit u-turns. However, geometric configuration makes them difficult to make.

Figure 5

Stockton Boulevard/T Street Intersection - Existing Conditions

As part of the traffic count data collection, maximum vehicle queues were recorded for several critical turning movements at the Stockton Boulevard/T Street intersection. **Table 2** displays the available storage, observed maximum vehicle queue, and modeled (via SimTraffic) maximum queue length at this intersection.[2]

TABLE 2:
PM PEAK HOUR QUEUING ANALYSIS – EXISTING CONDITIONS

Intersection	Available Storage	Movement	Maximum Observed Vehicle Queue [1]	Maximum Modeled Vehicle Queue [2]	Difference (in vehicles)
3. Stockton Boulevard / T St / Gerber Avenue	1,100 ft. per lane [3]	NB TH/RT	750 ft.	900 ft.	+6
	570 ft. [4]	EB LT/TH	450 ft.	375 ft.	-3
	375 ft.	EB TH/RT	350 ft.	350 ft.	0
	800 ft. per lane	SB TH/RT	200 ft.	150 ft.	-2
	175 ft.	SB LT	25 ft.	50 ft.	+1
	200 ft. [5]	WB LT/TH	100 ft.	175 ft.	+3
	130 ft. [6]	WB RT	200 ft.	200 ft.	0

Notes:
1. Observed queues during PM peak hour on Tuesday October 21, 2014. Values rounded to the nearest 25 ft.
2. Modeled results based on maximum predicted queue length reported from SimTraffic. Rounded to nearest 25 feet.
3. Distance to upstream signalized Stockton Boulevard/39th Street intersection. Maximum queue reported for outside northbound travel lane, which has more lengthy queues due to motorists' lane selection in advance of US 50/Stockton Boulevard interchange.
4. Distance to upstream T Street/35th Street intersection.
5. Distance to upstream T Street/37th Street intersection.
6. Distance to first upstream on-street parking space on T Street.

Source: Fehr & Peers, 2015

For most movements, the SimTraffic model validates well against the observed maximum vehicle queues at the Stockton Boulevard/T Street intersection. However, the model over-predicts queuing for the following two movements:

1. Northbound Outside Through/Right – The model over-predicts (by six vehicles) the maximum observed vehicle queue. This occurs as a result of the model's requirement that a minimum advance lane selection distance be selected for vehicles that desire to access the eastbound or westbound on-

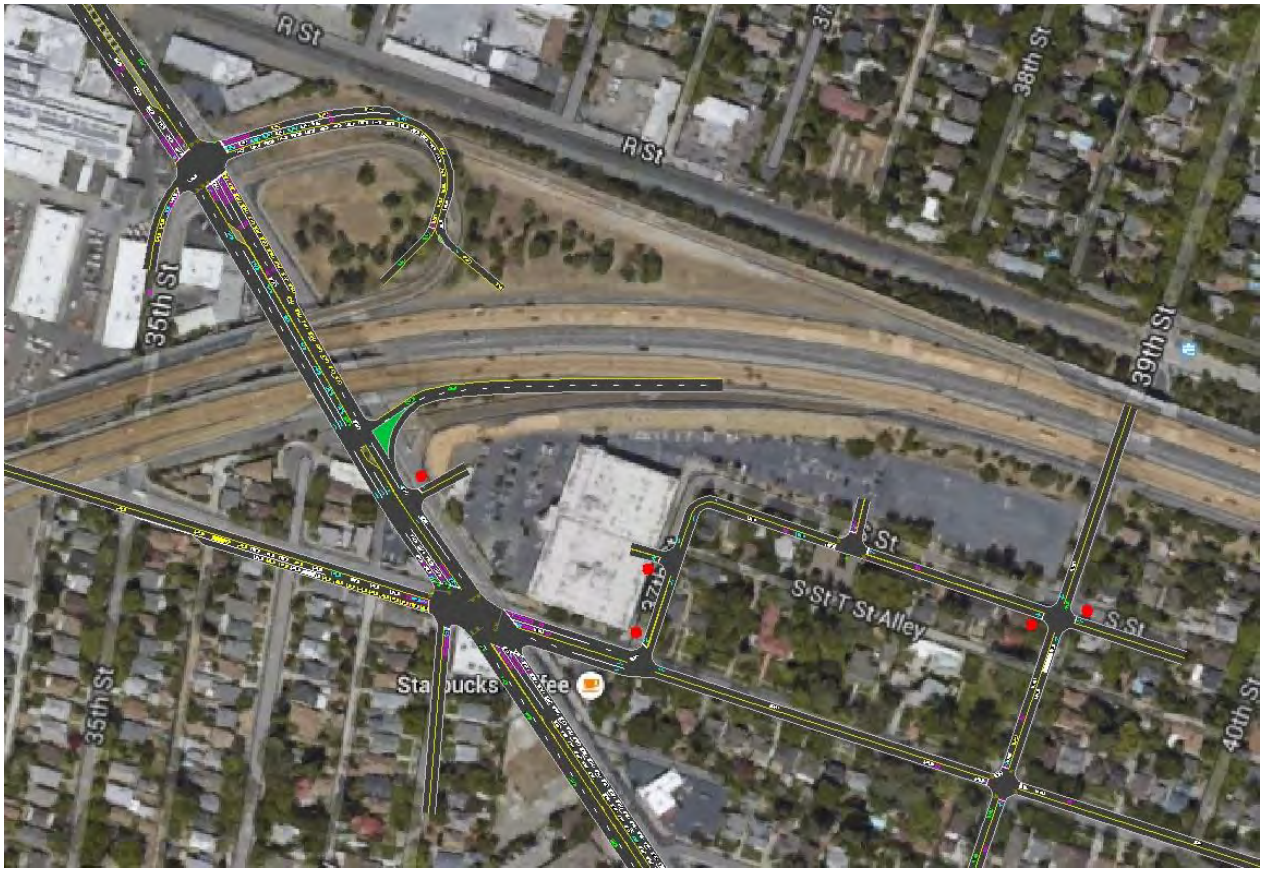
[2] The PM peak hour experienced much greater levels of congestion and queuing (and was more directly affected by ramp metering) than the AM peak hour. For this reason, vehicle queue observations and model validation focused on PM peak hour conditions.

ramps. Field observations indicate that most motorists queue in the outside through lane in anticipation of accessing these ramps. However, some motorists remain in the inside through lane, and merge into the outside lane downstream of T Street. SimTraffic is not able to accurately model this aggressive and irregular driver behavior, which explains why the model over-predicts the maximum observed vehicle queue in the outside northbound through/right lane.

2. Westbound Left/Through – The model overpredicts (by three vehicles) the maximum observed vehicle queue. Based on observations of the SimTraffic on-screen results, this occurs as a result of a simulated left-turning vehicle having difficulty turning onto southbound Gerber Avenue (i.e., waiting for a substantially long gap in eastbound T Street through traffic).

These over-predictions are caused by limitations in the software program. They do not appreciably affect the intersection's overall average delay or LOS. When queue lengths for these two movements are estimated under 'plus project' conditions, a modified difference method procedure (whereby the SimTraffic model's estimated increase in queuing resulting from the project is added to the existing observed maximum queue) is used to correct for these over-predictions.

Below is a screenshot of the SimTraffic model used to analyze the study intersections.



View of SimTraffic micro-simulation model used to analyze study intersections

Figure 6 illustrates the existing maximum observed vehicle queues in the study area during the PM peak hour. As shown, lengthy queues form at the ramp meter on the westbound US 50 loop on-ramp. This queuing spills back onto Stockton Boulevard, extending to T Street and beyond. The indirect effect of this queuing is frequent/continuous blockage of the southbound left-turn movement onto the eastbound US 50 on-ramp. The length of queues on the eastbound, westbound, and northbound approaches to the Stockton Boulevard/T Street intersection are also affected by queuing from the on-ramp.

On December 17, 2014, additional PM peak hour field observations were conducted at the Stockton Boulevard/T Street intersection. The purpose of these observations was to determine the arrival and departure characteristics of southbound left-turning vehicles relative to their arrival during different phases of the traffic signal. The following shows the results:

Number of Vehicles Arriving During Red Indication:	10
Number of Vehicles Turning Left During Successive Green Indication:	1
Number of Vehicles Turning Left During Successive Yellow/All-Red Indication:	9
Number of Vehicles Arriving During First Half of Green Indication:	9
Number of Vehicles Turning Left During Same Green Indication:	2
Number of Vehicles Turning Left During Successive Yellow/All-Red Indication:	7
Number of Vehicles Arriving During Second Half of Green Indication:	5
Number of Vehicles Turning Left During Same Green Indication:	3
Number of Vehicles Turning Left During Successive Yellow/All-Red Indication:	2

This data indicates that 25 percent of all left-turning vehicles were able to turn during the green indication. Due to lack of available gaps, the remaining 75 percent of motorists turned left during the yellow or all-red signal indications when gaps in northbound traffic became available. This is important when considering how the left-turn would operate with the addition of project trips.

Table 3 summarizes the existing AM and PM peak hour operations at the study intersections (refer to separate Appendix A for detailed calculations). Key findings from this table include:

- During the AM peak hour, all study intersections operate at LOS C or better.
- During the PM peak hour, the Stockton Boulevard/T Street intersection operates at LOS E. As noted earlier, this result is due, in part, to ramp metering on the westbound US 50 loop on-ramp that spills back onto Stockton Boulevard into the intersection.

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Vehicle Queue

Project Site

Note: Queue length observation on surface streets collected on Tuesday, October 21, 2014.

Figure 6

Maximum Observed Vehicle Queues – Existing PM Peak Hour Conditions

TABLE 3:
INTERSECTION OPERATIONS – EXISTING CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1. Stockton Boulevard/35th Street/US 50 WB Ramps	Traffic Signal	23.5	C	43.4	D
2. Stockton Boulevard/US 50 EB Ramps	Uncontrolled	1.9 (10.5)	A (B)	14.8 (52.1)	B (F)
3. Stockton Boulevard/T Street/Gerber Avenue	Traffic Signal	25.9	C	55.9	E
4. T Street/37th Street	Side-Street Stop	2.1 (6.2)	A (A)	12.9 (24.8)	B (C)
5. T Street/39th Street	Traffic Signal	14.1	B	14.8	B
6. S Street/39th Street	Side-Street Stop	0.7 (3.5)	A (A)	1.2 (7.4)	A (A)

Notes:

[1] For signalized intersections, the LOS is based on the average delay experienced by all vehicles passing through the intersection. For uncontrolled and side-street stop controlled intersections, the delay and LOS for the worst case movement (in parentheses) is reported along with the average delay for the entire intersection and for the overall movement not in parentheses.

Source: Fehr & Peers, 2015

An analysis was conducted to better understand the degree to which the ramp meter on the westbound loop on-ramp affects the Stockton Boulevard corridor. The existing PM peak hour SimTraffic model was reanalyzed with the ramp meter removed (with all other inputs remaining unchanged). The results indicated that the Stockton Boulevard/T Street intersection would improve to LOS C and vehicle queues would be reduced on all approaches. However, this analysis did not take into consideration the likelihood that additional motorists may use the Stockton Boulevard corridor in response to the reduced queuing and travel times. Thus, it is more realistic that operations at Stockton Boulevard/T Street intersection would be in the LOS D range if the ramp meter was removed.

Fehr & Peers obtained collision data for the Stockton Boulevard/T Street intersection from January 1, 2009 through November 6, 2014. Over this nearly six-year period, 12 total collisions were reported. Given the level of traffic that passes through this intersection, an average of two collisions per year is considered a relatively low collision frequency. Review of the collision data indicated that the vast majority involved two vehicles. Most collisions were either rear-end, sideswipe, or broadside. Only one collision involved a vehicle performing a southbound left-turn. This data suggests that motorists are using care when driving through the intersection based on the type and rate of collisions.

BICYCLE SYSTEM

Figure 7 displays the existing bicycle facilities located in the vicinity of the project site based on field observations and review of aerial imagery. As shown, Class II bike lanes (on-street with appropriate signing and striping) exist on both sides of T Street east of 37th Street, and portions of T Street west of Stockton Boulevard. According to the *Sacramento Existing and Proposed Bikeways Map* (Updated October 2011), a continuous Class II bike lane is shown to currently exist on T Street throughout the study area. However, bicycle lanes are not present on the T Street approach and departure legs at Stockton Boulevard. Furthermore, as shown in the image on the following page, the Class II bike lane on the south side of T Street currently terminates at 36th Street.

The *Sacramento Existing and Proposed Bikeways Map* shows a proposed Class II bike lane on Stockton Boulevard from T Street southerly to Broadway.

PEDESTRIAN SYSTEM

Figure 7 displays the pedestrian facilities located in the vicinity of the project site. As shown, sidewalks are present along the majority of Stockton Boulevard and T Street. Crosswalks exist on all approaches to the Stockton Boulevard/T Street intersection. Regardless of the presence of pedestrians, the WALK / DON'T WALK indication is operational for all crosswalks. As shown on Figure 7, sidewalks also exist on the majority of 37th Street, S Street, and 39th Street. Continuous pedestrian facilities connect the project site with the 39th Street light rail station.

TRANSIT SYSTEM

Public transit service within the study area is provided by light rail and bus, which is operated by the Sacramento Regional Transit (RT).

39th Street Light Rail Station – This station is a stop along the Gold Line, which operates between downtown Sacramento and the City of Folsom. Trains stop at this station from approximately 4 AM to 12 AM Monday through Friday. The Gold Line operates on 15-minute headways from approximately 5 AM to 7 PM Monday through Friday, and 30-minute headways beyond these hours. On Saturdays, Sundays, and Holidays, the Gold Line operates on 30-minute headways from about 5:30 AM to 11:00 PM. The light rail station is less than a ½-mile walk from any part of the project site.

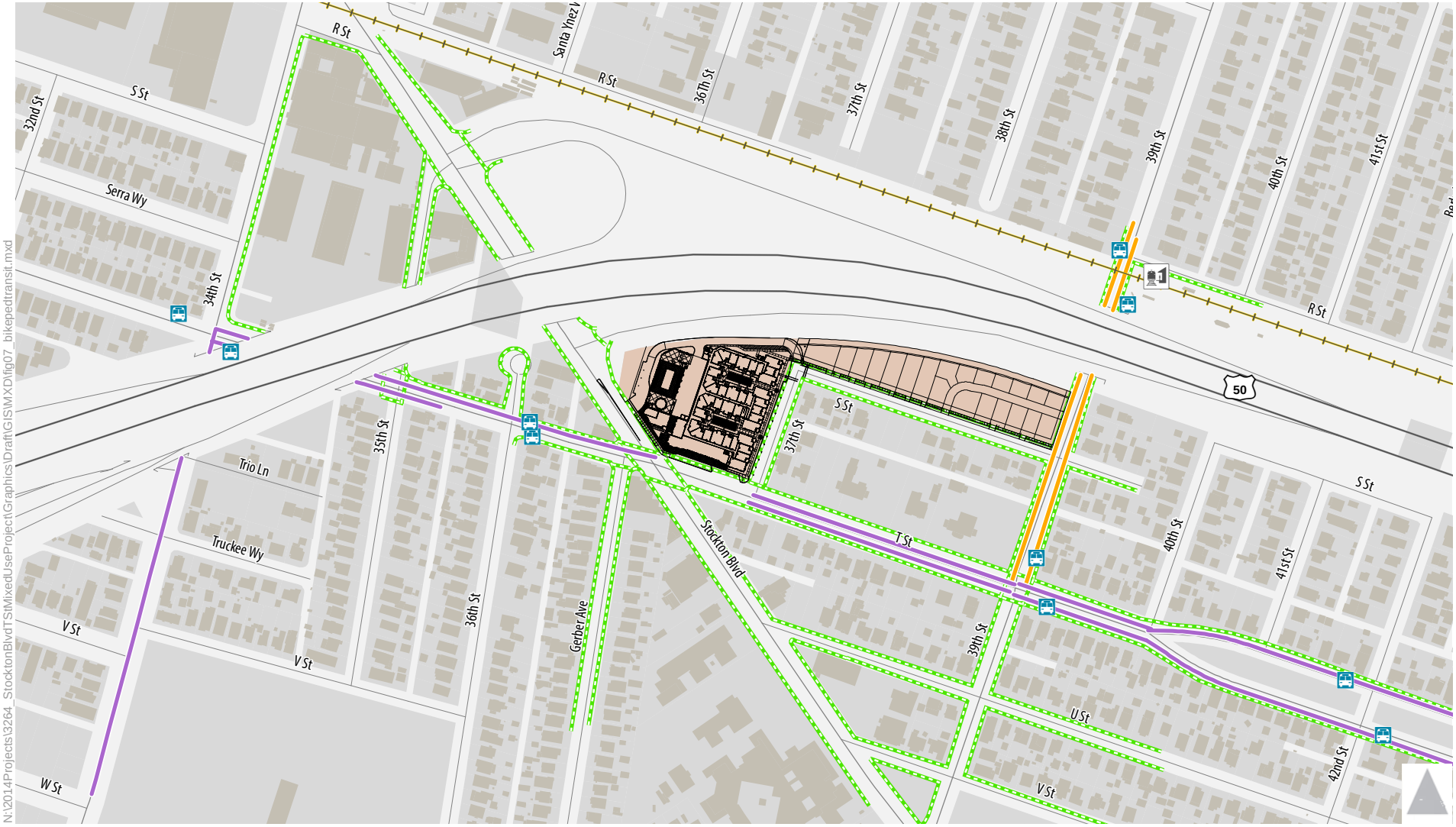


Figure 7

Bicycle, Pedestrian, and Transit Facilities – Existing Conditions

View of T Street at 36th Street – Eastbound Class II bike lane terminates just west of 36th Street

Route 38 provides service on T Street west of Stockton Boulevard and continues on Stockton Boulevard south of T Street. This route features a bus stop in each direction of T Street at 36th Street. This route begins in Land Park and terminates at 65th Street and Folsom Boulevard. Monday through Friday, Route 38 operates on 60-minute headways from about 6:30 AM to 8:30 PM. On Saturdays, Route 38 operates on 60-minute headways from about 8 AM to 8 PM. On Sundays and Holidays, Route 38 operates on 60-minute headways from about 8 AM to 6 PM.

