Appendix A

Air Quality and Greenhouse Gas Emissions Calculations and Modeling Results

RTA Maintenance Facility Project

San Luis Obispo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.00	1000sqft	0.30	15,000.00	0
Parking Lot	187.00	Space	3.50	74,800.00	0
Automobile Care Center	30.00	1000sqft	0.40	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on site plan

Grading -

Demolition -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblGrading	MaterialImported	0.00	11,600.00
tblLandUse	LotAcreage	0.34	0.30
tblLandUse	LotAcreage	1.68	3.50
tblLandUse	LotAcreage	0.69	0.40
tblProjectCharacteristics	OperationalYear	2018	2021

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					
2019	0.3775	3.7835	2.7048	5.7900e-003	0.1624	0.1820	0.3444	0.0626	0.1708	0.2334	0.0000	524.2632	524.2632	0.0919	0.0000	526.5614
2020	0.5580	0.1439	0.1551	2.6000e-004	3.0500e-003	8.0000e-003	0.0111	8.1000e-004	7.4800e-003	8.2900e-003	0.0000	22.2062	22.2062	5.4800e-003	0.0000	22.3432
Maximum	**0.5580**	**3.7835**	**2.7048**	**5.7900e-003**	**0.1624**	**0.1820**	**0.3444**	**0.0626**	**0.1708**	**0.2334**	**0.0000**	**524.2632**	**524.2632**	**0.0919**	**0.0000**	**526.5614**

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					
2019	0.3775	3.7835	2.7048	5.7900e-003	0.1624	0.1820	0.3444	0.0626	0.1708	0.2334	0.0000	524.2628	524.2628	0.0919	0.0000	526.5610
2020	0.5580	0.1439	0.1551	2.6000e-004	3.0500e-003	8.0000e-003	0.0111	8.1000e-004	7.4800e-003	8.2900e-003	0.0000	22.2062	22.2062	5.4800e-003	0.0000	22.3431
Maximum	**0.5580**	**3.7835**	**2.7048**	**5.7900e-003**	**0.1624**	**0.1820**	**0.3444**	**0.0626**	**0.1708**	**0.2334**	**0.0000**	**524.2628**	**524.2628**	**0.0919**	**0.0000**	**526.5610**

	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2019**	**3-31-2019**	1.5164	1.5164
2	**4-1-2019**	**6-30-2019**	0.8513	0.8513
3	**7-1-2019**	**9-30-2019**	0.8606	0.8606
4	**10-1-2019**	**12-31-2019**	0.8623	0.8623
5	**1-1-2020**	**3-31-2020**	0.6727	0.6727
		Highest	1.5164	1.5164

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	0.2347	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003
Energy	5.6100e-003	0.0510	0.0429	3.1000e-004		3.8800e-003	3.8800e-003		3.8800e-003	3.8800e-003	0.0000	227.6990	227.6990	8.8500e-003	2.6300e-003	228.7037
Mobile	0.2103	0.7198	1.8464	4.1100e-003	0.3430	4.6500e-003	0.3476	0.0919	4.3600e-003	0.0962	0.0000	376.2650	376.2650	0.0186	0.0000	376.7305
Waste						0.0000	0.0000		0.0000	0.0000	26.0945	0.0000	26.0945	1.5421	0.0000	64.6480
Water						0.0000	0.0000		0.0000	0.0000	1.7412	12.0645	13.8058	0.1794	4.3400e-003	19.5825
Total	**0.4505**	**0.7709**	**1.8932**	**4.4200e-003**	**0.3430**	**8.5400e-003**	**0.3515**	**0.0919**	**8.2500e-003**	**0.1001**	**27.8357**	**616.0362**	**643.8719**	**1.7490**	**6.9700e-003**	**689.6728**

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	0.2347	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003
Energy	5.6100e-003	0.0510	0.0429	3.1000e-004		3.8800e-003	3.8800e-003		3.8800e-003	3.8800e-003	0.0000	227.6990	227.6990	8.8500e-003	2.6300e-003	228.7037
Mobile	0.2103	0.7198	1.8464	4.1100e-003	0.3430	4.6500e-003	0.3476	0.0919	4.3600e-003	0.0962	0.0000	376.2650	376.2650	0.0186	0.0000	376.7305
Waste						0.0000	0.0000		0.0000	0.0000	26.0945	0.0000	26.0945	1.5421	0.0000	64.6480
Water						0.0000	0.0000		0.0000	0.0000	1.7412	12.0645	13.8058	0.1794	4.3400e-003	19.5825
Total	**0.4505**	**0.7709**	**1.8932**	**4.4200e-003**	**0.3430**	**8.5400e-003**	**0.3515**	**0.0919**	**8.2500e-003**	**0.1001**	**27.8357**	**616.0362**	**643.8719**	**1.7490**	**6.9700e-003**	**689.6728**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/29/2020	2/21/2020	5	18	
2	Building Construction	Building Construction	2/15/2019	1/2/2020	5	230	
3	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
4	Grading	Grading	2/5/2019	2/14/2019	5	8	
5	Paving	Paving	1/3/2020	1/28/2020	5	18	
6	Site Preparation	Site Preparation	1/29/2019	2/4/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,500; Non-Residential Outdoor: 22,500; Striped Parking Area: 4,488 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	9.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	46.00	20.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	7.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,900.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2020

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	0.5370					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0152	0.0165	3.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total	**0.5392**	**0.0152**	**0.0165**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.2 Architectural Coating - 2020

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	3.5000e-004	3.2000e-004	2.7900e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	**3.5000e-004**	**3.2000e-004**	**2.7900e-003**	**1.0000e-005**	**7.8000e-004**	**1.0000e-005**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6524**	**0.6524**	**2.0000e-005**	**0.0000**	**0.6529**

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	0.5370					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1800e-003	0.0152	0.0165	3.0000e-005		1.0000e-003	1.0000e-003		1.0000e-003	1.0000e-003	0.0000	2.2979	2.2979	1.8000e-004	0.0000	2.3024
Total	**0.5392**	**0.0152**	**0.0165**	**3.0000e-005**		**1.0000e-003**	**1.0000e-003**		**1.0000e-003**	**1.0000e-003**	**0.0000**	**2.2979**	**2.2979**	**1.8000e-004**	**0.0000**	**2.3024**

3.2 Architectural Coating - 2020

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	3.5000e-004	3.2000e-004	2.7900e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.8000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	**3.5000e-004**	**3.2000e-004**	**2.7900e-003**	**1.0000e-005**	**7.8000e-004**	**1.0000e-005**	**7.8000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6524**	**0.6524**	**2.0000e-005**	**0.0000**	**0.6529**

3.3 Building Construction - 2019

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	0.2692	2.4030	1.9567	3.0700e-003		0.1470	0.1470		0.1383	0.1383	0.0000	268.0188	268.0188	0.0653	0.0000	269.6511
Total	**0.2692**	**2.4030**	**1.9567**	**3.0700e-003**		**0.1470**	**0.1470**		**0.1383**	**0.1383**	**0.0000**	**268.0188**	**268.0188**	**0.0653**	**0.0000**	**269.6511**

3.3 Building Construction - 2019

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	0.0107	0.2601	0.0816	4.6000e-004	0.0104	2.0800e-003	0.0124	2.9900e-003	1.9900e-003	4.9800e-003	0.0000	43.9247	43.9247	2.8200e-003	0.0000	43.9953
Worker	0.0252	0.0237	0.2050	4.8000e-004	0.0505	3.4000e-004	0.0508	0.0134	3.2000e-004	0.0137	0.0000	43.5842	43.5842	1.6200e-003	0.0000	43.6249
Total	**0.0359**	**0.2837**	**0.2866**	**9.4000e-004**	**0.0608**	**2.4200e-003**	**0.0633**	**0.0164**	**2.3100e-003**	**0.0187**	**0.0000**	**87.5090**	**87.5090**	**4.4400e-003**	**0.0000**	**87.6201**

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	0.2692	2.4030	1.9567	3.0700e-003		0.1470	0.1470		0.1383	0.1383	0.0000	268.0185	268.0185	0.0653	0.0000	269.6508
Total	**0.2692**	**2.4030**	**1.9567**	**3.0700e-003**		**0.1470**	**0.1470**		**0.1383**	**0.1383**	**0.0000**	**268.0185**	**268.0185**	**0.0653**	**0.0000**	**269.6508**

3.3 Building Construction - 2019

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	0.0107	0.2601	0.0816	4.6000e-004	0.0104	2.0800e-003	0.0124	2.9900e-003	1.9900e-003	4.9800e-003	0.0000	43.9247	43.9247	2.8200e-003	0.0000	43.9953
Worker	0.0252	0.0237	0.2050	4.8000e-004	0.0505	3.4000e-004	0.0508	0.0134	3.2000e-004	0.0137	0.0000	43.5842	43.5842	1.6200e-003	0.0000	43.6249
Total	**0.0359**	**0.2837**	**0.2866**	**9.4000e-004**	**0.0608**	**2.4200e-003**	**0.0633**	**0.0164**	**2.3100e-003**	**0.0187**	**0.0000**	**87.5090**	**87.5090**	**4.4400e-003**	**0.0000**	**87.6201**

3.3 Building Construction - 2020

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	2.1200e-003	0.0192	0.0169	3.0000e-005		1.1200e-003	1.1200e-003		1.0500e-003	1.0500e-003	0.0000	2.3161	2.3161	5.7000e-004	0.0000	2.3302
Total	**2.1200e-003**	**0.0192**	**0.0169**	**3.0000e-005**		**1.1200e-003**	**1.1200e-003**		**1.0500e-003**	**1.0500e-003**	**0.0000**	**2.3161**	**2.3161**	**5.7000e-004**	**0.0000**	**2.3302**

3.3 Building Construction - 2020

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	7.0000e-005	2.0800e-003	6.3000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3848	0.3848	2.0000e-005	0.0000	0.3854
Worker	2.0000e-004	1.8000e-004	1.5800e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3705	0.3705	1.0000e-005	0.0000	0.3708
Total	**2.7000e-004**	**2.2600e-003**	**2.2100e-003**	**0.0000**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.7553**	**0.7553**	**3.0000e-005**	**0.0000**	**0.7562**

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	2.1200e-003	0.0192	0.0169	3.0000e-005		1.1200e-003	1.1200e-003		1.0500e-003	1.0500e-003	0.0000	2.3161	2.3161	5.7000e-004	0.0000	2.3302
Total	**2.1200e-003**	**0.0192**	**0.0169**	**3.0000e-005**		**1.1200e-003**	**1.1200e-003**		**1.0500e-003**	**1.0500e-003**	**0.0000**	**2.3161**	**2.3161**	**5.7000e-004**	**0.0000**	**2.3302**

3.3 Building Construction - 2020

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	7.0000e-005	2.0800e-003	6.3000e-004	0.0000	9.0000e-005	1.0000e-005	1.0000e-004	3.0000e-005	1.0000e-005	4.0000e-005	0.0000	0.3848	0.3848	2.0000e-005	0.0000	0.3854
Worker	2.0000e-004	1.8000e-004	1.5800e-003	0.0000	4.4000e-004	0.0000	4.5000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3705	0.3705	1.0000e-005	0.0000	0.3708
Total	**2.7000e-004**	**2.2600e-003**	**2.2100e-003**	**0.0000**	**5.3000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**1.0000e-005**	**1.6000e-004**	**0.0000**	**0.7553**	**0.7553**	**3.0000e-005**	**0.0000**	**0.7562**

3.4 Demolition - 2019

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					8.1000e-004	0.0000	8.1000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8672
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**8.1000e-004**	**0.0180**	**0.0188**	**1.2000e-004**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8672**

3.4 Demolition - 2019

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	4.0000e-005	1.2300e-003	2.7000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2716	0.2716	2.0000e-005	0.0000	0.2720
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	7.2000e-004	6.8000e-004	5.8600e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2467	1.2467	5.0000e-005	0.0000	1.2479
Total	**7.6000e-004**	**1.9100e-003**	**6.1300e-003**	**1.0000e-005**	**1.5000e-003**	**2.0000e-005**	**1.5200e-003**	**4.0000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.5183**	**1.5183**	**7.0000e-005**	**0.0000**	**1.5198**

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					8.1000e-004	0.0000	8.1000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0351	0.3578	0.2206	3.9000e-004		0.0180	0.0180		0.0167	0.0167	0.0000	34.6263	34.6263	9.6300e-003	0.0000	34.8671
Total	**0.0351**	**0.3578**	**0.2206**	**3.9000e-004**	**8.1000e-004**	**0.0180**	**0.0188**	**1.2000e-004**	**0.0167**	**0.0168**	**0.0000**	**34.6263**	**34.6263**	**9.6300e-003**	**0.0000**	**34.8671**

3.4 Demolition - 2019

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	4.0000e-005	1.2300e-003	2.7000e-004	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2716	0.2716	2.0000e-005	0.0000	0.2720
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	7.2000e-004	6.8000e-004	5.8600e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2467	1.2467	5.0000e-005	0.0000	1.2479
Total	**7.6000e-004**	**1.9100e-003**	**6.1300e-003**	**1.0000e-005**	**1.5000e-003**	**2.0000e-005**	**1.5200e-003**	**4.0000e-004**	**2.0000e-005**	**4.1000e-004**	**0.0000**	**1.5183**	**1.5183**	**7.0000e-005**	**0.0000**	**1.5198**

3.5 Grading - 2019

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					0.0283	0.0000	0.0283	0.0138	0.0000	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1134	0.0652	1.2000e-004		5.5900e-003	5.5900e-003		5.1400e-003	5.1400e-003	0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total	**0.0103**	**0.1134**	**0.0652**	**1.2000e-004**	**0.0283**	**5.5900e-003**	**0.0339**	**0.0138**	**5.1400e-003**	**0.0189**	**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.5 Grading - 2019

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	0.0149	0.5093	0.1104	1.1500e-003	0.0247	3.0300e-003	0.0277	6.7900e-003	2.9000e-003	9.6900e-003	0.0000	112.5190	112.5190	6.3900e-003	0.0000	112.6788
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.7000e-004	2.3500e-003	1.0000e-005	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4987	0.4987	2.0000e-005	0.0000	0.4991
Total	**0.0152**	**0.5096**	**0.1128**	**1.1600e-003**	**0.0253**	**3.0300e-003**	**0.0283**	**6.9400e-003**	**2.9000e-003**	**9.8500e-003**	**0.0000**	**113.0177**	**113.0177**	**6.4100e-003**	**0.0000**	**113.1779**

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					0.0283	0.0000	0.0283	0.0138	0.0000	0.0138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0103	0.1134	0.0652	1.2000e-004		5.5900e-003	5.5900e-003		5.1400e-003	5.1400e-003	0.0000	10.6569	10.6569	3.3700e-003	0.0000	10.7412
Total	**0.0103**	**0.1134**	**0.0652**	**1.2000e-004**	**0.0283**	**5.5900e-003**	**0.0339**	**0.0138**	**5.1400e-003**	**0.0189**	**0.0000**	**10.6569**	**10.6569**	**3.3700e-003**	**0.0000**	**10.7412**

3.5 Grading - 2019

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	0.0149	0.5093	0.1104	1.1500e-003	0.0247	3.0300e-003	0.0277	6.7900e-003	2.9000e-003	9.6900e-003	0.0000	112.5190	112.5190	6.3900e-003	0.0000	112.6788
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.7000e-004	2.3500e-003	1.0000e-005	5.8000e-004	0.0000	5.8000e-004	1.5000e-004	0.0000	1.6000e-004	0.0000	0.4987	0.4987	2.0000e-005	0.0000	0.4991
Total	**0.0152**	**0.5096**	**0.1128**	**1.1600e-003**	**0.0253**	**3.0300e-003**	**0.0283**	**6.9400e-003**	**2.9000e-003**	**9.8500e-003**	**0.0000**	**113.0177**	**113.0177**	**6.4100e-003**	**0.0000**	**113.1779**

3.6 Paving - 2020

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	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	4.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0152**	**0.1062**	**0.1105**	**1.7000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.6 Paving - 2020

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	7.9000e-004	7.2000e-004	6.1900e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.4497	1.4497	5.0000e-005	0.0000	1.4509
Total	**7.9000e-004**	**7.2000e-004**	**6.1900e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.4497**	**1.4497**	**5.0000e-005**	**0.0000**	**1.4509**

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	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	4.5900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0152**	**0.1062**	**0.1105**	**1.7000e-004**		**5.8600e-003**	**5.8600e-003**		**5.4000e-003**	**5.4000e-003**	**0.0000**	**14.7348**	**14.7348**	**4.6300e-003**	**0.0000**	**14.8506**

3.6 Paving - 2020

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	7.9000e-004	7.2000e-004	6.1900e-003	2.0000e-005	1.7300e-003	1.0000e-005	1.7400e-003	4.6000e-004	1.0000e-005	4.7000e-004	0.0000	1.4497	1.4497	5.0000e-005	0.0000	1.4509
Total	**7.9000e-004**	**7.2000e-004**	**6.1900e-003**	**2.0000e-005**	**1.7300e-003**	**1.0000e-005**	**1.7400e-003**	**4.6000e-004**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**1.4497**	**1.4497**	**5.0000e-005**	**0.0000**	**1.4509**

3.7 Site Preparation - 2019

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	0.0108	0.1139	0.0552	9.0000e-005		5.9800e-003	5.9800e-003		5.5000e-003	5.5000e-003	0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total	**0.0108**	**0.1139**	**0.0552**	**9.0000e-005**	**0.0452**	**5.9800e-003**	**0.0512**	**0.0248**	**5.5000e-003**	**0.0303**	**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.7 Site Preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.0000e-004	1.7600e-003	0.0000	4.3000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3740	0.3740	1.0000e-005	0.0000	0.3744
Total	**2.2000e-004**	**2.0000e-004**	**1.7600e-003**	**0.0000**	**4.3000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3740**	**0.3740**	**1.0000e-005**	**0.0000**	**0.3744**

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	0.0108	0.1139	0.0552	9.0000e-005		5.9800e-003	5.9800e-003		5.5000e-003	5.5000e-003	0.0000	8.5422	8.5422	2.7000e-003	0.0000	8.6097
Total	**0.0108**	**0.1139**	**0.0552**	**9.0000e-005**	**0.0452**	**5.9800e-003**	**0.0512**	**0.0248**	**5.5000e-003**	**0.0303**	**0.0000**	**8.5422**	**8.5422**	**2.7000e-003**	**0.0000**	**8.6097**

3.7 Site Preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	2.0000e-004	1.7600e-003	0.0000	4.3000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3740	0.3740	1.0000e-005	0.0000	0.3744
Total	**2.2000e-004**	**2.0000e-004**	**1.7600e-003**	**0.0000**	**4.3000e-004**	**0.0000**	**4.4000e-004**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**0.3740**	**0.3740**	**1.0000e-005**	**0.0000**	**0.3744**

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	0.2103	0.7198	1.8464	4.1100e-003	0.3430	4.6500e-003	0.3476	0.0919	4.3600e-003	0.0962	0.0000	376.2650	376.2650	0.0186	0.0000	376.7305
Unmitigated	0.2103	0.7198	1.8464	4.1100e-003	0.3430	4.6500e-003	0.3476	0.0919	4.3600e-003	0.0962	0.0000	376.2650	376.2650	0.0186	0.0000	376.7305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	711.60	711.60	356.40	626,999	626,999
General Office Building	165.45	36.90	15.75	285,954	285,954
Parking Lot	0.00	0.00	0.00		
Total	877.05	748.50	372.15	912,953	912,953

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
Automobile Care Center	13.00	5.00	5.00	33.00	48.00	19.00	21	51	28
General Office Building	13.00	5.00	5.00	33.00	48.00	19.00	77	19	4
Parking Lot	13.00	5.00	5.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Parking Lot	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Automobile Care Center	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	172.1393	172.1393	7.7800e-003	1.6100e-003	172.8138
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	172.1393	172.1393	7.7800e-003	1.6100e-003	172.8138
NaturalGas Mitigated	5.6100e-003	0.0510	0.0429	3.1000e-004		3.8800e-003	3.8800e-003		3.8800e-003	3.8800e-003	0.0000	55.5597	55.5597	1.0600e-003	1.0200e-003	55.8899
NaturalGas Unmitigated	5.6100e-003	0.0510	0.0429	3.1000e-004		3.8800e-003	3.8800e-003		3.8800e-003	3.8800e-003	0.0000	55.5597	55.5597	1.0600e-003	1.0200e-003	55.8899

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					
Automobile Care Center	794400	4.2800e-003	0.0389	0.0327	2.3000e-004		2.9600e-003	2.9600e-003		2.9600e-003	2.9600e-003	0.0000	42.3922	42.3922	8.1000e-004	7.8000e-004	42.6441
General Office Building	246750	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1675	13.1675	2.5000e-004	2.4000e-004	13.2458
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
Total		**5.6100e-003**	**0.0510**	**0.0429**	**3.0000e-004**		**3.8800e-003**	**3.8800e-003**		**3.8800e-003**	**3.8800e-003**	**0.0000**	**55.5597**	**55.5597**	**1.0600e-003**	**1.0200e-003**	**55.8899**

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					
Automobile Care Center	794400	4.2800e-003	0.0389	0.0327	2.3000e-004		2.9600e-003	2.9600e-003		2.9600e-003	2.9600e-003	0.0000	42.3922	42.3922	8.1000e-004	7.8000e-004	42.6441
General Office Building	246750	1.3300e-003	0.0121	0.0102	7.0000e-005		9.2000e-004	9.2000e-004		9.2000e-004	9.2000e-004	0.0000	13.1675	13.1675	2.5000e-004	2.4000e-004	13.2458
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
Total		**5.6100e-003**	**0.0510**	**0.0429**	**3.0000e-004**		**3.8800e-003**	**3.8800e-003**		**3.8800e-003**	**3.8800e-003**	**0.0000**	**55.5597**	**55.5597**	**1.0600e-003**	**1.0200e-003**	**55.8899**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	252600	73.4842	3.3200e-003	6.9000e-004	73.7722
General Office Building	273300	79.5061	3.6000e-003	7.4000e-004	79.8176
Parking Lot	65824	19.1490	8.7000e-004	1.8000e-004	19.2240
Total		**172.1393**	**7.7900e-003**	**1.6100e-003**	**172.8138**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	252600	73.4842	3.3200e-003	6.9000e-004	73.7722
General Office Building	273300	79.5061	3.6000e-003	7.4000e-004	79.8176
Parking Lot	65824	19.1490	8.7000e-004	1.8000e-004	19.2240
Total		**172.1393**	**7.7900e-003**	**1.6100e-003**	**172.8138**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2347	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003
Unmitigated	0.2347	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003

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	0.0537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.7000e-004	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003
Total	**0.2347**	**4.0000e-005**	**3.9200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.6000e-003**	**7.6000e-003**	**2.0000e-005**	**0.0000**	**8.1000e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0537					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1806					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.7000e-004	4.0000e-005	3.9200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	7.6000e-003	7.6000e-003	2.0000e-005	0.0000	8.1000e-003
Total	**0.2347**	**4.0000e-005**	**3.9200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**7.6000e-003**	**7.6000e-003**	**2.0000e-005**	**0.0000**	**8.1000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	13.8058	0.1794	4.3400e-003	19.5825
Unmitigated	13.8058	0.1794	4.3400e-003	19.5825

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	2.82243 / 1.72988	7.0996	0.0923	2.2300e-003	10.0703
General Office Building	2.66601 / 1.634	6.7062	0.0871	2.1100e-003	9.5122
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**13.8058**	**0.1794**	**4.3400e-003**	**19.5825**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	2.82243 / 1.72988	7.0996	0.0923	2.2300e-003	10.0703
General Office Building	2.66601 / 1.634	6.7062	0.0871	2.1100e-003	9.5122
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**13.8058**	**0.1794**	**4.3400e-003**	**19.5825**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	26.0945	1.5421	0.0000	64.6480
Unmitigated	26.0945	1.5421	0.0000	64.6480

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	114.6	23.2628	1.3748	0.0000	57.6325
General Office Building	13.95	2.8317	0.1674	0.0000	7.0155
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**26.0945**	**1.5421**	**0.0000**	**64.6480**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	114.6	23.2628	1.3748	0.0000	57.6325
General Office Building	13.95	2.8317	0.1674	0.0000	7.0155
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**26.0945**	**1.5421**	**0.0000**	**64.6480**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RTA Maintenance Facility Project

San Luis Obispo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.00	1000sqft	0.30	15,000.00	0
Parking Lot	187.00	Space	3.50	74,800.00	0
Automobile Care Center	30.00	1000sqft	0.40	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on site plan

Grading -

Demolition -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblGrading	MaterialImported	0.00	11,600.00
tblLandUse	LotAcreage	0.34	0.30
tblLandUse	LotAcreage	1.68	3.50
tblLandUse	LotAcreage	0.69	0.40
tblProjectCharacteristics	OperationalYear	2018	2021

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					
2019	6.3393	153.2011	43.7219	0.3210	18.2442	2.3915	20.6358	9.9779	2.2002	12.1781	0.0000	34,272.0537	34,272.0537	2.6690	0.0000	34,338.7786
2020	59.9517	21.4142	19.0729	0.0352	0.5476	1.1312	1.6788	0.1474	1.0637	1.2111	0.0000	3,407.6545	3,407.6545	0.6614	0.0000	3,424.1899
Maximum	**59.9517**	**153.2011**	**43.7219**	**0.3210**	**18.2442**	**2.3915**	**20.6358**	**9.9779**	**2.2002**	**12.1781**	**0.0000**	**34,272.0537**	**34,272.0537**	**2.6690**	**0.0000**	**34,338.7786**

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					
2019	6.3393	153.2011	43.7219	0.3210	18.2442	2.3915	20.6358	9.9779	2.2002	12.1781	0.0000	34,272.0537	34,272.0537	2.6690	0.0000	34,338.7786
2020	59.9517	21.4142	19.0729	0.0352	0.5476	1.1312	1.6788	0.1474	1.0637	1.2111	0.0000	3,407.6545	3,407.6545	0.6614	0.0000	3,424.1898
Maximum	**59.9517**	**153.2011**	**43.7219**	**0.3210**	**18.2442**	**2.3915**	**20.6358**	**9.9779**	**2.2002**	**12.1781**	**0.0000**	**34,272.0537**	**34,272.0537**	**2.6690**	**0.0000**	**34,338.7786**

	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	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Energy	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
Mobile	1.3777	4.3481	11.0710	0.0268	2.2282	0.0290	2.2572	0.5954	0.0272	0.6226		2,701.9326	2,701.9326	0.1257		2,705.0755
Total	**2.6944**	**4.6279**	**11.3297**	**0.0285**	**2.2282**	**0.0504**	**2.2786**	**0.5954**	**0.0486**	**0.6440**		**3,037.5676**	**3,037.5676**	**0.1323**	**6.1500e-003**	**3,042.7081**

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	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Energy	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
Mobile	1.3777	4.3481	11.0710	0.0268	2.2282	0.0290	2.2572	0.5954	0.0272	0.6226		2,701.9326	2,701.9326	0.1257		2,705.0755
Total	**2.6944**	**4.6279**	**11.3297**	**0.0285**	**2.2282**	**0.0504**	**2.2786**	**0.5954**	**0.0486**	**0.6440**		**3,037.5676**	**3,037.5676**	**0.1323**	**6.1500e-003**	**3,042.7081**

	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/29/2020	2/21/2020	5	18	
2	Building Construction	Building Construction	2/15/2019	1/2/2020	5	230	
3	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
4	Grading	Grading	2/5/2019	2/14/2019	5	8	
5	Paving	Paving	1/3/2020	1/28/2020	5	18	
6	Site Preparation	Site Preparation	1/29/2019	2/4/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,500; Non-Residential Outdoor: 22,500; Striped Parking Area: 4,488 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	9.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	46.00	20.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	7.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,900.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2020

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	59.6710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**59.9132**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.2 Architectural Coating - 2020

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	0.0385	0.0321	0.3195	8.4000e-004	0.0890	5.7000e-004	0.0895	0.0236	5.3000e-004	0.0241		83.1499	83.1499	2.7100e-003		83.2176
Total	**0.0385**	**0.0321**	**0.3195**	**8.4000e-004**	**0.0890**	**5.7000e-004**	**0.0895**	**0.0236**	**5.3000e-004**	**0.0241**		**83.1499**	**83.1499**	**2.7100e-003**		**83.2176**

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	59.6710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**59.9132**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.2 Architectural Coating - 2020

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	0.0385	0.0321	0.3195	8.4000e-004	0.0890	5.7000e-004	0.0895	0.0236	5.3000e-004	0.0241		83.1499	83.1499	2.7100e-003		83.2176
Total	**0.0385**	**0.0321**	**0.3195**	**8.4000e-004**	**0.0890**	**5.7000e-004**	**0.0895**	**0.0236**	**5.3000e-004**	**0.0241**		**83.1499**	**83.1499**	**2.7100e-003**		**83.2176**

3.3 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.580 2	2,591.580 2	0.6313		2,607.363 5
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.580 2**	**2,591.580 2**	**0.6313**		**2,607.363 5**

3.3 Building Construction - 2019

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	0.0915	2.2584	0.6722	4.0500e-003	0.0928	0.0180	0.1109	0.0267	0.0173	0.0440		430.0114	430.0114	0.0264		430.6717
Worker	0.2161	0.1863	1.8486	4.4100e-003	0.4548	3.0100e-003	0.4578	0.1206	2.7800e-003	0.1234		438.5402	438.5402	0.0161		438.9430
Total	**0.3076**	**2.4447**	**2.5207**	**8.4600e-003**	**0.5476**	**0.0211**	**0.5686**	**0.1473**	**0.0200**	**0.1674**		**868.5516**	**868.5516**	**0.0425**		**869.6146**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.3 Building Construction - 2019

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	0.0915	2.2584	0.6722	4.0500e-003	0.0928	0.0180	0.1109	0.0267	0.0173	0.0440		430.0114	430.0114	0.0264		430.6717
Worker	0.2161	0.1863	1.8486	4.4100e-003	0.4548	3.0100e-003	0.4578	0.1206	2.7800e-003	0.1234		438.5402	438.5402	0.0161		438.9430
Total	**0.3076**	**2.4447**	**2.5207**	**8.4600e-003**	**0.5476**	**0.0211**	**0.5686**	**0.1473**	**0.0200**	**0.1674**		**868.5516**	**868.5516**	**0.0425**		**869.6146**

3.3 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.3 Building Construction - 2020

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	0.0725	2.0641	0.5915	4.0400e-003	0.0928	0.0112	0.1040	0.0267	0.0107	0.0375		429.6033	429.6033	0.0247		430.2209
Worker	0.1968	0.1641	1.6329	4.2700e-003	0.4548	2.9100e-003	0.4577	0.1206	2.6800e-003	0.1233		424.9882	424.9882	0.0139		425.3345
Total	**0.2693**	**2.2282**	**2.2244**	**8.3100e-003**	**0.5476**	**0.0141**	**0.5617**	**0.1474**	**0.0134**	**0.1608**		**854.5915**	**854.5915**	**0.0386**		**855.5554**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.3 Building Construction - 2020

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	0.0725	2.0641	0.5915	4.0400e-003	0.0928	0.0112	0.1040	0.0267	0.0107	0.0375		429.6033	429.6033	0.0247		430.2209
Worker	0.1968	0.1641	1.6329	4.2700e-003	0.4548	2.9100e-003	0.4577	0.1206	2.6800e-003	0.1233		424.9882	424.9882	0.0139		425.3345
Total	**0.2693**	**2.2282**	**2.2244**	**8.3100e-003**	**0.5476**	**0.0141**	**0.5617**	**0.1474**	**0.0134**	**0.1608**		**854.5915**	**854.5915**	**0.0386**		**855.5554**

3.4 Demolition - 2019

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					0.0813	0.0000	0.0813	0.0123	0.0000	0.0123			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0813**	**1.7949**	**1.8762**	**0.0123**	**1.6697**	**1.6820**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.4 Demolition - 2019

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	3.5600e-003	0.1205	0.0259	2.8000e-004	6.1000e-003	7.3000e-004	6.8300e-003	1.6700e-003	6.9000e-004	2.3700e-003		30.1167	30.1167	1.6700e-003		30.1585
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	0.0705	0.0608	0.6028	1.4400e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		143.0023	143.0023	5.2500e-003		143.1336
Total	**0.0740**	**0.1813**	**0.6287**	**1.7200e-003**	**0.1544**	**1.7100e-003**	**0.1561**	**0.0410**	**1.6000e-003**	**0.0426**		**173.1189**	**173.1189**	**6.9200e-003**		**173.2921**