Routes 212, 213, & 214 provide service to Kit Carson Middle School in East Sacramento. Each line features bus stops adjacent to the 39th Street/T Street intersection. Route 212 begins at 21st Avenue and 65th Street, Route 213 begins at West Campus High School in South Sacramento, and Route 214 begins at T Street and 34th Street. Monday through Friday, these routes operate one morning trip from about 7 AM to 8 AM and one afternoon trip from about 2 PM to 3 PM. Routes 212, 213, and 214 do not operate on Saturdays, Sundays, or Holidays.

Bus service does not currently exist along Stockton Boulevard north of T Street or T Street between Stockton Boulevard and 39th Street.

The Capital City Hospital Shuttle service stops at the 39th Street Light Rail station. This free shuttle transports employees, patients, and visitors to the Mercy, Sutter, UC Davis Medical Centers located in Midtown and East Sacramento.

3. EXISTING PLUS PROJECT CONDITIONS

This chapter analyzes the potential traffic impacts of the proposed project on the surrounding roadway system under existing conditions. Chapter 6 describes the specific impacts of the project on the roadway system, as well as impacts to bicycle, pedestrian, and transit modes.

PROJECT TRAVEL CHARACTERISTICS

This chapter begins by describing the project's expected travel characteristics including the anticipated number of vehicle trips, directionality of those trips, and their expected travel routes.

Trip Generation

The first step in analyzing the proposed project's travel characteristics was to estimate its AM and PM peak hour trip generation using data published in the *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers, 2012). The *Manual* is the most widely used industry resource for this type of data. The trip generation data are organized by land use types, with more than 170 different categories of land uses. For each category, the *Manual* provides a data set for use in estimating the number of vehicle and person trips generated by a site based on its characteristics such as physical size or intensity. Trips may be estimated by direction (entering or exiting the site), and for time periods typically pertaining to a full day (weekday or weekend), peak periods of the adjacent roadway, and peak hours of the particular land use. Used properly, the *Trip Generation Manual* provides an objective basis for estimating trips generated by a proposed development.

Most of the observation sites used to develop trip rates in the *Manual* were collected in suburban settings, which often feature limited transit service, and may not have nearby destinations within close walking/biking distance. Therefore, adjustments to ITE trip rates are warranted based on the proximity of transit service, and numerous nearby attractions within bicycling and walking distance.

The expected amount of internal trip-making between the residential and retail uses, and proportion of external trips made by walking, bicycling, and transit was estimated using the Mixed-Use Trip Generation Model (MXD). This model was developed for the US Environmental Protection Agency (EPA) by consultants and academic researchers to more accurately estimate the external vehicular trip generation of mixed-use land development projects than prior methods (e.g., ITE internalization spreadsheet). The model was developed based on empirical evidence at 240 mixed-use projects located across the U.S. The model considers various built environment variables such as land use density, regional location, proximity to transit, and various design variables when calculating the project's internal trips, and external trips made by auto, transit, and non-motorized modes. The MXD model has been used in dozens of EIRs and other environmental documents throughout California.

Table 4 displays the trip generation of the proposed project during the weekday AM and PM peak hours. Refer to Appendix B for the MXD model output.

TABLE 4:
AM AND PM PEAK HOUR TRIP GENERATION – PROPOSED PROJECT

Land Use	Quantity	ITE Land Use Code	Trip Rate[1]		Trips					
			AM Peak Hour	PM Peak Hour	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Single-Family Housing	24 du's	210	1.21	1.29	29	8	21	31	20	11
Mid-Rise Apartments	214 du's	223	0.39	0.48	84	18	66	102	63	39
Retail	6 ksf	820	0.96	3.71	6	4	2	22	11	11
Gross Trips					119	30	89	155	94	61
Internal Trips [2]					-6	-3	-3	-10	-5	-5
Pass-by Trips (to Retail) [2]					-2	-1	-1	-4	-2	-2
External Walk & Bike Trips [2]					-17	-4	-13	-19	-11	-8
External Transit Trips [2]					-11	-3	-8	-13	-8	-5
New Vehicle Trips [2]					**83**	**19**	**64**	**109**	**68**	**41**

Notes:

[1] Trip rates from *Trip Generation* (ITE, 2012). Fitted curve equation used to estimate trips for residential uses. Average rate used to estimate trips for retail use (due to very small square footage). Use of equation would have substantially overestimated trip generation for the retail use.

[2] Refer to text below for process used to develop these estimates.

ksf = thousand square feet. du's = dwelling units.

The following describes the adjustments made in Table 4:

- Internalization: The MXD model predicts that about five percent of trips will remain internal to the project site. This is reasonable given the limited size of the retail (i.e., one end of the trip match with the residential).

- Pass-by Trips: Per *Trip Generation Handbook, 3rd Edition* (Institute of Transportation Engineers, 2014), 34 percent of non-internal p.m. peak hour retail trips are expected to be pass-by trips.

- External Walk/Bike Trips: The MXD model predicts that about 13 to 15 percent of non-internal trips (varies by analysis hour) will made by walking or bicycling. This is reasonable given the proximity of attractions in the area (e.g., UCD Medical Center, Sacramento Charter High School, and various retail/employment uses along Stockton Boulevard).

- External Transit Trips: The MXD model predicts that about 9 to 10 percent of non-internal trips (varies by analysis hour) will be made by transit. This is reasonable given that the 39th Street Gold

line light rail station is about a 0.2-mile walk from the 37th Street/S Street intersection. In addition, bus service is provided on segments of Stockton Boulevard, T Street, and 39th Street adjacent to the project site. Lastly, the Capital City Hospital Shuttle service stops at the 39th Street Light Rail station. This free shuttle transports employees, patients, and visitors to the Mercy, Sutter, UC Davis medical centers located in mid-town and East Sacramento.

After making these adjustments, the project would generate 83 new AM peak hour vehicle trips and 109 new PM peak hour vehicle trips. These totals represent a 30 percent reduction in trips when compared to the gross trip totals.

Table 5 displays the project's average weekday daily trip generation estimate. As shown, the project would generate 1,180 new average weekday daily trips.

TABLE 5:
DAILY TRIP GENERATION – PROPOSED PROJECT

Land Use	Quantity	ITE Land Use Code	Trip Rate[1]	Trips
Single-Family Housing	24 du's	210	11.77	283
Mid-Rise Apartments	214 du's	223	4.99	1,068
Retail	6 ksf	820	42.70	256
			Gross Trips	1,607
			Internal Trips [2]	-74
			Pass-by Trips (to Retail) [2]	-38
			External Walk & Bike Trips [2]	-240
			External Transit Trips [2]	-77
			New Vehicle Trips [2]	**1,178**

Notes:

[1] Trip rates from *Trip Generation* (ITE, 2012). Fitted curve equation used to estimate trips for single-family residential uses. Since mid-rise apartments land use category does not contain a daily trip rate, the AM and PM peak hour trip rates were factored up to a daily rate based using the same ratio as exists for the Apartments (220) land use category. Average rate used to estimate trips for retail use (due to very small square footage). Use of equation would have substantially overestimated trip generation for the retail use.

[2] Refer to text above for process used to develop these estimates.

ksf = thousand square feet. du's = dwelling units.

Trip Distribution/Assignment

Figures 8a and 8b show the expected distribution of inbound and outbound vehicle trips, respectively, to the project. It was necessary to develop separate inbound and outbound percentages due to the effects of different freeway accesses. Specifically, inbound trips to the project traveling eastbound on US 50 would exit at 34th Street and access the site via T Street. In contrast, outbound trips from the project site traveling on westbound US 50 would use Stockton Boulevard to the US 50 loop on-ramp.

The distribution percentages are based on an assignment of project trips using the base year version of SACOG's travel demand model. Minor adjustments to the model's predicted assignment of trips were made in consideration of existing turning movements and travel patterns in the area, roadway segments featuring directional congestion, and project access provisions (i.e., right-turn only driveway on Stockton Boulevard).

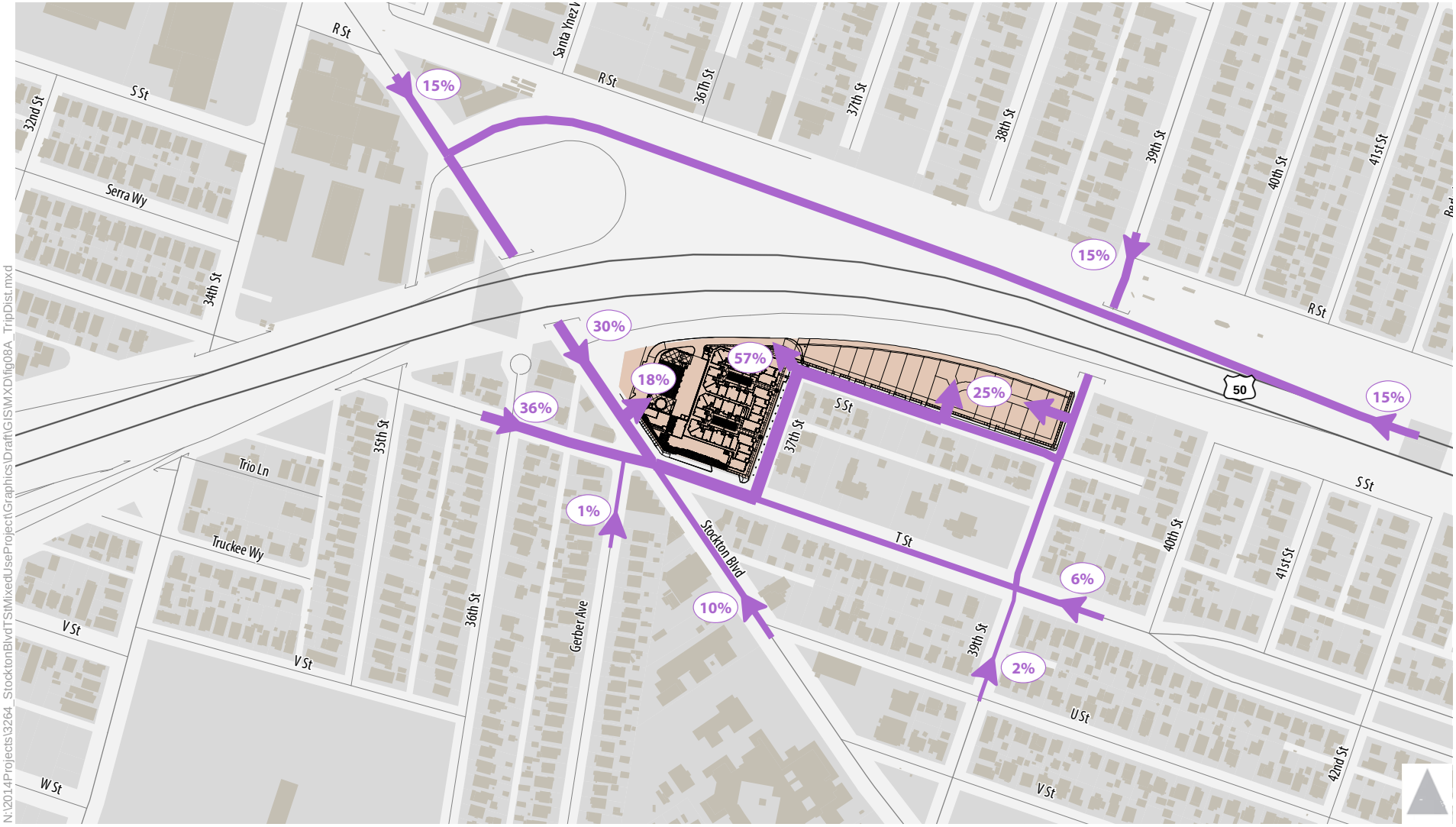
TRAFFIC FORECASTS

AM and PM peak hour traffic forecasts were developed for the "existing plus project" condition by adding project trips to existing volumes using the project's trip generation from Table 4 and trip distribution percentages from Figures 8A and 8B.

The assignment of project trips considers that the project driveway on Stockton Boulevard would be restricted to right-turns only. The assignment also reflects the planned restriction of the new internal street on 39th Street to inbound travel only. All other project accesses would permit all turning movements.

Figure 9 displays the resulting existing plus project forecasts. This figure shows trips entering/exiting the new driveway on Stockton Boulevard. The project would cause the following increases in the southbound left-turn movement at the Stockton Boulevard/T Street intersection:

- AM Peak Hour: Traffic volume would increase from 23 to 29 vehicles (26 percent increase)
- PM Peak Hour: Traffic volume would increase from 33 to 53 vehicles (61 percent increase)

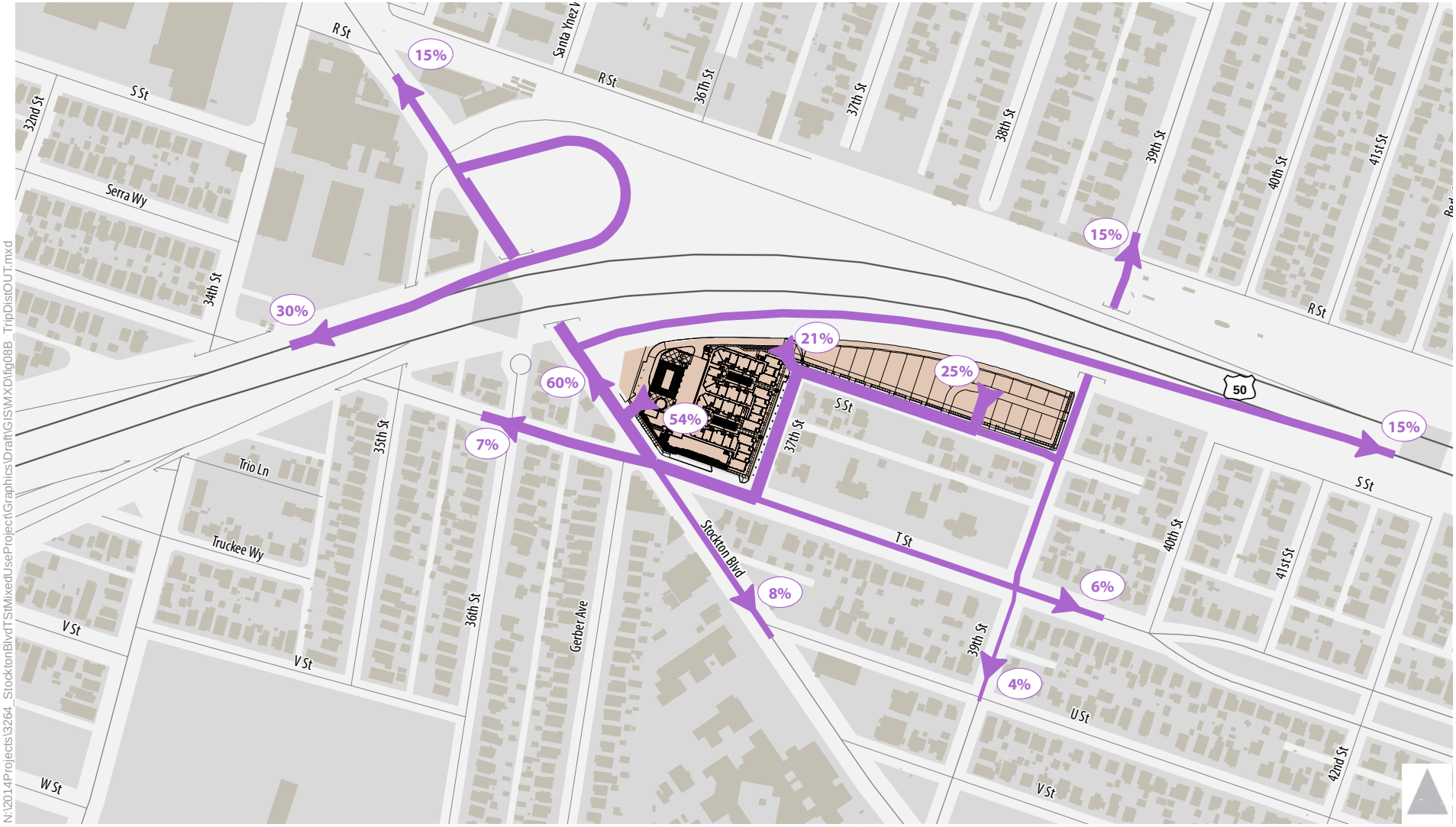


Inbound Project Trip Distribution

Project Site

Figure 8A

Inbound Project Trip Distribution

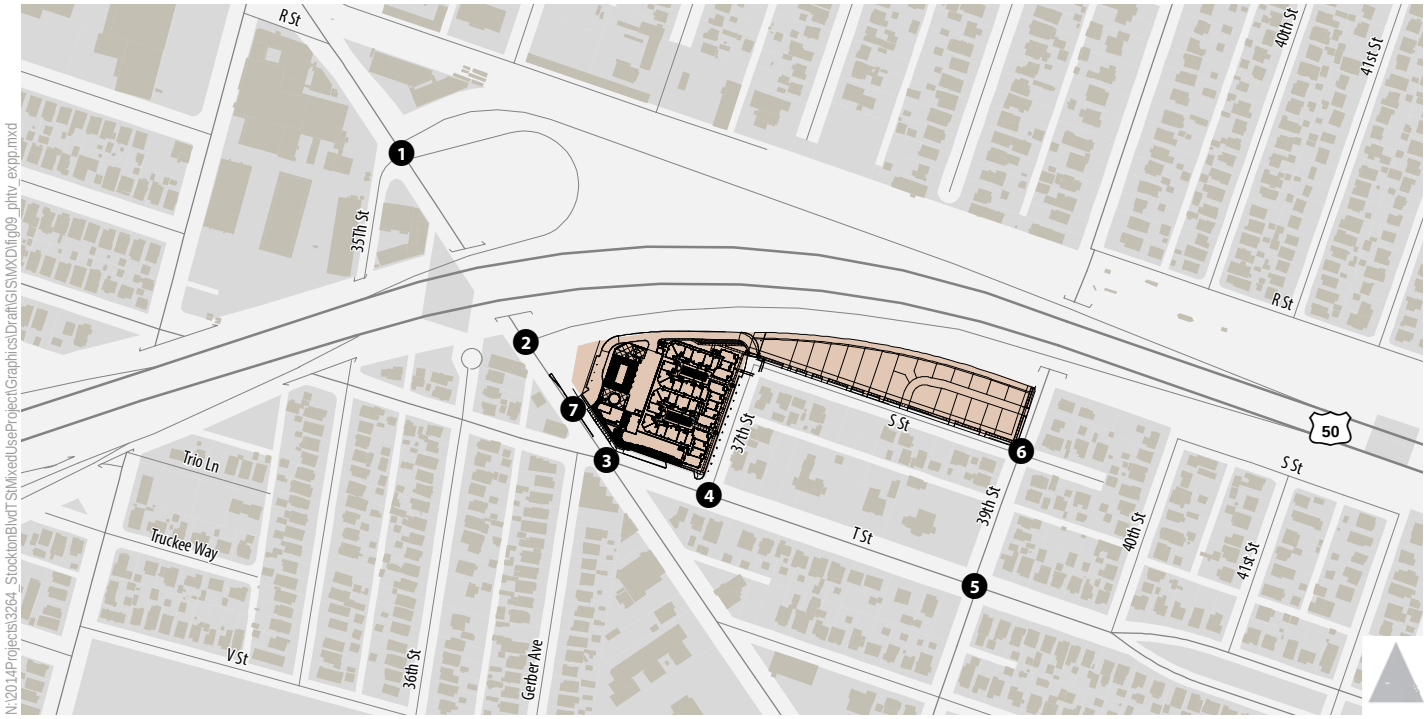


Outbound Project Trip Distribution

Project Site

Figure 8B

Outbound Project Trip Distribution



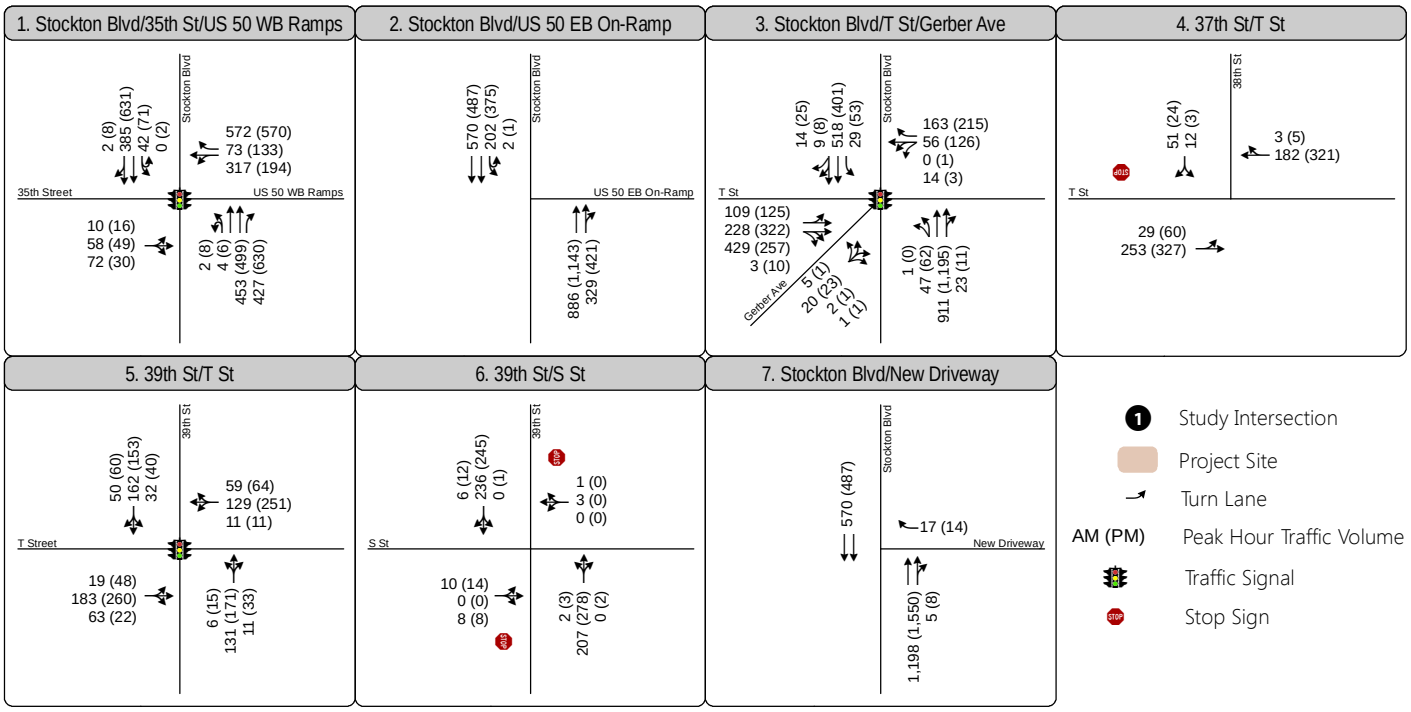


Figure 9

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Project Conditions

INTERSECTION OPERATIONS

Table 6 displays the results at the study intersections under "existing plus project" conditions. Refer to Appendix C for technical calculations. This table indicates the following:

- During the PM peak hour, the average delay at the Stockton Boulevard/T Street intersection would increase from 56 to 71 seconds per vehicle. Operations would remain at LOS E.
- The project would cause additional delays during the PM peak hour for the southbound left-turn (yield-controlled) movement at the US 50 EB ramps/Stockton Boulevard intersection. This occurs as a result of the project adding 25 additional northbound trips, which causes fewer gaps for this movement.

TABLE 6:
INTERSECTION OPERATIONS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Control	Existing Conditions				Existing Plus Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1. Stockton Boulevard/35th Street/US 50 WB Ramps	Traffic Signal	23.5	C	43.4	D	22.5	C	42.2	D
2. Stockton Boulevard/US 50 EB Ramps	Uncontrolled	1.9 (10.5)	A (B)	14.8 (52.1)	B (F)	2.1 (11.8)	A (B)	17.0 (61.5)	C (F)
3. Stockton Boulevard/T Street/Gerber Avenue	Traffic Signal	25.9	C	55.9	E	29.3	C	71.2	E
4. T Street/37th Street	Side-Street Stop	2.1 (6.2)	A (A)	12.9 (24.8)	B (C)	2.3 (5.5)	A (A)	8.7 (21.6)	A (C)
5. T Street/39th Street	Traffic Signal	14.1	B	14.8	B	14.4	B	14.8	B
6. S Street/39th Street	Side-Street Stop	0.7 (3.5)	A (A)	1.2 (7.4)	A (A)	0.9 (5.9)	A (A)	1.0 (7.6)	A (A)

Notes:

[1] For signalized intersections, the LOS is based on the average delay experienced by all vehicles passing through the intersection. For uncontrolled and side-street stop controlled intersections, the delay and LOS for the worst case movement (in parentheses) is reported along with the average delay for the entire intersection and for the overall movement not in parentheses.

Source: Fehr & Peers, 2015

Table 7 displays the maximum expected vehicle queues during the PM peak hour at the Stockton Boulevard/T Street intersection under "existing plus project" conditions. This table indicates the following:

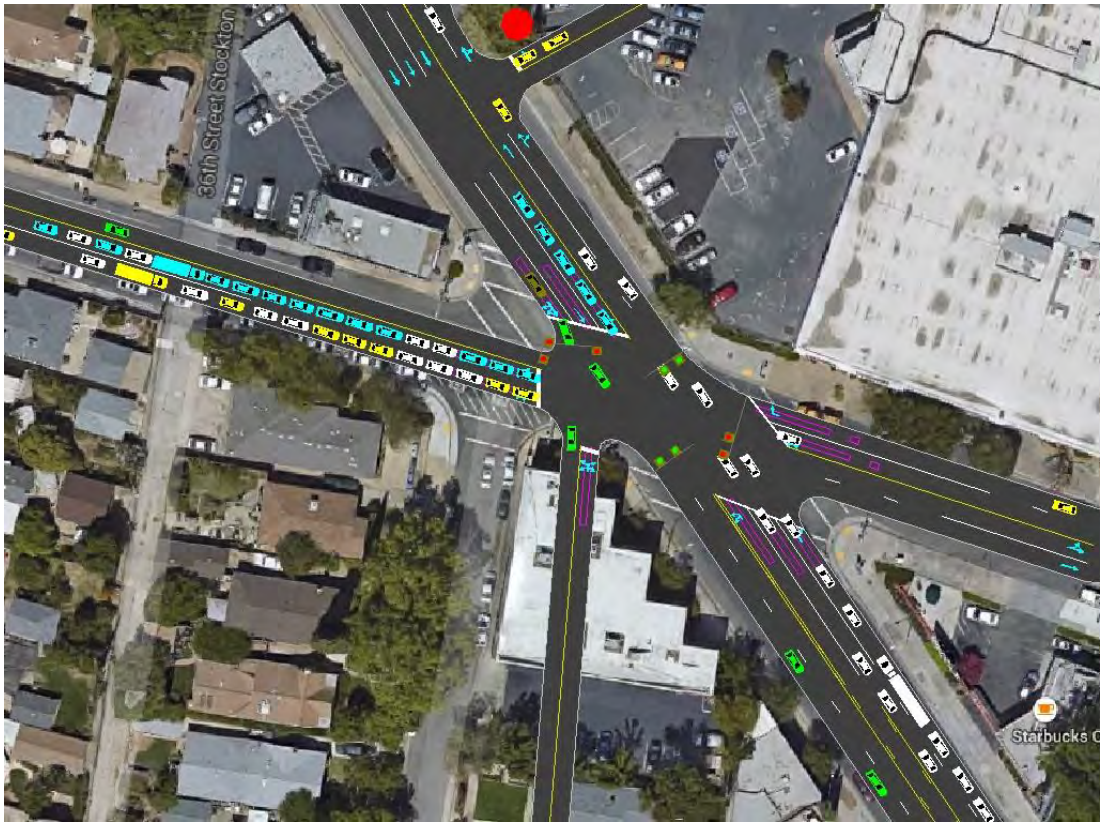
- The project would cause the northbound outside through lane maximum queue to increase by 10 vehicles (250 feet at 25 feet per vehicle). This occurs as a result of the project adding northbound traffic to Stockton Boulevard.
- The project would cause the southbound left-turn lane maximum queue to increase from two to five vehicles (50 to 125 feet). The following page shows a SimTraffic screenshot of this queuing situation.
- The project would cause the westbound left/through and right-turn lane maximum queues to spill back into the 37th Street/T Street intersection. The following page also shows a SimTraffic screenshot of this queuing situation.

TABLE 7:
PM PEAK HOUR QUEUING ANALYSIS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Available Storage	Movement	Maximum Vehicle Queue	
			Existing Conditions	Existing Plus Project Conditions [2]
3. Stockton Boulevard / T St / Gerber Avenue	1,100 ft. per lane [3]	NB TH/RT	750 ft.	1,000 ft.
	570 ft. [4]	EB LT/TH	375 ft.	525 ft.
	375 ft.	EB TH/RT	350 ft.	400 ft.
	800 ft. per lane	SB TH/RT	150 ft.	150 ft.
	175 ft.	SB LT	50 ft.	125 ft.
	200 ft. [5]	WB LT/TH	175 ft.	200 ft. + 75 ft. [7]
	130 ft. [6]	WB RT	200 ft.	

Notes:
1. Observed queues during PM peak hour on Tuesday October 21, 2014. Values rounded to the nearest 25 ft.
2. Modeled results based on maximum predicted queue length reported from SimTraffic. Rounded to nearest 25 feet.
3. Distance to upstream signalized Stockton Boulevard/39th Street intersection. Maximum queue reported for outside northbound travel lane, which has more lengthy queues due to motorists' lane selection in advance of US 50/Stockton Boulevard interchange.
4. Distance to upstream T Street/35th Street intersection.
5. Distance to upstream T Street/37th Street intersection.
6. Distance to first upstream on-street parking space on T Street.
7. Maximum queue extends into the T Street/37th Street intersection, and includes an additional three vehicles queued on the WB through and SB approaches to the intersection.

Source: Fehr & Peers, 2015



SimTraffic screenshot showing a southbound left-turn queue of five vehicles

SimTraffic screenshot showing westbound queue extending into 37th Street/T Street intersection

NEIGHBORHOOD STREETS

The effects of the project on traffic levels on neighborhood streets in the project vicinity were analyzed under "existing plus project" conditions. **Table 8** displays the projected increase in PM peak hour trips resulting from the project on various residential streets. Data is shown for the PM peak hour (versus AM peak hour) because volumes are greater during the PM peak hour on nearly every study roadway.

This table indicates that the project would cause a one to three percent increase in traffic on segments of T Street and 39th Street east of Stockton Boulevard. Project-related increases in traffic on 37th Street and S Street are greater, both in terms of the volume added and the percentage increase. However, both streets would continue carrying less than 100 vehicles during the PM peak hour, which is well within the comfortable carrying capacity of each street.

TABLE 8:
NEIGHBORHOOD STREET TRAFFIC VOLUMES – EXISTING PLUS PROJECT CONDITIONS

Segment	PM Peak Hour Volume (in Both Directions)			
	Existing Conditions [1]	Project-Related Traffic Increase	Existing Plus Project Conditions [2]	% Increase
T Street east of 37th Street	644	12	656	1.9%
T Street east of 39th Street	652	7	659	1.1%
39th Street north of S Street	535	15	550	2.8%
39th Street south of T Street	401	4	405	1.0%
37th Street north of T Street	30	62	92	206.7%
S Street east of 37th Street	21	16	37	76.2%

Notes:

[1] Existing volume based on counts collected in October 2014 while schools were in session.

[2] Existing Plus Project volume based on project's expected travel characteristics (including trip generation, distribution, and route assignment through neighborhoods).

Source: Fehr & Peers, 2015

4. CUMULATIVE CONDITIONS

This chapter describes cumulative transportation conditions in the project vicinity assuming development of the proposed project. All technical calculations are contained in Appendix D.

TRAFFIC FORECASTS

Fehr & Peers used the most recent version of SACOG's travel demand model to develop traffic forecasts in the study area. This model has recently been used for other studies in the City such as the Entertainment Sports Center (ESC) EIR, I Street Bridge Study, and Downtown Transportation Study. Fehr & Peers added additional land use and roadway network detail to the model to better match the existing roadway system and loading of trips onto streets.

A forecasting procedure known as the "difference method" was utilized to develop the cumulative background forecasts. This method accounts for potential differences between the base year model and existing traffic counts that could otherwise transfer to the future year model and traffic forecast. This forecasting procedure is calculated as follows:

Cumulative Traffic Forecast = Existing Volume + (Cumulative TDM Forecast – Base Year TDM Forecast)

Trips associated with the proposed project were then added to the cumulative forecast using the same trip generation, distribution, and assignment procedures described in Chapter 3. **Figure 10** displays the resulting cumulative plus project peak hour traffic forecasts at the study intersections. As shown, the same lane configurations and traffic controls as currently exist were assumed at the study intersections since there are no planned roadway improvements in the area.

A comparison of Figures 4 and 10 indicates that the Stockton Boulevard/T Street intersection is forecast to accommodate 23 percent more PM peak hour traffic under cumulative plus project conditions than currently exists. About 11 percent of this growth is attributable to the proposed project, while 89 percent of the growth is attributable to increases in ambient or background travel.

Like most travel demand models, the SACOG model is not sensitive to the effects of ramp metering on travel time and route choice. The model projected a net increase of 72 vehicles being added to the WB loop on-ramp. An even greater increase (184 PM peak hour vehicles) was projected for the EB diagonal on-ramp, which is not currently ramp metered. However, access to this on-ramp is adversely affected by queuing caused by ramp metering on the WB loop on-ramp. Thus, the cumulative forecasts shown in Figure 10 are considered conservative and may overstate the actual growth in traffic expected on the Stockton Boulevard corridor.