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					0.0813	0.0000	0.0813	0.0123	0.0000	0.0123			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0813**	**1.7949**	**1.8762**	**0.0123**	**1.6697**	**1.6820**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.4 Demolition - 2019

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	3.5600e-003	0.1205	0.0259	2.8000e-004	6.1000e-003	7.3000e-004	6.8300e-003	1.6700e-003	6.9000e-004	2.3700e-003		30.1167	30.1167	1.6700e-003		30.1585
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	0.0705	0.0608	0.6028	1.4400e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		143.0023	143.0023	5.2500e-003		143.1336
Total	**0.0740**	**0.1813**	**0.6287**	**1.7200e-003**	**0.1544**	**1.7100e-003**	**0.1561**	**0.0410**	**1.6000e-003**	**0.0426**		**173.1189**	**173.1189**	**6.9200e-003**		**173.2921**

3.5 Grading - 2019

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					7.0861	0.0000	7.0861	3.4483	0.0000	3.4483			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**7.0861**	**1.3974**	**8.4835**	**3.4483**	**1.2856**	**4.7339**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

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	3.6884	124.7924	26.8258	0.2899	6.3228	0.7509	7.0737	1.7318	0.7184	2.4503		31,192.2447	31,192.2447	1.7346		31,235.6089
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	0.0705	0.0608	0.6028	1.4400e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		143.0023	143.0023	5.2500e-003		143.1336
Total	**3.7588**	**124.8531**	**27.4286**	**0.2913**	**6.4711**	**0.7519**	**7.2230**	**1.7712**	**0.7193**	**2.4905**		**31,335.2469**	**31,335.2469**	**1.7398**		**31,378.7425**

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					7.0861	0.0000	7.0861	3.4483	0.0000	3.4483			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**7.0861**	**1.3974**	**8.4835**	**3.4483**	**1.2856**	**4.7339**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

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	3.6884	124.7924	26.8258	0.2899	6.3228	0.7509	7.0737	1.7318	0.7184	2.4503		31,192.2447	31,192.2447	1.7346		31,235.6089
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	0.0705	0.0608	0.6028	1.4400e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		143.0023	143.0023	5.2500e-003		143.1336
Total	**3.7588**	**124.8531**	**27.4286**	**0.2913**	**6.4711**	**0.7519**	**7.2230**	**1.7712**	**0.7193**	**2.4905**		**31,335.2469**	**31,335.2469**	**1.7398**		**31,378.7425**

3.6 Paving - 2020

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	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.5094					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6932**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**		**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.6 Paving - 2020

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	0.0855	0.0714	0.7099	1.8600e-003	0.1977	1.2600e-003	0.1990	0.0524	1.1700e-003	0.0536		184.7775	184.7775	6.0200e-003		184.9280
Total	**0.0855**	**0.0714**	**0.7099**	**1.8600e-003**	**0.1977**	**1.2600e-003**	**0.1990**	**0.0524**	**1.1700e-003**	**0.0536**		**184.7775**	**184.7775**	**6.0200e-003**		**184.9280**

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	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.5094					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6932**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**	**0.0000**	**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.6 Paving - 2020

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	0.0855	0.0714	0.7099	1.8600e-003	0.1977	1.2600e-003	0.1990	0.0524	1.1700e-003	0.0536		184.7775	184.7775	6.0200e-003		184.9280
Total	**0.0855**	**0.0714**	**0.7099**	**1.8600e-003**	**0.1977**	**1.2600e-003**	**0.1990**	**0.0524**	**1.1700e-003**	**0.0536**		**184.7775**	**184.7775**	**6.0200e-003**		**184.9280**

3.7 Site Preparation - 2019

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	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.7 Site Preparation - 2019

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	0.0846	0.0729	0.7233	1.7200e-003	0.1780	1.1800e-003	0.1791	0.0472	1.0900e-003	0.0483		171.6027	171.6027	6.3000e-003		171.7603
Total	**0.0846**	**0.0729**	**0.7233**	**1.7200e-003**	**0.1780**	**1.1800e-003**	**0.1791**	**0.0472**	**1.0900e-003**	**0.0483**		**171.6027**	**171.6027**	**6.3000e-003**		**171.7603**

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	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.7 Site Preparation - 2019

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	0.0846	0.0729	0.7233	1.7200e-003	0.1780	1.1800e-003	0.1791	0.0472	1.0900e-003	0.0483		171.6027	171.6027	6.3000e-003		171.7603
Total	**0.0846**	**0.0729**	**0.7233**	**1.7200e-003**	**0.1780**	**1.1800e-003**	**0.1791**	**0.0472**	**1.0900e-003**	**0.0483**		**171.6027**	**171.6027**	**6.3000e-003**		**171.7603**

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	1.3777	4.3481	11.0710	0.0268	2.2282	0.0290	2.2572	0.5954	0.0272	0.6226		2,701.932 6	2,701.932 6	0.1257		2,705.075 5
Unmitigated	1.3777	4.3481	11.0710	0.0268	2.2282	0.0290	2.2572	0.5954	0.0272	0.6226		2,701.932 6	2,701.932 6	0.1257		2,705.075 5

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	711.60	711.60	356.40	626,999	626,999
General Office Building	165.45	36.90	15.75	285,954	285,954
Parking Lot	0.00	0.00	0.00		
Total	877.05	748.50	372.15	912,953	912,953

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
Automobile Care Center	13.00	5.00	5.00	33.00	48.00	19.00	21	51	28
General Office Building	13.00	5.00	5.00	33.00	48.00	19.00	77	19	4
Parking Lot	13.00	5.00	5.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Parking Lot	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Automobile Care Center	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
NaturalGas Unmitigated	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784

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					
Automobile Care Center	2176.44	0.0235	0.2134	0.1792	1.2800e-003		0.0162	0.0162		0.0162	0.0162		256.0516	256.0516	4.9100e-003	4.6900e-003	257.5732
General Office Building	676.027	7.2900e-003	0.0663	0.0557	4.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003		79.5326	79.5326	1.5200e-003	1.4600e-003	80.0053
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
Total		**0.0308**	**0.2797**	**0.2349**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.5842**	**335.5842**	**6.4300e-003**	**6.1500e-003**	**337.5784**

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					
Automobile Care Center	2.17644	0.0235	0.2134	0.1792	1.2800e-003		0.0162	0.0162		0.0162	0.0162		256.0516	256.0516	4.9100e-003	4.6900e-003	257.5732
General Office Building	0.676027	7.2900e-003	0.0663	0.0557	4.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003		79.5326	79.5326	1.5200e-003	1.4600e-003	80.0053
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
Total		**0.0308**	**0.2797**	**0.2349**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.5842**	**335.5842**	**6.4300e-003**	**6.1500e-003**	**337.5784**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Unmitigated	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541

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	0.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2200e-003	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Total	**1.2860**	**2.2000e-004**	**0.0238**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0508**	**0.0508**	**1.3000e-004**		**0.0541**

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	0.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2200e-003	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Total	**1.2860**	**2.2000e-004**	**0.0238**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0508**	**0.0508**	**1.3000e-004**		**0.0541**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RTA Maintenance Facility Project

San Luis Obispo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.00	1000sqft	0.30	15,000.00	0
Parking Lot	187.00	Space	3.50	74,800.00	0
Automobile Care Center	30.00	1000sqft	0.40	30,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage based on site plan

Grading -

Demolition -

Table Name	Column Name	Default Value	New Value
tblGrading	MaterialExported	0.00	11,600.00
tblGrading	MaterialImported	0.00	11,600.00
tblLandUse	LotAcreage	0.34	0.30
tblLandUse	LotAcreage	1.68	3.50
tblLandUse	LotAcreage	0.69	0.40
tblProjectCharacteristics	OperationalYear	2018	2021

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					
2019	6.4471	154.1818	45.4482	0.3168	18.2442	2.3915	20.6358	9.9779	2.2002	12.1781	0.0000	33,826.0908	33,826.0908	2.7274	0.0000	33,894.2766
2020	59.9571	21.4261	19.1031	0.0349	0.5476	1.1315	1.6791	0.1474	1.0641	1.2114	0.0000	3,374.7728	3,374.7728	0.6627	0.0000	3,391.3395
Maximum	**59.9571**	**154.1818**	**45.4482**	**0.3168**	**18.2442**	**2.3915**	**20.6358**	**9.9779**	**2.2002**	**12.1781**	**0.0000**	**33,826.0908**	**33,826.0908**	**2.7274**	**0.0000**	**33,894.2766**

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					
2019	6.4471	154.1818	45.4482	0.3168	18.2442	2.3915	20.6358	9.9779	2.2002	12.1781	0.0000	33,826.0908	33,826.0908	2.7274	0.0000	33,894.2766
2020	59.9571	21.4261	19.1031	0.0349	0.5476	1.1315	1.6791	0.1474	1.0641	1.2114	0.0000	3,374.7728	3,374.7728	0.6627	0.0000	3,391.3395
Maximum	**59.9571**	**154.1818**	**45.4482**	**0.3168**	**18.2442**	**2.3915**	**20.6358**	**9.9779**	**2.2002**	**12.1781**	**0.0000**	**33,826.0908**	**33,826.0908**	**2.7274**	**0.0000**	**33,894.2766**

	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	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Energy	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
Mobile	1.3311	4.4686	11.9060	0.0257	2.2282	0.0296	2.2577	0.5954	0.0277	0.6231		2,590.4738	2,590.4738	0.1310		2,593.7496
Total	**2.6478**	**4.7485**	**12.1647**	**0.0274**	**2.2282**	**0.0509**	**2.2791**	**0.5954**	**0.0491**	**0.6445**		**2,926.1088**	**2,926.1088**	**0.1376**	**6.1500e-003**	**2,931.3821**

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	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Energy	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
Mobile	1.3311	4.4686	11.9060	0.0257	2.2282	0.0296	2.2577	0.5954	0.0277	0.6231		2,590.4738	2,590.4738	0.1310		2,593.7496
Total	**2.6478**	**4.7485**	**12.1647**	**0.0274**	**2.2282**	**0.0509**	**2.2791**	**0.5954**	**0.0491**	**0.6445**		**2,926.1088**	**2,926.1088**	**0.1376**	**6.1500e-003**	**2,931.3821**

	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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/29/2020	2/21/2020	5	18	
2	Building Construction	Building Construction	2/15/2019	1/2/2020	5	230	
3	Demolition	Demolition	1/1/2019	1/28/2019	5	20	
4	Grading	Grading	2/5/2019	2/14/2019	5	8	
5	Paving	Paving	1/3/2020	1/28/2020	5	18	
6	Site Preparation	Site Preparation	1/29/2019	2/4/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 3.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 67,500; Non-Residential Outdoor: 22,500; Striped Parking Area: 4,488 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	158	0.38
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	2	6.00	132	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	9.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	46.00	20.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	7.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,900.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2020

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	59.6710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**59.9132**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.2 Architectural Coating - 2020

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	0.0439	0.0365	0.3108	8.0000e-004	0.0890	5.7000e-004	0.0895	0.0236	5.3000e-004	0.0241		79.2565	79.2565	2.6200e-003		79.3220
Total	**0.0439**	**0.0365**	**0.3108**	**8.0000e-004**	**0.0890**	**5.7000e-004**	**0.0895**	**0.0236**	**5.3000e-004**	**0.0241**		**79.2565**	**79.2565**	**2.6200e-003**		**79.3220**

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	59.6710					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**59.9132**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.2 Architectural Coating - 2020

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	0.0439	0.0365	0.3108	8.0000e-004	0.0890	5.7000e-004	0.0895	0.0236	5.3000e-004	0.0241		79.2565	79.2565	2.6200e-003		79.3220
Total	**0.0439**	**0.0365**	**0.3108**	**8.0000e-004**	**0.0890**	**5.7000e-004**	**0.0895**	**0.0236**	**5.3000e-004**	**0.0241**		**79.2565**	**79.2565**	**2.6200e-003**		**79.3220**

3.3 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.3 Building Construction - 2019

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	0.0963	2.2505	0.7555	3.9300e-003	0.0928	0.0186	0.1114	0.0267	0.0177	0.0445		417.4429	417.4429	0.0282		418.1489
Worker	0.2458	0.2116	1.8081	4.2000e-003	0.4548	3.0100e-003	0.4578	0.1206	2.7800e-003	0.1234		418.0272	418.0272	0.0157		418.4195
Total	**0.3421**	**2.4621**	**2.5636**	**8.1300e-003**	**0.5476**	**0.0216**	**0.5691**	**0.1473**	**0.0205**	**0.1679**		**835.4702**	**835.4702**	**0.0439**		**836.5684**

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.3 Building Construction - 2019

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	0.0963	2.2505	0.7555	3.9300e-003	0.0928	0.0186	0.1114	0.0267	0.0177	0.0445		417.4429	417.4429	0.0282		418.1489
Worker	0.2458	0.2116	1.8081	4.2000e-003	0.4548	3.0100e-003	0.4578	0.1206	2.7800e-003	0.1234		418.0272	418.0272	0.0157		418.4195
Total	**0.3421**	**2.4621**	**2.5636**	**8.1300e-003**	**0.5476**	**0.0216**	**0.5691**	**0.1473**	**0.0205**	**0.1679**		**835.4702**	**835.4702**	**0.0439**		**836.5684**

3.3 Building Construction - 2020

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.3 Building Construction - 2020

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	0.0767	2.0538	0.6660	3.9200e-003	0.0928	0.0116	0.1044	0.0267	0.0111	0.0378		416.6213	416.6213	0.0264		417.2816
Worker	0.2243	0.1863	1.5886	4.0700e-003	0.4548	2.9100e-003	0.4577	0.1206	2.6800e-003	0.1233		405.0885	405.0885	0.0134		405.4234
Total	**0.3010**	**2.2401**	**2.2546**	**7.9900e-003**	**0.5476**	**0.0145**	**0.5621**	**0.1474**	**0.0137**	**0.1611**		**821.7098**	**821.7098**	**0.0398**		**822.7050**

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	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.3 Building Construction - 2020

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	0.0767	2.0538	0.6660	3.9200e-003	0.0928	0.0116	0.1044	0.0267	0.0111	0.0378		416.6213	416.6213	0.0264		417.2816
Worker	0.2243	0.1863	1.5886	4.0700e-003	0.4548	2.9100e-003	0.4577	0.1206	2.6800e-003	0.1233		405.0885	405.0885	0.0134		405.4234
Total	**0.3010**	**2.2401**	**2.2546**	**7.9900e-003**	**0.5476**	**0.0145**	**0.5621**	**0.1474**	**0.0137**	**0.1611**		**821.7098**	**821.7098**	**0.0398**		**822.7050**

3.4 Demolition - 2019

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					0.0813	0.0000	0.0813	0.0123	0.0000	0.0123			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697		3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0813**	**1.7949**	**1.8762**	**0.0123**	**1.6697**	**1.6820**		**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.4 Demolition - 2019

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	3.6600e-003	0.1214	0.0276	2.8000e-004	6.1000e-003	7.4000e-004	6.8500e-003	1.6700e-003	7.1000e-004	2.3800e-003		29.6925	29.6925	1.7300e-003		29.7358
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	0.0690	0.5896	1.3700e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		136.3132	136.3132	5.1200e-003		136.4411
Total	**0.0838**	**0.1904**	**0.6172**	**1.6500e-003**	**0.1544**	**1.7200e-003**	**0.1561**	**0.0410**	**1.6200e-003**	**0.0426**		**166.0057**	**166.0057**	**6.8500e-003**		**166.1770**

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					0.0813	0.0000	0.0813	0.0123	0.0000	0.0123			0.0000			0.0000
Off-Road	3.5134	35.7830	22.0600	0.0388		1.7949	1.7949		1.6697	1.6697	0.0000	3,816.8994	3,816.8994	1.0618		3,843.4451
Total	**3.5134**	**35.7830**	**22.0600**	**0.0388**	**0.0813**	**1.7949**	**1.8762**	**0.0123**	**1.6697**	**1.6820**	**0.0000**	**3,816.8994**	**3,816.8994**	**1.0618**		**3,843.4451**

3.4 Demolition - 2019

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	3.6600e-003	0.1214	0.0276	2.8000e-004	6.1000e-003	7.4000e-004	6.8500e-003	1.6700e-003	7.1000e-004	2.3800e-003		29.6925	29.6925	1.7300e-003		29.7358
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	0.0690	0.5896	1.3700e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		136.3132	136.3132	5.1200e-003		136.4411
Total	**0.0838**	**0.1904**	**0.6172**	**1.6500e-003**	**0.1544**	**1.7200e-003**	**0.1561**	**0.0410**	**1.6200e-003**	**0.0426**		**166.0057**	**166.0057**	**6.8500e-003**		**166.1770**

3.5 Grading - 2019

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					7.0861	0.0000	7.0861	3.4483	0.0000	3.4483			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856		2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**7.0861**	**1.3974**	**8.4835**	**3.4483**	**1.2856**	**4.7339**		**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

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	3.7864	125.7649	28.5652	0.2858	6.3228	0.7670	7.0898	1.7318	0.7338	2.4656		30,752.9708	30,752.9708	1.7931		30,797.7993
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	0.0690	0.5896	1.3700e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		136.3132	136.3132	5.1200e-003		136.4411
Total	**3.8666**	**125.8338**	**29.1548**	**0.2872**	**6.4711**	**0.7680**	**7.2390**	**1.7712**	**0.7347**	**2.5059**		**30,889.2840**	**30,889.2840**	**1.7983**		**30,934.2404**

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					7.0861	0.0000	7.0861	3.4483	0.0000	3.4483			0.0000			0.0000
Off-Road	2.5805	28.3480	16.2934	0.0297		1.3974	1.3974		1.2856	1.2856	0.0000	2,936.8068	2,936.8068	0.9292		2,960.0361
Total	**2.5805**	**28.3480**	**16.2934**	**0.0297**	**7.0861**	**1.3974**	**8.4835**	**3.4483**	**1.2856**	**4.7339**	**0.0000**	**2,936.8068**	**2,936.8068**	**0.9292**		**2,960.0361**

3.5 Grading - 2019

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	3.7864	125.7649	28.5652	0.2858	6.3228	0.7670	7.0898	1.7318	0.7338	2.4656		30,752.9708	30,752.9708	1.7931		30,797.7993
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	0.0690	0.5896	1.3700e-003	0.1483	9.8000e-004	0.1493	0.0393	9.1000e-004	0.0402		136.3132	136.3132	5.1200e-003		136.4411
Total	**3.8666**	**125.8338**	**29.1548**	**0.2872**	**6.4711**	**0.7680**	**7.2390**	**1.7712**	**0.7347**	**2.5059**		**30,889.2840**	**30,889.2840**	**1.7983**		**30,934.2404**

3.6 Paving - 2020

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	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005		1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.5094					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6932**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**		**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.6 Paving - 2020

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	0.0975	0.0810	0.6907	1.7700e-003	0.1977	1.2600e-003	0.1990	0.0524	1.1700e-003	0.0536		176.1254	176.1254	5.8200e-003		176.2710
Total	**0.0975**	**0.0810**	**0.6907**	**1.7700e-003**	**0.1977**	**1.2600e-003**	**0.1990**	**0.0524**	**1.1700e-003**	**0.0536**		**176.1254**	**176.1254**	**5.8200e-003**		**176.2710**

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	1.1837	11.8015	12.2823	0.0189		0.6509	0.6509		0.6005	0.6005	0.0000	1,804.7070	1,804.7070	0.5670		1,818.8830
Paving	0.5094					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6932**	**11.8015**	**12.2823**	**0.0189**		**0.6509**	**0.6509**		**0.6005**	**0.6005**	**0.0000**	**1,804.7070**	**1,804.7070**	**0.5670**		**1,818.8830**

3.6 Paving - 2020

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	0.0975	0.0810	0.6907	1.7700e-003	0.1977	1.2600e-003	0.1990	0.0524	1.1700e-003	0.0536		176.1254	176.1254	5.8200e-003		176.2710
Total	**0.0975**	**0.0810**	**0.6907**	**1.7700e-003**	**0.1977**	**1.2600e-003**	**0.1990**	**0.0524**	**1.1700e-003**	**0.0536**		**176.1254**	**176.1254**	**5.8200e-003**		**176.2710**

3.7 Site Preparation - 2019

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	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991		3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**		**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.7 Site Preparation - 2019

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	0.0962	0.0828	0.7075	1.6400e-003	0.1780	1.1800e-003	0.1791	0.0472	1.0900e-003	0.0483		163.5759	163.5759	6.1400e-003		163.7294
Total	**0.0962**	**0.0828**	**0.7075**	**1.6400e-003**	**0.1780**	**1.1800e-003**	**0.1791**	**0.0472**	**1.0900e-003**	**0.0483**		**163.5759**	**163.5759**	**6.1400e-003**		**163.7294**

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	4.3350	45.5727	22.0630	0.0380		2.3904	2.3904		2.1991	2.1991	0.0000	3,766.4529	3,766.4529	1.1917		3,796.2445
Total	**4.3350**	**45.5727**	**22.0630**	**0.0380**	**18.0663**	**2.3904**	**20.4566**	**9.9307**	**2.1991**	**12.1298**	**0.0000**	**3,766.4529**	**3,766.4529**	**1.1917**		**3,796.2445**

3.7 Site Preparation - 2019

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	0.0962	0.0828	0.7075	1.6400e-003	0.1780	1.1800e-003	0.1791	0.0472	1.0900e-003	0.0483		163.5759	163.5759	6.1400e-003		163.7294
Total	**0.0962**	**0.0828**	**0.7075**	**1.6400e-003**	**0.1780**	**1.1800e-003**	**0.1791**	**0.0472**	**1.0900e-003**	**0.0483**		**163.5759**	**163.5759**	**6.1400e-003**		**163.7294**

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	1.3311	4.4686	11.9060	0.0257	2.2282	0.0296	2.2577	0.5954	0.0277	0.6231		2,590.4738	2,590.4738	0.1310		2,593.7496
Unmitigated	1.3311	4.4686	11.9060	0.0257	2.2282	0.0296	2.2577	0.5954	0.0277	0.6231		2,590.4738	2,590.4738	0.1310		2,593.7496

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	711.60	711.60	356.40	626,999	626,999
General Office Building	165.45	36.90	15.75	285,954	285,954
Parking Lot	0.00	0.00	0.00		
Total	877.05	748.50	372.15	912,953	912,953

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
Automobile Care Center	13.00	5.00	5.00	33.00	48.00	19.00	21	51	28
General Office Building	13.00	5.00	5.00	33.00	48.00	19.00	77	19	4
Parking Lot	13.00	5.00	5.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Parking Lot	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552
Automobile Care Center	0.567875	0.030811	0.198391	0.124124	0.028385	0.006896	0.012949	0.019383	0.002368	0.001236	0.005232	0.000797	0.001552

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784
NaturalGas Unmitigated	0.0308	0.2797	0.2349	1.6800e-003		0.0213	0.0213		0.0213	0.0213		335.5842	335.5842	6.4300e-003	6.1500e-003	337.5784

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					
Automobile Care Center	2176.44	0.0235	0.2134	0.1792	1.2800e-003		0.0162	0.0162		0.0162	0.0162		256.0516	256.0516	4.9100e-003	4.6900e-003	257.5732
General Office Building	676.027	7.2900e-003	0.0663	0.0557	4.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003		79.5326	79.5326	1.5200e-003	1.4600e-003	80.0053
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
Total		**0.0308**	**0.2797**	**0.2349**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.5842**	**335.5842**	**6.4300e-003**	**6.1500e-003**	**337.5784**

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					
Automobile Care Center	2.17644	0.0235	0.2134	0.1792	1.2800e-003		0.0162	0.0162		0.0162	0.0162		256.0516	256.0516	4.9100e-003	4.6900e-003	257.5732
General Office Building	0.676027	7.2900e-003	0.0663	0.0557	4.0000e-004		5.0400e-003	5.0400e-003		5.0400e-003	5.0400e-003		79.5326	79.5326	1.5200e-003	1.4600e-003	80.0053
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
Total		**0.0308**	**0.2797**	**0.2349**	**1.6800e-003**		**0.0213**	**0.0213**		**0.0213**	**0.0213**		**335.5842**	**335.5842**	**6.4300e-003**	**6.1500e-003**	**337.5784**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Unmitigated	1.2860	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541

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	0.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2200e-003	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Total	**1.2860**	**2.2000e-004**	**0.0238**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0508**	**0.0508**	**1.3000e-004**		**0.0541**

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	0.2943					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.2200e-003	2.2000e-004	0.0238	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0508	0.0508	1.3000e-004		0.0541
Total	**1.2860**	**2.2000e-004**	**0.0238**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0508**	**0.0508**	**1.3000e-004**		**0.0541**

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 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Greenhouse Gas Emission Worksheet
N20 Mobile Emissions

RTA Maintenance Facility Project

From CalEEMod Vehicle Fleet Mix Output:

Annual VMT: 912,953

Vehicle Type	Percent Type	CH4 Emission Factor (g/mile)*	CH4 Emission (g/mile)**	N2O Emission Factor (g/mile)*	N2O Emission (g/mile)**
Light Auto	56.8%	0.04	0.02272	0.04	0.02272
Light Truck < 3750 lbs	3.1%	0.05	0.00155	0.06	0.00186
Light Truck 3751-5750 lbs	19.8%	0.05	0.0099	0.06	0.01188
Med Truck 5751-8500 lbs	12.4%	0.12	0.01488	0.2	0.0248
Lite-Heavy Truck 8501-10,000 lbs	2.8%	0.12	0.00336	0.2	0.0056
Lite-Heavy Truck 10,001-14,000 lbs	0.7%	0.09	0.00063	0.125	0.000875
Med-Heavy Truck 14,001-33,000 lbs	1.3%	0.06	0.00078	0.05	0.00065
Heavy-Heavy Truck 33,001-60,000 lbs	1.9%	0.06	0.00114	0.05	0.00095
Other Bus	0.2%	0.06	0.00012	0.05	0.0001
Urban Bus	0.1%	0.06	0.00006	0.05	0.00005
Motorcycle	0.5%	0.09	0.00045	0.01	0.00005
School Bus	0.1%	0.06	0.00006	0.05	0.00005
Motor Home	0.3%	0.09	0.00027	0.125	0.000375
Total	**100.0%**		**0.05592**		**0.06996**

Total Emissions (metric tons) =
Emission Factor by Vehicle Mix (g/mi) x Annual VMT(mi) x 0.000001 metric tons/g

Conversion to Carbon Dioxide Equivalency (CO2e) Units based on Global Warming Potential (GWP)

CH4	25	GWP
N2O	298	GWP
1 ton (short, US) =	0.90718474	metric ton

Annual Mobile Emissions:

	Total Emissions		Total CO2e units	
N20 Emissions:	0.0639	metric tons N2O	**19.03**	metric tons CO2e
		Project Total:	***19.03***	***metric tons CO2e***

References

* from Table C.4: Methane and Nitrous Oxide Emission Factors for Mobile Sources by Vehicle and Fuel Type (g/mile).
in California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.
Assume Model year 2000-present, gasoline fueled.

** Source: California Climate Action Registry General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, Version 3.1, January 2009.

*** From CalEEmod results for mobile sources

****Global Warming Potentials from 2007 IPCC AR4

Appendix B

Natural Environment Study

San Luis Obispo Regional Transit Authority
Maintenance Facility Project

Natural Environment Study

(Minimal Impacts)

253 Elks Lane,

City of San Luis Obispo

San Luis Obispo County

February 2017

Prepared By: ____________________________________ Date: ____________

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U.S. Department of Transportation
(415) 734-9490
Federal Transit Administration, Region 9

Summary

The San Luis Obispo Regional Transit Authority (SLORTA) is proposing a bus maintenance facility on a 6.5-acre parcel at 253 Elks Lane in the City of San Luis Obispo, hereinafter referred to as the Project. The Project is receiving funding from the Federal Transit Administration. California Department of Transportation (Caltrans) review may be required if the project requires any work within a Caltrans right-of-way. The overall objective of this Natural Environment Study – Minimal Impacts (NES-MI) is to provide the SLORTA with the baseline information on and impacts analysis for biological resources to achieve compliance with the requirements of the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), as applicable. The proposed Project includes the construction of a two-story building, totally 45,000 square feet that will serve as both the SLORTA Administration Headquarters and bus maintenance building, a secure bus maintenance and storage yard, associated roads, and designated vehicle parking. Based on review of the Conceptual Site Plan (Option D.3.1), it is anticipated the entire Project site will be graded and the proposed buildings will be constructed on fill above the 100-year flood level, or their foundations will be constructed to provide equivalent flood protection. Results of a field survey and relevant biological resources literature review determined there is no suitable habitat for special status plant or wildlife species within the Project site. Similarly, there are no sensitive vegetation communities within the Project site. In addition, there are no wetlands or aquatic habitats on site.

1. Introduction

The Project site also known as the Biological Study Area (BSA), is a 6.5-acre parcel (Assessor's Parcel Number [APN] 053-041-071), located at the intersection of Elks Lane and Prado Road in the City of San Luis Obispo, San Luis Obispo County (Figures 1 and 2). The site is located at coordinates 35^{o}15'25.97"N, and 120^{o}40'23.11"W, is depicted on the *San Luis Obispo*, *California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle, and is within the Central Coast Watershed (Hydrologic Unit Code Number 18060006 – U.S. Geological Survey, 1978). Within the BSA is a fenced in area of 0.61 acres, that holds a U Haul equipment rental facility.

The proposed Project consists of the following development: construction of a two-story building totaling 45,000 square feet, a secure bus maintenance and storage yard, associated roads, and designated vehicle parking. Based on review of the Conceptual Site Plan (Option D.3.1), it is anticipated the entire Project site will be graded and the proposed buildings will be constructed on fill above the 100-year flood level, or their foundations will be constructed to provide equivalent flood protection.

Imagery provided by ESRI and its licensors © 2016.

Regional Location

Figure 1

Imagery provided by Google and its licensors © 2016.

Biological Study Area (BSA)

Figure 2

2. Study Methods

The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California, were reviewed for the *San Luis Obispo, California* USGS 7.5-minute topographic quadrangle, and the surrounding eight quadrangles for previously documented occurrences of special status species. The U.S. Fish and Wildlife Service (USFWS) query of the Information, Planning, and Conservation System (IPaC) was also reviewed for federally listed species that could potentially be affected by the project (Appendix A).

On October 26, 2016, Rincon Consultants, Inc. (Rincon) conducted a reconnaissance-level field survey of the BSA. Rincon Senior Biologist, Kumari Jayakody visited the site during the hours of 1045 to 1230 to assess general habitat, identify plant and wildlife species, and characterize and map vegetation communities present within the BSA. Due to lack of Permission-To-Enter the U Haul rental facility a visual assessment was made from outside of the area. Weather conditions during the survey were mild. The temperature ranged from 61 to 71 degrees Fahrenheit, with 20 percent cloud cover and no wind breeze.

Rincon Associate Biologist, Kyle Weichert conducted in-house plant identification and verification based on field specimens and photographs gathered during the field survey. The results of the CNDDB list of special status species and CNPS Rare and Endangered Plants of California list were analyzed. The analysis was based on habitat requirements for each special status species and evaluation of the quality of habitat observed on site during the field survey. The potential for special status species to occur within the BSA is summarized in Appendix B. The USFWS-IPaC species list was analyzed and compared with both CNDDB and CNPS lists. Determinations for species with potential to be affected by the project included in the USFWS-IPaC species list is provided in Table 1 of Section 4. Species that are simply tracked by the CNDDB, but that are not afforded protection pursuant to existing local, state or federal laws were not included in the analysis. The report was prepared by Senior Biologist Kumari Jayakody, with technical review by Senior Regulatory Specialist Karen Holmes and Principal/Senior Ecologist Colby J. Boggs.

3. Environmental Setting

4.1 Description of the Existing Biological and Physical Conditions

The Project site is bordered to the south and west by Prado Road and Elks Road respectively, to the north by the Sunset Drive-In Theater, and to the east by fallow agricultural lands that have been entitled for development of the CAPSLO Homeless Services Center. At the southeast corner of the Project property, a U-Haul equipment rental facility is present. The BSA contains developed areas with an electric power transmission tower, paved roads, designated parking areas and the U-Haul rental facility (Appendix C, Photographs 1, 2 and 4). The remainder of the BSA contains some vegetated areas consisting predominantly of introduced species of grasses, herbs and sub shrubs (Appendix C, Photographs 3, 5 and 6). There are no wetlands or aquatic features within the BSA.

The climate in San Luis Obispo is a typical Mediterranean climate, characterized by cool wet winters and warm summers, with frequent morning fog due to the proximity to the Pacific Ocean. Average annual temperatures range from approximately 76 to 44 degrees Fahrenheit, and average annual precipitation is approximately 23.12 inches, most of which falls between November and March (National Oceanic and Atmospheric Administration, 2016). The entire Project area is flat with an elevation of approximately 100 feet above mean sea level.

Two soil map units are mapped within the BSA: Salinas silty clay loam, 0 to 2 percent slopes (which covers the majority of the BSA); and Cropley clay, 0 to 2 percent slopes (which is mapped in the north east corner of the BSA). Salinas silty clay loam soil is characterized as very deep, well drained, nearly level soil on alluvial fans and plains. Cropley clay soil is characterized as very deep, moderately well drained, nearly level soil on alluvial fans and plains (U.S. Department of Agriculture, Natural Resources Conservation Service, 2016).

4.2 Natural Vegetation Communities

The CNDDB identifies the following eight sensitive natural communities to occur within the nine quadrangle area of the Project site; Central dune scrub, Central foredunes, Central maritime chaparral, Coastal and valley freshwater marsh, Coastal brackish marsh, Northern coastal salt marsh, Northern interior cypress forest, Serpentine bunchgrass and Valley needlegrass grassland (Appendix B). The field survey conducted on October 26, 2016, determined that no natural vegetation communities occur within the BSA.

4.3 Special Status Plant Species

The CNPS identifies 72 special status plant species within the nine quadrangle area of the Project site (Appendix B). No special status plant species were observed within the BSA during the reconnaissance-level survey. The field survey was conducive for general plant identification but was conducted outside of the blooming season for most sensitive species known to occur in the vicinity of the BSA. However, no suitable habitat for sensitive plant species is present within the BSA. Plant species observed are summarized in a table (Appendix

D). Three trees comprising of two coast live oak (*Quercus agrifolia*) and one Sydney golden wattle (*Acacia longifolia*), with a diameter at breast height (DBH) of greater than six inches, occur along the fence line of the U-Haul facility at the western limit of the Project site. In the vicinity there are additional trees with a smaller DBH that line the fence with roots located in the area of the U Haul facility. Approximately 5 trees are estimated to occur within the area of the U Haul facility.

4.4 Special Status Wildlife Species

No special status wildlife species were observed within the BSA during the field survey. Small mammal burrows were observed within some areas, mainly in the open areas at the northern perimeter of the BSA and open areas to the east. Due to the lack of suitable habitat and the disturbed nature of the BSA, it is unlikely special status wildlife species would occur within the BSA. No birds or bird nests were observed in the trees within the BSA. However, these trees have the potential to be used by nesting birds. To reduce the potential for impacts to nesting birds, avoidance and minimization measures are outlined in Section 6. There is no federally designated critical habitat within the BSA.

4. Applicable Federal Laws, Acts, and Orders

Federal Endangered Species Act of 1973, as amended

Federal agencies that fund, authorize, or carry out actions that "may affect" a listed species and its habitat, must consult with USFWS according to the provision in Section 7(a) of the Endangered Species Act (Act) for federal actions. Provisions of the 1982 amendments to Act authorize USFWS to permit the taking of listed species, if such taking is "incidental to, and not the purpose of carrying out otherwise lawful activities [16 U.S.C. 1539 and Section 10(a)(1)(B) of the Act} pursuant to Section 7 of Act for federal actions". The Federal Transit Administration (FTA) as part of its National Environmental Policy Act assignment of federal responsibilities to the Federal Department of Transportation, will act as the lead federal agency for Section 7 of the Federal Endangered Species Act. As part of the process of compliance with the Act (Section 7(c)), this NES-MI document was prepared to provide FTA with adequate information to determine any project-related impacts on federally-listed species, proposed species, and/or their habitat and whether consultation is necessary with the National Marine Fisheries Service (NMFS) and/or USFWS.

Table 1 below lists federally listed as threatened and endangered species with potential to occur within the project area and effects determinations for such species related to project implementation.

Table 1. Section 7 Determinations for USFWS Species List

Scientific Name/ Common Name	**Federal Status**	**Section 7 Determination**
Plants		
Caulanthus californicus California Jewelflower	FE	No Effect
Cirsium fontinale var. *obispoense* Chorro Creek Bog Thistle	FE	No Effect
Arenaria paludicola Marsh Sandwort	FE	No Effect
Arctostaphylos morroensis Morro Manzanita	FT	No Effect
Clarkia speciosa ssp. *immaculata* Pismo Clarkia	FE	No Effect
Navarretia fossalis Spreading Navarretia	FT	No Effect
Invertebrates		
Euproserpinus euterpe Kern Primrose Sphinx Moth	FT	No Effect
Crustaceans		
Branchinecta lynchi Vernal Pool Fairy Shrimp	FT	No Effect
Reptiles		
Gambelia silus Blunt-nosed Leopard Lizard	FE	No Effect
Amphibians		
Rana draytonii California Red-legged Frog	FT	No Effect
Ambystoma californiense California Tiger Salamander	FT	No Effect
Birds		
Rallus longirostrisobsoletus California Clapper Rail	FE	No Effect
Gymnogyps californianus California Condor	FE	No Effect
Sterna antillarum browni California Least Tern	FE	No Effect
Vireo bellii pusillus Least Bell’s Vireo	FE	No Effect
Empidonax traillii extimus South Western Willow Flycatcher	FE	No Effect
Mammals		
Dipodomys ingens Giant Kangaroo Rat	FE	No Effect
Vulpes macrotis mutica San Joaquin Kit Fox	FE	No Effect

STATUS CODES

FEDERAL: United States Fish and Wildlife Service

FE	Federally Listed Endangered
FT	Federally Listed Threatened

Executive Order 13112 - Invasive Species

Executive Order 13112 was issued in 1999 to enhance federal coordination and response to the complex and accelerating problem of invasive species. Invasive plant species listed in the California Invasive Plant Council (Cal-IPC; 2016) inventory that were observed within the BSA include: stinkwort (*Dittrichia graveolens*), black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), curly dock (*Rumex crispus*), fennel (*Foeniculum vulgare*), castor bean (*Ricinus communis*), redstem filaree (*Erodium cicutarium*), and Russian thistle (*Salsola tragus*). Section 5 of the document outlines a measure to avoid and minimize the spread of invasive plants during project construction.

Executive Order 11988 - Flood Plains Management

Executive Order 11988 directs federal agencies to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid both direct and indirect support of floodplain development wherever there is a practicable (or feasible) alternative. The project work will require grading and or structural flood proofing to protect proposed buildings from the 100-year flood level.

Executive Order 11990 - Protection of Wetlands

Executive Order 11990 requires agencies to minimize destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Wetlands function to improve water quality, detain storm-water runoff, recharge groundwater, and provide wildlife habitats. A wetland is an area of land whose soil is saturated with moisture either permanently or seasonally. Such areas may also be covered partially or completely by shallow pools of water. There are no wetlands within the project site.

Migratory Bird Treaty Act

This treaty with Canada, Mexico, and Japan makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests occupied by migratory birds during the breeding season (February 15 through October 15). The California Fish and Game Code (Section 3500 et seq.) also prohibits the destruction of any nest, egg, or nestlings. Trees within the project site have the potential to support nesting bird species. A measure to avoid and minimize potential project-related impacts to nesting birds is outlined in Section 5 of the document.

5. Avoidance and Minimization Efforts

To avoid and minimize the spread of invasive plant species, and potential project-related impacts to nesting birds, the following measures shall be implemented.

1. To minimize the spread of invasive plant species during project work:
    a. Prior to construction, all staff and contractors shall receive from a qualified botanist/biologist, invasive plant prevention training. The training shall provide an appropriate identification/instruction guide, a list of target species for the area, and a list of measures for early detection and eradication.
    b. Prior to construction, specific areas shall be designated for cleaning of tools, vehicles, equipment, clothing, footwear, and any other gear to be used on site.
    c. During construction, before entering and exiting the work site, all tools, equipment, vehicles, clothing, footwear, and other gear shall be thoroughly cleaned to remove soil, seeds, and plant parts.
    d. The reproductive parts (seeds, mature flowers, roots and shoots, as well as other plant parts of species that reproduce vegetatively), shall be removed, stored in sealed containers, transported sealed, and appropriately disposed of at a certified landfill.
    e. All disturbed areas that are not converted to hardscape shall be hydro-seeded with a mix of locally native species upon completion of work in the area. In areas where construction is ongoing, hydro-seeding shall occur in those areas where no construction activities have occurred within six weeks of ground disturbance. If exotic species invade the area prior to hydro-seeding, weed removal shall occur in consultation with a qualified botanist/ biologist.

2. If construction is scheduled to occur during the nesting bird season (February 15 through September 1), pre-construction surveys shall be conducted by a Qualified Biologist no more than one week prior to construction to determine the presence/absence of nesting birds within the project site. If active nests are found the Qualified Biologist shall establish an appropriate buffer to be in compliance with Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3500 et seq. The CDFW generally considers an appropriate buffer of 100 feet for passerines and 300 feet for raptors. The Qualified Biologist shall perform at least two hours of pre-construction monitoring of the nest to characterize "typical" bird behavior. The Qualified Biologist shall monitor the nesting birds and shall increase the buffer if the Qualified Biologist determines the birds are showing signs of unusual or distressed behavior due to project activities. Atypical nesting behaviors that may cause

reproductive harm include but are not limited to, defensive flights/vocalizations directed towards project personnel, standing up from a brooding position, and flying away from the nest. The Qualified Biologist shall have authority, through the Resident Engineer, to order the cessation of all project activities if the nesting birds exhibit atypical behavior which may cause reproductive failure (nest abandonment and loss of eggs and/or young) until an appropriate buffer is established. To prevent encroachment, the established buffer(s) shall be clearly marked by high visibility material. The established buffer(s) shall remain in effect until the young have fledged or the nest has been abandoned as confirmed by the Qualified Biologist. Any sign of nest abandonment shall be reported to CDFW within 48 hours.

6. Project Impacts

With implementation of the recommended avoidance and minimization measures, nesting bird species will not be impacted should they occur within the BSA. While up to 3 trees (2 coast live oak, 1 Sydney golden wattle), and approximately 5 additional trees estimated to occur within the U Haul facility would be removed to accommodate project development, the trees are not protected by existing local, state or federal laws and do not provide suitable habitat for sensitive species (beyond general habitat for nesting birds). Special status plant and animal species, special status vegetation communities, aquatic habitats, vernal pools and riparian habitats do not occur within the BSA and therefore, no impacts to these biological resources are anticipated from the proposed project. Further, the project site is not within federally designated critical habitat.

7. Permits Required

Riparian vegetation is not present on site; therefore, a Section 1602 Streambed Alteration Agreement from CDFW is not required. Similarly the project will not result in the discharge of dredged or fill material below the ordinary high water mark of any streams or creeks on site; therefore, a U.S. Army Corps of Engineers authorization pursuant to Section 404 of the Clean Water Act and Regional Water Quality Control Board certification pursuant to Section 401 of the Clean Water Act are not required. Additionally, the project is not within the Coastal Zone and does not require a Coastal Development Permit.

8. References

California Department of Fish and Wildlife. 2016. California Natural Diversity Database (CNDDB), Rarefind 5, Version 5. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

California Invasive Plant Council. 2016. California Invasive Plant Inventory Database. Available at: http://www.cal-ipc.org/ip/management/ipcw/categories.php

National Oceanic and Atmospheric Administration. 2016. Online weather data. Available at: https://www.ncdc.noaa.gov/cdo-web/datatools/normals

United States Department of Agriculture, Natural Resources Conservation Service. 2016. *Soil Survey of San Luis Obispo County, California, Coastal Part.* Available at: http:/https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/california/sanluiscoastalCA1984/sanluiscoastalCA1984.pdf

United States Fish and Wildlife Service. 2016a. Information, Planning, and Conservation (IPaC System). Available at https://ecos.fws.gov/ipac/

United States Fish and Wildlife Service. 2016b. Critical Habitat Portal. Available at: http://fws.maps.arcgis.com/home/webmap/viewer

9. Appendices

Appendix A: U.S. Fish and Wildlife Service Species List
Appendix B: CNDDB Nine Quad Search for Special Status Species
Appendix C: Project Site Photographs
Appendix D: Plant and Animal Species Observed Within the Study Area During Reconnaissance Survey

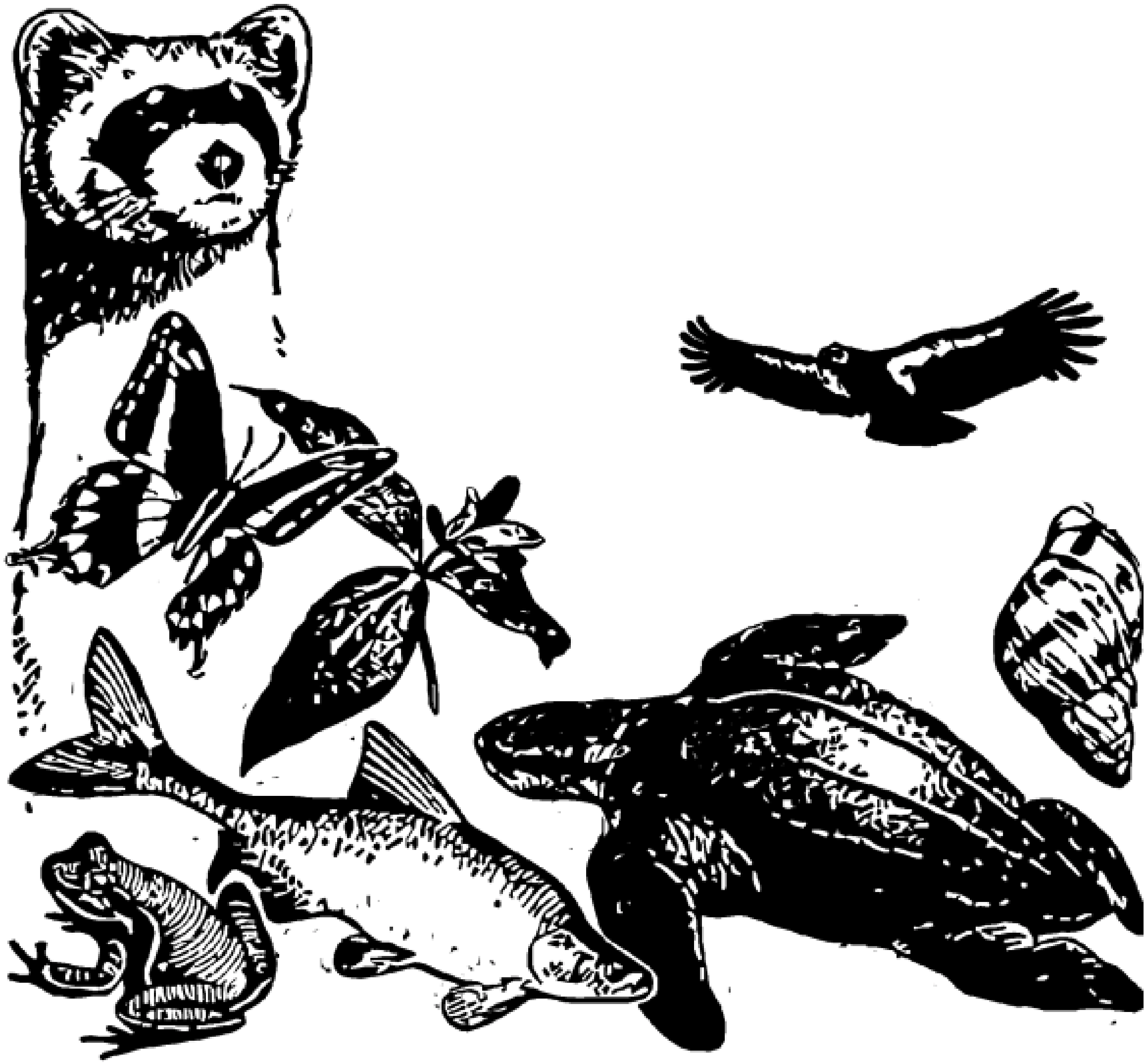
Appendix A: U.S. Fish and Wildlife Services Species List

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

Generated October 31, 2016 12:00 PM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

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U.S. Fish & Wildlife Service

IPaC Trust Resources Report

LOCATION

San Luis Obispo County, California

IPAC LINK

https://ecos.fws.gov/ipac/project/
X5ZLW-N56SR-FFTJZ-GC3RZ-YVBGLM

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

California Red-legged Frog Rana draytonii

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D02D

California Tiger Salamander Ambystoma californiense

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D01T

Birds

California Clapper Rail Rallus longirostris obsoletus

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B04A

California Condor Gymnogyps californianus

Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B002

California Least Tern Sterna antillarum browni

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B03X

Least Bell's Vireo Vireo bellii pusillus

Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus

Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B094

Crustaceans

Vernal Pool Fairy Shrimp Branchinecta lynchi

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03G

Flowering Plants

California Jewelflower Caulanthus californicus — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2Y8

Chorro Creek Bog Thistle Cirsium fontinale var. obispoense — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1UG

Marsh Sandwort Arenaria paludicola — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q25H

Morro Manzanita Arctostaphylos morroensis — Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q259

Pismo Clarkia Clarkia speciosa ssp. immaculata — Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1UJ

Spreading Navarretia Navarretia fossalis — Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2E7

Insects

Kern Primrose Sphinx Moth Euproserpinus euterpe — Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=I01C

Mammals

Giant Kangaroo Rat Dipodomys ingens

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A08P

San Joaquin Kit Fox Vulpes macrotis mutica

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A006

Reptiles

Blunt-nosed Leopard Lizard Gambelia silus

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=C001

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

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1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Allen's Hummingbird Selasphorus sasin — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0LI

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

Black Oystercatcher Haematopus bachmani — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0KJ

Black Swift Cypseloides niger — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FW

Black-chinned Sparrow Spizella atrogularis Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0IR

Brewer's Sparrow Spizella breweri Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0NC

California Spotted Owl Strix occidentalis occidentalis Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08L

Costa's Hummingbird Calypte costae Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JE

Fox Sparrow Passerella iliaca Bird of conservation concern

Season: Wintering

Lawrence's Goldfinch Carduelis lawrencei Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0J8

Least Bittern Ixobrychus exilis

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B092

Lesser Yellowlegs Tringa flavipes Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD

Lewis's Woodpecker Melanerpes lewis Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HQ

Long-billed Curlew Numenius americanus Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06S

Marbled Godwit Limosa fedoa Bird of conservation concern

Season: Wintering

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JL

Nuttall's Woodpecker Picoides nuttallii Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HT

Oak Titmouse Baeolophus inornatus Bird of conservation concern

Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ

Olive-sided Flycatcher Contopus cooperi Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus Bird of conservation concern

Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU

Rufous-crowned Sparrow Aimophila ruficeps Bird of conservation concern

Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX

Short-billed Dowitcher Limnodromus griseus Bird of conservation concern

Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK

Short-eared Owl Asio flammeus Bird of conservation concern

Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Snowy Plover Charadrius alexandrinus Bird of conservation concern