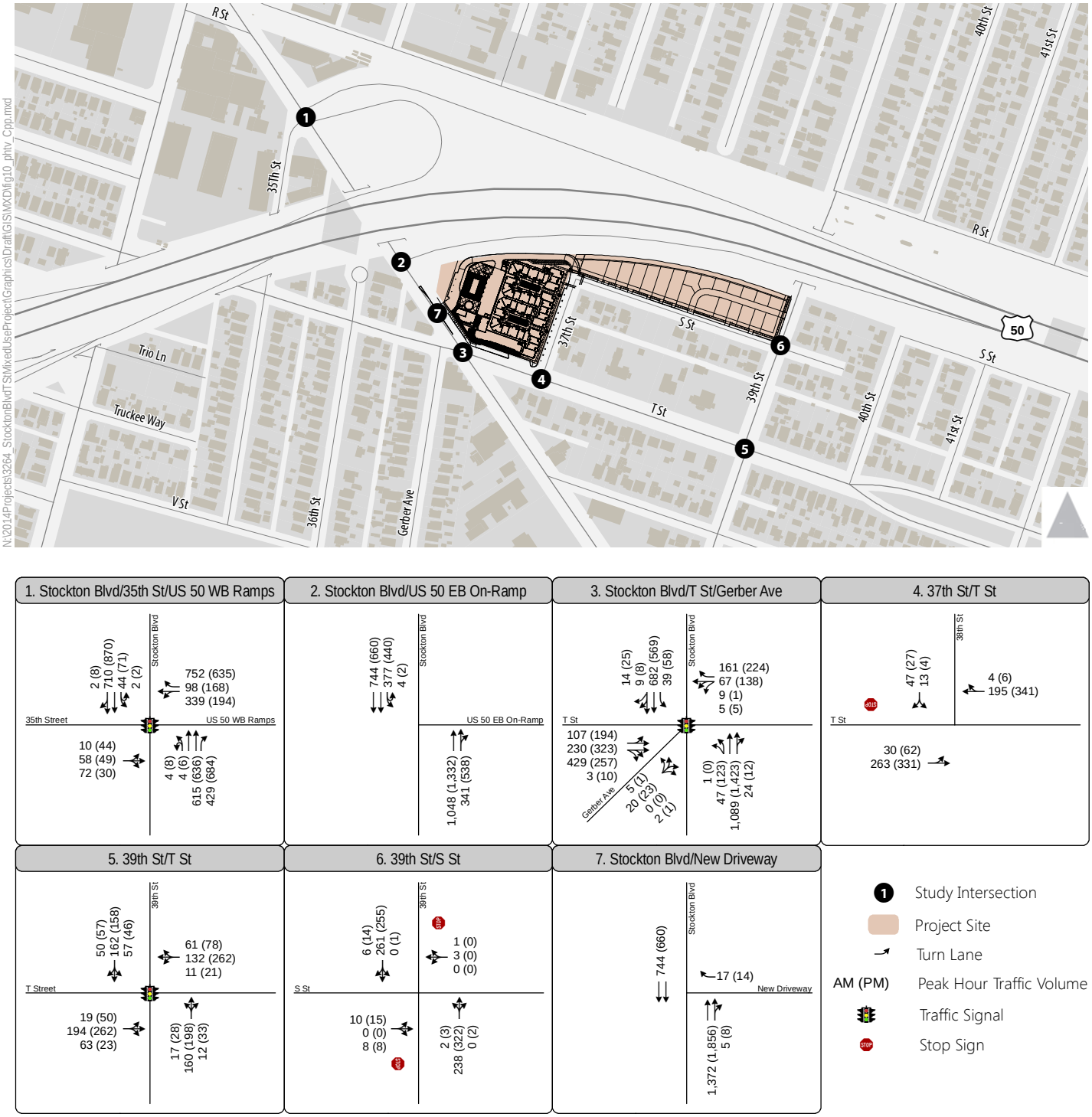


Figure 10

Peak Hour Traffic Volumes and Lane Configurations - Cumulative Plus Project Conditions

INTERSECTION OPERATIONS

Table 9 displays the operational results at the study intersections under cumulative plus project conditions. This table indicates that operations at the Stockton Boulevard/T Street intersection are expected to operate at LOS F during the PM peak hour.

TABLE 9:
INTERSECTION OPERATIONS – CUMULATIVE PLUS PROJECT CONDITIONS

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1. Stockton Boulevard/35th Street/US 50 WB Ramps	Signal	31.1	C	55.7	E
2. Stockton Boulevard/US 50 EB Ramps	Uncontrolled	3.7 (18.4)	A (C)	24.3 (108.0)	C (F)
3. Stockton Boulevard/T Street/Gerber Avenue	Signal	37.0	D	185.2	F
4. T Street/37th Street	Side-Street Stop	2.1 (6.3)	A (A)	9.6 (22.3)	A (C)
5. T Street/39th Street	Signal	15.7	B	16.6	B
6. S Street/39th Street	Side-Street Stop	0.8 (8.0)	A (A)	1.0 (7.1)	A (A)

Notes:

[1] For signalized intersections, the LOS is based on the average delay experienced by all vehicles passing through the intersection. For uncontrolled and side-street stop controlled intersections, the delay and LOS for the worst case movement (in parentheses) is reported along with the average delay for the entire intersection and for the overall movement not in parentheses.

Source: Fehr & Peers, 2015

Due to the severity of congestion under this scenario, maximum vehicle queue estimates are not provided.

TRIP GENERATION COMPARISON

If the proposed project is not approved and constructed, then it is probable that the existing office building would remain and have new tenants. **Table 10** compares the expected vehicular trip generation between the existing office building and the proposed project on a daily basis, and during the AM and PM peak hours. This table shows that the proposed project would generate 35 percent less AM peak hour traffic and 17 percent less PM peak hour traffic when compared to the trip generation potential of the existing office building. On a daily basis, the proposed project would generate 7 percent less traffic than the office building.

However, the proposed project would generate substantially greater number of AM peak hour outbound and PM peak hour inbound trips when compared to the office building due to the differing directional travel characteristics between residential and office projects.

TABLE 10:
TRIP GENERATION COMPARISON

Scenario	External Daily Vehicle Trips	External AM Peak Hour Vehicle Trips			External PM Peak Hour Vehicle Trips		
		In	Out	Total	In	Out	Total
Proposed Project	1,178	19	64	83	68	41	109
Office Building (120,000 sq. ft.)	1,099	113	15	128	22	110	132
Difference [1]	**+79 (+7%)**	**-94 (-83%)**	**+ 49 (+327%)**	**-45 (-35%)**	**+ 46 (+209%)**	**-69 (-63%)**	**-23 (-17%)**

Notes:

1. Difference in trips calculated as follows: Plus Project minus No Project. Results shown in green represent a reduction in vehicle trips due to the proposed land use change. Results shown in red represent an increase in vehicle trips due to the proposed land use change.

5. PROJECT ACCESS AND CIRCULATION EVALUATION

This chapter analyzes the following access provisions for the proposed project:

- Proposed on-street angled parking on T Street
- Right-turn only driveway on Stockton Boulevard
- Full access driveway on 37th Street
- Single-family residence driveway locations
- Proposed lane width modifications on Stockton Boulevard

In addition, the project site plan's proposed on-site circulation system is also reviewed. The recommendations from this chapter are illustrated on **Figure 11**.

PROPOSED ON-STREET PARKING ON T STREET

The project site plan shows eight (8) traditional angled parking spaces along T Street between Stockton Boulevard and 37th Street. The City of Sacramento has an on-street angled parking program[3] for streets, which begins with a request petition followed by a flow chart that outlines the request and evaluation process. The flow chart includes several minimum criteria for considering angled parking. One criterion is that the average daily traffic (ADT) volume not exceed 4,000 vehicles. Although an ADT value is not available for this segment of T Street, it is estimated to carry 6,700 vehicles per day based on an industry-standard assumption that 10 percent of the daily volume occurs during the PM peak hour. Therefore, the placement of angled parking on this segment of T Street would conflict with this minimum requirement. Additionally, it is noted that angled parking would not function very well from an operational perspective due to lengthy westbound right-turn queues that would frequent block ingress/egress to the spaces. Accordingly, Fehr & Peers recommends the following:

- Replace the proposed angled parking on T Street with parallel parking and limit the length of parallel parking so that spaces (likely to be three or four total) do not encroach into the right-turn lane.

Motorists on eastbound T Street may be tempted to perform a u-turn at 37th Street to access on-street parking on westbound T Street. The width of the T Street/37th Street intersection is sufficient so as to allow this movement. However, any vehicles performing this movement would effectively block continuing eastbound through traffic. And the u-turn movement may experience additional delays due to westbound T Street traffic queuing back from Stockton Boulevard into the intersection. Accordingly, Fehr & Peers recommends the following:

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3 Found at: http://portal.cityofsacramento.org/Public-Works/Transportation/Programs-and-Services/Angle-Parking

- Post a "No U-turn" sign in the median planter island that is visible to eastbound traffic approaching the T Street/37th Street intersection.

RIGHT-TURN ONLY DRIVEWAY ON STOCKTON BOULEVARD

According to the SimTraffic results, this driveway is expected to have a maximum queue length of three (3) outbound vehicles (or 75 feet). The site plan indicates that in excess of 75 feet of storage is provided on-site. Therefore, no queuing problems are expected at this driveway.

The proposed driveway is 30 feet wide, which is sufficient to accommodate simultaneous inbound and outbound traffic. This driveway meets all applicable dimensions and spacing requirements as set forth in the City's zoning code (**http://www.qcode.us/codes/sacramento/).**

FULL ACCESS DRIVEWAY ON 37TH STREET

The most recent project site plan (dated 1/22/2015) includes project access from the 37th Street/S Street intersection. The proposed design of a conventional three-way intersection represents an improvement over the previous configuration in which the driveway was a 'cut' within the curb radius of the existing intersection. The proposed driveway is 26 feet wide, which is sufficient to accommodate simultaneous inbound and outbound traffic. Crosswalks are proposed on all approaches to the intersection. For these reasons, operational or safety problems are not expected at this driveway, and no recommendations are offered.

SINGLE-FAMILY RESIDENCE DRIVEWAY LOCATIONS

The project site plan has been modified to eliminate three (3) single-family residences with driveways that were proposed to front onto 39th Street. Access to these areas would instead be provided by a new internal street that extends between S Street and 39th Street.

PROPOSED LANE WIDTH MODIFICATIONS ON STOCKTON BOULEVARD

The project site plan indicates that the width of the travel lanes on Stockton Boulevard would be modified such that a narrow 2-foot raised median could be constructed northerly from T Street for a distance of about 140 feet. This would restrict movements at the project driveway to right-turns only. To accommodate the raised median, the width of the outside southbound through lane is proposed to be decreased from 18 to 14 feet. While this lane width is typically more than adequate, the southbound Stockton Boulevard right-turn movement onto westbound T Street requires a greater than 90-degree turn. Accordingly, Fehr & Peers recommends the following:

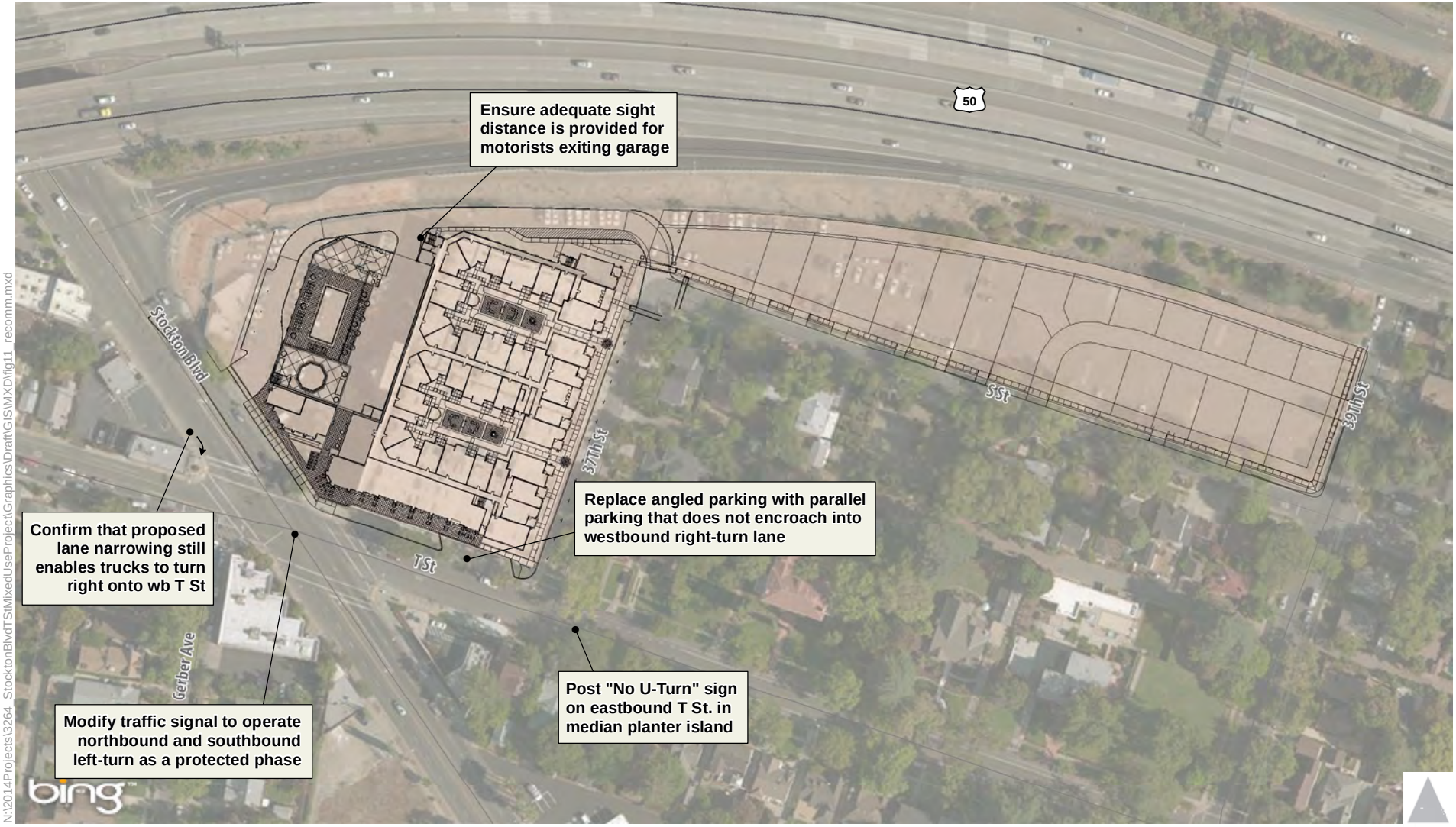
- The project applicant should confirm that the proposed lane width modifications along Stockton Boulevard provide adequate lane alignments and still enable trucks to turn right onto westbound T Street.

REVIEW OF ON-SITE CIRCULATION

An internal drive aisle would connect the Stockton Boulevard driveway with the S Street driveway. This internal roadway would generally be 20-feet wide with the exception of widening to 25 feet along the curvature in the northwest quadrant of the project site.

Motorists exiting the parking garage access (on the north side of the project site) could potentially have an impeded line of sight of oncoming driveway traffic due to trees (looking to the left) and a trash enclosure (looking to the right). Accordingly, Fehr & Peers recommends the following:

- Ensure that adequate sight distance is provided at parking garage access.



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Project Site

Figure 11

6. IMPACTS AND MITIGATION MEASURES

This chapter evaluates the significance of project impacts using the criteria described in Chapter 1. Where impacts are deemed significant according to the criteria, mitigation measures are recommended to lessen their significance.

EVALUATION OF POTENTIAL INTERSECTION IMPACTS

Table 6 indicates that the proposed project would cause the average delay at the Stockton Boulevard/T Street intersection to increase from 56 to 71 seconds per vehicle during the PM peak hour. Since LOS E operations would be maintained and are considered acceptable at this location, the added delay, in and of itself, is not considered a significant impact. However, *the effects of the project on increased vehicle queuing and the ability to safely pass through the Stockton Boulevard/T Street intersection are considered significant.*

The southbound left-turn is the primary movement of concern. During the PM peak hour, the project would cause the volume in this turn lane to increase from 33 to 53 vehicles. Only 25 percent of existing left-turn traffic is able to perform this movement during the green indication, with 75 percent making this movement during the yellow or all-red phase. On average, there are about 40 cycles per hour at this intersection. The addition of 20 project trips means an average of one more vehicle turning left every other cycle. This additional traffic would cause more frequent instances in which two vehicles simultaneously wait in the southbound left-turn lane throughout the green indication, and then both turn left (i.e,, 'sneakers") during the yellow or all-red phase. [4]

Impact TR-1: The addition of project traffic would cause adverse queuing effects and safety concerns in the southbound left-turn lane at the Stockton Boulevard/T Street intersection.

Mitigation Measure TR-1

The project applicant shall work with the City of Sacramento to modify the traffic signal at the Stockton Boulevard/T Street intersection to operate the northbound and southbound left-turns with protected phasing.

Table 11 describes proposed Mitigation Measure TR-1 in detail including timing, responsibility, and operational benefits. The effectiveness of this mitigation measure was tested using SimTraffic. The effectiveness of this mitigation was tested assuming a 4.5-second protected left-turn phase, followed by a 3.5-second yellow phase. In addition, the maximum green time for the north-south through phase was increased by eight seconds and east-west through phase maximum green time was increased by six seconds based on

[4] Although the existing office building would generate a greater number of total trips when compared to the project, the office building would not exacerbate this situation to the same degree as the proposed project. This is because the majority of inbound office trips are during the AM peak hour, and the majority of outbound office trips are during the PM peak hour.

preliminary SimTraffic results that showed otherwise substantially increased queuing. The net result was the cycle length increasing from 90 to 110 seconds.

Table 12 displays the the effectiveness of this mitigation measure under existing plus project conditions. As shown, operations would remain at an acceptable LOS E with this mitigation in place. The maximum vehicle queue in the southbound left-turn lane would be reduced, while the maximum vehicle queue in the northbound through lanes would increase.

This mitigation was also tested under cumulative plus project conditions. Operations would remain at LOS F with this mitigation in place. However, the average delay would decrease by four seconds.

TABLE 11:
DETAILS OF MITIGATION MEASURE TR-1

Topic	Discussion
Physical / Operational Improvements	Mitigation Measure TR-1 would convert the northbound and southbound left-turn movements from permitted to protected. Instead of waiting for a gap in opposing traffic to perform their turn, motorists would turn left during a protected left-turn phase (in which a green arrow would be shown). This mitigation would require the replacement of the signal poles in the southwest and northeast quadrants of the intersection with larger poles that can accommodate longer mast arms and a greater load. Modifications to the Type 1-B poles in the southeast and northwest quadrants would also be necessary. A preliminary review of the proposed improvements suggests they are feasible.
Mitigation Effectiveness	Level of Service: LOS E is maintained (see Table 12). Queuing: Maximum expected queue would not exceed the available storage in the southbound left-turn lane (see Table 12). Safety: Benefits provided by operating left-turn with protected signal phase.
Timing	To be completed prior to building occupancy
Responsibility	To be implemented by project applicant.

Source: Fehr & Peers, 2015

Mitigation Measure TR-1 would reduce Impact TR-1 to ***less than significant***.

TABLE 12:
MITIGATION MEASURE EFFECTIVENESS AT STOCKTON BOULEVARD/T STREET INTERSECTION – EXISTING PLUS PROJECT CONDITIONS

Intersection	Performance Standard		Available Storage	PM Peak Hour		
				Existing Conditions	Existing Plus Project Conditions	
					No Mitigation	With Protected Left-Turn Phasing [2]
Stockton Blvd. Ln / T Street / Gerber Ave.	Overall Average Delay		--	55.9	71.2	68.2
	Overall LOS		--	E	E	E
	Maximum Queue [1]	SB Left-Turn Lane	175 ft.	25 ft.	125 ft.	50 ft.
		NB Through/ Right Lane	1,100 ft.	750 ft.	1,000 ft.	875 ft.

Notes:

[1] All queues are expressed on a 'per lane" basis. Modeled results based on 95th percentile queue length reported from SimTraffic. Queue lengths are rounded to 25' increments based on an average car length of 25'.

[2] This mitigation test consists of adding a protected phase for the northbound and southbound left-turn lanes (refer to previous text for detailed signal timing parameters).

Source: Fehr & Peers, 2015.

Project impacts at this intersection under cumulative conditions are considered ***less than significant*** because the No Project condition (i.e., office building remains and is occupied by tenants) would cause greater increases in delays due to its greater AM and PM peak hour trip generation.

The average delay on the yield-controlled US 50 EB on-ramp/Stockton Boulevard intersection southbound left-turn movement would increase from 52 to 62 seconds per vehicle with the project. This represents a degradation of LOS F conditions. The increase in delay at this Caltrans-maintained intersection is not considered a significant impact because operations are at LOS F due to Caltrans operating a ramp meter on the westbound loop on-ramp. If this ramp meter were not in operation, this yield-controlled movement would operate at an acceptable LOS D. Thus, by operating the westbound loop on-ramp, Caltrans has decided to accept LOS F conditions at the US 50 EB on-ramp/Stockton Boulevard intersection.

EVALUATION OF BICYCLE IMPACTS

The proposed project would not interfere with any existing bicycle facilities. It would construct a Class II bicycle lane in the westbound direction of T Street approaching Stockton Boulevard. It would also not preclude construction of any new lanes such as a Class II lane on T Street, or a future Class II lane planned on Stockton Boulevard south of T Street. The project would include a 'bike lounge' and bicycle parking along its frontage on Stockton Boulevard. Proposed project impacts to bicycle facilities are considered ***less-than-significant***. Therefore, mitigations are not required.

EVALUATION OF PEDESTRIAN IMPACTS

The proposed project would construct a pedestrian plaza area along its frontages on Stockton Boulevard and T Street. The proposed project would also construct a new five-foot wide sidewalk on the west side of 37th Street with gated pedestrian linkages into the apartment courtyards. It would also construct a sidewalk along the northern driveway between 37th Street and the parking garage entry. The proposed project would construct a new five-foot wide sidewalk on the north side of S Street. The project would provide accessible and safe pedestrian connections between its buildings and adjacent streets and transit facilities. The project would not disrupt existing or planned pedestrian facilities or conflict with adopted City pedestrian plans, guidelines, policies, or standards. For these reasons, proposed project impacts to pedestrian facilities are considered ***less-than-significant***. Therefore, mitigations are not required.

EVALUATION OF POTENTIAL TRANSIT IMPACTS

According to Table 4, the proposed project could generate 11 new transit riders during the AM peak hour and 13 new transit riders during the PM peak hour. These riders may use light rail via the 39th Street Gold line stop, public bus (via Routes 38, and 212/213/214), and the Capital City Hospital Shuttle, which transports employees, patients, and visitors to the Mercy, Sutter, UC Davis Medical Centers located in Midtown and East Sacramento. Each of these routes can be accessed via existing pedestrian facilities including sidewalks and crosswalks. Since operations would remain at an acceptable LOS E at the Stockton Boulevard/T Street intersection, the project would not adversely affect public transit operations. The project would not disrupt existing or planned transit facilities or conflict with adopted City transit plans, guidelines, policies, or standards. For these reasons, proposed project impacts to transit facilities are considered ***less-than-significant***. Therefore, mitigations are not required.

EVALUATION OF POTENTIAL EMERGENCY VEHICLE ACCESS IMPACTS

The proposed project would not result in inadequate emergency access during construction and/or operation. The Stockton Boulevard/T Street intersection features emergency vehicle pre-emption on all four approaches. For these reasons, proposed project impacts to emergency vehicle access are considered ***less-than-significant***. Therefore, mitigations are not required.

EVALUATION OF POTENTIAL CONSTRUCTION IMPACTS

Construction of the proposed project would generate a variety of truck and employee trips during demolition of the existing office building, and construction of the proposed project. Since the magnitude of these trips during peak hours would be less than that of the proposed project, absolute impacts (in terms of delay and queuing) when compared to project operations would not be significant. Construction staging and lane closures could cause adverse effects if not carefully planned. Thus, the project could potentially cause a temporary but prolonged impact due to lane closures, traffic hazards to bikes/pedestrians, damage to roadbed, or truck traffic on roadways not designated as truck routes. For these reasons, proposed project impacts during construction are potentially ***significant***.

Mitigation TR-2

The project applicant shall develop a Construction Traffic Management Plan to the satisfaction of the City's Community Development Department. The plan would include items such as: the number and size of trucks per day, expected arrival/departure times, truck circulation patterns, location of truck staging areas, location/amount of employee parking, and the proposed use of traffic control/partial street closures on public streets. The overall goal of the Construction Traffic Management Plan would be to minimize traffic impacts to public streets and maintain a high level of safety for all roadway users. The Construction TMP shall adhere to the following performance standards throughout project construction:

1) *Delivery trucks do not idle/stage on Stockton Boulevard and T Street.*
2) *With the exception of trucks coming from local destinations via 39th Street, all delivery trucks shall use Stockton Boulevard to access the site.*
3) *Any lane closures on northbound Stockton Boulevard during the demolition of the existing office building or proposed project construction are limited to a single lane during off-peak hours (9:00 AM to 2:30 PM).*
4) *Roadways, sidewalks, crosswalks, and bicycle facilities shall be maintained clear of debris (e.g., rocks) that could otherwise impede travel and impact public safety.*

Implementation of this mitigation measure would reduce this impact to a ***less than significant*** level.

Each of the above conclusions regarding the significance of project impacts applies to both project-specific impacts and cumulatively considerable impacts.

APPENDIX A: EXISTING INTERSECTION CONDITIONS

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton Blvd/35th St-WB HWY 50 ramps	Signal	2,382	2,405	101.0%	118	2,240	2,644	23.5	4.9	16.9	32.6	C
2	Stockton Blvd/none-EB HWY 50 on ramp	Uncontrolled	1,944	1,949	100.2%	90	1,824	2,080	10.5	2.0	8.5	14.2	B
4	37th St-none/T St	Side-street Stop	478	467	97.7%	66	344	560	6.2	4.2	0.0	14.7	A
5	39th St/T St	Signal	846	832	98.3%	54	724	920	14.1	1.2	12.1	16.6	B
6	39th St/S St	Side-street Stop	457	444	97.2%	45	380	516	3.5	5.0	0.0	12.8	A
3	Stockton Blvd/T St	Signal	2,548	2,540	99.7%	91	2,372	2,664	25.9	5.7	20.7	40.0	C

Network Summary	
Total Demand Volume (veh/hr)	8,655
Total Volume Served (veh/hr)	8,636
Percent Served	99.8%
GEH Statistic	0.2

Intersection 1 **Stockton Blvd/35th St-WB HWY 50 ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	6	8	126.7%	37.0	23.2	D
	Through	443	443	100.0%	14.9	2.0	B
	Right Turn	410	410	99.9%	7.3	0.9	A
	Subtotal	859	860	100.1%	11.5	1.4	B
SB	Left Turn	42	44	103.8%	30.3	12.6	C
	Through	380	387	101.9%	14.0	2.2	B
	Right Turn	2	2	100.0%	0.4	1.4	A
	Subtotal	424	433	102.1%	15.6	2.0	B
EB	Left Turn	10	11	108.0%	35.2	18.2	D
	Through	58	62	106.2%	40.5	18.5	D
	Right Turn	72	61	85.0%	20.2	12.2	C
	Subtotal	140	134	95.4%	31.0	15.7	C
WB	Left Turn	314	312	99.5%	53.6	16.1	D
	Through	73	69	94.8%	54.1	14.8	D
	Right Turn	572	597	104.3%	25.5	11.2	C
	Subtotal	959	978	102.0%	36.5	11.1	D
Total		2,382	2,405	101.0%	23.5	4.9	C

Intersection 2 **Stockton Blvd/none-EB HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	857	859	100.3%	1.0	0.1	A
	Right Turn	321	317	98.7%	1.0	0.1	A
	Subtotal	1,178	1,176	99.8%	1.0	0.1	A
SB	Left Turn	202	195	96.4%	10.5	2.0	B
	Through	564	578	102.5%	0.9	0.1	A
	Right Turn						
	Subtotal	766	773	100.9%	3.3	0.6	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,944	1,949	100.2%	1.9	0.3	A

Intersection 4 **37th St-none/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	7	10	142.9%	6.2	4.2	A
	Through						
	Right Turn	20	18	90.0%	3.0	1.0	A
	Subtotal	27	28	103.7%	4.2	1.1	A
EB	Left Turn	15	16	106.7%	3.5	1.4	A
	Through	253	244	96.4%	2.5	0.4	A
	Right Turn						
	Subtotal	268	260	97.0%	2.5	0.4	A
WB	Left Turn						
	Through	180	174	96.4%	1.0	0.1	A
	Right Turn	3	5	173.3%	0.4	0.7	A
	Subtotal	183	179	97.7%	1.0	0.2	A
Total		478	467	97.7%	2.1	0.3	A

Intersection 5 **39th St/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	6	5	80.0%	10.9	11.6	B
	Through	131	146	111.1%	12.0	2.1	B
	Right Turn	11	13	116.4%	4.6	3.5	A
	Subtotal	148	163	110.3%	11.7	1.9	B
SB	Left Turn	30	23	76.0%	30.4	7.5	C
	Through	161	158	98.1%	27.9	2.1	C
	Right Turn	49	45	91.4%	19.8	3.3	B
	Subtotal	240	226	94.0%	26.6	2.3	C
EB	Left Turn	19	14	73.7%	10.5	6.6	B
	Through	181	171	94.4%	10.6	3.0	B
	Right Turn	60	62	102.7%	8.2	2.3	A
	Subtotal	260	246	94.8%	10.0	2.5	B
WB	Left Turn	11	17	152.7%	9.3	4.6	A
	Through	128	126	98.8%	7.4	1.5	A
	Right Turn	59	53	90.2%	3.2	1.6	A
	Subtotal	198	196	99.2%	6.5	1.3	A
Total		846	832	98.3%	14.1	1.2	B

Intersection 6 **39th St/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	2	1	60.0%	0.9	1.6	A
	Through	207	212	102.2%	1.1	0.2	A
	Right Turn						
	Subtotal	209	213	101.8%	1.1	0.2	A
SB	Left Turn						
	Through	235	218	92.6%	0.3	0.1	A
	Right Turn	4	4	90.0%	0.0	0.1	A
	Subtotal	239	221	92.6%	0.3	0.1	A
EB	Left Turn						
	Through						
	Right Turn	5	5	104.0%	2.1	1.5	A
	Subtotal	5	5	104.0%	2.1	1.5	A
WB	Left Turn						
	Through	3	2	53.3%	3.5	5.0	A
	Right Turn	1	3	320.0%	1.7	1.5	A
	Subtotal	4	5	120.0%	4.5	3.5	A
Total		457	444	97.2%	0.7	0.1	A

Intersection 0 **Side-street Stop**

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **AM Peak Hour**

Intersection 3 **Stockton Blvd/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	48	46	95.0%	41.4	7.7	D
	Through	910	923	101.5%	19.1	3.5	B
	Right Turn	22	20	89.1%	21.0	6.4	C
	Subtotal	980	988	100.9%	20.2	3.3	C
SB	Left Turn	23	21	92.2%	40.1	18.2	D
	Through	518	538	103.9%	12.6	1.0	B
	Right Turn	23	20	87.0%	8.3	4.9	A
	Subtotal	564	579	102.7%	13.4	1.2	B
EB	Left Turn	106	98	92.8%	38.2	12.7	D
	Through	224	214	95.7%	35.2	14.5	D
	Right Turn	443	436	98.4%	49.6	18.9	D
	Subtotal	773	749	96.9%	43.9	16.3	D
NE	Left Turn	25	26	104.0%	39.7	12.6	D
	Through						
	Right Turn	3	5	173.3%	29.5	22.8	C
	Subtotal	28	31	111.4%	39.6	9.6	D
WB	Left Turn	9	6	71.1%	21.9	18.1	C
	Through	52	46	87.7%	17.6	5.6	B
	Right Turn	142	140	98.9%	20.3	3.4	C
	Subtotal	203	192	94.8%	20.0	1.6	B
Total		2,548	2,540	99.7%	25.9	5.7	C

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton Blvd-Stockton/35th Street-WB HWY 50 ramps	Signal	2,804	2,651	94.6%	116	2,492	2,836	43.4	7.9	34.2	62.7	D
2	Stockton Blvd-Stockton/none-EB HWY 50 on-ramp	Uncontrolled	2,380	2,237	94.0%	107	2,076	2,380	52.1	26.7	20.9	110.7	F
4	37th Street/T Street	Side-street Stop	668	664	99.4%	66	588	772	24.8	29.6	12.6	108.8	C
5	39th Street/T Street	Signal	1,112	1,093	98.3%	78	972	1,212	14.8	8.6	10.9	39.2	B
6	39th Street/S Street	Side-street Stop	543	532	98.0%	26	496	572	7.4	2.0	5.2	12.1	A
3	Stockton Blvd-Gerber Avenue/T Street	Signal	2,767	2,639	95.4%	147	2,316	2,816	55.9	15.6	26.6	78.4	E

Network Summary	
Total Demand Volume (veh/hr)	10,274
Total Volume Served (veh/hr)	9,817
Percent Served	95.5%
GEH Statistic	4.6

Intersection 1 **Stockton Blvd-Stockton/35th Street-WB HWY 50 ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	18	128.6%	30.9	12.2	C
	Through	492	476	96.8%	19.3	2.6	B
	Right Turn	614	532	86.7%	103.0	5.5	F
	Subtotal	1,120	1,027	91.7%	63.1	3.5	E
SB	Left Turn	73	69	94.8%	76.1	47.4	E
	Through	621	600	96.6%	38.7	28.6	D
	Right Turn	8	8	95.0%	8.7	9.2	A
	Subtotal	702	676	96.4%	42.5	30.4	D
EB	Left Turn	16	20	122.5%	37.1	19.5	D
	Through	49	48	98.0%	49.6	22.0	D
	Right Turn	30	37	124.0%	32.1	28.7	C
	Subtotal	95	105	110.3%	40.9	21.7	D
WB	Left Turn	184	183	99.3%	32.3	13.3	C
	Through	133	120	90.5%	33.1	11.7	C
	Right Turn	570	540	94.7%	13.6	4.8	B
	Subtotal	887	843	95.1%	20.4	7.3	C
Total		2,804	2,651	94.6%	43.4	7.9	D