Season: Breeding

Western Grebe aechmophorus occidentalis Bird of conservation concern

Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA

Whimbrel Numenius phaeopus Bird of conservation concern

Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JN

Yellow Warbler dendroica petechia ssp. brewsteri Bird of conservation concern

Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EN

Yellow-billed Magpie Pica nuttalli Bird of conservation concern

Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0N8

Red Knot Calidris canutus ssp. roselaari Bird of conservation concern

Season: Wintering
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0G6

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

There are no wetlands in this location

Appendix B: CNDDB Nine Quad Search for Special Status Species

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Plants					
Hoover's bent grass	*Agrostis hooveri*	None/None G2 / S2 1B.2	Chaparral, cismontane woodland, closed-cone coniferous forest, valley and foothill grassland. Sandy sites. 60-765 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, cismontane woodland, closed-cone coniferous forest, and/or valley and foothill grassland do not occur within the project site.
Arroyo de la Cruz manzanita	*Arctostaphylos cruzensis*	None/None G3 / S3 1B.2	Broadleaved upland forest, coastal bluff scrub, closed-cone coniferous forest, chaparral, coastal scrub, & valley and foothill grassland. On sandy soils in several different habitat types from chaparral to coastal scrub to woodland. 60-310 m.	A	Not expected to occur due to lack of suitable habitat; Broadleaved upland forest, coastal bluff scrub, closed-cone coniferous forest, chaparral, coastal scrub, and/or valley and foothill grassland do not occur within the project site.
Santa Lucia manzanita	*Arctostaphylos luciana*	None/None G3 / S3 1B.2	Chaparral, cismontane woodland. On shale (one site says serpentine) outcrops, on slopes, in chaparral. 350-850 m.	A	Not expected to occur due to lack of chaparral and cismontane woodland habitat on site.
Morro manzanita	*Arctostaphylos morroensis*	Threatened/None G1 / S1 1B.1	Chaparral, cismontane woodland, coastal dunes, coastal scrub. On Baywood sands, usually with chaparral associates. 30-125 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, cismontane woodlands, coastal dunes, and coastal scrub habitat do not occur within the project site.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Oso manzanita	*Arctostaphylos osoensis*	None/None G1 / S1 1B.2	Chaparral, cismontane woodland. Usually occurs in openings w/in oak woodland on dacite porphyry buttes. 180-275 m.	A	Not expected to occur due to lack of chaparral and cismontane woodland habitat on site.
Pecho manzanita	*Arctostaphylos pechoensis*	None/None G2 / S2 1B.2	Closed-cone coniferous forest, chaparral, coastal scrub. Grows on siliceous shale with other chaparral associates. 125-850 m.	A	Not expected to occur due to lack of suitable habitat; closed-cone coniferous forest, chaparral and/or coastal scrub habitat do not occur within the project site.
Santa Margarita manzanita	*Arctostaphylos pilosula*	None/None G2? / S2? 1B.2	Closed-cone coniferous forest, chaparral, broadleaved upland forest, cismontane woodland. Shale outcrops & slopes; reported growing on decomposed granite or sandstone. 60-1220 m.	A	Not expected to occur due to lack of suitable habitat; closed-cone coniferous forest, chaparral, broadleaved upland forest and/or cismontane woodland habitat do not occur within the project site.
sand mesa manzanita	*Arctostaphylos rudis*	None/None G2 / S2 1B.2	Chaparral, coastal scrub. On sandy soils in Lompoc/Nipomo area. 25-325 m.	A	Not expected to occur due to lack of chaparral and coastal scrub habitat on site.
dacite manzanita	*Arctostaphylos tomentosa ssp. daciticola*	None/None G4T1 / S1 1B.1	Chaparral, cismontane woodland. Only known from one site in SLO County on dacite porphyry buttes. About 120m.	A	Not expected to occur due to lack of chaparral and cismontane woodland habitat on site.
marsh sandwort	*Arenaria paludicola*	Endangered/Endangered G1 / S1 1B.1	Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m.	A	Not expected to occur due to lack of wetlands on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Miles' milk-vetch	*Astragalus didymocarpus var. milesianus*	None/None G5T2 / S2 1B.2	Coastal scrub. Clay soils. 20-90 m.	A	Not expected to occur due to lack of coastal scrub habitat on site.
Coulter's saltbush	*Atriplex coulteri*	None/None G3 / S1S2 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland. Ocean bluffs, ridgetops, as well as alkaline low places. Alkaline or clay soils. 2-460 m.	A	Not expected to occur due to lack of suitable habitat; coastal bluff scrub, coastal dunes, coastal scrub, and/or valley and foothill grassland habitat do not occur within the project site.
twisted horsehair lichen	*Bryoria spiralifera*	None/None G3 / S1S2 1B.1	North coast coniferous forest. Usually on conifers. 0-30 m.	A	Not expected to occur due to lack of north coast coniferous forest on site.
round-leaved filaree	*California macrophylla*	None/None G3? / S3? 1B.2	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1200 m.	A	Not expected to occur due to lack of cismontane woodland and/ or valley and foothill grasslands on site.
San Luis mariposa-lily	*Calochortus obispoensis*	None/None G2 / S2 1B.2	Chaparral, coastal scrub, valley and foothill grassland. Often in serpentine grassland. 50-730 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, coastal scrub and/or valley and foothill grassland habitat do not occur within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
La Panza mariposa-lily	*Calochortus simulans*	None/None G2 / S2 1B.3	Valley and foothill grassland, cismontane woodland, chaparral, lower montane coniferous forest. Decomposed granite. 50-1160 m.	A	Not expected to occur due to lack of suitable habitat; valley and foothill grassland, cismontane woodland, chaparral, and/or lower montane coniferous forest habitats do not occur within the project site.
dwarf calycadenia	*Calycadenia villosa*	None/None G3 / S3 1B.1	Chaparral, cismontane woodland, valley and foothill grassland, meadows and seeps. Open, dry meadows, hillsides, gravelly outwashes. 240-1350 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, cismontane woodland, valley and foothill grassland, and/or meadows and seeps, do not occur within the project site.
Hardham's evening-primrose	*Camissoniopsis hardhamiae*	None/None G2 / S2 1B.2	Chaparral, cismontane woodland. Sandy, decomposed carbonate. 140-945 m.	A	Not expected to occur due to lack of chaparral and cismontane woodland habitat on site.
San Luis Obispo sedge	*Carex obispoensis*	None/None G2G3 / S2S3 1B.2	Closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Usually in transition zone on sand, clay, serpentine, or gabbro. In seeps. 5-845 m.	A	Not expected to occur due to lack of suitable habitat; closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and/or valley and foothill grassland habitat do not occur within the project site.
San Luis Obispo owl's-clover	*Castilleja densiflora var. obispoensis*	None/None G5T2 / S2 1B.2	Valley and foothill grassland, meadows and seeps. Sometimes on serpentine. 10-485 m.	A	Not expected to occur due to lack of valley and foothill grassland, and/or meadows and seeps within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Congdon's tarplant	*Centromadia parryi ssp. congdonii*	None/None G3T2 / S2 1B.1	Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. 0-230 m.	A	Not expected to occur due to lack of valley and foothill grassland on site.
coastal goosefoot	*Chenopodium littoreum*	None/None G2 / S2 1B.2	Coastal dunes. 10-30 m.	A	Not expected to occur due to lack of coastal dunes on site.
dwarf soaproot	*Chlorogalum pomeridianum var. minus*	None/None G5T2T3 / S2S3 1B.2	Chaparral. Serpentine. 305-1000 m.	A	Not expected to occur due to lack of chaparral and serpentine on site.
salt marsh bird's-beak	*Chloropyron maritimum ssp. maritimum*	Endangered/Endangered G4?T1 / S1 1B.2	Marshes and swamps, coastal dunes. Limited to the higher zones of salt marsh habitat. 0-10 m.	A	Not expected to occur due to lack of wetlands and coastal dunes on site.
Brewer's spineflower	*Chorizanthe breweri*	None/None G3 / S3 1B.3	Chaparral, cismontane woodland, coastal scrub, closed-cone coniferous forest. Rocky or gravelly serpentine sites; usually in barren areas. 45-765 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, cismontane woodland, coastal scrub, and closed-cone coniferous forest do not occur within the project site.
straight-awned spineflower	*Chorizanthe rectispina*	None/None G1 / S1 1B.3	Chaparral, cismontane woodland, coastal scrub. Often on granite in chaparral. 50-1040 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, cismontane woodland, and coastal scrub do not occur within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
San Luis Obispo fountain thistle	*Cirsium fontinale var. obispoense*	Endangered/Endangered G2T2 / S2 1B.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Serpentine seeps. 5-385 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, coastal scrub, and or valley and foothill grasslands do not occur within the project site.
Cuesta Ridge thistle	*Cirsium occidentale var. lucianum*	None/None G3G4T2 / S2 1B.2	Chaparral. Openings; on serpentinite. Often on steep rocky slopes and along disturbed roadsides. 485-765 m.	A	Not expected to occur due to lack of chaparral and serpentinite on site.
surf thistle	*Cirsium rhothophilum*	None/Threatened G1 / S1 1B.2	Coastal dunes, coastal bluff scrub. Open areas in central dune scrub; usually in coastal dunes. 3-60 m.	A	Not expected to occur due to lack of coastal dunes and coastal bluff scrub on site.
La Graciosa thistle	*Cirsium scariosum var. loncholepis*	Endangered/Threatened G5T1 / S1 1B.1	Coastal dunes, coastal scrub, brackish marshes, valley and foothill grassland, cismontane woodland. Lake edges, riverbanks, other wetlands; often in dune areas. Mesic, sandy sites. 4-220 m.	A	Not expected to occur due to lack of suitable habitat: coastal dunes, coastal scrub, brackish marshes, valley and foothill grassland and or cismontane woodland habitats do not occur within the project site.
popcorn lichen	*Cladonia firma*	None/None G4 / S1 2B.1	Coastal dunes, coastal scrub. On soil and detritus on stabilized sand dunes, in pure stands or intermixed with other lichens and mosses forming biotic soil crusts, covering areas up to several meters. 30-80 m.	A	Not expected to occur due to lack of coastal dunes and coastal scrub on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Pismo clarkia	*Clarkia speciosa ssp. immaculata*	Endangered/Rare G4T1 / S1 1B.1	Chaparral, cismontane woodland, valley and foothill grassland. On ancient sand dunes not far from the coast. Sandy soils, openings. 25-185 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, valley and foothill grasslands, and sand dunes do not occur within the project site.
dune larkspur	*Delphinium parryi ssp. blochmaniae*	None/None G4T2 / S2 1B.2	Chaparral, coastal dunes (maritime). On rocky areas and dunes. 0-200 m.	A	Not expected to occur due to lack of chaparral and maritime coastal dunes on site.
Eastwood's larkspur	*Delphinium parryi ssp. eastwoodiae*	None/None G4T2 / S2 1B.2	Chaparral, valley and foothill grassland. Serpentine. Openings. 60-640 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, valley and foothill grassland and serpentine do not occur within the project site.
umbrella larkspur	*Delphinium umbraculorum*	None/None G3 / S3 1B.3	Cismontane woodland. Mesic sites. 400-1600 m.	A	Not expected to occur due to lack of cismontane woodlands on site.
beach spectaclepod	*Dithyrea maritima*	None/Threatened G1 / S1 1B.1	Coastal dunes, coastal scrub. Sea shores, on sand dunes, and sandy places near the shore. 3-65 m.	A	Not expected to occur due to lack of suitable habitat: coastal dunes, coastal scrub, sea shores, sand dunes, and sandy areas do not occur within the project site.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Betty's dudleya	*Dudleya abramsii ssp. bettinae*	None/None G4T2 / S2 1B.2	Coastal scrub, valley and foothill grassland, chaparral. On rocky, barren exposures of serpentine within scrub vegetation. 20-250 m.	A	Not expected to occur due to lack of suitable habitat: coastal scrub, valley and foothill grassland, chaparral, and serpentine do not occur within the project site.
mouse-gray dudleya	*Dudleya abramsii ssp. murina*	None/None G4T2 / S2 1B.3	Chaparral, cismontane woodland, valley and foothill grassland. Serpentine outcrops. 25-535 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, valley and foothill grasslands, and serpentine outcrops do not occur within the project site.
Blochman's dudleya	*Dudleya blochmaniae ssp. blochmaniae*	None/None G3T2 / S2 1B.1	Coastal scrub, coastal bluff scrub, chaparral, valley and foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas with little soil. 5-450 m.	A	Not expected to occur due to lack of suitable habitat: coastal scrub, coastal bluff scrub, chaparral, and or valley and foothill grasslands do not occur within the project site.
yellow-flowered eriastrum	*Eriastrum luteum*	None/None G2 / S2 1B.2	Broadleaved upland forest, cismontane woodland, chaparral. On bare sandy decomposed granite slopes. 240-580 m.	A	Not expected to occur due to lack of suitable habitat: broadleaved upland forest, cismontane woodland, and chaparral do not occur within the project site.
Blochman's leafy daisy	*Erigeron blochmaniae*	None/None G2 / S2 1B.2	Coastal dunes, coastal scrub. Sand dunes and hills. 3-45 m.	A	Not expected to occur due to lack of suitable habitat: coastal dunes, coastal scrub, sand dunes and hills do not occur within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Indian Knob mountainbalm	*Eriodictyon altissimum*	Endangered/Endangered G1 / S1 1B.1	Chaparral (maritime), cismontane woodland, coastal scrub. Ridges in open, disturbed areas within chaparral on Pismo sandstone. 90-270 m.	A	Not expected to occur due to lack of suitable habitat: maritime chaparral, cismontane woodland and coastal scrub do not occur within the project site.
Hoover's button-celery	*Eryngium aristulatum var. hooveri*	None/None G5T1 / S1 1B.1	Vernal pools. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 3-45 m.	A	Not expected to occur due to lack of vernal pools on site.
San Joaquin spearscale	*Extriplex joaquinana*	None/None G2 / S2 1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 1-835 m.	A	Not expected to occur due to lack of suitable habitat: chenopod scrub, alkali meadow, playas, and or valley and foothill grasslands do not occur within the project site.
Ojai fritillary	*Fritillaria ojaiensis*	None/None G2? / S2? 1B.2	Broadleaved upland forest (mesic), chaparral, lower montane coniferous forest, cismontane woodland. Usually loamy soil. Sometimes on serpentine; sometimes along roadsides. 225-1000 m.	A	Not expected to occur due to lack of suitable habitat: broadleaved upland forest (mesic), chaparral, lower montane coniferous forest and cismontane woodlands do not occur within the project site.
San Benito fritillary	*Fritillaria viridea*	None/None G2 / S2 1B.2	Chaparral, cismontane woodland. Serpentine slopes. Sometimes on rocky streambanks. 365-1360 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodlands and serpentine do not occur within the project site.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
mesa horkelia	*Horkelia cuneata var. puberula*	None/None G4T1 / S1 1B.1	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 15-1645 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodlands and coastal scrub do not occur within the project site.
Kellogg's horkelia	*Horkelia cuneata var. sericea*	None/None G4T1? / S1? 1B.1	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. 5-215 m.	A	Not expected to occur due to lack of suitable habitat: closed-cone coniferous forest, coastal scrub, coastal dunes and chaparral do not occur within the project site.
perennial goldfields	*Lasthenia californica ssp. macrantha*	None/None G3T2 / S2 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. 5-185 m.	A	Not expected to occur due to lack of suitable habitat: coastal bluff scrub, coastal dunes and coastal scrub do not occur within the project site.
Coulter's goldfields	*Lasthenia glabrata ssp. coulteri*	None/None G4T2 / S2 1B.1	Coastal salt marshes, playas, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. 1-1375 m.	A	Not expected to occur due to lack of suitable habitat; coastal salt marshes, playas and vernal pools do not occur within the project site.
Jones' layia	*Layia jonesii*	None/None G2 / S2 1B.2	Chaparral, valley and foothill grassland. Clay soils and serpentine outcrops. 5-400 m.	A	Not expected to occur due to lack of suitable habitat; chaparral, valley and foothill grasslands, and serpentine do not occur within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
San Luis Obispo County lupine	*Lupinus ludovicianus*	None/None G1 / S1 1B.2	Chaparral, cismontane woodland. Open areas in sandy soil, Santa Margarita formation. 85-525 m.	A	Not expected to occur due to lack of chaparral and cismontane woodlands on site.
slender bush-mallow	*Malacothamnus gracilis*	None/None G1Q / S1 1B.1	Chaparral. Dry, rocky slopes. 190-575 m.	A	Not expected to occur due to lack of chaparral and dry rocky slopes on site.
Carmel Valley bush-mallow	*Malacothamnus palmeri var. involucratus*	None/None G3T3Q / S3 1B.2	Cismontane woodland, chaparral, coastal scrub. Talus hilltops and slopes, sometimes on serpentine. Fire dependent. 30-1100 m.	A	Not expected to occur due to lack of suitable habitat: cismontane woodland, chaparral, coastal scrub and/or talus hilltops and slopes do not occur within the project site.
Santa Lucia bush-mallow	*Malacothamnus palmeri var. palmeri*	None/None G3T2Q / S2 1B.2	Chaparral. Dry rocky slopes, mostly near summits, but occasionally extending down canyons to the sea. 60-360 m.	A	Not expected to occur due to lack of chaparral and dry rocky slopes on site.
Palmer's monardella	*Monardella palmeri*	None/None G2 / S2 1B.2	Cismontane woodland, chaparral. On serpentine, often found associated with Sargent cypress forests. 200-800 m.	A	Not expected to occur due to lack of suitable habitat; cismontane woodland, chaparral and serpentine do not occur within the project site.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
southern curly-leaved monardella	*Monardella sinuata ssp. sinuata*	None/None G3T2 / S2 1B.2	Coastal dunes, coastal scrub, chaparral, cismontane woodlands. Sandy soils. 0-300 m.	A	Not expected to occur due to lack of suitable habitat: coastal dunes, coastal scrub, chaparral, and cismontane woodlands do not occur within the project site.
San Luis Obispo monardella	*Monardella undulata ssp. undulata*	None/None G2 / S2 1B.2	Coastal dunes, coastal scrub. Stabilized sand of the immediate coast. 10-200 m.	A	Not expected to occur due to lack of coastal dunes and coastal scrub on site.
woodland woollythreads	*Monolopia gracilens*	None/None G3 / S3 1B.2	chaparral, valley and foothill grassland, cismontane woodland, broadleaved upland forest, north coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 1	A	Not expected to occur due to lack of suitable habitat: chaparral, valley and foothill grassland, cismontane woodland, broadleaved upland forest and north coast coniferous forest do not occur within the project site.
shining navarretia	*Navarretia nigelliformis ssp. radians*	None/None G4T2 / S2 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Apparently in grassland, and not necessarily in vernal pools. 60-975 m.	A	Not expected to occur due to lack of suitable habitat; cismontane woodlands, valley and foothill grasslands and vernal pools do not occur within the project site.
coast woolly-heads	*Nemacaulis denudata var. denudata*	None/None G3G4T2 / S2 1B.2	Coastal dunes. 0-100 m.	A	Not expected to occur due to lack of coastal dunes on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
hooked popcornflower	*Plagiobothrys uncinatus*	None/None G2 / S2 1B.2	Chaparral, cismontane woodland, valley and foothill grassland. Sandstone outcrops and canyon sides; often in burned or disturbed areas. 300-760 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, and/or valley and foothill grasslands do not occur within the project site.
Diablo Canyon blue grass	*Poa diaboli*	None/None G2 / S2 1B.2	Chaparral (mesic sites), cismontane woodland, coastal scrub, closed-cone coniferous forest. Shale, sometimes burned areas. 120-400 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, coastal scrub and closed-cone coniferous forests do not occur within the project site.
adobe sanicle	*Sanicula maritima*	None/Rare G2 / S2 1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 30-240 m.	A	Not expected to occur due to lack of suitable habitat: meadows, seeps, valley and foothill grasslands, chaparral and coastal prairies do not occur within the project site.
black-flowered figwort	*Scrophularia atrata*	None/None G2G3 / S2S3 1B.2	Closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, riparian scrub. Sand, diatomaceous shales, and soils derived from other parent material; around swales and in sand dunes. 10-500 m.	A	Not expected to occur due to lack of suitable habitat: closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub and riparian scrub do not occur within the project site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
chaparral ragwort	*Senecio aphanactis*	None/None G3 / S2 2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, cismontane woodland, coastal scrub and alkaline flats do not occur within the project site.
Cuesta Pass checkerbloom	*Sidalcea hickmanii ssp. anomala*	None/Rare G3T1 / S1 1B.2	Closed-cone coniferous forest, chaparral Rocky serpentine soil; associated with Sargent cypress forest. 600-800 m.	A	Not expected to occur due to lack of suitable habitat: closed-cone coniferous forests and Sargent cypress forests do not occur within the project site.
most beautiful jewelflower	*Streptanthus albidus ssp. peramoenus*	None/None G2T2 / S2 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Serpentine outcrops, on ridges and slopes. 95-1000 m.	A	Not expected to occur due to lack of suitable habitat: chaparral, valley and foothill grasslands and cismontane woodlands do not occur within the project site.
California seablite	*Suaeda californica*	Endangered/None G1 / S1 1B.1	Marshes and swamps. Margins of coastal salt marshes. 0-5 m.	A	Not expected to occur due to lack of wetlands on site.
splitting yarn lichen	*Sulcaria isidiifera*	None/None G1 / S1 1B.1	Coastal scrub. On branches of oaks and shrubs in old growth coastal scrub. 20-55 m.	A	Not expected to occur due to lack of coastal scrub on site.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
saline clover	*Trifolium hydrophilum*	None/None G2 / S2 1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300 m.	A	Not expected to occur due to lack of suitable habitat: wetlands, vernal pools, and/or valley and foothill grasslands do not occur within the project site.
caper-fruited tropidocarpum	*Tropidocarpum capparideum*	None/None G1 / S1 1B.1	Valley and foothill grassland. Alkaline clay. 0-360 m.	A	Not expected to occur due to lack of valley and foothill grasslands on site.
Birds					
Cooper's hawk	*Accipiter cooperii*	None/None G5 / S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	A	Not expected to occur due to lack of suitable nesting or foraging habitat on site.
tricolored blackbird	*Agelaius tricolor*	None/Candidate Threatened G2G3 / S1S2 SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
grasshopper sparrow	*Ammodramus savannarum*	None/None G5 / S3 SSC	Dense grasslands on rolling hills, lowland plains, in valleys & on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs & scattered shrubs. Loosely colonial when nesting.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.
golden eagle	*Aquila chrysaetos*	None/None G5 / S3 FP, WL	Rolling foothills, mountain areas, sage-juniper flats, & desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.
burrowing owl	*Athene cunicularia*	None/None G4 / S3 SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	A	Species is not known to occur in this region. No suitable habitat on site.
ferruginous hawk	*Buteo regalis*	None/None G4 / S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	A	Low potential for foraging on site. No nesting habitat on site. No individuals were observed during the survey.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
western snowy plover	*Charadrius alexandrinus nivosus*	Threatened/None G3T3 / S2S3 SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Threatened/Endangered G5T2T3 / S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.
white-tailed kite	*Elanus leucurus*	None/None G5 / S3S4 FP	Rolling foothills and valley margins with scattered oaks & river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site. No individuals were observed during the survey.
California horned lark	*Eremophila alpestris actia*	None/None G5T3Q / S3 WL	Coastal regions, chiefly from Sonoma Co. to San Diego Co. Also main part of San Joaquin Valley & east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	A	Species is not known to occur in this area. No suitable habitat on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
merlin	*Falco columbarius*	None/None G5 / S3S4 WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	A	Species is not known to occur in this area. No suitable habitat on site.
prairie falcon	*Falco mexicanus*	None/None G5 / S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	A	Low potential for foraging on site. No nesting habitat on site. No individuals were observed during the survey.
loggerhead shrike	*Lanius ludovicianus*	None/None G4 / S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site. No individuals were observed during the survey.
California black rail	*Laterallus jamaicensis coturniculus*	None/Threatened G3G4T1 / S1 FP	Inhabits freshwater marshes, wet meadows & shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year & dense vegetation for nesting habitat.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
purple martin	*Progne subis*	None/None G5 / S3 SSC	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, & Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.	A	Not expected to occur on site due to lack of suitable nesting and foraging habitat on site.
California clapper rail	*Rallus longirostris obsoletus*	Endangered/Endangered G5T1 / S1 FP	Salt-water & brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	A	Not expected to occur due to lack of suitable nesting and foraging habitat on site.
Reptiles					
black legless lizard	*Anniella pulchra nigra*	None/None G3G4T2T3Q / S2 SSC	Sand dunes and sandy soils in the Monterey Bay and Morro Bay regions. Inhabit sandy soil/dune areas with bush lupine and mock heather as dominant plants. Moist soil is essential.	A	Not expected to occur. No suitable habitat on site.
silvery legless lizard	*Anniella pulchra pulchra*	None/None G3G4T3T4Q / S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	A	Not expected to occur. No suitable habitat on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
western pond turtle	*Emys marmorata*	None/None G3G4 / S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	A	Not expected to occur. No suitable habitat on site.
coast horned lizard	*Phrynosoma blainvillii*	None/None G3G4 / S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants & other insects.	A	Not expected to occur. No suitable habitat on site.
Mammals					
pallid bat	*Antrozous pallidus*	None/None G5 / S3 SSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.
Townsend's big-eared bat	*Corynorhinus townsendii*	None/Candidate Threatened G3G4 / S2 SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting, extremely sensitive to human disturbance.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Morro Bay kangaroo rat	*Dipodomys heermanni morroensis*	Endangered/Endangered G3G4TH / SH FP	Coastal sage scrub on the south side of Morro Bay. Needs sandy soil, but not active dunes, prefers early seral stages.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.
western mastiff bat	*Eumops perotis californicus*	None/None G5T4 / S3S4 SSC	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc. Roosts in crevices in cliff faces, high buildings, trees & tunnels.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.
San Diego desert woodrat	*Neotoma lepida intermedia*	None/None G5T3T4 / S3S4 SSC	Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops & rocky cliffs & slopes.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.
big free-tailed bat	*Nyctinomops macrotis*	None/None G5 / S3 SSC	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	A	Not expected to occur on site. No suitable habitat occurs on site and no individuals were observed during the survey.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
American badger	*Taxidea taxus*	None/None G5 / S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	A	The site contains burrows. Low potential for species to occur due to limited herbaceous area within the site. No individuals were observed during the survey.
Crustaceans					
vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened/None G3 / S3	Endemic to the grasslands of the Central Valley, Central Coast mtns, and South Coast mtns, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	A	Not expected to occur on site due to lack of suitable habitat.
Sensitive Natural Communities					
Central Dune Scrub	*Central Dune Scrub*	None/None G2 / S2.2	A dense coastal scrub community of scattered shrubs, subshrubs, and herbs generally less than 1m tall. Diagnostic species include Ericameria ericoides, Lupinus chamissonis, and Artemisia pycnocephala.	A	No dune scrub vegetation communities present within the study area.

Common Name	**Scientific Name**	**FESA/ CESA Global Rank/ State Rank CRPR or CDFW**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Central Foredunes	*Central Foredunes*	None/None G1 / S1.2	Species in this habitat type include Abronia latifolia, ambrosia chamissonis, Elymus mollis, Camissonia cheiranthifolia, and Calystegia soldanella	A	No central foredune vegetation communities present within the study area.
Central Maritime Chaparral	*Central Maritime Chaparral*	None/None G2 / S2.2	A variable sclerophyll scrub of moderate to high cover (50-100%) dominated by forms of Arctostaphylos tomentosa (or A. crustacea) plus one or more other narrowly distributed manzanita.	A	No central maritime chaparral vegetation communities present within the study area.
Coastal and Valley Freshwater Marsh	*Coastal and Valley Freshwater Marsh*	None/None G3 / S2.1	Dominated by perennial, emergent monocots to 4-5m tall. Often forming completely closed canopies. Scirpus and Typha dominated types and their environmental and floristic distinctions require clarification. Quiet sites (lacking significant current) permanently flooded by fresh water (rather than brackish, alkaline, or variable). Prolonged saturation permits accumulation of deep, peaty soils.	A	No wetlands present within the study area.
Coastal Brackish Marsh	*Coastal Brackish Marsh*	None/None G2 / S2.1	Dominated by species indicative of coastal brackish marsh systems.	A	No wetlands present within the study area.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Northern Coastal Salt Marsh	*Northern Coastal Salt Marsh*	None/None G3 / S3.2	Dominated by species indicative of Northern coastal salt marshes.	A	No wetlands present within the study area.
Northern Interior Cypress Forest	*Northern Interior Cypress Forest*	None/None G2 / S2.2	Dominated by species indicative of northern interior cypress forests.	A	No species indicative of northern interior cypress forest present within the study area.
Serpentine Bunchgrass	*Serpentine Bunchgrass*	None/None G2 / S2.2	Mid-height (up to 2 feet) grassland dominated by perennial, tussock-forming Stipa pulchra. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover. Habitat description: based on valley needlegrass grassland description as current vegetation classification does not differentiate between serpentine bunchgrass and other needlegrass grassland types.	A	No serpentine bunchgrass/ needlegrass grassland vegetation communities present within the study area.
Valley Needlegrass Grassland	*Valley Needlegrass Grassland*	None/None G3 / S3.1	Mid-height (up to 2 feet) grassland dominated by perennial, tussock-forming Stipa pulchra. Native and introduced annuals occur between the perennials, often actually exceeding the bunchgrasses in cover.	A	No needlegrass grassland vegetation communities present within the study area.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Fish					
tidewater goby	*Eucyclogobius newberryi*	Endangered/None G3 / S3 SSC	Brackish water habitats along the Calif coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water & high oxygen levels.	A	Absent. No aquatic habitat on site.
summer-run steelhead trout	*Oncorhynchus mykiss irideus*	None/None G5T4Q / S2 SSC	No. Calif coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer.	A	Absent. No aquatic habitat on site.
Mollusks					
Morro shoulderband (=banded dune) snail	*Helminthoglypta walkeriana*	Endangered/None G1 / S1S2	Restricted to the coastal strand in the immediate vicinity of Morro Bay. Inhabits the duff beneath Haplopappus, Salvia, Dudleya, and Mesembryanthemum.	A	Not expected to occur due to lack of suitable habitat on site.

Common Name	Scientific Name	FESA/ CESA Global Rank/ State Rank CRPR or CDFW	General Habitat Description	Habitat Present/ Absent	Rationale
Amphibians					
foothill yellow-legged frog	*Rana boylii*	None/None G3 / S3 SSC	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	A	Not expected to occur. No suitable habitat on site.
California red-legged frog	*Rana draytonii*	Threatened/None G2G3 / S2S3 SSC	Lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. must have access to estivation habitat.	A	Not expected to occur. No suitable habitat on site.
western spadefoot	*Spea hammondii*	None/None G3 / S3 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	A	Not expected to occur. No suitable habitat on site.
Coast Range newt	*Taricha torosa*	None/None G4 / S4 SSC	Coastal drainages from Mendocino County to San Diego County. Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	A	Not expected to occur. No suitable habitat on site.

Habitat: Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present or the species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.
Federal Status: USFWS (ESA) Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC); Federal Proposed (FP, FPE, FPT); Federal Species of Concern (FSC).

State Status: CDFW (CESA) State Endangered (SE); State Threatened (ST); State Delisted (SD).
Other State Status: CDFW Fully Protected (FP); Species of Special Concern (SSC), State Rare (SR), Watch list (WL).
California Rare Plant Rank (CRPR): Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere (1A); Plants Rare, Threatened, or Endangered in California and Elsewhere (1B); Plant presumed Extirpated in California, but More Common Elsewhere (2A); Plant Rare, Threatened, or Endangered in California, but More Common Elsewhere (2B);
CRPR Threat Codes: 0.1-Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat); 0.2-Fairly threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat); 0.3-Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

Sources: USFWS, 2016; CDFW, 2016; and California Native Plant Society (CNPS), 2016.

Appendix C: Site Photographs

Photograph 1. View of Biological Study Area (BSA) looking south east, from north west corner of property boundary adjacent to Elks Lane.

Photograph 2. View of BSA from western property boundary looking east.

Photograph 3. View of BSA from eastern property boundary looking south.

Photograph 4. View of BSA from eastern property boundary looking west.

Photograph 5. View of BSA looking west from within BSA.

Photograph 6. View of BSA looking south west towards Elks Lane and fenced area of U Haul equipment rental facility.

Appendix D: Plant Species Observed Within the Biological Study Area During Reconnaissance Survey

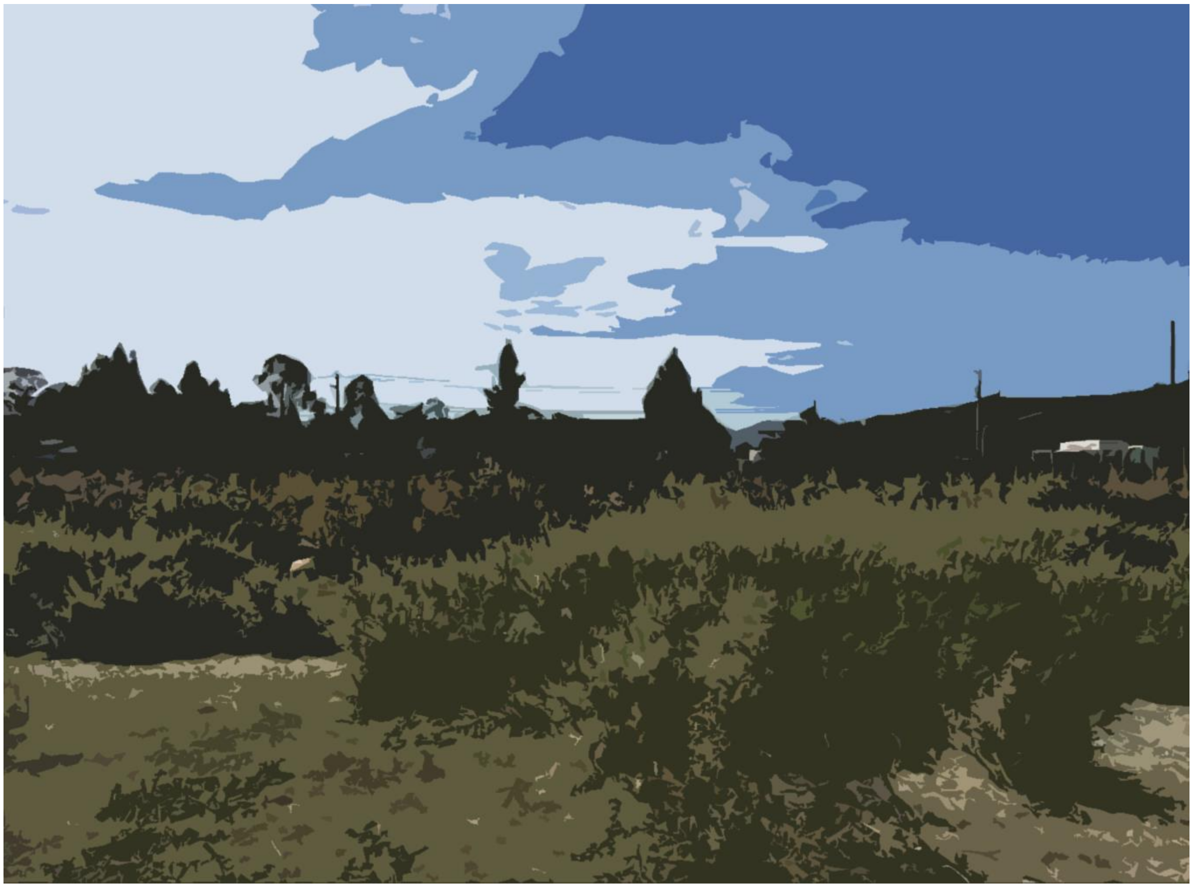
Scientific Name	Common Name	Origin (Native or Introduced)[2]
Trees		
Quercus agrifolia	coast live oak	Native
Acacia longifolia	Sydney golden wattle	Introduced
Shrubs		
Baccharis pilularis	coyote brush	Native
Dittrichia graveolens	stinkwort	Introduced; Cal-IPC Moderate
Salix laevigata	red willow	Native
Herbs and Sub-shrubs		
Brassica nigra	black mustard	Introduced; Cal-IPC Moderate
Calystegia macrostegia	morning glory	Native
Centaurea melitensis	tocalote	Introduced; Cal-IPC Moderate
Heterotheca grandiflora	telegraph weed	Native
Rumex crispus	curly dock	Introduced; Cal-IPC Limited
Polygonum aviculare	common knot weed	Introduced
Sonchus asper	prickly sow thistle	Introduced
Foeniculum vulgare	fennel	Introduced; Cal-IPC High
Epilobium brachycarpum	willow-herb	Native
Ricinus communis	castor bean	Introduced; Cal-IPC Limited
Erodium cicutarium	redstem filaree	Introduced; Cal-IPC Limited
Salsola tragus	Russian thistle	Introduced; Cal-IPC Limited
Grasses		
Bromus sp.	brome	Introduced
Avena sp.	wild oats	Introduced

[1] *CRPR – California Rare Plant Rank, defined in California Native Plant Society Online Inventory and CDFW California Natural Diversity Database.*

[2] *Cal-IPC – California Invasive Plant Council*

Appendix C

Phase I Cultural Resources Survey Report



San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Cultural Resources Survey Report

prepared by
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Executive Summary

Rincon Consultants, Inc. (Rincon) was retained by the San Luis Obispo Regional Transit Authority (RTA) to conduct a Phase I cultural resources study for the RTA Coordinated Transit Maintenance and Dispatch Facility Project (Project) located within the City of San Luis Obispo, San Luis Obispo County, California. This study has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines and Section 106 of the National Historic Preservation Act (NHPA) and presents the results of a cultural resources records search of the project area and 0.5-mile buffer, consultation with Native American groups and individuals, local historical group consultation, an intensive pedestrian survey of the Project site, and preparation of this technical report. The project area of potential effects (APE) is located at 253 Elks Lane within the City of San Luis Obispo, California. The project site is located within the San Luis Obispo, California, United States Geological Survey 7.5-minute topographic quadrangles. The Public Land Survey System (PLSS) depicts the project site within the Mt. Diablo Meridian, Township 31S, Range 12E, Section 03.

One previously recorded archaeological resource, a prehistoric isolate (P-40-038212), was identified within the project APE as a result of the records search, but was not relocated during the pedestrian survey. Two previously recorded archaeological resources, a prehistoric shell midden (P-40-001406) and the historical City of San Luis Obispo dump (P-40-001449), were recorded within the indirect APE. Native American consultation identified the project vicinity as sensitive for cultural resources. Further, the proximity to San Luis Obispo Creek increases the archaeological sensitivity of the area. Thus, Rincon has recommended an Extended Phase I (XPI) testing program be conducted prior to project-related ground disturbance and that initial ground disturbance be observed by archaeological and Native American monitors.

One newly recorded historical built-environment resource, a service station building, was identified within the project APE. This resource as recorded, evaluated, and recommended ineligible for the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP) under all criteria (1-4 and A-D, respectively). The project indirect APE contained one newly recorded built-environment resource, the Sunset Drive-In, and one previously recorded built-environment resource, the San Luis Obispo Water Resource Recovery Facility (WRRF). The WRRF has been previously recommended ineligible for listing in the CRHR and NRHP. The Sunset Drive-In was recorded, evaluated, and recommended eligible for listing in the CRHR, however the proposed project will not affect the Drive-In. The proposed buildings to be constructed will be one story in height and not significantly taller than other buildings in the project vicinity. Further, the proposed project will be designed so as to minimize ambient light pollution that may affect patrons' ability to see the screen whilst at the Sunset Drive-In. The proposed project will not significantly alter the setting of the Sunset Drive-In and construction of the current project will not significantly impact the resource under CEQA, nor will it have an adverse effect on the resource under the NHPA.

Based on the results of the study, Rincon recommends additional studies be conducted to determine if the current undertaking will have a significant impact on historical resources under CEQA or an adverse effect to historic properties under the NHPA. The additional studies are discussed below.

Retain a Qualified Principal Investigator

A qualified principal investigator, defined as an archaeologist who meets the Secretary of the Interior's Standards for professional archaeology (36 CFR 61), shall be retained to complete all mitigation measures related to archaeological and historical resources (hereafter principal investigator).

Extended Phase I Archaeological Testing

Because it is unknown whether buried archaeological resources are present within the APE, Rincon recommends that an extended phase I (XPI) study be conducted prior to project related ground disturbance. This study should be conducted by a qualified archaeologist under the direction of a qualified principal investigator and in accordance with CEQA and Section 106. The qualified archaeologist should prepare a testing plan designed to establish the presence or absence and extent of archaeological deposits within the direct APE. An XPI conducted prior to project construction could reduce potential delays caused by unanticipated finds during construction. Should a subsurface resource be found during the XPI, additional studies such as a Phase II investigation may be required to determine if the resource is eligible for the CRHR and/or the NRHP. The results of the XPI will also determine whether additional mitigation such as monitoring will be necessary. Rincon recommends that XPI testing be observed by a Native American monitor.

Unanticipated Discovery of Human Remains

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the San Luis Obispo County coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

1 Introduction

Rincon Consultants, Inc. (Rincon) was retained by the San Luis Obispo Regional Transit Authority (RTA) to conduct a Phase I cultural resources study for the San Luis Obispo RTA Coordinated Transit Maintenance and Dispatch Facility Project (Project) located within the City of San Luis Obispo, San Luis Obispo County, California (Figure 1). This study has been prepared in accordance with the California Environmental Quality Act (CEQA) statutes and guidelines and in accordance with Section 106 of the National Historic Preservation Act (NHPA) should a federal nexus be established. Therefore, this report is completed in a CEQA-Plus format providing compliance with cultural resources component of CEQA and the NHPA. This cultural resources study includes a records search, Native American consultation, local consultation, an intensive pedestrian survey of the project area of potential effects (APE), evaluation of historic built environment resources, and preparation of this report.

1.1 Project Description

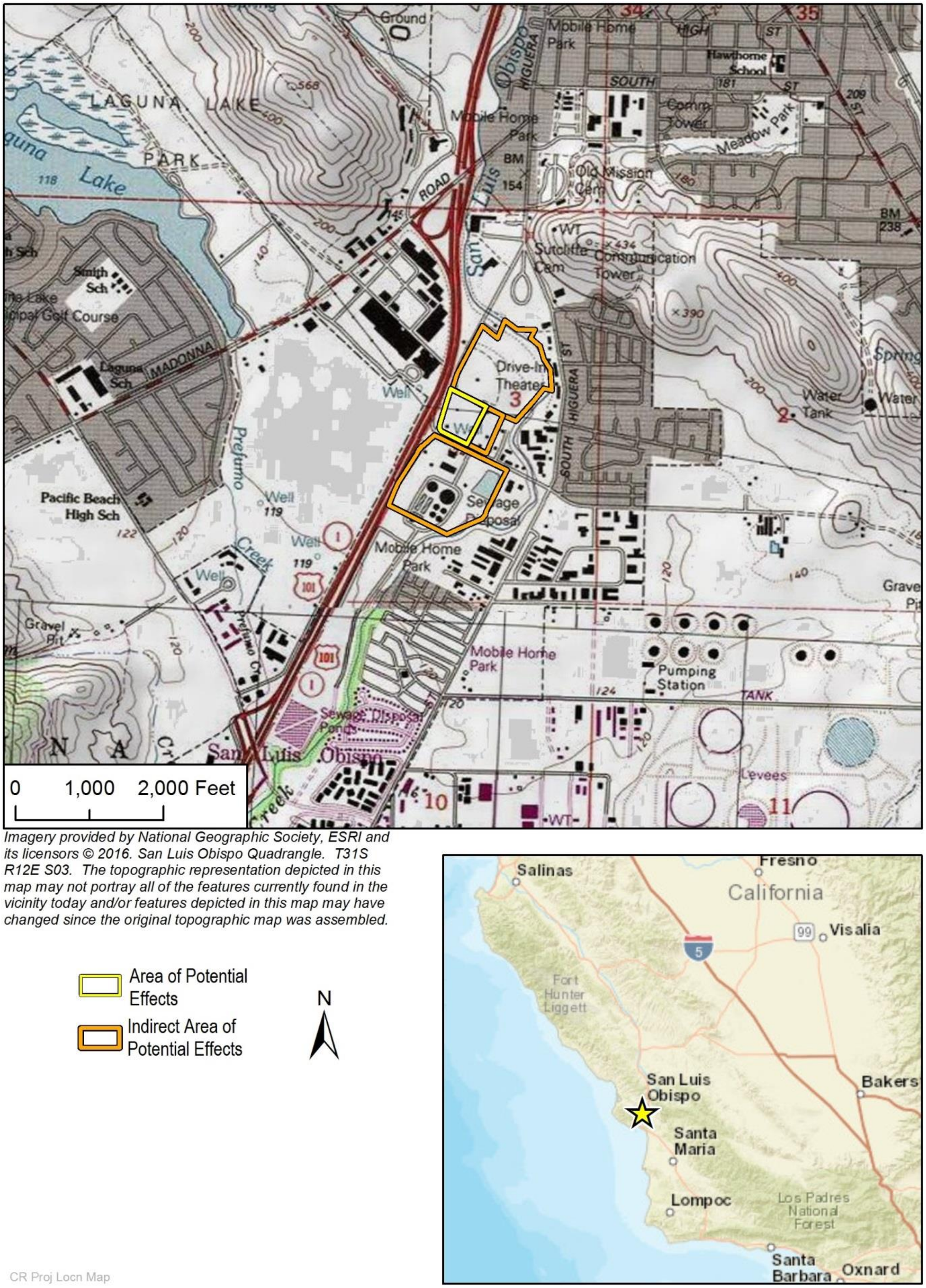
The proposed project includes the construction of a bus maintenance building and an office building totaling approximately 45,000 square feet. Both buildings will be one story, though the maintenance building will have an interior mezzanine level. The project will also include the construction of a parking lot surrounding the buildings as well as the installation of lighting, landscaping, and utilities. Project related ground disturbance will include, clearing, grubbing, and removing and/or recompacting unconsolidated soils near the ground surface, resulting in ground disturbance of approximately five feet or more. The import of fill will be necessary to raise the ground-elevation of a portion of the APE to above the 100-year flood level.