Intersection 2 **Stockton Blvd-Stockton/none-EB HWY 50 on-ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,120	1,035	92.4%	9.8	3.2	A
	Right Turn	417	374	89.7%	8.6	2.6	A
	Subtotal	1,537	1,409	91.7%	9.5	3.0	A
SB	Left Turn	376	362	96.2%	52.1	26.7	F
	Through	467	467	100.0%	1.3	0.3	A
	Right Turn						
	Subtotal	843	828	98.3%	23.6	11.8	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,380	2,237	94.0%	14.8	4.6	B

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Existing Conditions**
Volume and Delay by Movement **PM Peak hour**

Intersection 0 **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Through	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Right Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Subtotal	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
SB	Left Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Through	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Right Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Subtotal	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
EB	Left Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Through	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Right Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Subtotal	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
WB	Left Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Through	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Right Turn	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
	Subtotal	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Intersection 4 **37th Street/T Street** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	Total Delay (sec/veh) LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	1	0	40.0%	13.3	1.8	B
	Through						
	Right Turn	10	9	92.0%	24.8	29.6	C
	Subtotal	11	10	87.3%	22.0	31.2	C
EB	Left Turn	14	14	100.0%	7.7	4.8	A
	Through	326	314	96.2%	3.6	0.3	A
	Right Turn						
	Subtotal	340	328	96.4%	3.8	0.4	A
WB	Left Turn						
	Through	314	324	103.3%	22.3	51.7	C
	Right Turn	3	2	80.0%	0.4	0.7	A
	Subtotal	317	327	103.1%	22.3	51.7	C
Total		668	664	99.4%	12.9	24.5	B

Intersection 5 **39th Street/T Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	17	122.9%	39.9	75.5	D
	Through	171	173	101.1%	20.0	19.8	B
	Right Turn	33	32	97.0%	14.8	25.0	B
	Subtotal	218	222	101.8%	20.9	24.5	C
SB	Left Turn	39	34	86.2%	22.8	21.4	C
	Through	152	148	97.4%	15.3	8.5	B
	Right Turn	55	50	91.6%	12.3	13.2	B
	Subtotal	246	232	94.3%	15.7	11.0	B
EB	Left Turn	48	48	100.0%	16.1	4.7	B
	Through	259	247	95.4%	12.5	2.4	B
	Right Turn	20	14	68.0%	11.3	5.6	B
	Subtotal	327	309	94.4%	13.1	2.2	B
WB	Left Turn	11	10	90.9%	15.5	14.5	B
	Through	248	256	103.4%	12.3	4.9	B
	Right Turn	62	64	103.2%	6.1	1.4	A
	Subtotal	321	330	102.9%	11.2	4.2	B
Total		1,112	1,093	98.3%	14.8	8.6	B

Intersection 6 **39th Street/S Street** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	1	0	40.0%	0.4	1.2	A
	Through	278	282	101.6%	1.1	0.2	A
	Right Turn	2	2	80.0%	0.7	1.0	A
	Subtotal	281	284	101.2%	1.1	0.2	A
SB	Left Turn	1	1	80.0%	0.7	1.7	A
	Through	241	228	94.8%	1.0	2.4	A
	Right Turn	6	6	100.0%	0.7	2.1	A
	Subtotal	248	235	94.8%	1.0	2.4	A
EB	Left Turn	9	9	97.8%	7.4	2.0	A
	Through						
	Right Turn	5	4	80.0%	3.1	2.8	A
	Subtotal	14	13	91.4%	6.4	2.4	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		543	532	98.0%	1.2	1.2	A

Intersection 3 **Stockton Blvd-Gerber Avenue/T Street** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	62	60	96.1%	72.2	25.4	E
	Through	1,194	1,081	90.5%	70.4	28.5	E
	Right Turn	6	4	73.3%	77.4	86.8	E
	Subtotal	1,262	1,145	90.7%	70.6	28.3	E
SB	Left Turn	33	29	88.5%	133.8	104.7	F
	Through	401	405	100.9%	12.9	1.9	B
	Right Turn	33	31	93.3%	10.6	5.0	B
	Subtotal	467	465	99.5%	22.3	12.7	C
EB	Left Turn	121	116	95.9%	73.5	21.5	E
	Through	301	294	97.5%	55.9	12.7	E
	Right Turn	267	266	99.8%	47.9	12.9	D
	Subtotal	689	676	98.1%	56.0	13.8	E
NE	Left Turn	24	19	78.3%	87.0	82.6	F
	Through						
	Right Turn	1	4	400.0%	51.8	56.4	D
	Subtotal	25	23	91.2%	75.7	63.4	E
WB	Left Turn	3	1	40.0%	65.0	152.8	E
	Through	122	120	98.4%	41.5	47.2	D
	Right Turn	199	209	105.1%	52.2	30.0	D
	Subtotal	324	330	102.0%	50.4	33.0	D
Total		2,767	2,639	95.4%	55.9	15.6	E

Intersection: 3: Stockton Boulevard & T Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	NE
Directions Served	LT	TR>	<LT	R	<L	T	TR	L	T	TR>	<LR>
Maximum Queue (ft)	345	342	94	174	83	873	896	60	106	129	68
Average Queue (ft)	249	257	32	89	23	536	577	23	60	73	35
95th Queue (ft)	392	392	88	201	87	981	988	83	114	138	85
Link Distance (ft)	1512		176	176		3144	3144	117	117	117	336
Upstream Blk Time (%)				7				3	1	1	
Queuing Penalty (veh)				12				4	1	2	
Storage Bay Dist (ft)		425			100						
Storage Blk Time (%)	0	0			0	10					
Queuing Penalty (veh)	1	0			0	6					

APPENDIX B: MXD MODEL

MIXED USE TRIP GENERATION MODEL - BASIC INPUT

All shaded cells are inputs
Regular inputs (project-specific)
Inputs that may depend on regional values from census data, travel demand model, etc…

Section 1 - General Site Information

Site Name	Stockton Blvd./T Street	int/sq mi	640

		Notes / Instructions
Geographic		
Developed Area (in acres)	5	Include streets, ROW, parking lots, pocket parks. Do not include open space, vacant lots.
Number of Intersections	5	Count intersections either within or on the perimeter of the MXD. Check resulting intersections per square mile in blue above
Is Transit (bus or rail) present within the site or across the street?	Yes	
Proportion of households within 1/4 mile of a transit stop	100%	Enter as a percentage
Land Use - Surrounding Area		
Is the site in a Central Business District and/or TOD?	No	Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should be the primary factor in the selection here.
Employment within one mile of the MXD	10,000	Do not include employment within the MXD itself
Employment within a 30 minute Transit Trip (Door-to-door)	90,000	Per Sacmet Model.
Total Regional Employment	966,900	Employment at MPO or similar level — If in the 9 county Bay Area, can use the MTCJobsWithin30MinutesE
Site Demographics		
Enter Population Directly?	No	If "No", will apply average HH size factors (immediately below) to dwelling unit totals in section 2
Population		You do not need to enter population here. It will be calculated based on dwelling units below and average HH sizes.
Use Surrounding Area (Block Group) Demographics for On-Site Average HH Size?	No	If no project-specific information exists, can use block group average HH size (see below)
Use Surrounding Area (Block Group) Demographics for On-Site Average Veh Own?	No	If no project-specific information exists, can use block group average veh owned (see below)
Surrounding Area (Block Group) Demographics		
Average HH size near Site	1.75	See http://factfinder2.census.gov/
Average Vehicles Owned per Dwelling Unit near Site	1.00	See http://factfinder2.census.gov/

Section 2 - Trip Generation

Trip Equation Method

	Quantity	Units	Daily	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	PM Peak Hour
Number of Dwelling Units								
Single Family	24	DU	Log Equation	Linear Equation	Log Equation	27	29	Yes
Multi-Family	0	DU	Linear Equation	Linear Equation	Linear Equation	0	0	Yes
Townhouse (du's adjusted to match mid-rise ITE apt trip estimate)	189	DU	Log Equation	Log Equation	Log Equation	86	101	
High Rise Condo	0	DU	Linear Equation	Linear Equation	Linear Equation	0	0	Yes
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)								
General Retail other than those listed below	6	ksf	Average Rate	Average Rate	Average Rate	6	22	Yes
Supermarket	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Bank	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Health Club	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Restaurant (non-fast food)	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Fast-Food Restaurant	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Gas Station	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Auto Repair	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Home Improvement Superstore		ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Free-Standing Discount		ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Office								
Non-Medical	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Medical	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Industrial								
Light Industrial	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Manufacturing	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Warehousing / Self-Storage	0	ksf	Average Rate	Average Rate	Average Rate	0	0	Yes
Hotel (including restaurant, facilities, etc…)	0	Rooms	Average Rate	Average Rate	Average Rate	0	0	Yes
Motel		Rooms	Average Rate	Average Rate	Average Rate	0	0	Yes
Movie Theater (Theater with Matinee)			Average Rate	Average Rate	Average Rate	0	0	Yes
Movie Theater (Multiplex)	0	Screens	Average Rate	Average Rate	Average Rate	0	0	Yes
School								
University		Students	Linear Equation	Average Rate	Average Rate	0	0	Yes
High School		Students	Average Rate	Average Rate	Average Rate	0	0	Yes
Middle School		Students	Average Rate	Average Rate	Average Rate	0	0	Yes
Elementary	0	Students	Average Rate	Average Rate	Average Rate	0	0	Yes
Trips from Land uses not covered above ==>								
Daily								
AM Peak Hour								
PM Peak Hour								
Jobs in those Land Uses	0							

	Daily	AM Peak Hour	PM Peak Hour
Total "Raw" ITE Trips	**1,658**	**118**	**153**

MIXED USE TRIP GENERATION MODEL - ADVANCED OUTPUT

MODEL APPLICATION - ALL TRIPS

	Daily		AM Peak Hour		PM Peak Hour	
	HBW	HBO	HBW	HBO	HBW	HBO
Number of "Raw" ITE Trips Subject to Model						
Productions	316	847	52	50	41	69
Attractions	26	312	2	13	3	25
Total	342	1159	53	63	44	93
Predicted Probabilities:						
Productions						
Internal Capture	2.44%	2.19%	9.69%	5.95%	10.55%	6.48%
Walking External	1.90%	18.01%	2.51%	23.77%	1.90%	18.01%
Transit External	7.82%	3.18%	11.11%	6.85%	12.13%	6.37%
Attractions						
Internal Capture	7.09%	4.30%	9.69%	5.95%	10.55%	6.48%
Walking External	9.80%	29.69%	12.93%	39.18%	9.80%	29.69%
Transit External	26.75%	8.45%	37.99%	18.16%	41.47%	16.89%
Total						
Internal Capture	7.02%	4.31%	6.07%	6.35%	9.16%	6.44%
Walking External	2.24%	21.03%	2.51%	26.57%	2.12%	20.89%
Transit External	8.63%	4.54%	11.11%	8.90%	12.94%	8.97%
Number of Trips:						
Productions						
Internal Capture	12	25	2	2	2	3
Walking External	6	148	1	11	1	12
Transit External	24	26	6	3	5	4
Attractions						
Internal Capture	12	25	2	2	2	3
Walking External	1	85	0	4	0	6
Transit External	4	24	0	2	0	4
Total						
Internal Capture	24	50	**3**	**4**	**4**	**6**
Walking External	7	233	**1**	**16**	**1**	**18**
Transit External	27	50	**6**	**5**	**5**	**8**

MIXED USE TRIP GENERATION MODEL - BASIC INPUT

All shaded cells are inputs
Regular inputs (project-specific)
Inputs that may depend on regional values from census data, travel demand model, etc…

Section 1 - General Site Information

Site Name	Stockton Blvd./T Street Office	int/sq mi	640

Geographic		**Notes / Instructions**
Developed Area (in acres)	5	Include streets, ROW, parking lots, pocket parks. Do not include open space, va
Number of Intersections	5	Count intersections either within or on the perimeter of the MXD. Check resulting
Is Transit (bus or rail) present within the site or across the street?	Yes	
Proportion of households within 1/4 mile of a transit stop	100%	Enter as a percentage

Land Use - Surrounding Area		
		Answering "Yes" will reduce the HBO and NHB purpose splits for retail use to those found in smaller stores. The nature of the stores (large vs. small) should
Is the site in a Central Business District and/or TOD?	No	be the primary factor in the selection here.
Employment within one mile of the MXD	10,000	Do not include employment within the MXD itself
Employment within a 30 minute Transit Trip (Door-to-door)	90,000	Per Sacmet Model.
Total Regional Employment	966,900	Employment at MPO or similar level

If in the 9 county Ba

Site Demographics		
Enter Population Directly?	No	If "No", will apply average HH size factors (immediately below) to dwelling unit tot
Population		You do not need to enter population here. It will be calculated based on dwelling
Use Surrounding Area (Block Group) Demographics for On-Site Average HH Size?	No	If no project-specific information exists, can use block group average HH size
Use Surrounding Area (Block Group) Demographics for On-Site Average Veh Own?	No	If no project-specific information exists, can use block group average veh

Surrounding Area (Block Group) Demographics		
Average HH size near Site	1.75	See http://factfinder2.census.gov/
Average Vehicles Owned per Dwelling Unit near Site	1.00	See http://factfinder2.census.gov/

Section 2 - Trip Generation

Trip Equation Method

	Quantity	**Units**	Daily	AM Peak Hour	PM Peak Hour
Number of Dwelling Units					
Single Family	0	DU	Log Equation	Linear Equation	Log Equation
Multi-Family	0	DU	Linear Equation	Linear Equation	Linear Equation
Townhouse (du's adjusted to match mid-rise ITE apt trip estimate)	0	DU	Log Equation	Log Equation	Log Equation
High Rise Condo	0	DU	Linear Equation	Linear Equation	Linear Equation
Retail (note: if you use job units for retail, the spreadsheet will convert before applying trip rates, using the rate in section 2 which you can change)					
General Retail other than those listed below	0	ksf	Average Rate	Average Rate	Average Rate
Supermarket	0	ksf	Average Rate	Average Rate	Average Rate
Bank	0	ksf	Average Rate	Average Rate	Average Rate
Health Club	0	ksf	Average Rate	Average Rate	Average Rate
Restaurant (non-fast food)	0	ksf	Average Rate	Average Rate	Average Rate
Fast-Food Restaurant	0	ksf	Average Rate	Average Rate	Average Rate
Gas Station	0	ksf	Average Rate	Average Rate	Average Rate
Auto Repair	0	ksf	Average Rate	Average Rate	Average Rate
Home Improvement Superstore		ksf	Average Rate	Average Rate	Average Rate
Free-Standing Discount		ksf	Average Rate	Average Rate	Average Rate
Office					
Non-Medical	120	ksf	Log Equation	Log Equation	Linear Equation
Medical	0	ksf	Average Rate	Average Rate	Average Rate
Industrial					
Light Industrial	0	ksf	Average Rate	Average Rate	Average Rate
Manufacturing	0	ksf	Average Rate	Average Rate	Average Rate
Warehousing / Self-Storage	0	ksf	Average Rate	Average Rate	Average Rate
Hotel (including restaurant, facilities, etc…)	0	Rooms	Average Rate	Average Rate	Average Rate
Motel		Rooms	Average Rate	Average Rate	Average Rate
Movie Theater (Theater with Matinee)			Average Rate	Average Rate	Average Rate
Movie Theater (Multiplex)	0	Screens	Average Rate	Average Rate	Average Rate
School					
University		Students	Linear Equation	Average Rate	Average Rate
High School		Students	Average Rate	Average Rate	Average Rate
Middle School		Students	Average Rate	Average Rate	Average Rate
Elementary	0	Students	Average Rate	Average Rate	Average Rate

Trips from Land uses not covered above ==>	
Daily	
AM Peak Hour	
PM Peak Hour	
Jobs in those Land Uses	0

	Daily	AM Peak Hour	PM Peak Hour
Total "Raw" ITE Trips	**1,508**	**221**	**213**

MIXED USE TRIP GENERATION MODEL - ADVANCED OUTPUT

MODEL APPLICATION - ALL TRIPS

	Daily		AM Peak Hour		PM Peak Hour	
	HBW	HBO	HBW	HBO	HBW	HBO
Number of "Raw" ITE Trips Subject to Model						
Productions	0	0	0	0	0	0
Attractions	503	589	146	62	89	66
Total	503	589	146	62	89	66
Predicted Probabilities:						
Productions						
Internal Capture						
Walking External						
Transit External						
Attractions						
Internal Capture	2.34%	1.35%				
Walking External	5.25%	15.72%				
Transit External	26.75%	7.40%				
Total						
Internal Capture	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Walking External	5.25%	15.72%	6.93%	20.75%	5.25%	15.72%
Transit External	26.75%	7.40%	37.99%	15.91%	41.47%	14.80%
Number of Trips:						
Productions						
Internal Capture	0	0	0	0	0	0
Walking External	0	0	0	0	0	0
Transit External	0	0	0	0	0	0
Attractions						
Internal Capture	0	0	0	0	0	0
Walking External	26	93	10	13	5	10
Transit External	134	44	55	10	37	10
Total						
Internal Capture	0	0	**0**	**0**	**0**	**0**
Walking External	26	93	**10**	**13**	**5**	**10**
Transit External	134	44	**55**	**10**	**37**	**10**