1.2 Regulatory Framework

The current study is conducted under CEQA plus federal cross-cutting documentation in place of a NEPA document in what is termed “CEQA-Plus” documentation. To meet the requirements of a CEQA-Plus study, the current undertaking complies with CEQA regulations at the state level and Section 106 of the NHPA to complete the federal cross-cutting documentation. The state and federal regulations are discussed below. The Historic Preservation Ordinance of the City of San Luis Obispo is also discussed in this section.

1.2.1 State

CEQA requires a lead agency to determine whether a project may have a significant effect on historical resources (Public Resources Code [PRC], Section 21084.1). A historical resource is a resource listed in, or determined to be eligible for listing, in the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (State CEQA Guidelines, Section 15064.5[a][1-3]).



Imagery provided by National Geographic Society, ESRI and its licensors © 2016. San Luis Obispo Quadrangle. T31S R12E S03. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Figure 1. Project Location

A resource shall be considered historically significant if it meets any of the following criteria:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2) Is associated with the lives of persons important in our past;
3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4) Has yielded, or may be likely to yield, information important in prehistory or history.

In addition, if it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC, Section 21083.2[a], [b], and [c]). PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2) Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

1.2.2 Federal

This project may involve the use of funds provided by the federal government. Therefore, this project has been conducted according to the CEQA-Plus regulatory standards. Cultural resources are considered during federal undertakings chiefly under Section 106 of the NHPA of 1966 (as amended) through its implementing regulations, 36 CFR 800 (Protection of Historic Properties), as well as the National Environmental Policy Act (NEPA). Properties of traditional religious and cultural importance to Native Americans are considered under Section 101(d)(6)(A) of NHPA. Other federal laws include the Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act (AIRFA) of 1978, the Archaeological Resources Protection Act (ARPA) of 1979, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1989, among others.

Section 106 of the NHPA (16 United States Code [USC] 470f) requires federal agencies to take into account the effects of their undertakings on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP) and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR 800.1). Under Section 106, the significance of any adversely affected cultural resource is assessed and mitigation measures are proposed to reduce any impacts to an acceptable level. Significant cultural resources are those resources that are listed in or are eligible for listing in the NRHP per the criteria listed below (36 CFR 60.4). Cultural resources eligible for the NRHP are labeled as historic properties.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:

- a. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. Are associated with the lives of persons significant in our past; or
- c. Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. Have yielded, or may be likely to yield, information important in prehistory or history.

PRC, Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2) Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

1.2.3 City of San Luis Obispo

In 2010 the City of San Luis Obispo passed a Historic Preservation Ordinance to identify and protect important historic resources within the city (City of San Luis Obispo 2010). When determining if a property should be designated as a listed Historic or Cultural Resource, the Cultural Heritage Commission (CHC) and City Council are to consider this ordinance and SHPO standards. To be eligible for designation, the resource shall exhibit a high level of historic integrity, be at least fifty (50) years old (less than 50 if it can be demonstrated that enough time has passed to understand its historical importance) and satisfy at least one of the following criteria:

A. Architectural Criteria: Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

1) Style: Describes the form of a building, such as size, structural shape and details within that form (e.g. arrangement of windows and doors, ornamentation, etc.). Building style will be evaluated as a measure of:
    - a. The relative purity of a traditional style;
    - b. Rarity of existence at any time in the locale; and/or current rarity although the structure reflects a once popular style;

   c. Traditional, vernacular and/or eclectic influences that represent a particular social milieu and period of the community; and/or the uniqueness of hybrid styles and how these styles are put together.

2) Design: Describes the architectural concept of a structure and the quality of artistic merit and craftsmanship of the individual parts. Reflects how well a particular style or combination of styles are expressed through compatibility and detailing of elements. Also, suggests degree to which the designer (e.g., carpenter-builder) accurately interpreted and conveyed the style(s). Building design will be evaluated as a measure of:

   a. Notable attractiveness with aesthetic appeal because of its artistic merit, details and craftsmanship (even if not necessarily unique);

   b. An expression of interesting details and eclecticism among carpenter-builders, although the craftsmanship and artistic quality may not be superior.

3) Architect: Describes the professional (an individual or firm) directly responsible for the building design and plans of the structure. The architect will be evaluated as a reference to:

   a. A notable architect (e.g., Wright, Morgan), including architects who made significant contributions to the state or region, or an architect whose work influenced development of the city, state or nation.

   b. An architect who, in terms of craftsmanship, made significant contributions to San Luis Obispo (e.g., Abrahams who, according to local sources, designed the house at 810 Osos - Frank Avila's father's home - built between 1927 – 1930).

B. Historic Criteria:

1) History – Person: Associated with the lives of persons important to local, California, or national history. Historic person will be evaluated as a measure of the degree to which a person or group was:

   a. Significant to the community as a public leader (e.g., mayor, congress member, etc.) or for his or her fame and outstanding recognition - locally, regionally, or nationally.

   b. Significant to the community as a public servant or person who made early, unique, or outstanding contributions to the community, important local affairs or institutions (e.g., council members, educators, medical professionals, clergymen, railroad officials).

2) History – Event: Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. Historic event will be evaluated as a measure of:

   a. A landmark, famous, or first-of-its-kind event for the city - regardless of whether the impact of the event spread beyond the city.

   b. A relatively unique, important or interesting contribution to the city (e.g., the Ah Louis Store as the center for Chinese-American cultural activities in early San Luis Obispo history).

3) History-Context: Associated with and also a prime illustration of predominant patterns of political, social, economic, cultural, medical, educational, governmental, military, industrial, or

religious history. Historic context will be evaluated as a measure of the degree to which it reflects:

c. Early, first, or major patterns of local history, regardless of whether the historic effects go beyond the city level, that are intimately connected with the building (e.g., County Museum).

d. Secondary patterns of local history, but closely associated with the building (e.g., Park Hotel).

C. Integrity: Authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity will be evaluated by a measure of:

a. Whether or not a structure occupies its original site and/or whether or not the original foundation has been changed, if known.

b. The degree to which the structure has maintained enough of its historic character or appearance to be recognizable as an historic resource and to convey the reason(s) for its significance.

c. The degree to which the resource has retained its design, setting, materials, workmanship, feeling and association.

1.3 Area of Potential Effects

The APE of an undertaking is defined in 36 CFR 800.16(d) as the "geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such property exists." Additionally, the APE must be considered as a three-dimensional space (depth, length, and width). The current proposed undertaking is limited to assessor's parcel number (APN) 053-041-071 at 253 Elks Lane in San Luis Obispo, California. Therefore, the 6.5-acre parcel represents the horizontal (length and width) APE. The vertical APE (depth) is limited to the depth of disturbance needed for the facility upgrades including buildings demolition and construction. The maximum depth of disturbance expected for the undertaking is 10 feet below the surface. An indirect APE for historical built-environment resources includes the parcels surrounding the APE. See Figure 2 for an illustration of the APE, which includes the APE and indirect APE, for the current undertaking.

The approximate center of the APE occurs at latitude 35°15'2.12"N and longitude 120°40'39.52"W (WGS-84 datum). The project site is located on the San Luis Obispo, California United States Geological Survey 7.5-minute topographic quadrangles. The Public Land Survey System depicts the project site within the Mt. Diablo Meridian, Township 31S, Range 12E, Section 03.

Figure 2. Area of Potential Effects

1.4 Personnel

Rincon Archaeologist Hannah Haas served as the primary author of this report and assisted with Native American consultation. Rincon Archaeologist Meagan Szromba conducted the pedestrian survey. Rincon Architectural Historian Susan Zamudio-Gurrola conducted archival research and prepared California Department of Parks and Recreation (DPR) Series 523 forms for the built environment properties within the direct and indirect APE. Rincon Senior Architectural Historian Shannon Carmack reviewed the built environment findings in the report. Ms. Carmack meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history (NPS 1983). Cultural Resources Principal Investigator Christopher Duran, M.A., RPA, served as principal investigator for the study. Mr. Duran meets the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology (NPS 1983). Rincon Cultural Resources Program Manager Kevin Hunt, B.A., managed this cultural resources study and provided program-level oversight. Rincon GIS Analyst Allysen Valencia prepared the figures found in the report. Rincon Vice President Duane Vander Pluym, D. Env., reviewed this report for quality control.

2 Natural and Cultural Setting

2.1 Environmental Setting

The project APE is located within the corporate limits of the City of San Luis Obispo at an approximate elevation of 40 meters (130 feet) above mean sea level. The project is located generally along U.S. Highway 101 at the intersection of Elks Lane and Prado Road. Vegetation, where present within the project site, consists of non-native grass and weeds.

2.2 Cultural Setting

2.2.1 Prehistoric Setting

The project lies in the Central Coast archaeological region (Jones et al. 2007). The Central Coast has been defined as extending from south of San Francisco Bay to the northern edge of the California Bight (Jones et al. 2007:125). Following Jones et al. (2007:137), the prehistoric cultural chronology for the Central Coast can be generally divided into six periods: Paleo-Indian (ca. 10000–8000 B.C.), Millingstone/Early Archaic (8000-3500 B.C.), Early (3500-600 B.C.), Middle (600 B.C.- A.D. 1000), Middle-Late Transition (A.D. 1000-A.D. 1250), and Late (A.D. 1250-contact [ca. A.D. 1769]).

Several chronological sequences have been devised to understand cultural changes along the Central Coast from the Millingstone period to contact. Jones (1993) and Jones and Waugh (1995) presented a Central Coast sequence that integrated data from archaeological studies conducted since the 1980s. Three periods are presented in their prehistoric sequence subsequent to the Millingstone period: Early, Middle, and Late periods. More recently, Jones and Ferneau (2002:213) updated the sequence following the Millingstone period as follows: Early, Middle, Middle-Late Transition, and Late periods. The archaeology of the Central Coast subsequent to the Millingstone period is distinct from that of the Bay Area and Central Valley, and the region has more in common with the Santa Barbara Channel area during the Middle and Middle-Late Transition periods, but few similarities during the Late period (Jones & Ferneau 2002:213).

2.2.1.1 Paleo-Indian Period (ca. 10,000–8000 B.C.)

When Wallace developed the Early Man horizon (referred to herein as the Paleo-Indian Period) in the 1950s, little evidence of human presence was known for the southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous sites older than this date, including coastal and Channel Islands sites (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984). The earliest accepted dates for occupation are from two of the Northern Channel Islands, located off the southern coast of Santa Barbara County. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area approximately 10,000 years ago (Erlandson 1991:105). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002).

Only a few archaeological sites along the Central Coast are documented prior to 8,000 years ago. It is likely that most earlier coastal sites are presently under water because it is estimated that 10,000 years ago sea levels were 15 – 20 meters lower than today (Bickel 1978:7). Estimates place the shore in central and southern California during this period at approximately 10 kilometers farther west than today's coastline (Breschini and Haversat 1991:126).

Recent data from Paleo-Indian sites in southern California indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas (e.g., Jones et al. 2002) and on Pleistocene lake shores in eastern California (Moratto 1984:90–92). Although few Clovis-like or Folsom-like fluted points have been found in southern California (e.g., Erlandson et al. 1987), it is generally considered that the emphasis on hunting may have been greater during the Paleo-Indian period than in later periods. A fluted point fragment was recovered from site CA-SBA-1951 on the Santa Barbara Channel coastal plain (Erlandson 1994:44; Erlandson et al. 1987). Another fluted point was reportedly found on the surface in Nipomo, San Luis Obispo County (Mills et al. 2005; Jones et al. 2007).

Large side-notched points of the Central Coast Stemmed series in this area date to as early as 8,000 years ago (Justice 2002). Points of this type have been recovered at Diablo Canyon (CA-SLO-2; Greenwood 1972), Cross Creek (CA-SLO-1797; Fitzgerald 2000), Little Pico Creek (CA-SLO-175; Jones and Waugh 1995), and the Honda Beach site (CA-SBA-530; Glassow 1997), among others. At the Metcalf site (CA-SCL-178), in southern Santa Clara Valley, Hildebrandt (1983) recovered two large side-notched points associated with charcoal dates ranging from 9,960 – 8,500 years ago.

Several recently investigated sites also provide clear evidence for human occupation of the Central Coast during the Paleo-Indian period. CA-SLO-1764 (Lebow et al. 2001) and Cross Creek (CA-SLO-1797; Fitzgerald 2000), both near Santa Margarita in San Luis Obispo County, and CA-SLO-832 (Jones et al. 2001) near Pismo Beach, have produced radiocarbon dates from approximately 9,000 years ago (Jones and Ferneau 2002).

2.2.1.2 Millingstone Period (8000–3500 B.C.)

The Millingstone Period, as defined by Wallace (1955, 1978) and recognized on the Central Coast by Greenwood (1972), is characterized by an ecological adaptation to collecting suggested by the appearance and abundance of well-made milling implements. Millingstones occur in large numbers for the first time in the region's archaeological record, and are even more numerous near the end of this period. Aside from millingstones, typical artifacts during this period include crude core and cobble-core tools, flake tools, large side-notched projectile points, and pitted stones (Jones et al. 2007).

As testified by their toolkits and shell middens in coastal sites, people during this period practiced a mixed food procurement strategy. Subsistence patterns varied somewhat as groups became better adapted to their regional or local environments. Faunal remains identified at Millingstone sites point to broad-spectrum hunting and gathering of shellfish, fish, birds, and mammals, though large faunal assemblages are uncommon.

The Millingstone Period somewhat corresponds with King's (1981, 1990) Early period of the Santa Barbara Channel area, although King's Early period starts later and lasts longer (5500 – 1350 B.C.). The Cross Creek site (CA-SLO-1797) is a Millingstone occupation site in San Luis Obispo County that returned radiocarbon dates ranging between 9,500 – 4,700 years ago This site represents one of the oldest expressions of the pattern (Jones et al. 2007; Fitzgerald 2000:58).

Along the Central Coast, Millingstone period sites are most common on terraces and knolls, typically set back from the current coastline (Glassow et al. 1988:68, Erlandson 1994:46). However, no less than 42 sites have been identified in various settings, including rocky coasts, estuaries, and nearshore interior valleys (Jones et al. 2007). The larger sites usually contain extensive midden deposits, possible subterranean house pits, and cemeteries. Most of these sites probably reflect intermittent use over many years of local cultural habitation and resource exploitation. Erlandson has noted that the typical Millingstone tools are not common on contemporaneous Channel Island sites, possibly reflecting an alternate insular resource exploitation pattern (Erlandson 1994:47).

2.2.1.3 Early Period (3500–600 B.C.)

An extensive series of shoreline midden deposits are within the Central Coast region dating to the Early Period, signifying an increase in occupation of the open coast (Jones 1995; Jones and Waugh 1995, 1997). These include estuarine sites such as CA-SLO-165 and open-coast sites in Monterey Bay area, including CA-MNT-73, CA-MNT-108, and CA-MNT-1228. Sites dating to this period are marked by large lithic artifact assemblages that include Central Coast Stemmed Series and side-notched projectile points. Square-stemmed and side-notched points have also been found in deposits at Willow Creek in Big Sur (CA-MNT-282), and Little Pico II on the San Luis Obispo coast (CA-SLO-175) (Jones and Ferneau 2002). This trend, first identified by David Banks Rogers in 1929, was confirmed by Greenwood (1972) at Diablo Canyon and since that time it has become apparent at numerous sites throughout the Central Coast. In many cases, manifestations of this trend are associated with the establishment of new settlements (Jones et al. 2007).

The material culture recovered from Early Period sites within the Central Coast region provides evidence for continued exploitation of inland plant and coastal marine resources. Artifacts include milling slabs and handstones, as well as mortars and pestles, which were used for processing a variety of plant resources. Bipointed bone gorge hooks were used for fishing. Assemblages also include a suite of *Olivella* spp. beads, bone tools, and pendants made from talc schist. Square abalone shell (*Haliotis* spp.) beads have been found in Monterey Bay, but not in the Big Sur or San Luis Obispo areas (Jones and Waugh 1997:122).

Shell beads and obsidian are hallmarks of the trade and exchange networks of the central and southern California coasts. The archaeological record indicates a substantial increase in the abundance of obsidian at Early Period sites in the Monterey Bay and San Luis Obispo areas (Jones and Waugh 1997:124–126). Obsidian trade continued to increase during the following Middle Period.

2.2.1.4 Middle Period (600 B.C.–A.D. 1000)

A pronounced trend toward greater adaptation to regional or local resources occurred during the Middle Period. For example, the remains of fish, land mammals, and sea mammals are increasingly abundant and diverse in archaeological deposits along the coast. Related chipped stone tools suitable for hunting were more abundant and diversified, and shell fishhooks became part of the toolkit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Bone tools, including awls, are more numerous than in the preceding period, and the use of asphaltum adhesive became common. Sites from this period show a retention of stemmed points and the disappearance of the larger side-notched points (Jones and Klar 2007; Jones et al. 2007).

Complex maritime technology also proliferated during this period. Notable introductions included circular shell fishhooks (Jones and Klar 2007:466), the appearance of compound bone fishhooks between A.D. 300 and 900, and the development of the wooden plank canoe (tomol or tomolo) by at least A.D. 400–700 (Arnold 1995; Jones and Klar 2007:466; Kennett 1998:357; King 1990:87–88; Rick et al. 2002). Hand-hewn plank canoes, sewn together with cordage and then sealed with asphaltum, were “a uniquely sophisticated craft for prehistoric North America” (Jones and Klar 2007: 461). These large canoes were used extensively for travel and trade between the Channel Islands and the mainland; however, no evidence of their use north of Point Conception is known.

The introduction of shell fishhooks and plank canoes, their subsequent modifications, and the increased use of other capture devices such as nets appear to have led to a substantial focus on fishing in most coastal areas. A seasonal round settlement pattern was still followed; however, large, permanently occupied settlements, particularly in coastal areas, appear to have been the norm by the end of the period (Kennett 1998).

2.2.1.5 Middle-Late Transition Period (A.D. 1000–1250)

The Middle-Late Transition Period is marked by relative instability and change, with major changes in diet, settlement patterns, and interregional exchange. The relatively ubiquitous Middle Period shell midden sites found along the Central Coast were abandoned by the end of the Middle-Late Transition Period, so most Transition Period and Late Period sites were first occupied during those periods (Jones and Ferneau 2002:213, 219). Site CA-SLO-239 has been tentatively dated to the Middle-Late Transition Period and contains the only residential feature, a circular house floor, dating to this time period (Jones et al. 2007; Mikkelsen et al. 2000).

During the Middle-Late Transition Period within the Central Coast region, projectile points diagnostic of both the Middle and Late Periods are found (Jones and Ferneau 2002:217). The points include large, contracting-stemmed types typical of the Middle Period, as well as Late Period small, leaf-shaped points, which likely reflect the introduction of the bow and arrow.

2.2.1.6 Late Period (A.D. 1250–Historic Contact)

Late Period sites are marked by small, finely worked projectile points, such as Desert side-notched and Cottonwood points, as well as temporally diagnostic shell beads. The small projectile points are associated with bow and arrow technology and indicate influence from the Takic migration from the deserts into southern California. The Chumash only adopted useful technology from the Takic culture, as compared to the broad culture change that occurred to the south. Although shell beads were typical of coastal sites, trade brought many of these maritime artifacts to inland locations, especially during the latter part of the Late Period (Jones et al. 2007).

Common artifacts identified at Late Period sites include bifacial bead drills, bedrock mortars, hopper mortars, lipped and cupped *Olivella* shell beads, and steatite disk beads. The presence of beads and bead drills suggest that low-level bead production was widespread throughout the Central Coast region (Jones et al. 2007).

Unlike the large Middle period shell middens, Late Period sites are more frequently single-component deposits. There are also more inland sites, with fewer and less visible sites along the Pacific shore during the Late Period. However, one Late Period shell midden has been identified on the coast in Morro Bay (CA-SLO-23). The settlement pattern and dietary reconstructions indicate a lesser reliance on marine resources than observed for the Middle and Middle-Late Transition periods, as well as an increased preference for deer and rabbit (Jones 1995). An increase in sites with bedrock mortars during the Late Period further suggests that nuts and seeds began to take on a more significant dietary role (Jones et al. 2007).

2.2.2 Ethnographic Overview

The project APE was historically occupied by the Obispeño Chumash, so called after their historic period association with Mission San Luis Obispo de Tolosa (Gibson 1983; Kroeber 1925). The precise location of the boundary between the Chumashan-speaking Obispeño Chumash and their northern neighbors, the Hokan-speaking Salinan, is debatable (Milliken and Johnson 2005); however, Jones and Waugh (1995:8) note that “those boundaries may well have fluctuated through time in response to possible shifts in economic strategies and population movement.”

The Chumash spoke six closely related Chumashan languages, which have been divided into two broad groups—Northern Chumash (consisting only of Obispeño) and Southern Chumash (Purisimeño, Ineseño, Barbareño, Ventureño, and Island Chumash) (Mithun 2004:389). The Chumashan language currently is considered an isolate stock with a long history in the Santa Barbara region (Mithun 2004:304). Groups neighboring the Chumash included the Salinan to the north, the Southern Valley Yokuts and Tataviam to the east, and the Gabrielino (Tongva) to the south. Chumash place names in the project vicinity include Pismu (Pismo Beach), Tematatimi (along Los Berros Creek), and Tilhini (near San Luis Obispo) (Greenwood 1978:520).

Only a general outline of the lifeways of the Obispeño Chumash is known based on the little ethnographic information available (Greenwood 1978). Although their language was closer to Southern Chumash groups, the material culture and lifeways of the Northern Chumash appear to have been more similar to their northern neighbors, the Salinan. Accordingly, their populations in this area are thought to have been substantially lower than in the Santa Barbara Channel area, their villages smaller, and their livelihood less based on intensive use of marine fisheries (Glassow et al. 1988; Greenwood 1978).

Permanent Chumash villages included hemispherical dwellings arranged in close groups, with the chief having the largest for social obligations (Brown 2001). Each Chumash village had a formal cemetery marked by tall painted poles and often with a defined entrance area (Gamble et al. 2001:191). Archaeological studies have identified separate sections for elite versus commoner families within the cemetery grounds (King 1969).

The acorn was a dietary staple for the mainland Chumash, though its dominance varied by coastal or inland location. Chumash diet also included cattail roots, fruits and pads from cactus, and bulbs and tubers of plants such as amole (Miller 1988:89). On the coast, the wooden plank canoe (tomol) was employed in the pursuit of marine mammals and fish. The tomol not only facilitated marine resource procurement but also facilitated an active trade network maintained by frequent crossings between the mainland and the Channel Islands.

Chumash populations were decimated by the effects of European colonization and missionization (Johnson 1987). Traditional lifeways largely gave way to laborer jobs on ranches and farms in the Mexican and early American periods. Today, the Santa Ynez Band of Chumash Indians is the only federally recognized Chumash tribe, though many people of Chumash descent continue to live throughout their traditional territory.

2.2.3 Historical Overview

Post-European contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present).

2.2.3.1 Spanish Period (1769-1822)

Initial European entry into the San Luis Obispo region began with the Juan Rodrigues Cabrillo Expedition in 1542. Cabrillo sailed along the coast, possibly landing in Morro Bay, and then continued as far north as San Francisco Bay (Chesnut 1993). In 1587, Pedro de Unamuno landed in what was most likely Morro Bay, but suffered casualties during an attack by Native Americans and left (Bean 1968). Sebastian Rodriguez Cermeño entered the San Luis Obispo region in 1595 as part of his exploration of the Alta California coast (Jones et al. 1994). The earliest detailed descriptions of the area come from members of Gaspar de Portolá's land expedition, which passed through the region in 1769 (Squibb 1984). Early travelers in the Central Coast region reported seeing no large Native American villages like those noted in the Santa Barbara Channel area.

Gaspar de Portolá and Franciscan Father Junípero Serra established the first Spanish settlement in Alta California at Mission San Diego de Alcalá in 1769. This was the first of 21 missions erected by the Spanish between 1769 and 1823. Portolá continued north, passing through the project vicinity and reaching San Francisco Bay in 1769. Mission San Luis Obispo de Tolosa was founded in 1772, the fifth of 21 missions established by the Spanish in the California (Rolle 2003).

2.2.3.2 Mexican Period (1822-1848)

The Mexican Period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period saw the federalization of mission lands in California with the passage of the Secularization Act of 1833. This Act enabled Mexican governors in California to distribute former mission lands to individuals in the form of land grants. Successive Mexican governors made more than 700 land grants between 1822 and 1846, putting most of the state's lands into private ownership for the first time (Shumway 2007).

The secularization of the missions during the Mexican period resulted in approximately 500,000 acres of former mission lands being granted to Mexican citizens in San Luis Obispo County (San Luis Obispo 2006). Mexican governor Manuel Micheltorena granted six leagues to Pedro Narvaez in 1844. This grant came to be known as Paso de Robles (Shumway 2007). The project APE is located within this land grant.

2.2.3.3 American Period (1848-Present)

The American Period began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, including California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. This period saw increased settlement throughout the state. Many Mexican ranchos were sold or otherwise acquired by Americans, and most were subdivided into agricultural parcels or towns. Rancho Paso de Robles was patented in 1866 to Petronillo Rios who then sold the land to James H. Blackburn, Daniel Drew Blackburn, and Lazarus Godehaux in 1857 for $8,000 (Shumway 2007; City of Paso Robles 2014).

The County of San Luis Obispo was founded in 1850 (San Luis Obispo 2006). Roads were constructed throughout the county in the 1870s, primarily by Chinese laborers, leading to increased mobility throughout the county. In 1872, Captain John Harford began construction on the Pacific Coast Railway.

Dumke (1944) described San Luis Obispo County during the California land boom of the 1880s as "the great butter and cheese belt of southern California," initially with land affordably priced between $18 and $25 per acre. By April 1887, an estimated 3,000 to 4,000 people inhabited the region, and land prices increased dramatically. In 1894, the Southern Pacific Railroad completed a line from San Jose to San Luis Obispo encouraging trade and further settlement of the region.

In the early twentieth century Port Harford was renamed Port San Luis and oil from the Santa Maria and Taft-Coalinga fields was shipped beginning in 1907 and 1913, respectively. The California Polytechnic School was established in 1901 as a high school and eventually became California Polytechnic State University (Cal Poly). The county's agriculture and ranching production supplied U.S troops during World War I and helped its residents weather the Great Depression of the 1930s. At the start of World War II, the U.S. War Department transferred nearly 100,000 military personnel to bases at Morro Bay, Camp San Luis Obispo, Camp Roberts, and Cambria.

2.2.3.4 City of San Luis Obispo

The City of San Luis Obispo was laid out in 1850 and incorporated as the county seat in 1856. The community's economy was based primarily on agricultural development, with a strong focus on cattle ranching and dairy operations (Angel 1883; City of San Luis Obispo 2013). By the late 1800s, the City of San Luis Obispo had grown into a bustling community, especially after the extension of the Southern Pacific Railroad through the area. The City served as a center of trade for central California as it was surrounded by the agricultural and dairy industries of the region and by Union Oil of California's oil fields (City of San Luis Obispo 2013).

The establishment of Cal Poly in 1903 had a drastic influence on the development of the City throughout the 20th century, leading to further development focused around the campus (City of San Luis Obispo 2013). With the advent of the automobile, tourism became an important player in the regional economy. Landmarks such as Mission San Luis Obispo and the nearby Hearst Castle added to the tourism industry, and the first motel in the country, the Milestone Mo-tel, was built in the City of San Luis Obispo in 1924. In the 1930s, the economic effects of the Great Depression were slowed with the construction and establishment of Camp San Luis Obispo, a military training camp. The establishment of the camp led to increased population as more soldiers and their families moved to the area. Post-World War II the city saw an increased demand for single-family housing, leading to various expansions of the city's boundaries and the construction of large residential subdivisions throughout the 1950s and 1960s (City of San Luis Obispo 2013).

3 Background Research

3.1 California Historical Resources Information System

Rincon requested a search of the cultural resource records housed at the California Historical Resources Information System (CHRIS), Central Coast Information Center (CCIC) located at University of California, Santa Barbara for two nearby recent projects, which cover the entirety of the current APE plus a 0.5-mile buffer around the APE. The searches were conducted to identify all previous cultural resources work and previously recorded cultural resources within a 0.25-mile radius of the project site. The CHRIS searches included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. The records search also included a review of all available historic USGS 7.5- and 15-minute quadrangle maps. The results of these two previous records searches are used for the current study.

The CCIC did not list any historic addresses within the search radius, nor did they possess any historical maps depicting the APE.

3.1.1 Previous Studies

The CCIC records search identified 27 previous studies within a 0.5-mile radius of the APE, eight of which include portions of the APE (Table 1). Of the previous studies within portions of the APE, two identified cultural resources within the APE. Study SL-02320 identified a historical ranch within the indirect APE at 50 Prado Road (Map Reference #3), but this ranch was never formally recorded and has since been demolished. Study SL 4053 identified resource P-40-038212 within the APE, discussed in further detail below.

Table 1. Previous Cultural Resource Studies within 0.5 Mile of the APE

Report Number	Author	Year	Title	Relationship to APE
SL-00052	Hoover, R	1977	Cultural Resources Evaluation City of San Luis Obispo Sewage Treatment Project	**Within indirect APE**
SL-00095	Dills, C.	1978	Archaeological Potential at Elks Lane Bridge Project	Outside
SL-00138	Dills, C.	1975	Information to aid in Interpretive Planning Map for San Luis Obispo (city) and Environs	**Within APE and indirect APE**
SL-00311	Dills, C.	1975	Proposed Expansion of SLO Wastewater Treatment Plant and Repair of Arroyo Grande-Grover City-Oceano Wastewater Facility – Archaeological Impact	**Within indirect APE**

Report Number	Author	Year	Title	Relationship to APE
SL-00349	Osland, K.	1981	Proposed Project- An Extension of Los Osos Road, From Its Intersection with Highway 101 to an Existing Portion of Los Osos Road	Outside
SL-00437	Smith, C.	1981	Archaeological Survey Along Highway 101 from Marsh Road, South to Approximately .5 miles South of Madonna Road	**Within APE and indirect APE**
SL-00719	Brock, J. and R. Wall	1986	A Cultural Resources Assessment of Selected Study Areas within the City of San Luis Obispo	**Within indirect APE**
SL-01245	Singer, C. and J. Atwood	1988	Cultural Resources Survey and Impact Assessment for the Dalidio, Madonna, and McBride Properties near the City of San Luis Obispo, SLO County, CA	Outside
SL-01305	Singer, C. and J. Atwood	1989	Cultural Resources Survey and Impact Assessment for the City of San Luis Obispo Wastewater Plant, San Luis Obispo County, California	**Within indirect APE**
SL-01686	Dills, C.	1990	Archaeological Potential of Parcel at Prado Road and Higuera Street, San Luis Obispo	**Within indirect APE**
SL-02320	Parker, J.	1991	Archaeological Investigation of APN 053-041-034, San Luis Obispo, CA	**Within APE and indirect APE**
SL-02363	Gibson, Robert O.	1993	Inventory of Cultural Resources for the Water Reclamation Project, City of San Luis Obispo, CA	**Within APE and indirect APE**
SL-02386	Levulett, V.	1991	Caltrans Archaeological Survey Report, Project SLO-101 26.0/26.9 Fence Installation	Outside
SL-02391	Anastasio, R.	1993	Re: Archaeological Monitoring of Subsurface Construction ant 293 El Portal, Lot 13, Block 7, Tract 57, El Pismo Manor #1 (APN 010-184-002)	**Within indirect APE**
SL-02529	Singer, C., J. Atwood, and J. Frierman	1993	It Came From Beneath the Streets: An Archaeological Report on the Expansion of the City of San Luis Obispo Wastewater Treatment System	**Within APE and indirect APE**
SL-03711	Bertrando, B.	1999	Historical Resources Inventory and Evaluation for the San Luis Marketplace Annexation: The Dalidio Property, San Luis Obispo, California	Outside

Report Number	Author	Year	Title	Relationship to APE
SL-03804	Bertrando, B.	1999	Historical Evaluation for the Existing Structures on the Proposed San Luis Obispo Marketplace Annexation	Outside
SL-03922	McGowan, Dana	1999	Cultural Resource Inventory Report for Williams Communications, Inc. Fiber Optic Cable System Installation Project, San Luis Obispo to Los Osos Loop	**Within indirect APE**
SL-03934	Avina, M.	1999	Cultural Resources Inventory Report for Williams Communications, Inc. Fiber Optic Cable Installation Project, San Luis Obispo to Bakersfield Volume I	Outside
SL-04031	Wilson, K.	2000	Cultural Resources Study, State Route 101 Fence Replacement	Outside
SL-04053	Nettles, W.	2000	Phase I Archaeological Survey of the Proposed Prado Road/Highway 101 Interchange, San Luis Obispo County, CA	**Within APE and indirect APE**
SL-04818	Parker, J.	2002	South Higuera Street, Proposed Peoples Self Help Housing Project, Cultural Resource Investigation APN 053-034-002 and -003	Outside
SL-05043	Martinez, A.	2002	Project Design Change for Sprint Facility SN45XC088F, “Elks Lodge,” San Luis Obispo	Outside
SL-05066	Maki, M.	2003	Cultural Resources Constraints Analysis for the Templeton-Atascadero Bikeway Project, San Luis Obispo County, California	Outside
SL-05350	Singer, C.	2004	Cultural Resources Survey and Impact Assessment for a +/- acre Property in the City of San Luis Obispo County, California	Outside
SL-05669	Ogden, A. and T. Joslin	2002	Negative Archaeological Survey Report for the Changeable Message Signs Project	Outside
SL-05729	Gibson, R.O.	2005	Archaeological Survey Report for the Bob Jones City to the Sea Bike Trail Segment 3 Project in the City of San Luis Obispo Area, San Luis Obispo County, CA	**Within indirect APE**

Source: CCIC 2015, 2016

3.1.2 Previously Recorded Sites

The CCIC records search identified five previously recorded cultural resources within a 0.5-mile radius of the project APE, one of which is located within the APE (P-40-038212) and three of which are located within the indirect APE (P-40-001406, -001449, and the San Luis Obispo Water Resource Reclamation Facility; Table 2).

Table 2. Previously Recorded Resources within 0.5 mile of the APE

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR Status	Relationship to APE
P-40-000124	CA-SLO-124	Prehistoric site	Prehistoric midden	C. N. G. 1952	Not evaluated	Outside
P-40-000400	CA-SLO-400	Prehistoric site	Bedrock milling site	C. E. Dills 1968	Not evaluated	Outside
P-40-001406	CA-SLO-1406	Prehistoric site	Prehistoric midden	G. Fleshman 1974	Not evaluated	**Within indirect APE**
P-40-001449	CA-SLO-1449H	Historic site	Historic San Luis Obispo City Dump	C. Singer 1992	Not evaluated	**Within indirect APE**
P-40-038212	N/A	Prehistoric isolate	Isolated chert cobble	W. Nettles 2000	Presumed ineligible	**Within**
N/A	N/A	Historic built-environment	Water Resource Reclamation Facility	S. Carmack 2015	Recommended ineligible	**Within indirect APE**

Source: CCIC 2015, 2016

3.1.2.1 P-40-001406

Resource P-40-001406 was recorded by G. Fleshman in 1974 and is recorded within the current project indirect APE. The resource consists of a shell midden. At the time it was recorded, the site had already been damaged by dry farming and the construction of Elks Lane. The site was not evaluated for listing in the CRHR or NRHP.

3.1.2.2 P-40-001449

Resource P-40-001449 consisted of the historical San Luis Obispo City Dump, which was partially removed in 1991 as part of an expansion of the WRRF. The recorded location of the resources is within the current project indirect APE. The deposit contained burnt and compacted refuse, including glass bottles, cans, auto parts, wood, ceramics, electrical cable, and other historical artifacts dating to ca. 1900-1945. When the WRRF was expanded in 1991, deposits were removed and redeposited in an area at the west end of the San Luis Obispo Airport that is located outside of the project APE. The original investigation (Singer et al. 1993) noted that the site may be larger than the disturbance area, but this was never confirmed through additional investigation (i.e., testing). Singer et al. recommended that any future construction activities and/or demolition of older facilities within the WRRF be inspected for the presence of additional deposits related to P-40-001449. An archaeological survey conducted by Rincon in 2015 for an expansion of the WRRF facility did not identify any deposits associated with P-40-001449 (Haas et al. 2015).

3.1.2.3 P-40-038212

Resource P-40-038212 consists of a prehistoric isolate recorded by Wendy Nettles in 2000. The isolated artifact is a single tested cobble of Franciscan chert. The isolate was not evaluated for listing in the CRHR or NRHP, however isolates are generally considered ineligible due to a lack of data potential.

3.1.2.4 Water Resource Reclamation Facility

The San Luis Obispo Water Resource Reclamation Facility (WRRF) (pending primary number) was recorded by Shannon Carmack in 2015. Established during the 1910s to modernize the city's waste water disposal system, the plant has expanded through the years to accommodate the need for increased capacity and to comply with increasingly stringent wastewater discharge requirements. The extant buildings and structures and features of the site were constructed between 1917 and 2007. The WRRF was recommended ineligible for listing in the NRHP and CRHR.

3.2 Native American Heritage Commission

Rincon Consultants contacted the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File (SLF) on October 18, 2016. In anticipation of the response from the NAHC, Rincon mailed anticipatory letters to 16 tribal groups or individuals on October 19, 2016 (Appendix A). These groups and individuals are known to Rincon to have affiliations to the project APE and surrounding area.

On October 25, 2016, Freddie Romero of the Santa Ynez Tribal Elders Council responded via telephone, asking if local groups had been contacted and stating that he would defer his comments to local groups.

On November 10, 2016, Rincon Archaeologist Hannah Haas conducted follow-up consultation by telephone. Ms. Haas left a voicemail with each of the contacts that she called.

On November 10, 2016, Mona Olivas Tucker responded via telephone, stating that the project vicinity is considered sensitive due to its proximity to San Luis Creek and the known presence of numerous Native American archaeological sites in the San Luis Obispo area. She recommended that limited archaeological testing be conducted prior to project ground disturbance and that, at a minimum, all project ground disturbance be observed by archaeological and Native American monitors.

As of November 17, 2016, Rincon has not received any additional responses to consultation requests.

3.3 Historic Consultation

Rincon Consultants mailed a letter to the History Center of San Luis Obispo and to the City of San Luis Obispo Community Development Department on October 31, 2016 to request information regarding historical resources within the project APE (Appendix B).

On November 2, 2016, Brian Lavell from the City of San Luis Obispo called Rincon architectural historian Shannon Carmack and stated that drive-in theater is a property of concern for the city and that the historic context statement for the City of San Luis Obispo does note the site as being one of the early examples of a drive-in theater within the area and is of local significance.

On November 14, 2016, Rincon archaeologist Hannah Haas telephoned the History Center and left a voicemail. No further responses have been received.

3.4 Historic Map and Aerial Review

Rincon reviewed historic aerials and topographic maps from internet sources to better understand the land use history of the project site. The 1967 San Luis Obispo, CA 7.5-minute topographic quadrangle, accessed using USGS TopoView, depicted one structure within the APE. The Drive-In Theatre and the San Luis Obispo WRRF are depicted within the indirect APE.

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4 Methods

4.1 Survey Methods

Rincon Archaeologist Meagan Szromba conducted a cultural resources survey of the project APE on October 26, 2016. The survey consisted of walking transects oriented generally north to south and spaced no greater than 10 meters apart over the entirety of the APE and a windshield survey of the indirect APE, consisting of driving the length of each parcel in the indirect APE and stopping to take photos of any potential built-environment resources. During the survey, the surveyor examined all areas of exposed ground surface for prehistoric artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic debris (e.g., metal, glass, ceramics), or soil discoloration that might indicate the presence of a cultural midden. The archaeologist recorded APE characteristics and survey conditions using a field notebook and a digital camera. The surveyor took photographs of the historical resources located within the indirect APE, the Sunset Drive-In Theatre and the SLO WRRF. Newly identified cultural resources were recorded on Department of Parks and Recreation (DPR) Series 523 forms (Appendix C). Copies of the field notes and digital photographs are on file with Rincon’s San Luis Obispo office.

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5 Findings

5.1 Archaeological Resources

No archaeological resources were identified during the pedestrian survey. Much of the APE included pavement or vegetation, limiting surface visibility to approximately 30%. One existing structure is also present within the APE and is evaluated for its significance in the following section.

One shell fragment was identified during the pedestrian survey. The presence of a shell midden adjacent to the APE suggests that shells in the vicinity may be cultural in origin; however, no resources were found in association with the shell fragment to confirm any cultural activity. No historical artifacts were identified near the boundary of the APE where the historical ranch described in Study SL-02320 was once located. Isolate P-40-038212 (tested cobble) was not relocated during the current survey.

Figure 3. Portion of APE, facing northwest.

Figure 4. View of portion of APE, facing southwest.

5.2 Built Environment Resources

No built environment resources were identified within the direct APE. Three properties containing buildings and structures older than 45 years of age were identified within the indirect APE; these include a portion of the previously evaluated SLO WRRF, a service station and the Sunset Drive-In Theater. The previously unrecorded resources are discussed below.

5.2.1 Service Station

The southwest corner of the APE is occupied by a building currently in use as a U-Haul rental office (Figures 5 and 6). The one-story building has a rectangular footprint and a flat roof. The building materials vary, including concrete, a wide vertical cladding, and what appears to be metal sheets. The southwest elevation contains the main entry –two single entry doors, both over concrete stoops, and a garage door opening. The garage door was not clearly visible but includes multiple panes and wooden framing either as part of the door or as a transom. One of the entry doors has been boarded over with a business sign placed over it. Between the two single entry doors is a large, multi-paned window. A portion of the building, as well as windows, located at the northwest corner have been covered with plywood and corrugated metal panels. The northwest elevation contains two single, metal doors that lead to men's and women's restrooms, each topped by a transom that has been boarded over. In addition, a window is adjacent to each of the transoms that were likely intended for ventilation. The southeast elevation contains two large window openings with various window types including jalousie, hopper, and what appear to be multi-paned fixed windows. The east elevation contains one small, multi-paned window. The perimeter of the flat roof appears to have once included an overhang, the frame of which is all that remains.

According to historic aerials and topographic maps, the building was constructed sometime between 1957 and 1963. The property originally contained two buildings sited in an L configuration (Historic Aerials 2016). It appears that the property was originally developed as a gas/service station (San Luis Obispo city directory 1967). In more recent years the property was reportedly also utilized as a Union 76 service station (San Luis Obispo Regional Transit Authority 2015). One of the two buildings was demolished sometime between 1989 and 1994 (Historic Aerials 2016).

The building located within the APE is no longer used for its original purpose – a gas/service station – and has fallen into disrepair. It is clad with a mix of rectangular metal sheets and wide vertical siding, some of which is likely not original. In addition, a portion of the northwest corner has been covered with plywood and corrugated metal sheets. The southeast elevation has two window openings containing a mix of window types indicating they are not original as well. The second building associated with the service station that once existed closer to Elks Lane was demolished between 1989 and 1994. Thus the property does not retain integrity of design, workmanship, materials, feeling, or association. It does not appear eligible for listing in the NRHP, CRHR, or on the City of San Luis Obispo's Master List of Historic Resources. The property does not appear to be associated with events that have made a significant contribution to the broad patterns of local, state or national history (Criteria A/1). The property has not been directly associated with persons significant in our past (Criteria B/2). The building has been heavily altered and does not embody any characteristics of a type, period, or method of construction, or represent the work of a master (Criteria C/3). It does not represent a significant and distinguishable entity whose components lack individual distinction. Lastly, the property is not expected to yield important information about prehistory or history (Criteria D/4). For these same reasons, the property does not appear eligible under any of the City of San Luis Obispo's evaluation criteria. Therefore the property is not considered a historic property, as defined in Section 106 of the NRHP, nor does it qualify as a historical resource under CEQA.

Figure 5. Southwest elevation of building.

Figure 6. Northwest elevation of building.

5.2.2 Sunset Drive-In

The Sunset Drive-In movie theater is located adjacent to and east of Elks Lane, within the indirect APE on the parcel immediately north of the APE. The drive-in includes the marquee sign adjacent to Elks Lane near the entry drive, a single movie screen, which is mounted on a one-story building and located at the southwest end of the property, a small ticket booth slightly to the southeast at the end of the drive, rows of parking in an arc configuration that accommodate up to 500 vehicles, and a concessions stand near the center of the parking area.

The Sunset Drive-In was constructed in 1950, opening in May of that year. The property has continuously been operated as a drive-in movie theater since then. The property was originally owned by Charles Pasquini and Don McClaren, and the drive-in was operated by Raymond Rodkey (Rodkey 2010; Vogel 2009). The Pasquini family reportedly lived in the one-story building underneath the movie screen (Cinema SLO 2010).

Box Office Magazine, in its March 18, 1950 issue, reported on the anticipated opening of the Sunset Drive-in, described as accommodating 500 cars. One of the owners, Don McClaren, was said to have served as his own architect. McClaren was a former branch manager for J.P. Filbert Co., a theater supply business based in Los Angeles (Vogel 2009; *Long Beach Independent* 1968).

In 1955 the theater screen was enlarged to accommodate a new technology which had been recently developed: Cinemascope. Approximately 16 feet were added to each side of the original screen (Rodkey 2010). When viewing the vertical metal supports, the outer supports are slightly different than the others, reflecting the addition. The screen rests on a long, one-story building. The building has a rectangular footprint and a nearly flat roof. The east elevation contains at least two entry doors and five window openings; however, the windows appear to be boarded and painted over. The west elevation contains multi-paned windows, a single-pane picture window, a single entry door over a concrete stoop, and two roll-up or tilt-up garage doors. The name of the theater, *Sunset,* is announced on the rear of the screen, advertising to passing freeway motorists. The sign is comprised of freestanding letters with neon tubing applied, arranged on a grid (Figure 7). During an interview in 2010, theater owner Larry Rodkey stated that the screen had remained the same since 1955 (Rodkey 2010).

The concessions stand near the center of the parking area is a long, one-story building with a rectangular footprint (Figure 8). It has a slightly sloping shed roof that overhangs on the west elevation, and is clad with painted stucco. The roof appears to be clad with composite shingles. The east (rear) side of the building features various recessed entries. The recesses alternate with wall planes that have vertical wooden posts painted in a contrasting color to the wall. Entry doors are screened from view. The west elevation contains various large pass-through windows to service customers. Some of the pass-through windows at the south end of the building have been covered over as if they are not currently in use. The north elevation has no fenestration. A small, flat-roofed addition was constructed against the south elevation in approximately 2010. It is surrounded by chain-link fencing and appears to be a trash enclosure. A separate sitting area was constructed slightly to the east of the concessions stand in the mid-2000s. This consists of a low, concrete block wall that creates a rectangular area containing tables and bench seating, covered by a nearly flat roof supported by a post at each corner.

The ticket booth is a small building with a rectangular footprint and a steeply-pitched roof (Figure 9). The building is clad in painted stucco and the roof is clad with vertically-placed galvanized steel panels. The gable faces contain narrow, vertical siding. The west elevation has a small, dropped, shed roof across the gable face, clad with galvanized steel panels. The building contains large single-pane windows on all four sides, and doors on the south and north elevations. Both are single entry doors (of unknown material), each containing an aluminum-frame double-hung window.

The marquee sign at the northwest edge of the property consists of a rectangular, internally-lit sign supported by a tapered brick pillar at one end and two posts at the other end. Along the top is a neon sign depicting a sun and its rays, and the words "Sunset Drive In." The color scheme of the sign is yellow, orange and red to complement the sunset theme of the design (Figure 10).

In addition to the usual drive-in theater speakers, the Sunset Drive-In also offered heaters. Each post had two heaters on it that could be hooked up to patrons' automobiles. The speakers were in place until approximately the 1970s, after which an FM radio transmitter was utilized that offered better sound quality (Rodkey 2010).

The drive-in property is bordered on the west by Elks Lane and US Highway 101, on the east by agricultural fields and South Higuera Street, on the south by a U-Haul rental property and mostly vacant land, and on the north by a mobile home park, commercial uses, and a cemetery.

Over the years, the Rodkey family has also owned the Oaks Drive-In, the Pismo Theater, the Fox Theater, and the Fair Oaks Theater. Raymond Rodkey also ran the Fremont Theater, the Obispo Theater, and the Elmo Theater in the 1940s when Fox West Coast Theaters had a monopoly (Schuster 2016). Today, Larry Rodkey still owns the Sunset Drive-In in San Luis Obispo, the Fair Oaks Theater in Arroyo Grande, and the Skyline Drive-In in Barstow (Schuster 2016).

The period of significance for the Sunset Drive-In is 1950, its date of construction. The property retains the principal features of a mid-century drive-in theater, including its marquee sign, entry drive, ticket booth, movie screen, concessions stand, rows of parking in an arc configuration, mounded topography for better vehicular viewing positions, and circulation pattern to direct vehicular traffic in and out of the site. The speakers and heaters that the drive-in once had are no longer in place; however, many of the posts appear to remain on the property. The Sunset Drive-In retains integrity of design, materials, workmanship, location, association, feeling, and setting. It has been in continuous operation as a drive-in movie theater, and operated by the same family, the Rodkeys, since its opening in 1950. The Sunset Drive-In is the only drive-in in San Luis Obispo, and one of the few remaining drive-ins in Southern California. Less than twenty drive-in theaters were believed to remain in the state of California in 2013 (HRG 2013). The Sunset Drive-In appears eligible for listing on the City of San Luis Obispo's Master List of Historic Resources under the theme Mid-20th Century Commercial Development, both as an excellent or rare example of a particular architectural style associated with the period, as well as an excellent example of a post-World War II commercial property type (Criteria A.1, A.2). The property retains the majority of the significant character-defining features of the property type, and retains the essential aspects of integrity.

The Sunset Drive-In appears eligible for listing in the CRHR as it embodies the distinctive characteristics of a type, period, or method of construction (Criterion 3). The property retains almost all of the character-defining features of a mid-century drive-in theater (with the exception of the speakers), and retains the essential aspects of integrity. The property is an excellent and rare example of this mid-century commercial property type. Drive-in theaters sprang up across the country post WWII, and reached their height between the mid-1950s and mid-1960s. They were especially popular in automobile-centric Southern California, given the mild climate and regional influence of Hollywood (Sanders and Sanders 2000). Very few functioning drive-in theaters remain today.

The property was not found eligible for the CRHR under any other criteria. It is not associated with events that have made a significant contribution to the broad patterns of state or national history (Criterion 1); it has not been directly associated with the lives of persons significant in our past (Criterion 2); it is not expected to yield important information about prehistory or history (Criterion 4).

Although eligible for the CRHR, the property does not appear to demonstrate sufficient significance in national, state or local history or as a unique property type to warrant listing in the National Register of Historic Places (Criteria A-D).

Figure 7. Sunset Drive-In Screen, facing northeast.

Figure 8. Concessions building, facing south.

Figure 9. Ticket booth, facing east.

Figure 10. Marquee, facing south.

6 Recommendations

The results of the cultural resource records search yielded one previously recorded archaeological isolate (P-40-038212) within the project APE. Resource P-40-038212 was not relocated during the current study. Although the isolate was not evaluated for CRHR or NRHP listing, isolates are generally considered ineligible for the CRHR and NRHP because they often lack the capacity to contribute important data or information to our understanding of prehistory or history.

No previously undocumented sites were identified as a result of the Native American consultation or the pedestrian survey; however, the dense vegetation onsite may have obscured any existing resources. The Native American consultation did suggest the APE and surrounding area may be sensitive for buried cultural materials due to the proximity of San Luis Obispo Creek and the numerous known archaeological sites in the San Luis Obispo area in general. Given the sensitivity of the area, Rincon recommends that an extended Phase I (XPI) archaeological testing program be performed within the project APE prior to project construction. An XPI investigation is intended to determine the presence or absence of subsurface cultural resources within the APE, not to determine if any identified resources are eligible for the CRHR or NRHP. Upon completion of an XPI, Rincon will provide recommendations for any further cultural resources needs such as additional studies or cultural resources monitoring. An XPI conducted prior to project construction could reduce potential delays caused by unanticipated finds during construction by informing the applicant of what types of resources may exist on the property and where. Alternatively, should the XPI prove negative, the need for monitoring may be reduced during the construction phase. The XPI recommendation is discussed in further detail below.

One built-environment resource, the service station, was identified within the APE. However, this resource has been recommended ineligible for listing in the NRHP, CRHR, and City of San Luis Obispo historic landmark list. Two built-environment resources, a portion the WRRF and the Sunset Drive-In, were identified within the indirect APE. The WRRF has been previously recommended ineligible for listing in the NRHP and CRHR. The Sunset Drive-In has been recommended herein as eligible for listing in the CRHR. However, the proposed project will not directly affect the Sunset Drive-In property. The proposed buildings to be constructed will be one story in height and not significantly taller than other buildings in the project vicinity. Further, the proposed project will be designed so as to minimize ambient light pollution that may affect patrons’ ability to see the screen whilst at the drive-in. The proposed project will not significantly alter the setting of the Sunset Drive-In. Thus construction of the current project will not significantly impact the resource under CEQA, nor will it have an adverse effect on the resource under the NHPA.

6.1 Retain a Qualified Principal Investigator

A qualified principal investigator, defined as an archaeologist who meets the Secretary of the Interior’s Standards for professional archaeology (36 CFR 61), shall be retained to carry out all mitigation measures related to archaeological and historical resources (hereafter principal investigator).

6.2 Extended Phase I Archaeological Testing

Because it is unknown whether buried archaeological resources are present within the APE, Rincon recommends that an extended phase I (XPI) study be conducted prior to project related ground disturbance. This study should be conducted by a qualified archaeologist under the direction of a qualified principal investigator and in accordance with CEQA and Section 106. The qualified archaeologist should prepare a testing plan designed to establish the presence or absence and extent of archaeological deposits within the direct APE. An XPI conducted prior to project construction could reduce potential delays caused by unanticipated finds during construction. Should a subsurface resource be found during the XPI, additional studies such as a Phase II investigation may be required to determine if the resource is eligible for the CRHR and/or the NRHP. The results of the XPI will also determine whether additional mitigation such as monitoring will be necessary. Rincon recommends that XPI testing be observed by a Native American monitor.

6.3 Unanticipated Discovery of Human Remains

The discovery of human remains is always a possibility during ground disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the San Luis Obispo County coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

7 References

Arnold, Jeanne E.

1995 Transportation Innovation and Social Complexity among Maritime Hunter-Gathere Societies. American Anthropologist 97: 733-747.

Autry, Jim.

2014 "Preface – City Sewer History" in Sewer System Management Plan Update. City of San Luis Obispo. 2014

Autry, Jim

2015 Personal Communication between Jim Autry, former supervisor of the WRRF and Jasmine Diaz, Water Systems Consulting, Inc. Via email. September 22, 2015.

Bean, Walton

1968 California: An Interpretive History. McGraw-Hill Book Company.

Bickel, P. McW.

1978 Changing Sea Levels along the California Coast: Anthropological Implications. Journal of California Anthropology 5:6-20.

Breschini, Gary S., and Trudy Haversat

1991 Early Holocene Occupation of the Central California Coast. In Hunter-Gatherers of Early Holocene Coastal California, edited by Jon M. Erlandson and Roger H. Colten, pp.125-132. Perspectives in California Archaeology, Vol. 1. Institute of Archaeology, University of California, Los Angeles.

Brown, Alan K. (editor)

2001 A Description of Distant Roads: Original Journals of the First Expedition into California, 1769-1770, by Juan Crespi. Translated by Alan K. Brown. San Diego State University Press, San Diego.

California Office of Historic Preservation

2003 California Historical Resources Status Codes. Electronic document, http://www.ohp.parks.ca.gov/pages/1069/files/tab8.pdf. Accessed November 2, 2015.

Chesnut, Merlyn

1993 The Gaviota Land: A Glimpse Into California History. Fithian Press, Santa Barbara, California.

Cinema SLO

2010 "The history of San Luis Obispo cinema". Accessed November 4, 2016 at https://cinemaslo.wordpress.com/2010/01/20/the-history-of-san-luis-obispo-cinema/

Cinema Treasures, LLC

2000

-2016 "Sunset Drive-In, 255 Elks Lane, San Luis Obispo, CA 93401", Cinema Treasures, LLC. Accessed November 2, 2016 at http://cinematreasures.org/theaters/7784

City of Paso Robles

2014 History of Paso Robles: The Land. Electronic document, http://www.prcity.com/about/history.asp, accessed January 5, 2015.

City of San Luis Obispo

2010 Historic Preservation Ordinance. Electronic Document, http://www.slocity.org/home/showdocument?id=4142, accessed November 2, 2015

Cornejo, AnnMarie

2014 "Upgrade to SLO's Sewage Plant Will Save Energy, Cut Emissions" The Tribune. 30 January 2014. Electronic document, http://www.sanluisobispo.com/news/local/article39467097.html, accessed November 2, 2015.

Crawford Multari and Clark Omni-Means and The City of Atascadero Community Development Department

2004 City of Atascadero General Plan 2025. Final Plan Update #1. Updated June 23, 2004. On file at the City of Atascadero.

Dumke, Glenn S.

1944 The Boom of the Eighties in Southern California. Huntington Library Publications, San Marino, California.

Erlandson, Jon M.

1991 Early Maritime Adaptations on the Northern Channel Islands. In Hunter-Gatherers of Early Holocene Coastal California, edited by J. M. Erlandson and R. Colten. Perspectives in California Archaeology, Vol. 1. Institute of Archaeology, University of California, Los Angeles.

1994 Early Hunter-Gatherers of the California Coast. Plenum Press, New York.

Erlandson, Jon M., Theodore Cooley, and Richard Carrico

1987 A Fluted Projectile Point Fragment from the Southern California Coast: Chronology and Context at CA-SBA-1951. Journal of California and Great Basin Anthropology 9:120–128.

Fitzgerald, Richard T.

2000 Cross Creek: An Early Holocene/Millingstone Site. California State Water Project, Coastal Branch Series Paper Number 12. San Luis Obispo County Archaeological Society, San Luis Obispo, California.

Gamble, Lynn. H., Philip. L. Walker, and Glenn S. Russell

2001 Integrative Approach to Mortuary Analysis: Social and Symbolic Dimensions of Chumash Burial Practices. American Antiquity 66:185–212.

Gibson, R. O.

1983 Ethnography of the Salinan People: A Systems Approach. Master's Thesis, California State University, Hayward.

Glassow, Michael A.

1997 Middle Holocene Cultural Development in the Central Santa Barbara Channel Region. In Archaeology of the California Coast during the Middle Holocene, edited by Jon M. Erlandson and Michael A. Glassow, pp.73–90. Perspectives in California Archaeology, Vol. 4. Institute of Archaeology, University of California, Los Angeles.

Glassow, Michael A, L. Wilcoxen, and J. M. Erlandson

1988 Cultural and Environmental Change during the Early Period of Santa Barbara Channel Prehistory. In The Archaeology of Prehistoric Coastlines, edited by G. Bailey and J. Parkington pp. 64–77. Cambridge University Press, Cambridge, England.

Greenwood, Roberta S.

1972 9000 Years of Prehistory at Diablo Canyon, San Luis Obispo County, California. San Luis Obispo Historical Society Occasional Paper No. 7.

1978 Obispeño and Purisimeño Chumash. In California, edited by Robert F. Heizer, pp. 520–523. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Hildebrandt, William

1983 Archaeological Research of the Southern Santa Clara Valley Project. California Department of Transportation, District 4, San Francisco.

Johnson, John R.

1987 Chumash Social Organization: An Ethnohistoric Perspective. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Santa Barbara.

Johnson, J. R., T. W. Stafford, Jr., H. O. Ajie, and D. P. Morris

2002 Arlington Springs Revisited. In Proceedings of the Fifth California Islands Symposium, edited by D. Browne, K. Mitchell, and H. Chaney, pp. 541–545. USDI Minerals Management Service and the Santa Barbara Museum of Natural History, Santa Barbara, California.

Jones, Terry L.

1993 Big Sur: A Keystone in Central California Cultural History. Pacific Coast Archaeological Society Quarterly 29(1):1–78.

1995 Transitions in Prehistoric Diet, Mobility, Exchange, and Social Organization along California's Big Sur Coast. Unpublished Ph.D. dissertation, University of California, Davis.

Jones, Terry L., K. Davis, G. Farris, S.D. Grantham, T.W. Fung, and B. Rivers

1994 Toward a Prehistory of Morro Bay: Phase II Archaeological Investigations for the Highway 41 Widening Project, San Luis Obispo County, California. Report prepared for Caltrans District 5, San Luis Obispo, California.

Jones, D.A., C. Young, and W.R. Hildebrandt

2001 Phase II Archaeological Test Excavation at CA-SLO-832 and CA-SLO-1420, for the James Way/Price Street Road Improvement Project, San Luis Obispo County, California. Far Western Anthropological Research Group, Davis California. Submitted to California Department of Transportation, San Luis Obispo.

Jones, Terry L., and Jennifer A. Ferneau

2002 Deintensification along the Central California Coast. In Catalysts to Complexity, Late Holocene Societies of the California Coast, edited by Jon M. Erlandson and Terry L. Jones, pp. 205-232. Perspectives in California Archaeology Vol. 6. Costen Institute of Archaeology, University of California, Los Angeles.

Jones, Terry L., Richard T. Fitzgerald, Douglas J. Kennett, Charles Miksicek, John L. Fagan, John Sharp, and Jon M. Erlandson

2002 The Cross Creek Site and Its Implications for New World Colonization. American Antiquity 67:213–230.

Jones, Terry L. and Kathryn A. Klar

2007 California Prehistory: Colonization, Culture, and Complexity. AltaMira Press, Lanham, Maryland.

Jones, Terry L., Nathan E. Stevens, Deborah A. Jones, Richard T. Fitzgerald, and Mark G. Hylkema

2007 The Central Coast: A Midlatitude Milieu. In California Prehistory: Colonization, Culture, and Complexity, edited by Terry L. Jones and Kathryn A. Klar, pp. 125–146. AltaMira Press, Lanham, Maryland.

Jones, Terry L. and Georgie Waugh

1995 Central California Prehistory: A View from Little Pico Creek. Perspectives in California Archaeology 3. Institute of Archaeology, University of California, Los Angeles.

1997 Climatic Consequences of Population Pragmatism? A Middle Holocene Prehistory of the Central Coast. In Archaeology of the California Coast During the Middle Holocene, edited by Jon M. Erlandson and Michael A. Glassow, pp. 111–128. Perspectives in California Archaeology 4. Institute of Archaeology, University of California, Los Angeles.

Justice, Noel D.

2002 Stone Age Spear and Arrow Points of California and the Great Basin. Indiana University Press, Bloomington, Indiana.

Kennett, Douglas J.

1998 Behavioral Ecology and the Evolution of Hunter-Gatherer Societies on the Northern Channel Islands, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Santa Barbara.

King, Chester D.

1969 Approximate 1769 Chumash Village Locations and Populations. Annual Reports of the University of California Archaeological Survey 11:3. Los Angeles, California.