APPENDIX C: EXISTING PLUS PROJECT INTERSECTION CONDITIONS

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton/35th-WB HWY 50 ramps	Signal	2,413	2,458	101.9%	107	2,284	2,652	22.5	4.8	16.1	33.3	C
2	Stockton/none-EB HWY 50 on ramp	Uncontrolled	1,987	2,038	102.6%	107	1,844	2,180	11.8	2.2	8.0	15.0	B
4	37th/T St	Side-street Stop	530	524	98.8%	31	460	564	5.5	2.7	0.0	9.0	A
5	39th/T St	Signal	856	837	97.8%	67	772	964	14.4	1.2	12.8	16.6	B
6	39th/S St	Side-street Stop	473	458	96.7%	31	424	520	5.9	3.0	0.0	10.4	A
3	Stockton/T St	Signal	2,593	2,587	99.8%	115	2,356	2,740	29.3	7.5	20.8	41.5	C

Network Summary	
Total Demand Volume (veh/hr)	8,852
Total Volume Served (veh/hr)	8,901
Percent Served	100.6%
GEH Statistic	0.5

Intersection 1 **Stockton/35th-WB HWY 50 ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	6	3	46.7%	16.8	24.6	B
	Through	453	448	98.9%	15.1	2.2	B
	Right Turn	427	432	101.2%	7.8	2.1	A
	Subtotal	886	883	99.6%	11.6	1.7	B
SB	Left Turn	42	41	98.1%	30.2	7.8	C
	Through	381	398	104.4%	14.4	1.3	B
	Right Turn	2	3	140.0%	2.2	2.5	A
	Subtotal	425	442	103.9%	15.8	1.2	B
EB	Left Turn	10	10	104.0%	37.3	13.3	D
	Through	58	66	113.1%	32.7	10.4	C
	Right Turn	72	79	109.4%	17.1	7.9	B
	Subtotal	140	155	110.6%	25.2	8.9	C
WB	Left Turn	317	330	104.0%	53.1	20.8	D
	Through	73	68	92.6%	56.2	19.1	E
	Right Turn	572	582	101.7%	21.6	6.9	C
	Subtotal	962	979	101.7%	34.8	12.0	C
Total		2,413	2,458	101.9%	22.5	4.8	C

Intersection 2 **Stockton/none-EB HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	886	895	101.0%	1.1	0.1	A
	Right Turn	329	331	100.5%	1.0	0.0	A
	Subtotal	1,215	1,226	100.9%	1.1	0.1	A
SB	Left Turn	202	197	97.6%	11.8	2.2	B
	Through	570	616	108.0%	1.0	0.1	A
	Right Turn						
	Subtotal	772	813	105.3%	3.6	0.6	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,987	2,038	102.6%	2.1	0.2	A

Intersection 4 **37th/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	12	11	90.0%	5.5	2.7	A
	Through						
	Right Turn	51	45	87.8%	2.9	0.4	A
	Subtotal	63	56	88.3%	3.5	0.8	A
EB	Left Turn	29	29	99.3%	4.5	1.2	A
	Through	253	256	101.2%	2.6	0.4	A
	Right Turn						
	Subtotal	282	285	101.0%	2.8	0.5	A
WB	Left Turn						
	Through	182	180	98.7%	1.2	0.2	A
	Right Turn	3	4	120.0%	0.5	0.6	A
	Subtotal	185	183	99.0%	1.2	0.2	A
Total		530	524	98.8%	2.3	0.3	A

Intersection 5 **39th/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	6	6	93.3%	18.0	16.6	B
	Through	131	117	89.5%	12.4	3.0	B
	Right Turn	11	9	83.6%	4.2	4.9	A
	Subtotal	148	132	89.2%	12.2	3.0	B
SB	Left Turn	32	34	106.3%	29.7	4.5	C
	Through	162	156	96.0%	27.6	2.6	C
	Right Turn	50	48	96.0%	19.9	4.6	B
	Subtotal	244	238	97.4%	26.4	2.3	C
EB	Left Turn	19	18	96.8%	14.3	6.2	B
	Through	183	188	102.5%	9.8	2.6	A
	Right Turn	63	61	96.5%	6.2	2.6	A
	Subtotal	265	267	100.7%	9.2	2.0	A
WB	Left Turn	11	12	105.5%	15.6	9.2	B
	Through	129	124	95.8%	9.4	1.5	A
	Right Turn	59	65	110.5%	4.2	2.5	A
	Subtotal	199	200	100.7%	8.2	1.8	A
Total		856	837	97.8%	14.4	1.2	B

Intersection 6 **39th/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	2	1	40.0%	0.5	1.2	A
	Through	207	201	97.0%	1.0	0.2	A
	Right Turn						
	Subtotal	209	202	96.5%	1.0	0.2	A
SB	Left Turn						
	Through	236	222	93.9%	0.3	0.1	A
	Right Turn	6	8	140.0%	0.1	0.2	A
	Subtotal	242	230	95.0%	0.2	0.1	A
EB	Left Turn	10	8	84.0%	5.9	3.0	A
	Through						
	Right Turn	8	12	155.0%	4.0	1.1	A
	Subtotal	18	21	115.6%	5.0	1.4	A
WB	Left Turn						
	Through	3	2	80.0%	3.2	3.5	A
	Right Turn	1	3	280.0%	2.3	2.8	A
	Subtotal	4	5	130.0%	4.7	2.8	A
Total		473	458	96.7%	0.9	0.2	A

Intersection 0 **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total							

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **E+P**
Volume and Delay by Movement **AM Peak Hour**

Intersection 3 **Stockton/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	48	45	94.2%	41.6	12.3	D
	Through	911	908	99.7%	19.5	2.4	B
	Right Turn	23	24	102.6%	20.4	5.6	C
	Subtotal	982	977	99.5%	20.6	2.5	C
SB	Left Turn	29	28	95.2%	35.6	14.3	D
	Through	518	567	109.5%	12.3	1.4	B
	Right Turn	23	21	92.2%	9.1	3.9	A
	Subtotal	570	616	108.1%	13.4	1.1	B
EB	Left Turn	109	113	103.5%	47.8	22.6	D
	Through	228	232	101.8%	48.0	19.6	D
	Right Turn	443	395	89.2%	61.3	29.5	E
	Subtotal	780	740	94.9%	55.2	24.8	E
NE	Left Turn	25	29	115.2%	37.2	6.8	D
	Through						
	Right Turn	3	4	133.3%	42.8	32.2	D
	Subtotal	28	33	117.1%	38.3	7.3	D
WB	Left Turn	14	11	77.1%	33.5	11.8	C
	Through	56	51	90.7%	22.2	8.7	C
	Right Turn	163	160	97.9%	22.6	3.1	C
	Subtotal	233	221	94.9%	22.9	3.4	C
Total		2,593	2,587	99.8%	47.2	12.4	D

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton/35th-WB HWY 50 ramps	Signal	2,847	2,632	92.5%	94	2,496	2,803	42.2	7.7	35.5	61.3	D
2	Stockton/EB HWY 50 on ramp	Uncontrolled	2,427	2,152	88.7%	92	1,989	2,269	61.5	28.5	24.1	111.9	F
4	38th/T St	Side-street Stop	740	699	94.5%	58	595	799	21.6	34.1	2.2	113.1	C
5	39th/T St	Signal	1,128	1,053	93.3%	68	968	1,167	14.8	1.8	11.0	17.4	B
6	39th/S St	Side-street Stop	563	519	92.2%	57	422	599	7.6	2.6	4.2	13.9	A
3	Stockton/T	Signal	2,855	2,536	88.8%	149	2,323	2,730	71.2	18.1	42.1	103.9	E

Network Summary	
Total Demand Volume (veh/hr)	10,560
Total Volume Served (veh/hr)	9,592
Percent Served	90.8%
GEH Statistic	9.6

Intersection 1 **Stockton/35th-WB HWY 50 ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	8	60.3%	38.1	21.5	D
	Through	499	440	88.1%	18.9	3.6	B
	Right Turn	630	505	80.2%	102.8	11.3	F
	Subtotal	1,143	953	83.4%	64.0	6.9	E
SB	Left Turn	73	71	97.8%	54.7	28.1	D
	Through	631	624	98.8%	29.4	14.7	C
	Right Turn	8	10	124.8%	10.1	10.8	B
	Subtotal	712	705	99.0%	31.8	16.1	C
EB	Left Turn	16	11	67.2%	44.5	32.0	D
	Through	49	47	95.6%	63.4	34.9	E
	Right Turn	30	27	90.9%	41.1	53.3	D
	Subtotal	95	85	89.3%	53.2	38.7	D
WB	Left Turn	194	197	101.7%	34.9	6.4	C
	Through	133	118	88.9%	38.9	8.0	D
	Right Turn	570	574	100.6%	18.7	5.3	B
	Subtotal	897	889	99.1%	25.2	4.6	C
Total		2,847	2,632	92.5%	42.2	7.7	D

Intersection 2 **Stockton/EB HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,143	953	83.4%	11.3	3.2	B
	Right Turn	421	355	84.3%	9.8	3.0	A
	Subtotal	1,564	1,308	83.7%	10.9	3.2	B
SB	Left Turn	376	355	94.5%	61.5	28.5	F
	Through	487	489	100.4%	1.9	1.4	A
	Right Turn						
	Subtotal	863	844	97.8%	26.8	11.4	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,427	2,152	88.7%	17.0	4.4	C

Intersection 4 **38th/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	3	2	64.0%	7.7	12.2	A
	Through						
	Right Turn	24	26	107.2%	21.6	34.1	C
	Subtotal	27	28	102.4%	22.0	33.7	C
EB	Left Turn	60	53	88.3%	8.8	3.9	A
	Through	327	297	90.8%	3.9	0.5	A
	Right Turn						
	Subtotal	387	350	90.4%	4.7	0.9	A
WB	Left Turn						
	Through	321	315	98.2%	11.7	20.8	B
	Right Turn	5	7	130.6%	2.6	5.3	A
	Subtotal	326	322	98.7%	11.6	20.6	B
Total		740	699	94.5%	8.7	11.2	A

Intersection 5 **39th/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	15	14	92.2%	18.1	10.6	B
	Through	171	159	92.7%	14.2	2.1	B
	Right Turn	33	33	98.9%	8.6	3.2	A
	Subtotal	219	205	93.6%	13.7	2.3	B
SB	Left Turn	40	40	100.8%	35.1	8.2	D
	Through	153	142	92.9%	28.2	4.2	C
	Right Turn	60	60	99.2%	22.7	4.7	C
	Subtotal	253	242	95.6%	27.9	4.4	C
EB	Left Turn	48	36	76.0%	15.9	2.8	B
	Through	260	243	93.6%	10.5	2.2	B
	Right Turn	22	20	89.0%	8.2	5.0	A
	Subtotal	330	300	90.8%	11.1	2.1	B
WB	Left Turn	11	10	87.3%	9.4	7.0	A
	Through	251	232	92.4%	9.1	1.4	A
	Right Turn	64	65	101.4%	5.5	2.1	A
	Subtotal	326	306	94.0%	8.4	1.3	A
Total		1,128	1,053	93.3%	14.8	1.8	B

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **E+P**
Volume and Delay by Movement **PM Peak Hour**

Intersection 6 **39th/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	3	3	102.4%	2.2	2.3	A
	Through	278	257	92.3%	1.1	0.1	A
	Right Turn	2	1	38.4%	0.1	0.4	A
	Subtotal	283	260	92.0%	1.1	0.1	A
SB	Left Turn	1	0	38.4%	0.2	0.6	A
	Through	245	229	93.4%	0.3	0.2	A
	Right Turn	12	10	86.4%	0.1	0.1	A
	Subtotal	258	240	92.9%	0.3	0.2	A
EB	Left Turn	14	10	71.3%	7.6	2.6	A
	Through						
	Right Turn	8	9	115.2%	5.2	2.6	A
	Subtotal	22	19	87.3%	6.5	1.5	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		563	519	92.2%	1.0	0.1	A

Intersection 0 **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total							

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **E+P**
Volume and Delay by Movement **PM Peak Hour**

Intersection 3 **Stockton/T** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	62	51	83.0%	96.8	26.8	F
	Through	1,195	984	82.4%	95.2	29.4	F
	Right Turn	11	8	73.3%	102.7	45.8	F
	Subtotal	1,268	1,044	82.3%	95.3	29.0	F
SB	Left Turn	53	44	82.6%	212.6	139.0	F
	Through	401	396	98.6%	12.9	2.0	B
	Right Turn	33	37	112.9%	10.7	4.0	B
	Subtotal	487	477	97.9%	31.5	12.6	C
EB	Left Turn	125	118	94.3%	101.1	45.9	F
	Through	322	296	91.9%	74.2	28.5	E
	Right Turn	282	248	88.0%	65.8	24.1	E
	Subtotal	729	662	90.8%	75.8	29.3	E
NE	Left Turn	24	22	89.6%	94.8	69.2	F
	Through						
	Right Turn	2	2	76.8%	43.4	95.3	D
	Subtotal	26	23	88.6%	96.7	71.7	F
WB	Left Turn	4	4	96.0%	63.4	59.8	E
	Through	126	121	95.7%	37.6	16.2	D
	Right Turn	215	206	95.7%	46.5	21.6	D
	Subtotal	345	330	95.7%	43.7	15.3	D
Total		2,855	2,536	88.8%	71.2	18.1	E

Intersection: 3: Stockton Boulevard & T Street

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB	NE
Directions Served	LT	TR>	<LT	R	<L	T	TR	L	T	TR>	<LR>
Maximum Queue (ft)	518	404	125	170	69	1122	1153	137	103	134	60
Average Queue (ft)	346	314	49	93	16	670	710	90	63	87	35
95th Queue (ft)	633	467	135	209	72	1115	1135	199	110	146	78
Link Distance (ft)	1512		176	176		3144	3144	117	117	117	336
Upstream Blk Time (%)			3	9				28	0	2	
Queuing Penalty (veh)			5	15				45	0	4	
Storage Bay Dist (ft)		425			100						
Storage Blk Time (%)	7	4			0	10					
Queuing Penalty (veh)	31	12			0	7					

APPENDIX D: CUMULATIVE PLUS PROJECT INTERSECTION CONDITIONS

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton/35th-HWY 50 WB ramps	Signal	3,401	2,954	86.9%	85	2,776	3,088	31.1	1.4	29.3	33.6	C
2	Stockton/none-HWY 50 on ramp	Uncontrolled	2,969	2,449	82.5%	90	2,240	2,560	18.4	3.2	14.1	24.5	C
4	37th/T St	Side-street Stop	771	520	67.4%	57	428	616	6.3	3.4	0.0	12.9	A
5	39th/T St	Signal	1,216	925	76.1%	67	796	1,012	15.7	1.1	14.1	17.1	B
6	39th/S St	Side-street Stop	617	523	84.7%	37	468	592	8.0	5.6	0.0	18.1	A
3	Stockton/T St	Signal	3,410	2,847	83.5%	84	2,704	2,948	37.0	12.9	25.1	65.1	D

Network Summary	
Total Demand Volume (veh/hr)	12,384
Total Volume Served (veh/hr)	10,218
Percent Served	82.5%
GEH Statistic	20.4

Intersection 1 **Stockton/35th-HWY 50 WB ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	7	48.6%	29.1	24.2	C
	Through	636	601	94.5%	16.5	1.0	B
	Right Turn	682	406	59.5%	7.1	0.4	A
	Subtotal	1,332	1,014	76.1%	12.9	0.7	B
SB	Left Turn	73	54	74.0%	32.1	6.4	C
	Through	868	699	80.6%	15.9	2.6	B
	Right Turn	8	2	20.0%	1.4	3.3	A
	Subtotal	949	755	79.5%	16.9	2.5	B
EB	Left Turn	44	10	22.7%	25.2	13.0	C
	Through	49	60	122.4%	34.1	9.5	C
	Right Turn	30	70	232.0%	18.2	8.9	B
	Subtotal	123	140	113.5%	25.8	8.6	C
WB	Left Turn	194	296	152.8%	66.0	14.6	E
	Through	168	96	56.9%	70.4	17.6	E
	Right Turn	635	654	103.0%	54.3	6.7	D
	Subtotal	997	1,046	104.9%	59.6	4.1	E
Total		3,401	2,954	86.9%	31.1	1.4	C

Intersection 2 **Stockton/none-HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,332	1,015	76.2%	1.2	0.1	A
	Right Turn	537	352	65.5%	1.1	0.1	A
	Subtotal	1,869	1,366	73.1%	1.1	0.1	A
SB	Left Turn	440	370	84.0%	18.4	3.2	C
	Through	660	713	108.0%	1.1	0.1	A
	Right Turn						
	Subtotal	1,100	1,082	98.4%	7.0	1.2	A
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,969	2,449	82.5%	3.7	0.5	A

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 4 **37th/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	4	9	230.0%	6.3	3.4	A
	Through						
	Right Turn	27	41	152.6%	3.1	0.4	A
	Subtotal	31	50	162.6%	3.8	0.7	A
EB	Left Turn	62	22	36.1%	4.5	1.8	A
	Through	331	252	76.0%	2.2	0.2	A
	Right Turn						
	Subtotal	393	274	69.7%	2.4	0.2	A
WB	Left Turn						
	Through	341	189	55.5%	1.2	0.2	A
	Right Turn	6	6	106.7%	1.2	1.2	A
	Subtotal	347	196	56.4%	1.2	0.2	A
Total		771	520	67.4%	2.1	0.1	A