1981 The Evolution of Chumash Society: A Comparative Study of Artifacts Used in Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804. Ph.D. dissertation, University of California, Davis.

1990 Evolution of Chumash Society: A Comparative Study of Artifacts Used in Social System Maintenance in the Santa Barbara Channel Region Before A.D. 1804. Revised Ph.D. dissertation with a new preface and updated bibliography. In The Evolution of North American Indians, edited by David Hurst Thomas. Garland Publishing, New York.

Kroeber, Alfred J.

1925 Handbook of the Indians of California. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution. Government Printing Office, Washington, D.C. Reprinted 1976 by Dover Publications, Inc., New York.

Lebow , C., M.C. Baloian, D.R. Harro, R.L. Mckim, C. Denardo, J. Onken, E. Romanski, and B.A. Price

2001 Final Report of Archaeological Investigations for Reaches 5B and 6 Coastal Branch Aqueduct, Phase II. Applied EarthWorks Inc., Fresno, California. Submitted to Central Coast Water Authority, Buellton, California.

Long Beach Independent

1968 Ad for Lakewood Center Theater, January 16, 1968, vol. 31, no. 12.

Mikkelsen, P., W.R. Hildebrandt, and D. A. Jones

2000 Prehistoric Adaptations on the Shores of Morro Bay Estuary: Excavations at Site CA-SLO-165, Morro Bay, California. San Luis Obispo County Archaeological Society Occasional Papers no. 14.

Miller, Bruce W.

1988 Chumash: A Picture of Their World. Sand River Press, Los Osos, California.

Milliken, R. T. and J. R. Johnson

2005 An Ethnography of Salinan and Northern Chumash-1769 to 1810. Report prepared for Caltrans District 5. Far Western Anthropological Research Group, Davis. Copies available from California Department of Transportation, San Luis Obispo.

Mills, Wayne, Michael F. Rondeau, and Terry L. Jones

2005 A Fluted Point from Nipomo, San Luis Obispo County, California. Journal of California and Great Basin Archaeology 25(2): 68-74.

Mithun, Marianne

2004 The Languages of Native North America. Cambridge University Press, Cambridge, Massachusetts. Originally published 1999.

Moratto, Michael

1984 California Archaeology. Academic Press, New York.

Rick C., Torben, R. Vellanoweth, Jon M. Erlandson, and Douglas J. Kennett

2002 On the Antiquity of the Single-Piece Shell Fishhook: AMS Radiocarbon Evidence from the Southern California Coast. Journal of Archaeological Science 29:933–942.

Rolle, Andrew

2003 California: A History. Revised and expanded sixth edition. Harlan Davidson, Inc., Wheeling, Illinois.

Rodkey, Larry

2010 Interview with Larry Rodkey. Available at CalCoastNews.com. Accessed November 2, 2016 at https://calcoastnews.com/2010/02/the-sunset-drive-in/

Sanders, Don and Susan Sanders

2000 “When Drive-Ins Were the In Place to Be”, *Los Angeles Times*, August 26, 2000. Accessed on July 7, 2016 at http://articles.latimes.com/2000/aug/26/entertainment/ca-10584

San Luis Obispo Regional Transit Authority

2015 Staff Report for Agenda Item B-2, Site Consideration for a RTA Long-Term Garage Facility, January 7, 2015.

San Luis Obispo, City of

2006 A Brief History. Electronic document, www.ci.san-luis-obispo.ca.us/briefhistory.asp., accessed May 10, 2006.

2013 City of San Luis Obispo Citywide Historic Context Statement. Accessed online, http://ohp.parks.ca.gov/pages/1054/files/slo%20final%20historic%20context%20statement_1.21.2014.pdf.

Var. City directories. R.L. Polk Publishers.

Schuster, Kat

2016 Doing what it takes: How SLO County theater owners are out to prove that their properties are more than a relic of the past, New Times San Luis Obispo. Accessed online, http://www.newtimesslo.com/cover/14283/doing-what-it-takes-how-slo-county-theater-owners-are-out-to-prove-that-their-properties-are-more-than-a-relic-of-the-past/

Shumway, Burgess McK.

2007 California Ranchos. Second Edition. The Borgo Press.

Singer, Clay

1992 Site Record for CA-SLO-1449H. On file at the SCCIC.

2005 Human Remains Discovered at Site CA-SLO-1077 in the City of Atascadero in San Luis Obispo County. On file at C. A. Singer and Associates, Inc.

Singer, C, J.E. Atwood, and J. Frierman

1993 It Came from Beneath the Streets: An Archaeological Report on the Expansion of the City of San Luis Obispo Wastewater Treatment System.

Squibb, Paul

1984 Captain Portola in San Luis Obispo County in 1769. Tabula Rasa Press, Morro Bay, California.

Templeton Chamber of Commerce

2015 Templeton History. Electronic document, https://www.templetonchamber.com/content/templeton-history, accessed January 5, 2015.

Templeton Historical Museum Society

2014 Early Templeton History. Electronic document, http://www.templetonmuseum.com/history.html, accessed January 5, 2014.

Vogel, Joe

2009 “Sunset Drive-In, 255 Elks Lane, San Luis Obispo, CA 93401”, Cinema Treasures, LLC, copyright 2000-2016. Comment by Joe Vogel dated April 14, 2009. Accessed on November 2, 2016 at http://cinematreasures.org/theaters/7784

Wallace, William

1955 Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11:214–230.

1978 Post-Pleistocene Archaeology, 9000 to 2000 B.C. In California, edited by R. F. Heizer, pp. 25–36. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor, Smithsonian Institution, Washington D.C.

Waring, George E.

1896 Sewerage and Land Drainage. D. Van Norstrand Co., New York.

Appendix A

Native American Consultation

Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project
Native American Individuals/Organizations for Consultation
Contact List Received from the NAHC in January 2016

Contact	Letter Sent	Follow-up	Results
Chairperson Kenneth Kahn Santa Ynez Band of Mission Indians P.O. Box 517 Santa Ynez, CA, 93460 kkahn@santaynezchumash.org (805) 688-7997	10/19/2016	N/A	Freddie Romero is the official spokesperson for the Santa Ynez Band of Mission Indians with regards to cultural resources.
Chair Julie Lynn Tumamait-Stenslie Barbareno/Ventureno Band of Mission Indians 365 North Poli Ave Ojai, CA, 93023 jtumamait@hotmail.com (805) 646-6214	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Chief Mark Steven Vigil San Luis Obispo County Chumash Council 1030 Ritchie Road Grover Beach, CA, 93433 (805) 688-7997	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Tribal Administrator Patti Dunton Salinan Tribe of Monterey and San Luis Obispo Counties 7070 Morro Road, Suite A Atascadero, CA, 93422 salinantribe@aol.com (805) 464-2650	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail; Ms. Dunton returned call on 11/16/2016. She stated that she was unaware of any sites within the project APE or its immediate vicinity, but agreed with Rincon's assessment regarding the sensitivity of the area and a recommendation for archaeological testing prior to ground disturbance. She requested that the tribe be updated as the project moves forward.
Chairperson Antonia Flores Santa Ynez Tribal Elders Council P.O. Box 365 Santa Ynez, CA, 93640elders@santaynezchumash.org (805) 688-7997	10/19/2016	N/A	Freddie Romero is the official spokesperson for the Santa Ynez Band of Mission Indians with regards to cultural resources.
Chairperson Mia Lopez Coastal Band of the Chumash Nation cbcn.nahc.sb@gmail.com (805) 324-0135 10/19/2016	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Chairwoman Mona Olivas Tucker yak tityu tityu – Northern Chumash Tribe 660 Camino Del Rey Arroyo Grande, CA, 93420 olivas.mona@gmail.com (805) 489-1052	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail; Ms. Tucker returned the call on 11/10/16 stating that the project vicinity is considered sensitive. She recommended that limited subsurface testing be conducted prior to project construction. She also recommended that all project-related ground disturbance be observed by a Native American and archaeological monitor.

Contact	Letter Sent	Follow-up	Results
Tribal Administrator/Counsel Sam Cohen Santa Ynez Band of Mission Indians P.O. Box 517 City, CA, 93460 info@santaynezchumash.org (805) 688-7997	10/19/2016	N/A	Freddie Romero is the official spokesperson for the Santa Ynez Band of Mission Indians with regards to cultural resources.
Xielolixii Salinan-Chumash Nation 3901 Q Street, Suite 31B Bakersfield, CA, 93301 (408) 966-8807	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Spokesperson Fred Collins Northern Chumash Tribal Council 67 South Street San Luis Obispo, CA, 93401fcollins@northernchumash.org (805) 801-0347	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Cultural Resources Coordinator Freddie Romero Santa Ynez Tribal Elders Council P.O. Box 365 Santa Ynez, CA, 93460 freddyromero1959@yahoo.com (805) 688-7997	10/19/2016	10/25/2016	Mr. Romero contacted Ashlee Bailey on October 25, 2016 asking if local Native Americans have been consulted. Ms. Bailey informed Mr. Romero that anticipatory letters were sent to local groups, and Mr. Romero informed Ms. Bailey that he would defer his comments to the local groups.
Kathleen Pappo Babareno/Ventureno Band of Mission Indians 2762 Vista Mesa Drive Rancho Palos Verdes, CA, 90275 (310) 831-5295	10/19/2016	11/10/2016 (via telephone)	No answer, left message with family member
Raudel Joe Banuelos, Jr. Babareno/Ventureno Band of Mission Indians 331 Mira Flores Court Camarillo, CA, 93012 (805) 987-5314	10/19/2016	11/10/2016 (via telephone)	Phone number disconnected
Gino Altarmirano Coastal Band of the Chumash Nation cbcn.nahc.slo@gmail.com (510) 862-7615	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail
Isabel Ayala Coastal Band of the Chumash Nation cbcn.nahc.ventura@gmail.com (661) 340-6997	10/19/2016	11/10/2016 (via telephone)	Phone Number disconnected

Contact	Letter Sent	Follow-up	Results
Fred Segobia Salinan Tribe of Monterey and San Luis Obispo Counties 46451 Little Creek Court King City, CA, 93930 (831) 385-1490	10/19/2016	11/10/2016 (via telephone)	No answer; left voicemail

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October 19, 2016
Project No: 16-2448

Chairperson Kenneth Kahn
Santa Ynez Band of Mission Indians
P.O. Box 517
Santa Ynez, CA, 93460
Via email: kkahn@santaynezchumash.org

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chairperson Kenneth Kahn:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

As part of the process of identifying cultural resources issues for this project, Rincon has contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File search and a list of Native American tribal organizations and individuals who may have knowledge of sensitive cultural resources in or near the project area. As of the date of this letter, we have not yet received a response from the NAHC, but we are contacting you directly because, based on a previous project, we are aware that the present project site is within your area of concern. If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at the above address or abailey@rinconconsultants.com, or by telephone at (805) 547-0900. Thank you for your assistance.

Sincerely,

Rincon Consultants, Inc.

Ashlee Bailey

Ashlee M. Bailey, M.A, RPA
Archaeologist

Christopher A. Duran, M.A, RPA
Principal Investigator

Attachment. Area of Potential Effects Map

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San Luis Obispo, California 93401

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www.rinconconsultants.com

October 19, 2016
Project No: 16-2448

Chair Julie Lynn Tumamait-Stenslie
Barbareno/Ventureno Band of Mission Indians
365 North Poli Ave
Ojai, CA, 93023
Via email: jtumamait@hotmail.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chair Julie Lynn Tumamait-Stenslie:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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Sincerely,

Rincon Consultants, Inc.

Ashlee Bailey

Ashlee M. Bailey, M.A, RPA
Archaeologist

Christopher A. Duran, M.A, RPA
Principal Investigator

Attachment. Area of Potential Effects Map

rincon

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October 19, 2016
Project No: 16-2448

Chief Mark Steven Vigil
San Luis Obispo County Chumash Council
1030 Ritchie Road
Grover Beach, CA, 93433

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chief Mark Steven Vigil:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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Sincerely,

Rincon Consultants, Inc.

Ashlee Bailey

Ashlee M. Bailey, M.A, RPA
Archaeologist

Christopher A. Duran, M.A, RPA
Principal Investigator

Attachment. Area of Potential Effects Map

rincon

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

805 547 0900 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 19, 2016
Project No: 16-2448

Tribal Administrator Patti Dunton
Salinan Tribe of Monterey and San Luis Obispo Counties
7070 Morro Road, Suite A
Atascadero, CA, 93422
Via email: salinantribe@aol.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Tribal Administrator Patti Dunton:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

As part of the process of identifying cultural resources issues for this project, Rincon has contacted the Native American Heritage Commission (NAHC) and requested a Sacred Lands File search and a list of Native American tribal organizations and individuals who may have knowledge of sensitive cultural resources in or near the project area. As of the date of this letter, we have not yet received a response from the NAHC, but we are contacting you directly because, based on a previous project, we are aware that the present project site is within your area of concern. If you have knowledge of cultural resources that may exist within or near the project site, please contact me in writing at the above address or abailey@rinconconsultants.com, or by telephone at (805) 547-0900. Thank you for your assistance.

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October 19, 2016
Project No: 16-2448

Chairperson Antonia Flores
Santa Ynez Tribal Elders Council
P.O. Box 365
Santa Ynez, CA, 93640
Via email: elders@santaynezchumash.org

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chairperson Antonia Flores:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Chairperson Mia Lopez
Coastal Band of the Chumash Nation
Via email: cbcn.nahc.sb@gmail.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chairperson Mia Lopez:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Chairwoman Mona Olivas Tucker
yak tityu tityu – Northern Chumash Tribe
660 Camino Del Rey
Arroyo Grande, CA, 93420
Via email: olivas.mona@gmail.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Chairwoman Mona Olivas Tucker:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Tribal Administrator/Counsel Sam Cohen
Santa Ynez Band of Mission Indians
P.O. Box 517
City, CA, 93460
Via email: info@santaynezchumash.org

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Tribal Administrator/Counsel Sam Cohen:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Xielolixii
Salinan-Chumash Nation
3901 Q Street, Suite 31B
Bakersfield, CA, 93301

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Xielolixii:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Spokesperson Fred Collins
Northern Chumash Tribal Council
67 South Street
San Luis Obispo, CA, 93401
Via email: fcollins@northernchumash.org

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Spokesperson Fred Collins:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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Christopher A. Duran, M.A, RPA
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October 19, 2016
Project No: 16-2448

Cultural Resources Coordinator Freddie Romero
Santa Ynez Tribal Elders Council
P.O. Box 365
Santa Ynez, CA, 93460
Via email: freddyromero1959@yahoo.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Cultural Resources Coordinator Freddie Romero:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Kathleen Pappo
Babareno/Ventureno Band of Mission Indians
2762 Vista Mesa Drive
Rancho Palos Verdes, CA, 90275

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Kathleen Pappo:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Raudel Joe Banuelos, Jr.
Babareno/Ventureno Band of Mission Indians
331 Mira Flores Court
Camarillo, CA, 93012

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Raudel Joe Banuelos, Jr.:

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October 19, 2016
Project No: 16-2448

Gino Altarmirano
Coastal Band of the Chumash Nation
Via email: cbcn.nahc.slo@gmail.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Gino Altarmirano:

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October 19, 2016
Project No: 16-2448

Isabel Ayala
Coastal Band of the Chumash Nation
Via email: cbcn.nahc.ventura@gmail.com

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Isabel Ayala:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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October 19, 2016
Project No: 16-2448

Fred Segobia
Salinan Tribe of Monterey and San Luis Obispo Counties
46451 Little Creek Court
King City, CA, 93930

Subject: Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Dear Fred Segobia:

The San Luis Obispo (SLO) Regional Transit Authority (RTA) has retained Rincon Consultants, Inc. (Rincon) to conduct a cultural resources study for the Coordinated Transit Maintenance and Dispatch Facility Project in the City of San Luis Obispo, County of San Luis Obispo, California. The project involves the construction of a new facility that will house all administration, operation, and maintenance activities for the RTA as well as Ride-On Transportation (Ride-On). The facility will provide parking for approximately half of RTA's and the majority of Ride-On's non-commuter vehicles. The project site, identified by APN 053-041-071, encompasses approximately 6.5 acres at 253 Elks Lane, San Luis Obispo, California 93401. While U-Haul Rental is located in the southwest portion of the property, a majority of the property was graded for the temporary vanpool park and ride for the Topaz Solar project.

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Appendix B

Local Historical Group Consultation

Cultural Resources Survey for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project

Local Historical Group Consultation

Contact	Letter Sent	Follow-up	Results
History Center of San Luis Obispo County 696 Monterey Street San Luis Obispo, CA 93401	10/31/2016	11/14/2016	No answer, left VM
City of San Luis Obispo Community Development Department 919 Palm Street San Luis Obispo, CA 93401	10/13/2016	N/A	Brian Lavell called Shannon Carmack on 11/2/2016 and stated that the Sunset Drive-In is a property of concern for the City and that the historic context statement for the City notes it as being one of the early examples of a drive-in theatre in the area and is of local significance.

rincon

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
San Luis Obispo, California 93401

805 547 0900 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

October 31, 2016
Project No: 16-02448

History Center of San Luis Obispo County
696 Monterey Street
San Luis Obispo, CA 93401

Subject: Regional Transit Authority Maintenance Facility
253 Elks Lane, San Luis Obispo, CA

To whom it may concern:

Rincon Consultants has been retained to conduct a cultural resources study for the San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility, in San Luis Obispo, San Luis Obispo County, California. The project area of potential effects (APE) is located at 253 Elks Lane within the City of San Luis Obispo. The project is subject to the California Environmental Quality Act, National Environmental Policy Act, and Section 106 of the National Historic Preservation Act.

Rincon is currently working in the study area to identify any cultural resource issues for the proposed project. If you or your organization has any concerns regarding specific historic resources within the project area, please respond in writing at the above address or scarmack@rinconconsultants.com, or by telephone at 805-644-4455. Thank you for your assistance.

Sincerely,

Rincon Consultants, Inc.

Shannon Carmack

Shannon Carmack
Architectural Historian

Enclosure: Project Location Map

rincon

Rincon Consultants, Inc.
1530 Monterey Street, Suite D
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October 31, 2016
Project No: 16-02448

City of San Luis Obispo
Community Development Department
919 Palm Street
San Luis Obsipo, CA 93401

Subject: Regional Transit Authority Maintenance Facility
253 Elks Lane, San Luis Obispo, CA

To whom it may concern:

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Sincerely,

Rincon Consultants, Inc.

Shannon Carmack

Shannon Carmack
Architectural Historian

Enclosure: *Project Location Map*

Appendix C

Resource Records

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 4 ***Resource Name or #:** 253 Elks Lane

P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted** ***a. County:** San Luis Obispo
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** *San Luis Obispo* **Date:** 1995; PR **T**31S ; **R**12E ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: 253 Elks Lane City: San Luis Obispo Zip: 93401
d. UTM: Zone: ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: APN: 053-041-071

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject building is located on a nearly-square, approximately 6.4-acre parcel at the northeast corner of Elks Lane and Prado Rd. The property contains a 1-story commercial building set back approximately 100′ from the intersection and a parking area to the north. The building has a rectangular footprint and a flat roof. Building materials vary from concrete to rectangular metal sheets and wide vertical cladding. A portion of the northwest corner of the building is covered with plywood and metal corrugated panels. The main entry is on the southwest elevation. There are two single entry doors, both over concrete stoops, and a garage door opening. One of the entry doors has been boarded over and a business sign placed over it. Between the two doors is a large, multi-paned window that is partially obscured by a banner sign. The garage door was not clearly visible but includes multiple panes and wooden framing either as part of the door or as a transom. The northwest elevation contains two single, metal doors that lead to restrooms, each topped by a transom that has been boarded over. Windows adjacent to the transoms are likely for ventilation. The southeast elevation has two large window openings with various window types including jalousie, hopper, and what appear to be multi-paned fixed windows. The east elevation has one small multi-paned window. The perimeter of the flat roof appears to have once included an overhang, the frame of which is all that remains.The property is bordered on the south by Prado Road, on the east by a vacant lot, on the north by the Sunset Drive-In, and on the west by Elks Lane and Highway 101.

***P3b. Resource Attributes:** (List attributes and codes) HP6. 1-3 story commercial building
***P4. Resources Present:** ☒Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #)
View to northeast 10/26/16

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Built between 1957 and 1963 (historic aerials).

***P7. Owner and Address:**
SLO Regional Transit Authority 937
179 Cross Street
San Luis Obispo, CA 93401

***P8. Recorded by:** (Name, affiliation, and address)
Susan Zamudio-Gurrola
Rincon Consultants, Inc.
180 N. Ashwood Ave.
Ventura, CA 93003

***P9. Date Recorded:**
November 4, 2016.

***P10. Survey Type:** Intensive
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Haas, H., and C. Duran. San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project, San Luis Obispo County, California. Rincon Consultants Project No. 16-002448. Report to be filed at the CCIC.
***Attachments:** ☐NONE ☑Location Map ☑Sketch Map ☑Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

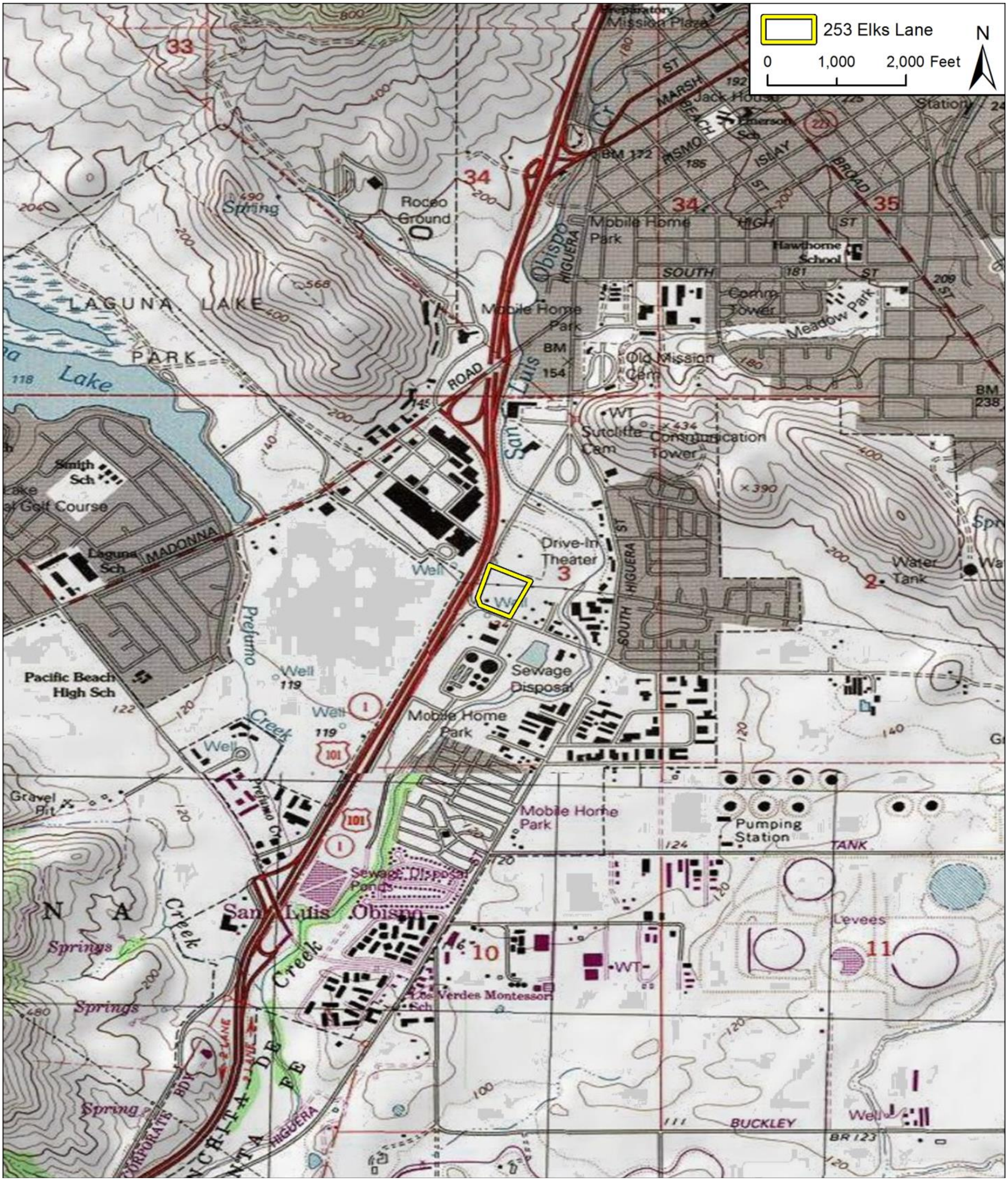
LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 4

***Resource Name or #:** 253 Elks Lane

***Map Name:** USGS *San Luis Obispo* Quadrangle ***Scale:** 1:24000 ***Date of Map:** 1995



State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI#**

BUILDING, STRUCTURE, AND OBJECT RECORD

Page 3 **of** 4 ***NRHP Status Code** 6Z

***Resource Name or #** (Assigned by recorder) 253 Elks Lane

B1. Historic Name:
B2. Common Name: 253 Elks Lane
B3. Original Use: Gas/service station B4. Present Use: U-Haul rental office
***B5. Architectural Style:** Vernacular commercial
***B6. Construction History:** (Construction date, alterations, and date of alterations)

Built between 1957-1963. The property originally had two buildings sited in an L configuration. The building closest to Elks Lane was demolished between 1989-1994 (historic aerials). Visible alterations include: doors and windows have been boarded over/ enclosed; non-original siding; non-original windows; an awning appears to have been removed, leaving only the framework.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**
B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme:** **Area:**
Period of Significance: **Property Type:** **Applicable Criteria:**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The property at the northeast corner of Elks Lane and Prado Road contains a one-story commercial building currently in use as a U-Haul rental office. According to historic aerials and topographic maps, the building was constructed between 1957 and 1963 (Historic Aerials 2016). The property originally contained two buildings sited in an L configuration. It appears that the property was originally developed as a gas/service station (San Luis Obispo city directory 1967). In more recent years the property was reportedly also utilized as a Union 76 service station (San Luis Obispo Regional Transit Authority 2015). One of the two buildings was demolished sometime between 1989 and 1994 (Historic Aerials 2016).

The subject property is no longer used as it was originally developed, and the remaining buiding has been heavily altered. It has non-original exterior cladding and windows, the roof awning has been removed, and a portion of the northwest corner has been covered with plywood and corrugated metal sheets. The second building associated with the service station was demolished between 1989 and 1994. Thus the property does not retain integrity of design, workmanship, materials, feeling, or association. It does not appear eligible for listing in the NRHP, CRHR, or on the City's Master List of Historic Resources. The property does not appear to be associated with events that have made a significant contribution to the broad patterns of local, state or national history (Criteria A/1). The property has not been directly associated with persons significant in our past (Criteria B/2). The building has been heavily altered and does not embody any characteristics of a type, period, or method of construction, represent the work of a master (Criteria C/3). It does not represent a significant and distinguishable entity whose components lack individual distinction. The property is not expected to yield important information about prehistory or history (Criteria D/4). For these same reasons, the property does not appear eligible under any of the City of San Luis Obispo's evaluation criteria.

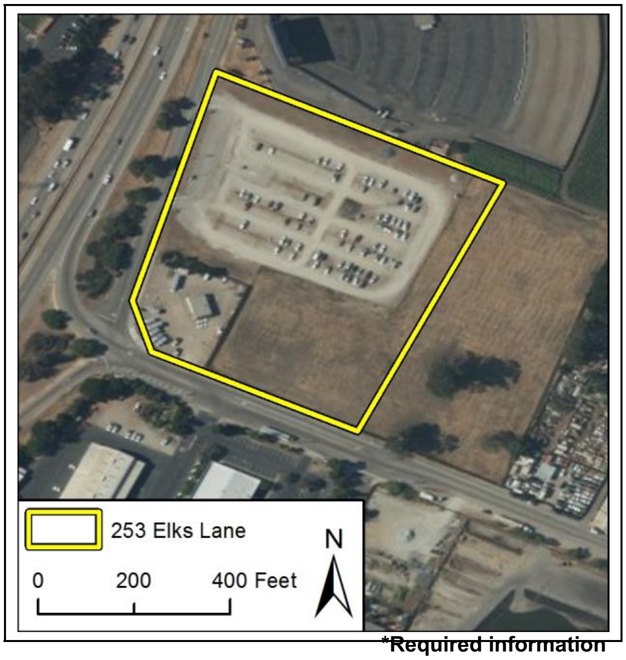
B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

Historic aerial photographs and topographic maps, viewed online at historicaerials.com
San Luis Obispo city directories. 1967, 1972, 1974. R.L. Polk & Co.
San Luis Obispo Regional Transit Authority 2015. Staff Report for Agenda Item B-2, Site Consideration for a RTA Long-Term Garage Facility, January 7, 2015.

B13. Remarks:
***B14. Evaluator:** Susan Zamudio-Gurrola, Rincon Consultants, Inc.
***Date of Evaluation:** November 2, 2016

(This space reserved for official comments.)



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 4 **of** 4 ***Resource Name or #** (Assigned by recorder) 255 Elks Lane

***Recorded by:** Susan Zamudio-Gurrola ***Date:** November 2, 2016 ☒ Continuation ☐ Update

Northwest elevation, looking southeast.

Southeast elevation, looking northwest.

East elevation, looking west.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code **Reviewer** **Date**

Page 1 **of** 6 ***Resource Name or #:** 255 Elks Lane

P1. Other Identifier: Sunset Drive-In Theater

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted** ***a. County:** San Luis Obispo

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** *San Luis Obispo* **Date:** 1995; PR **T**31S ; **R**12E ; **¼ of ¼ of Sec ;** M.D. **B.M.**

c. Address: 255 Elks Lane City: San Luis Obispo Zip: 93401

d. UTM: Zone: ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation: APN: 053-041-025

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The subject property, the Sunset Drive-In, is situated on an irregularly-shaped, approximately 26-acre parcel. A driveway at the northwestern end of the site allows entry from Elks Lane. Near that is a marquee sign; the internally-lit sign is supported by a tapered brick pillar on one end and two posts at the other end, and a neon sun and letters announce the "Sunset Drive-In". A long drive running along the western edge of the site leads cars to the ticket booth at the southern end of the site. The site is paved with mounds that position cars to view the movie screen; the rows of parking are in an arc configuration. The movie screen is mounted on top of a long, one-story building at the southwest edge of the site. The building has a rectangular footprint, a nearly flat roof, and is clad in painted stucco. The west elevation facing Elks Lane features a single entry door over a concrete stoop, multi-paned windows and a single-pane picture window, and two roll-up or tilt-up garage doors. The east elevation facing the parking area contains several windows and doors but they have been boarded and painted over. On the rear of the movie screen, the name of the theater is advertised – freestanding letters with neon tubing applied are arranged on a grid. Near the center of the parking area is a concessions stand and an outdoor seating area comprised of a low wall surrounding tables and benches, covered by a flat roof supported by posts at each corner. The drive-in theater is on the western end of the parcel with agricultural fields on the north and eastern parts of the parcel. The property is bordered by commercial buildings and a mobile home park to the north, commercial buildings on the east; the U-Haul property to the south, Elks Lane and Highway 101 on the west. See continuation sheet.

***P3b. Resource Attributes:** (List attributes and codes) HP10.Theater

***P4. Resources Present:** ☒Building ☒Structure ☐Object ☒Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #)
View to southeast, October 26, 2016.

***P6. Date Constructed/Age and Sources:** ☒Historic ☐Prehistoric ☐Both
Built in 1950 (Schuster 2016; Rodkey 2010).

***P7. Owner and Address:**
Charles A. Pasquini, Jr.
2381 Brant Street
Arroyo Grande, CA 93420

***P8. Recorded by:** (Name, affiliation, and address)
Susan Zamudio-Gurrola
Rincon Consultants, Inc.
180 N. Ashwood Ave.
Ventura, CA 93003

***P9. Date Recorded:** Nov. 3, 2016.

***P10. Survey Type:** Intensive

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")

Haas, H., and C. Duran. San Luis Obispo Regional Transit Authority Coordinated Transit Maintenance and Dispatch Facility Project, San Luis Obispo County, California. Rincon Consultants Project No. 16-002448. Report to be filed at the CCIC.