Intersection 5 **39th/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	28	19	67.1%	16.9	7.1	B
	Through	198	160	80.8%	13.6	2.5	B
	Right Turn	33	18	55.8%	7.5	4.3	A
	Subtotal	259	197	76.1%	13.3	2.7	B
SB	Left Turn	46	57	123.5%	31.3	5.5	C
	Through	158	164	104.1%	29.8	2.7	C
	Right Turn	57	54	95.4%	22.5	2.5	C
	Subtotal	261	276	105.6%	28.6	2.9	C
EB	Left Turn	50	16	31.2%	15.0	7.0	B
	Through	262	180	68.5%	10.8	1.4	B
	Right Turn	23	62	269.6%	6.8	1.5	A
	Subtotal	335	257	76.8%	10.1	1.6	B
WB	Left Turn	21	10	45.7%	16.6	15.9	B
	Through	262	124	47.2%	7.7	1.7	A
	Right Turn	78	62	79.5%	4.2	1.1	A
	Subtotal	361	195	54.1%	6.9	1.3	A
Total		1,216	925	76.1%	15.7	1.1	B

Intersection 6 **39th/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	2	2	80.0%	1.0	1.4	A
	Through	322	237	73.5%	1.1	0.1	A
	Right Turn	2	0	0.0%	0.0	0.0	A
	Subtotal	326	238	73.1%	1.1	0.1	A
SB	Left Turn	1	0	0.0%	0.0	0.0	A
	Through	255	266	104.3%	0.3	0.2	A
	Right Turn	14	5	34.3%	0.0	0.0	A
	Subtotal	270	271	100.3%	0.3	0.2	A
EB	Left Turn	15	7	48.0%	8.0	5.6	A
	Through						
	Right Turn	6	6	106.7%	4.7	4.3	A
	Subtotal	21	14	64.8%	6.0	2.9	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		617	523	84.7%	0.8	0.2	A

Intersection 0 **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total							

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **AM Peak Hour**

Intersection 3 **Stockton/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	123	44	35.4%	40.2	10.4	D
	Through	1,423	1,062	74.7%	21.1	2.4	C
	Right Turn	12	22	180.0%	19.0	10.0	B
	Subtotal	1,558	1,128	72.4%	21.8	2.7	C
SB	Left Turn	58	38	66.2%	59.3	19.2	E
	Through	569	654	115.0%	12.9	1.4	B
	Right Turn	33	21	64.2%	12.7	5.8	B
	Subtotal	660	714	108.2%	15.4	2.5	B
EB	Left Turn	194	103	53.2%	75.2	48.6	E
	Through	323	213	66.0%	71.4	47.6	E
	Right Turn	282	439	155.7%	88.1	51.8	F
	Subtotal	799	756	94.6%	81.5	49.6	F
NE	Left Turn	24	26	106.7%	40.2	5.4	D
	Through						
	Right Turn	1	3	280.0%	34.2	23.3	C
	Subtotal	25	28	113.6%	40.5	4.3	D
WB	Left Turn	6	9	146.7%	76.7	57.9	E
	Through	138	58	41.7%	43.6	36.6	D
	Right Turn	224	155	69.1%	20.8	4.2	C
	Subtotal	368	221	60.1%	28.2	11.8	C
Total		3,410	2,847	83.5%	37.0	12.9	D

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton/35th-HWY 50 WB ramps	Signal	3,401	3,068	90.2%	61	2,956	3,132	55.7	19.7	37.4	90.6	E
2	Stockton/none-HWY 50 on ramp	Uncontrolled	2,969	2,496	84.1%	81	2,332	2,588	108.0	19.0	68.3	135.3	F
4	37th/T St	Side-street Stop	771	682	88.5%	63	540	744	22.3	62.7	0.0	200.1	C
5	39th/T St	Signal	1,216	1,127	92.7%	48	1,012	1,200	16.6	1.6	15.5	20.6	B
6	39th/S St	Side-street Stop	617	584	94.7%	64	488	680	7.1	2.0	4.5	10.7	A
3	Stockton/T St	Signal	3,410	2,846	83.4%	152	2,564	3,056	185.2	23.8	141.1	224.9	F

Network Summary	
Total Demand Volume (veh/hr)	12,384
Total Volume Served (veh/hr)	10,803
Percent Served	87.2%
GEH Statistic	14.7

Intersection 1 **Stockton/35th-HWY 50 WB ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	8	60.0%	50.9	8.2	D
	Through	636	500	78.6%	18.0	2.3	B
	Right Turn	682	524	76.8%	108.9	7.9	F
	Subtotal	1,332	1,032	77.5%	64.6	6.3	E
SB	Left Turn	73	71	97.5%	104.3	66.7	F
	Through	868	859	98.9%	75.0	57.6	E
	Right Turn	8	9	115.0%	24.5	16.5	C
	Subtotal	949	939	99.0%	76.9	57.9	E
EB	Left Turn	44	43	98.2%	44.5	16.6	D
	Through	49	54	110.2%	56.1	11.8	E
	Right Turn	30	26	88.0%	36.2	23.6	D
	Subtotal	123	124	100.5%	48.0	15.5	D
WB	Left Turn	194	184	94.8%	38.5	15.1	D
	Through	168	174	103.6%	39.5	13.8	D
	Right Turn	635	615	96.9%	21.4	8.7	C
	Subtotal	997	973	97.6%	28.0	9.8	C
Total		3,401	3,068	90.2%	55.7	19.7	E

Intersection 2 **Stockton/none-HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,332	1,034	77.7%	11.1	3.7	B
	Right Turn	537	407	75.8%	10.5	3.8	B
	Subtotal	1,869	1,441	77.1%	11.0	3.7	B
SB	Left Turn	440	400	90.8%	108.0	19.0	F
	Through	660	655	99.3%	3.9	5.5	A
	Right Turn						
	Subtotal	1,100	1,055	95.9%	43.1	8.8	E
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,969	2,496	84.1%	24.3	3.7	C

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 4 **37th/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	4	5	130.0%	12.2	27.0	B
	Through						
	Right Turn	27	23	84.4%	18.6	24.1	C
	Subtotal	31	28	90.3%	17.8	23.5	C
EB	Left Turn	62	56	91.0%	6.7	1.5	A
	Through	331	263	79.5%	3.9	0.2	A
	Right Turn						
	Subtotal	393	320	81.3%	4.5	0.5	A
WB	Left Turn						
	Through	341	328	96.3%	13.5	20.8	B
	Right Turn	6	6	106.7%	22.3	62.7	C
	Subtotal	347	335	96.5%	13.4	20.8	B
Total		771	682	88.5%	9.6	10.6	A

Intersection 5 **39th/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	28	37	132.9%	15.5	7.0	B
	Through	198	191	96.6%	17.2	1.6	B
	Right Turn	33	38	113.9%	10.6	3.8	B
	Subtotal	259	266	102.7%	16.1	2.2	B
SB	Left Turn	46	41	88.7%	38.5	9.9	D
	Through	158	155	98.0%	33.0	3.5	C
	Right Turn	57	59	103.2%	26.8	5.4	C
	Subtotal	261	254	97.5%	32.2	2.6	C
EB	Left Turn	50	37	74.4%	15.7	3.5	B
	Through	262	209	79.7%	10.5	1.6	B
	Right Turn	23	23	99.1%	5.3	3.6	A
	Subtotal	335	269	80.2%	10.9	1.4	B
WB	Left Turn	21	20	93.3%	11.6	4.8	B
	Through	262	242	92.4%	10.2	2.7	B
	Right Turn	78	76	97.9%	6.8	1.5	A
	Subtotal	361	338	93.6%	9.5	2.2	A
Total		1,216	1,127	92.7%	16.6	1.6	B

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 6 **39th/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	2	0	20.0%	0.3	0.9	A
	Through	322	304	94.3%	1.2	0.1	A
	Right Turn	2	3	140.0%	0.3	0.6	A
	Subtotal	326	307	94.1%	1.2	0.1	A
SB	Left Turn	1	1	80.0%	0.3	0.7	A
	Through	255	245	96.0%	0.4	0.1	A
	Right Turn	14	13	94.3%	0.0	0.1	A
	Subtotal	270	259	95.9%	0.4	0.1	A
EB	Left Turn	15	12	77.3%	7.1	2.0	A
	Through						
	Right Turn	6	7	113.3%	3.3	2.3	A
	Subtotal	21	18	87.6%	6.6	2.0	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		617	584	94.7%	1.0	0.1	A

Intersection 0 **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total							

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project**
Volume and Delay by Movement **PM Peak Hour**

Intersection 3 **Stockton/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	123	100	81.6%	331.8	44.2	F
	Through	1,423	1,038	72.9%	311.4	49.3	F
	Right Turn	12	6	53.3%	252.1	117.7	F
	Subtotal	1,558	1,145	73.5%	312.9	48.2	F
SB	Left Turn	58	39	66.9%	247.4	129.8	F
	Through	569	570	100.1%	15.4	2.1	B
	Right Turn	33	32	97.0%	13.8	4.4	B
	Subtotal	660	640	97.0%	29.1	6.6	C
EB	Left Turn	194	158	81.2%	239.6	42.8	F
	Through	323	273	84.5%	187.5	39.2	F
	Right Turn	282	252	89.5%	174.0	46.3	F
	Subtotal	799	683	85.5%	194.0	40.3	F
NE	Left Turn	24	27	113.3%	81.7	36.8	F
	Through						
	Right Turn	1	1	80.0%	68.9	0.0	E
	Subtotal	25	28	112.0%	81.6	36.8	F
WB	Left Turn	6	4	66.7%	83.8	145.6	F
	Through	138	133	96.5%	40.3	38.2	D
	Right Turn	224	212	94.8%	54.9	28.9	D
	Subtotal	368	350	95.0%	47.3	21.6	D
Total		3,410	2,846	83.4%	185.2	23.8	F

APPENDIX E: MITIGATION MEASURES

	Intersection	Control	Demand Volume (vph)	Served Volume (vph) Average	Percent Served	Standard Deviation	Minimum	Maximum	Total Delay (sec/veh) Average	Std. Dev.	Minimum	Maximum	LOS
1	Stockton/35th-HWY 50 WB ramps	Signal	3,401	3,148	92.5%	89	2,960	3,256	32.8	7.1	20.2	40.0	C
2	Stockton/none-HWY 50 on ramp	Uncontrolled	2,969	2,670	89.9%	106	2,464	2,828	52.7	18.6	34.6	89.6	F
4	37th/T St	Side-street Stop	771	717	93.0%	51	612	768	28.0	65.5	2.4	212.3	D
5	39th/T St	Signal	1,216	1,125	92.5%	32	1,080	1,160	18.3	2.2	14.6	23.0	B
6	39th/S St	Side-street Stop	617	588	95.4%	34	528	636	7.2	2.9	0.0	9.8	A
3	Stockton/T St	Signal	3,410	2,986	87.6%	122	2,736	3,148	181.5	12.4	161.0	195.7	F

Network Summary	
Total Demand Volume (veh/hr)	12,384
Total Volume Served (veh/hr)	11,234
Percent Served	90.7%
GEH Statistic	10.6

Intersection 1 **Stockton/35th-HWY 50 WB ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	14	10	74.3%	40.3	20.9	D
	Through	636	558	87.7%	18.1	2.8	B
	Right Turn	682	546	80.1%	55.3	38.3	E
	Subtotal	1,332	1,115	83.7%	36.8	20.2	D
SB	Left Turn	73	63	86.6%	39.1	7.0	D
	Through	868	870	100.2%	22.1	4.5	C
	Right Turn	8	7	85.0%	12.3	9.9	B
	Subtotal	949	940	99.0%	23.2	4.6	C
EB	Left Turn	44	45	101.8%	47.8	20.0	D
	Through	49	49	100.4%	50.1	23.6	D
	Right Turn	30	38	125.3%	34.4	22.7	C
	Subtotal	123	132	107.0%	44.6	20.3	D
WB	Left Turn	194	194	99.8%	44.6	16.2	D
	Through	168	165	98.1%	46.1	17.8	D
	Right Turn	635	603	95.0%	29.4	14.2	C
	Subtotal	997	962	96.4%	36.0	14.0	D
Total		3,401	3,148	92.5%	32.8	7.1	C

Intersection 2 **Stockton/none-HWY 50 on ramp** **Uncontrolled**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through	1,332	1,118	83.9%	3.4	2.9	A
	Right Turn	537	461	85.8%	3.1	2.6	A
	Subtotal	1,869	1,579	84.5%	3.3	2.8	A
SB	Left Turn	440	424	96.3%	52.7	18.6	F
	Through	660	667	101.1%	1.6	0.3	A
	Right Turn						
	Subtotal	1,100	1,091	99.2%	21.3	7.2	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,969	2,670	89.9%	10.6	3.2	B

Intersection 4 **37th/T St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	4	4	90.0%	22.7	66.0	C
	Through						
	Right Turn	27	26	97.8%	28.0	65.5	D
	Subtotal	31	30	96.8%	27.9	65.3	D
EB	Left Turn	62	58	92.9%	6.4	1.5	A
	Through	331	276	83.5%	3.7	0.3	A
	Right Turn						
	Subtotal	393	334	85.0%	4.2	0.4	A
WB	Left Turn						
	Through	341	344	100.9%	11.7	22.3	B
	Right Turn	6	9	153.3%	8.8	22.8	A
	Subtotal	347	353	101.8%	11.7	22.4	B
Total		771	717	93.0%	9.1	14.3	A

Intersection 5 **39th/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	28	26	92.9%	17.7	7.8	B
	Through	198	193	97.6%	15.9	3.6	B
	Right Turn	33	29	88.5%	9.5	4.4	A
	Subtotal	259	248	95.9%	15.2	3.0	B
SB	Left Turn	46	40	87.0%	43.5	6.8	D
	Through	158	156	98.5%	37.2	4.9	D
	Right Turn	57	69	120.7%	32.0	5.5	C
	Subtotal	261	264	101.3%	36.6	4.4	D
EB	Left Turn	50	34	68.8%	17.9	4.8	B
	Through	262	219	83.5%	11.7	3.8	B
	Right Turn	23	16	71.3%	7.0	5.2	A
	Subtotal	335	270	80.5%	12.2	3.4	B
WB	Left Turn	21	18	83.8%	17.0	5.2	B
	Through	262	252	96.2%	11.5	4.2	B
	Right Turn	78	73	93.3%	7.4	3.3	A
	Subtotal	361	342	94.8%	10.9	3.6	B
Total		1,216	1,125	92.5%	18.3	2.2	B

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project NB/SB protected left turn**
Volume and Delay by Movement **PM Peak Hour**

Intersection 6 **39th/S St** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	2	2	80.0%	1.6	2.1	A
	Through	322	297	92.3%	1.2	0.1	A
	Right Turn	2	3	160.0%	0.5	0.8	A
	Subtotal	326	302	92.6%	1.2	0.1	A
SB	Left Turn	1	0	40.0%	0.2	0.6	A
	Through	255	252	98.7%	0.5	0.4	A
	Right Turn	14	14	97.1%	0.2	0.2	A
	Subtotal	270	266	98.4%	0.5	0.4	A
EB	Left Turn	15	13	88.0%	7.2	2.9	A
	Through						
	Right Turn	6	8	126.7%	4.0	2.3	A
	Subtotal	21	21	99.0%	6.5	1.7	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		617	588	95.4%	1.1	0.2	A

Intersection 0 **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total							

SimTraffic Post-Processor **Stockton & T**
Average Results from 10 Runs **Cumulative Plus Project NB/SB protected left turn**
Volume and Delay by Movement **PM Peak Hour**

Intersection 3 **Stockton/T St** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph) Average	Served Volume (vph) Percent	Total Delay (sec/veh) Average	Total Delay (sec/veh) Std. Dev.	LOS
NB	Left Turn	123	95	77.1%	325.1	52.5	F
	Through	1,423	1,150	80.8%	298.8	40.6	F
	Right Turn	12	7	56.7%	265.7	136.5	F
	Subtotal	1,558	1,252	80.3%	300.6	41.5	F
SB	Left Turn	58	48	83.4%	105.2	53.4	F
	Through	569	560	98.3%	21.3	1.7	C
	Right Turn	33	40	122.4%	17.6	4.7	B
	Subtotal	660	648	98.2%	27.0	3.9	C
EB	Left Turn	194	178	92.0%	227.7	64.8	F
	Through	323	278	85.9%	188.1	58.2	F
	Right Turn	282	232	82.3%	184.9	54.0	F
	Subtotal	799	688	86.1%	197.4	57.1	F
NE	Left Turn	24	21	86.7%	47.4	13.2	D
	Through						
	Right Turn	1	2	240.0%	33.6	36.1	C
	Subtotal	25	23	92.8%	44.9	9.9	D
WB	Left Turn	6	7	113.3%	43.8	50.0	D
	Through	138	137	99.1%	43.5	22.9	D
	Right Turn	224	232	103.4%	33.7	5.3	C
	Subtotal	368	375	102.0%	38.5	10.7	D
Total		3,410	2,986	87.6%	181.5	12.4	F