***Attachments:** ☐NONE ☑Location Map ☑Sketch Map ☑Continuation Sheet ☑Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

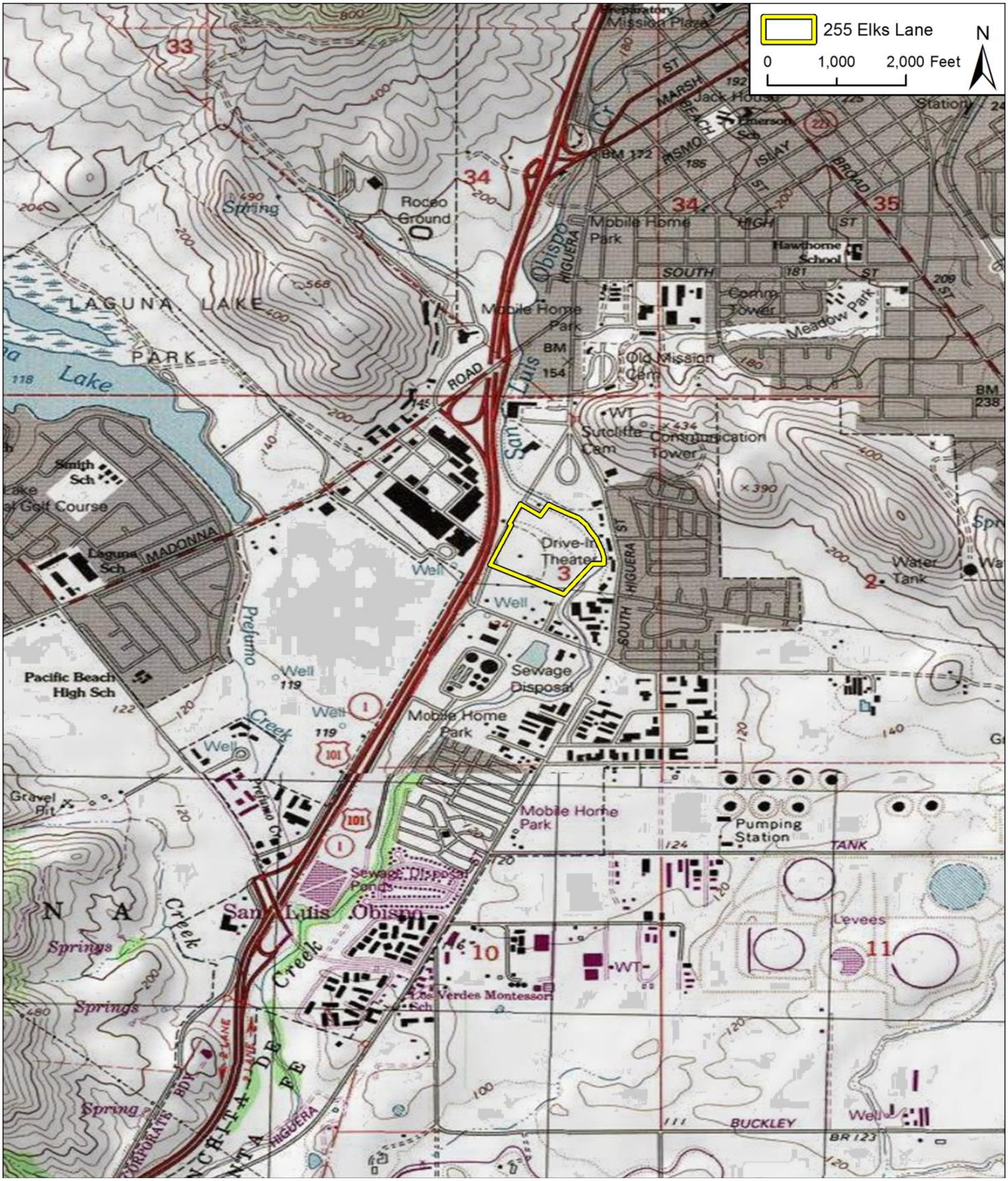
State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 6 ***Resource Name or #:** 255 Elks Lane

***Map Name:** USGS *San Luis Obispo* Quadrangle ***Scale:** 1:24000 ***Date of Map:** 1995



BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code**

***Resource Name or #** (Assigned by recorder) 255 Elks Lane

B1. Historic Name: Sunset Drive-In theater
B2. Common Name: Sunset Drive-In theater
B3. Original Use: Drive-In theater B4. Present Use: Drive-In theater
***B5. Architectural Style:** Mid-century modern
***B6. Construction History:** (Construction date, alterations, and date of alterations)

The drive-in was built in 1950. The movie screen was enlarged in 1955. An outdoor sitting area was built east of the concessions stand in the mid-2000s. A small addition was built south of the concessions stand in approximately 2010.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

B9a. Architect: attributed to Don Mc Claren b. Builder: Unknown
***B10. Significance: Theme:** Post-WWII Commercial Development **Area:** San Luis Obispo
Period of Significance: 1950 **Property Type:** Drive-In theater **Applicable Criteria:** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The Sunset Drive-In was constructed in 1950, opening in May of that year. The property was originally owned by Charles Pasquini and Don McClaren, and the drive-in was operated by Raymond Rodkey (Rodkey 2010; Vogel 2009). Box Office Magazine, in its March 18, 1950 issue, reported on the anticipated opening of the Sunset Drive-in, described as accommodating 500 cars. One of the owners, Don McClaren, was said to have served as his own architect. McClaren was a former branch manager for J.P. Filbert Co., a theater supply business based in Los Angeles (Vogel 2009; Long Beach Independent 1968).

In 1955 the theater screen was enlarged to accommodate a new technology which had been recently developed: Cinemascope. Approximately 16 feet were added to each side of the original screen (Rodkey 2010). When viewing the vertical metal supports, the outer supports are slightly different than the others, reflecting the addition. The name of the theater, Sunset, is announced on the rear of the screen with neon letters. During an interview in 2010, theater owner Larry Rodkey stated that the screen had remained the same since 1955 (Rodkey 2010). An outdoor sitting area was built east of the concessions stand in the mid-2000s. A small addition that appears to be a trash enclosure was built south of the concessions stand in approximately 2010.

In addition to the usual drive-in theater speakers, the Sunset Drive-In also offered heaters. Each post had two heaters on it that could be hooked up to patrons' automobiles. The speakers were in place until approximately the 1970s, then a FM radio transmitter was utilized, which offered better sound quality (Rodkey 2010).

The property continues to be owned by members of the Pasquini family. It has been continuously operated as a drive-in movie theater since 1950 by the same family, the Rodkeys. Over the years the Rodkey family also owned or operated the Oaks Drive-In, the Pismo Theater, the Fox Theater, the Fair Oaks Theater, the Fremont Theater, the Obispo Theater, the Elmo Theater, and the Skyline Drive-In (Barstow) (Schuster 2016).

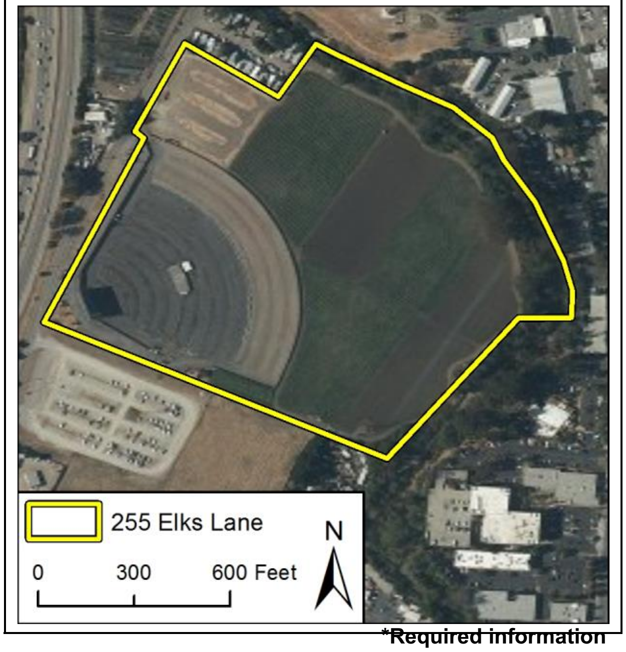
B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

County of San Luis Obispo Assessor
County of San Luis Obispo Department of Planning and Building Permit View database
HistoricAerials.com
See continuation sheet.

B13. Remarks:
***B14. Evaluator:** Susan Zamudio-Gurrola, Rincon Consultants, Inc.
***Date of Evaluation:** November 2, 2016

(This space reserved for official comments.)



***Resource Name or #** (Assigned by recorder) 255 Elks Lane

***Recorded by:** Susan Zamudio-Gurrola ***Date:** November 2, 2016 ☒ Continuation ☐ Update

P3a. Description, continued

The concessions stand near the center of the parking area is a long, one-story building with a rectangular footprint. It has a slightly sloping shed roof that overhangs on the west elevation, and is clad with painted stucco. The roof appears to be clad with composite shingles. The east (rear) side of the building features various recessed entries. The recesses alternate with wall planes that have vertical wooden posts painted in a contrasting color to the wall. Entry doors are screened from view. The west elevation contains various large pass-through windows to service customers. Some of the pass-through windows at the south end of the building have been covered over as if they are not currently in use. The north elevation has no fenestration. A small, flat-roofed addition has been constructed against the south elevation – it is surrounded by chain-link fencing and appears to be a trash enclosure.

The ticket booth is a small building with a rectangular footprint and a steeply-pitched roof. The building is clad in painted stucco and the roof is clad with vertically-placed galvanized steel panels. The gable faces contain narrow, vertical siding. The west elevation has a small, dropped, shed roof across the gable face, clad with galvanized steel panels. The building contains large single-pane windows on all four sides, and doors on the south and north elevations. Both are single entry doors (of unknown material), each containing an aluminum-frame double-hung window.

B10. Significance, continued

The first drive-in theater in the United States was designed by Richard Hollingshead and opened in Camden, New Jersey in the summer of 1933. By the following year, the city of Los Angeles had a drive-in of its own at Pico and Westwood Boulevards. After World War II drive-ins sprang up across the country, reaching their height between the mid-1950s and mid-1960s. From the late 1940s and into the 1970s, drive-in theaters were especially popular in automobile-centric Southern California, given the mild climate and regional influence of Hollywood (Sanders and Sanders 2000).

Drive-in theaters experienced a gradual decline; during the 1980s and 1990s many Southern California drive-ins closed, partly because of decreased popularity and partly due to the increased value of the land they occupied. The president of Pacific Theaters was quoted in 1997 as stating that a megaplex cinema could take in about $15 million annually compared to a drive-in theater which would take in about $500,000 a year. Drive-ins could not compete with modern technology in theaters providing better digital sound and sharper pictures. The popularity of movies on video, easily rented or purchased, also contributed to the decline of the drive-in. Drive-ins that were once located on large properties "in the middle of nowhere", decades later were on prime real estate after being surrounded by increased development (Selna 1997).

National Register and California Register Evaluation

The Sunset Drive-In theater was originally built in 1950 and has been in continuous use as a drive-in theater since that time, operated by the same family, the Rodkeys. Known alterations include: enlarging the movie screen in 1955; the use of the original speakers that were mounted on automobiles was discontinued in approximately the 1970s; an outdoor seating area was built slightly east of the concessions stand in the mid-2000s; a small addition that appears to be a trash enclosure was constructed south of the concessions stand in approximately 2010.

The period of significance for the Sunset Drive-In is 1950, its date of construction. The property retains the principal character-defining elements of a mid-century drive-in theater, including the marquee sign with neon sun and letters, the entry drive and circulation pattern, the ticket booth, the movie screen and its neon sign, the concessions stand, the mounded parking area in an arc configuration, and some of the speaker posts. The property retains integrity of design, materials, workmanship, setting, feeling, and association. The Sunset Drive-In is an excellent and rare example of this mid-century commercial property type. The property appears eligible for listing in the CRHR as it embodies the distinctive characteristics of a type, period, or method of construction (Criterion 3). The property was not found eligible for the CRHR under any other criteria. It is not known to be associated with events that have made a significant contribution to the broad patterns of state or national history (Criterion 1); it has not been directly associated with the lives of persons significant in our past (Criterion 2); it is not expected to yield important information about prehistory or history (Criterion 4).

Although the property appears eligible for the CRHR, it does not appear to demonstrate sufficient significance in national, state or local history or as a unique property type to warrant listing in the National Register of Historic Places (Criteria A-D).

See continuation sheet, p. 5.

Primary #
HRI#
Trinomial

Page 5 **of** 6 ***Resource Name or #** (Assigned by recorder) 255 Elks Lane

***Recorded by:** Susan Zamudio-Gurrola ***Date:** November 2, 2016 ☒ Continuation ☐ Update

B10. Significance, continued

Application of City of San Luis Obispo Criteria for listing on the Master List of Historic Resources

The period of significance for the Sunset Drive-In is 1950, its date of construction. The property retains the principal features of a mid-century drive-in theater, including its marquee sign, entry drive, ticket booth, movie screen, concessions stand, rows of parking in an arc configuration, mounded topography for better vehicular viewing positions, and circulation pattern to direct vehicular traffic in and out of the site. The speakers and heaters that the drive-in once had are no longer in place; however, many of the posts appear to remain on the property. The Sunset Drive-In retains integrity of design, materials, workmanship, location, association, feeling, and setting. It has been in continuous operation as a drive-in movie theater, and operated by the same family, the Rodkeys, since its opening in 1950. The Sunset Drive-In is the only drive-in in San Luis Obispo, and one of the few remaining drive-ins in Southern California. Less than twenty drive-in theaters were believed to remain in the state of California in 2013 (HRG 2013). The Sunset Drive-In appears eligible for listing on the City of San Luis Obispo's Master List of Historic Resources under the theme Mid-20th Century Commercial Development, both as an excellent or rare example of a particular architectural style associated with the period, as well as an excellent example of a post-World War II commercial property type (Criteria A.1, A.2). The property retains the majority of the significant character-defining features of the property type, and retains the essential aspects of integrity.

B12. References, continued

Historic Resources Group (HRG)
2013 City of San Luis Obispo Citywide Historic Context Statement

Long Beach Independent
1968 Ad for Lakewood Center Theater, January 16, 1968, vol. 31, no. 12.

Rodkey, Larry
2010 Interview regarding the Sunset Drive-In, CalCoastNews.com. Accessed November 2, 2016 at https://calcoastnews.com/2010/02/the-sunset-drive-in/

Sanders, Don and Susan Sanders
2000 "When Drive-Ins were the In Place to Be", *Los Angeles Times,* August 26, 2000. Accessed on July 7, 2016 at http://articles.latimes.com/2000/aug/26/entertainment/ca-10584

Selna, Rob
1997 "The Last Drive-In: County's Only Outdoor Theater Makes a Romantic Last Stand", *Los Angeles Times,* August 4, 1997. Accessed July 6, 2016 at http://articles.latimes.com/1997/aug/04/local/me-19309

Schuster, Kat
2016 Doing what it takes: How SLO County theater owners are out to prove that their properties are more than a relic of the past, New Times San Luis Obispo. Accessed online, http://www.newtimesslo.com/cover/14283/doing-what-it-takes-how-slo-county-theater-owners-are-out-to-prove-that-their-properties-are-more-than-a-relic-of-the-past/

United States Geological Survey
Var. Historic quadrangle maps

Vogel, Joe
2009 "Sunset Drive-In, 255 Elks Lane, San Luis Obispo, CA 93401", Cinema Treasures, LLC, copyright 2000-2016. Comment by Joe Vogel dated April 14, 2009. Accessed on November 2, 2016 at http://cinematreasures.org/theaters/7784

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary #
HRI#
Trinomial

Page 6 **of** 6 ***Resource Name or #** (Assigned by recorder) 255 Elks Lane

***Recorded by:** Susan Zamudio-Gurrola ***Date:** November 2, 2016 ☑ Continuation ☐ Update

Detail of auto parking area, view to the southwest.

Concessions stand, west elevation, view to the east.

Ticket booth, view to the south.

Movie screen and building supporting it, view to the west.

Marquee sign, view to the south. (D.J. Seltzer, roadarch.com, 2013)

All other photos date to October 26, 2016.

Appendix D

Preliminary and Supplemental Floodplain Analyses

Cannon

MEMO

DATE:	February 9, 2017
TO:	Hal Hannula, City of San Luis Obispo
CC:	
FROM:	Seth Stevens, PE
SUBJECT:	RTA Maintenance Facility – Preliminary Floodplain Impact Analysis
PROJECT NO.:	150823

Introduction and Background

The San Luis Obispo Regional Transit Authority (RTA) proposes the construction of a maintenance facility and associated site improvements on an existing 6.44 acre parcel located at the northeast corner of the intersection of Prado Road and Elks Lane in the City of San Luis Obispo. The site is bounded by an existing drive-in movie theater to the north, a future Homeless Service Center to the east, Prado Road to the south, and Elks Lane to the west.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Number 06079C1068G, effective November 16, 2012, shows the project site within Zone AE of the 1% annual chance floodplain boundary (100-yr floodplain) of San Luis Obispo Creek. Zone AE includes areas where base flood elevations have been determined. The base flood elevation varies across the project site from approximately 141.9’ at the northwest corner of the site to approximately 138.6’ at the southeast corner of the site.

In addition, the project site is located within the 100-yr floodplain as shown on Figure DDM 3-2c 1 in the City of San Luis Obispo’s Drainage Design Manual (DDM), which is Volume 3 of the City’s Waterway Management Plan. The project site is also located within Special Floodplain Management Zone #2, as identified by Figure DDM 3-1 in the DDM. These areas have been determined to have a potentially significant effect on downstream flooding and bank stability, and therefore development of these areas is restricted in the following ways:

- The project shall not cause the 100-year flood elevation to increase more than 2.5 inches
- The project shall not cause stream velocities to increase more than 0.3 ft/s
- The project shall not cause a significant net decrease in floodplain storage volume unless several exceptions are met.

The proposed project is currently in the preliminary design stages. An analysis was conducted to estimate the effects of the preliminary design on the existing floodplain with respect to the restrictions listed above for development in Special Floodplain Management Zone #2. The results of that analysis are presented in this memorandum.

Please note that this memorandum supersedes the memorandum dated January 24, 2017 on the same subject. The analysis presented herein is based on an updated site plan for the proposed facility, which is Concept D.3.2 developed by Garcia Architecture + Design. The analysis presented in the January 24, 2017 memorandum was based site plan Concept D.2.1.

Methodology

The analysis of the project impacts on the floodplain was performed using the City of San Luis Obispo’s hydraulic model for the San Luis Obispo Creek system. The model is a 1-dimensional HEC-RAS model developed by Questa Engineering, referred to herein as the Questa model. The model was converted to US Customary Units from SI units for this analysis. The model was modified and ran using HEC-RAS 3.1.3, which is the version used for the development of the Questa model. However, the RAS Mapper tool in HEC-RAS 5.0.3 was used to export the locations of the model cross-sections.

The model has four cross-sections that pass through the project site: 14168.87, 14259.74, 14371.48, and 14478.14. The geometries for these cross-sections were revised to reflect the pre-project conditions and the post-project conditions, as described below.

Pre-project Conditions

The Questa model was modified to create a scenario for the pre-project conditions to use as a baseline for the floodplain analysis. The geometry file within the Questa model called Existing_Conditions_0902203—mod was used as the basis for the pre-project model. The cross-sections that pass through the project site were modified within the limits of the project property lines to reflect the topographic data that is being used for the project design. In addition, the cross-sections 14168.87, 14259.74 and 14371.48 were modified to reflect the proposed grading and building for the Homeless Service Center (HSC) that is planned to be constructed on the adjacent property to the east of the project site. The Manning's n values for sections 14259.74 and 14371.48 where changed to 0.025 for the paved areas associated with the HSC. All other components of the cross-sections were unchanged. The resulting geometry file was saved to a file called RTA_Existing_Conditions_with_HSC. Figure 1 shows the pre-project conditions with the HEC-RAS cross-sections overlain.

A steady-flow analysis run was conducted with the geometry described above using the steady flow file Q100_080202 and a mixed flow regime. The model results for cross-sections within the vicinity of the proposed project are included in Table 1.

Post-project Conditions

The geometry file developed for the pre-project conditions (RTA_Existing_Conditions_with_HSC) was modified to reflect the preliminary grading and building layout associated with the proposed RTA maintenance facility Concept D.3.2 developed by Garcia Architecture + Design. The preliminary grading was based on a finish floor elevation of 139.00 ft for the building. The Manning's n values for sections 14259.74 and 14371.48 where changed to 0.025 for the paved areas associated with the proposed RTA maintenance facility. The resulting geometry file was saved to a file called RTA_Prop_Conditions_D32_with_HSC. Figure 2 shows the post-project conditions with the HEC-RAS cross-sections overlain.

A steady-flow analysis run was conducted with the geometry for the post-project conditions using the steady flow file Q100_080202 and a mixed flow regime. The model results for cross-sections within the vicinity of the proposed project are included in Table 1.

Results

The results of the two model runs are shown in Table 1. The table shows the flow, water surface elevation (WSE), and average velocity at each cross-section for both scenarios. There is an existing lateral structure within the model between cross-sections 14478.14 and 14132.47 along the western side of the cross-sections that allows flow to leave the cross-sections, resulting in a reduction in flow at the downstream cross-sections. It is assumed that the lateral structure represents Hwy. 101 and flow that overtops it flows overland to Prefumo Creek.

Table 1 - HEC-RAS Results

	Pre-project Conditions			Post-project Conditions		
Cross-section	Flow (cfs)	WSE (ft)	Velocity (ft/s)	Flow (cfs)	WSE (ft)	Velocity (ft/s)
14865.47	13,067	142.96	7.12	13,066	142.97	7.11
14730.29	13,067	141.24	5.03	13,066	141.24	5.04
14608.87	13,067	139.95	5.03	13,066	139.99	4.96
14478.14	13,067	139.16	3.33	13,066	139.26	3.23
14371.48	12,604	138.38	3.30	12,494	138.55	3.92
14259.74	10,876	137.56	3.31	10,687	137.51	4.70
14168.87	10,555	136.73	3.59	10,389	136.68	3.61
14132.47	10,431	136.51	3.40	10,281	136.45	3.43
14121.55	10,431	135.43	7.12	10,281	135.38	7.22

The changes in flow, water surface elevation, and average velocity for post-project conditions compared to the pre-project conditions are shown in Table 2. The modeling shows that the proposed project would cause a maximum rise in the water surface elevation of 2.0 inches, which is less than the allowable 2.5 inches. The increase in water surface elevation causes some additional flow to overtop the lateral structure along the west side of the property (which is assumed to represent Hwy. 101). The result is a decrease in flow on the project side of the highway downstream of the proposed buildings, but an increase in flow over the highway and on the west side of the highway.

Table 2 - Change in Flow Characteristics from Pre-project to Post-project

Cross-section	Change in Flow (cfs)	Change in WSE (in)	Change in Velocity (ft/s)
14865.47	-1	0.1	-0.01
14730.29	-1	0.0	0.01
14608.87	-1	0.5	-0.07
14478.14	-1	1.2	-0.1
14371.48	-109	2.0	0.62
14259.74	-189	-0.6	1.39
14168.87	-165	-0.6	0.02
14132.47	-150	-0.7	0.03
14121.55	-150	-0.6	0.1

The modeling shows that the water surface elevation downstream of the proposed buildings would decrease as a result of the reduction in flow there, but there would be an increase in flow velocity in that area, as well as just upstream of the proposed buildings. The increase in flow velocity is greater than the allowed 0.3 ft/s for cross-sections 14259.74 and 14371.48.

The effect of the proposed project on floodplain storage was not quantitatively analyzed as part of this study. However, since the entire project property is shown within the City’s 100-year floodplain and there is anticipated to be a substantial amount of imported fill required to elevate the building pad, it is expected that the proposed project will have a significant effect on the floodplain storage volume that currently exists on the project site.

Limitations

There are limitations on the validity of the results of the analysis that is presented herein. It appears that the Questa model may not accurately represent the flow distribution and characteristics for San Luis

Obispo Creek and the surrounding area within the area that was analyzed. The San Luis Obispo Waterway Management Plan states:

> *Under existing conditions, at about the 20-year recurrence interval, flow spills out of the channel of San Luis Obispo Creek near Elks Lane (below the Lady Family Sutcliffe Cemetery) and flows overland across the floodplain, through the existing drive-in theater site, and eventually across Prado Road. The larger flood flows spill onto the City Corporation Yard and Waste Water Treatment Plant (WWTP) (Note: currently the sludge ponds and critical treatment facilities are not inundated by the 100-year flood). From there, larger flows spill across Highway 101 to enter lower Prefumo Creek while the rest returns to the main creek channel below the Wastewater Treatment Plant.*

In reviewing the cross-sections in the Questa model for the reach of San Luis Obispo Creek between the Elks Lane bridge and Prado Road, it appears that the existing topography does not allow flow that exits the channel near Elks Lane to re-enter the channel along this reach. It appears that the flow that exits the channel near Elks Lane would be hydraulically disconnected from the flow in the channel, and there would be no exchange of flow between the channel and the overland flow.

However, the Questa model includes the channel and the overland flow in the same cross-section. The model solves for a single water surface elevation at each cross-section for the channel and the overland flow by varying the distribution of flow between the two at each cross-section. By doing so, the model violates the fundamental principle of conservation of mass for the channel and the overland flow as isolated flow paths.

As an example, Table 3 shows the flow in the channel at various cross-sections for the pre-project scenario. The flow varies greatly from one cross-section to another, but the attached cross-sections show the water surface in the channel below the top of the berm that separates it from the overland flow. In other words, even though the cross-sections show that the flow in the channel is hydraulically disconnected from the overland flow, the model is exchanging flow between the two entities between cross-sections. This appears to be an inaccuracy in the Questa model. Given the apparent inaccuracy of the model in the area analyzed, the validity of the results from the modeling is questionable.

Table 3 - Channel Flow for Pre-project Conditions

Cross-section	Flow in Channel (cfs)
14478.14	5,169
14371.48	7,291
14259.74	4,814
14168.87	6,049

Attachments

1. Figure 1 – HEC-RAS Cross-sections Pre-project Conditions
2. Figure 2 – HEC-RAS Cross-sections Post-project Conditions
3. FEMA Flood Insurance Rate Map
4. Drainage Design Manual Figure DDM 1 – Special Floodplain Management Zones
5. Drainage Design Manual Figure DDM 3-2c – City’s 100-yr Floodplain
6. HEC-RAS Output for Pre-project Conditions
7. HEC-RAS Output for Post-project Conditions

FIGURE 1

RTA MAINTENANCE FACILITY
HEC–RAS CROSS–SECTIONS
PRE–PROJECT CONDITIONS
SAN LUIS OBISPO, CA

Cannon
1050 Southwood Drive
San Luis Obispo, CA 93401
P 805.544.7407 F 805.544.3863

DRAWN BY STS	DATE 1/24/17	CA JOB NO. 150823
CHECKED BY	SCALE 1" = 300'	SHEET 1 OF 1

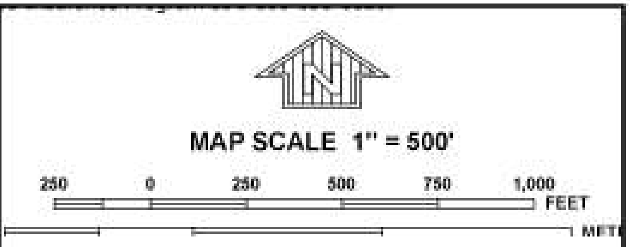
FIGURE 2

Cannon

1050 Southwood Drive
San Luis Obispo, CA 93401
P 805.544.7407 F 805.544.3863

RTA MAINTENANCE FACILITY
HEC–RAS CROSS–SECTIONS
POST–PROJECT CONDITIONS
SAN LUIS OBISPO, CA

DRAWN BY STS	DATE 2/7/17	CA JOB NO. 150823
CHECKED BY	SCALE 1" = 300'	SHEET 1 OF 1



MAP SCALE 1" = 500'

PANEL 1068G

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SAN LUIS OBISPO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1068 OF 2050

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN LUIS OBISPO COUNTY	060304	1068	G
SAN LUIS OBISPO, CITY OF	060310	1068	G

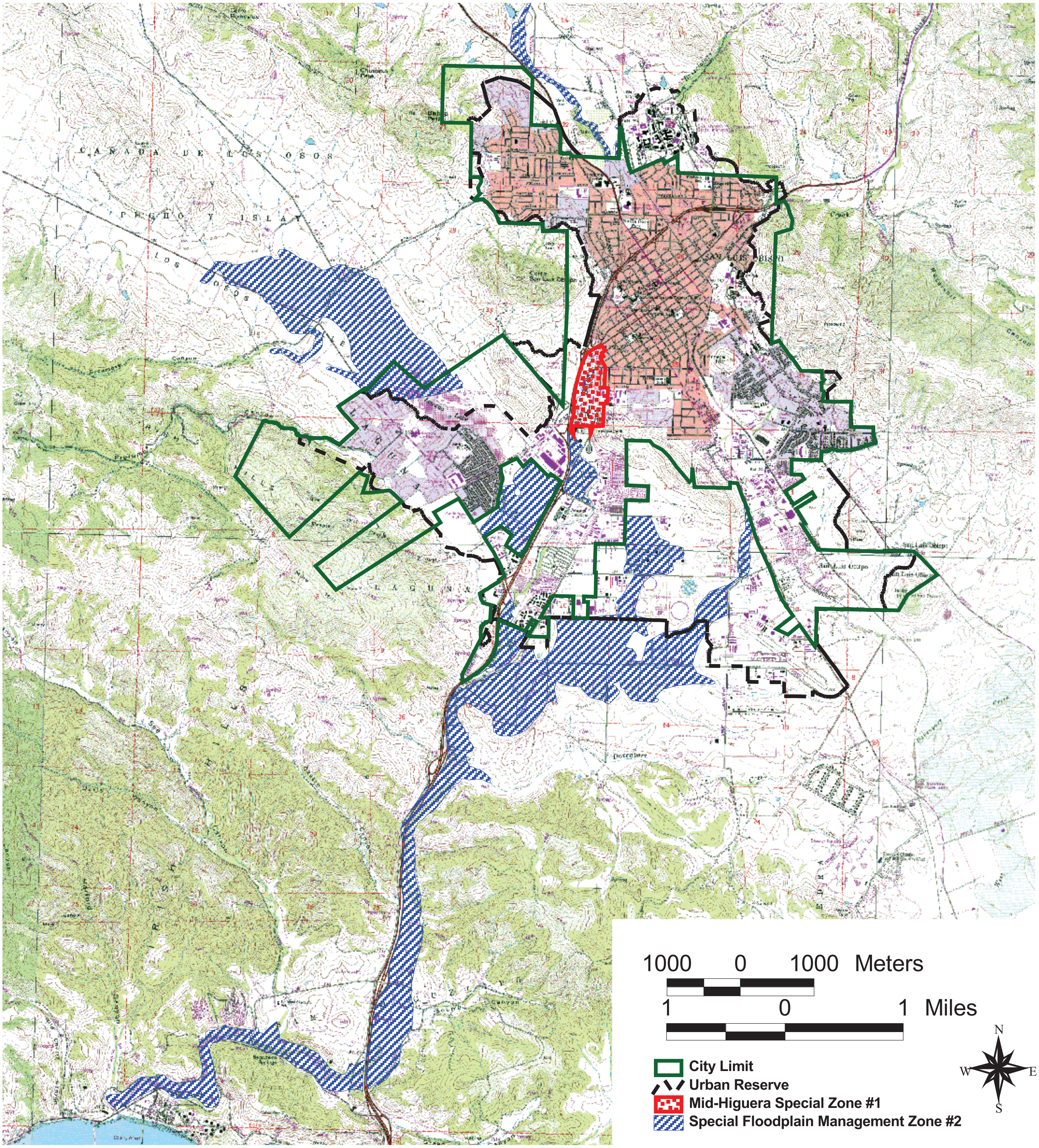
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06079C1068G

MAP REVISED
NOVEMBER 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



city of san luis obispo

PUBLIC WORKS DEPARTMENT

Special Floodplain Management Zones

Drainage Design Manual
City of San Luis Obispo

QUESTA ENGINEERING CORPORATION

Figure

DDM
3-1

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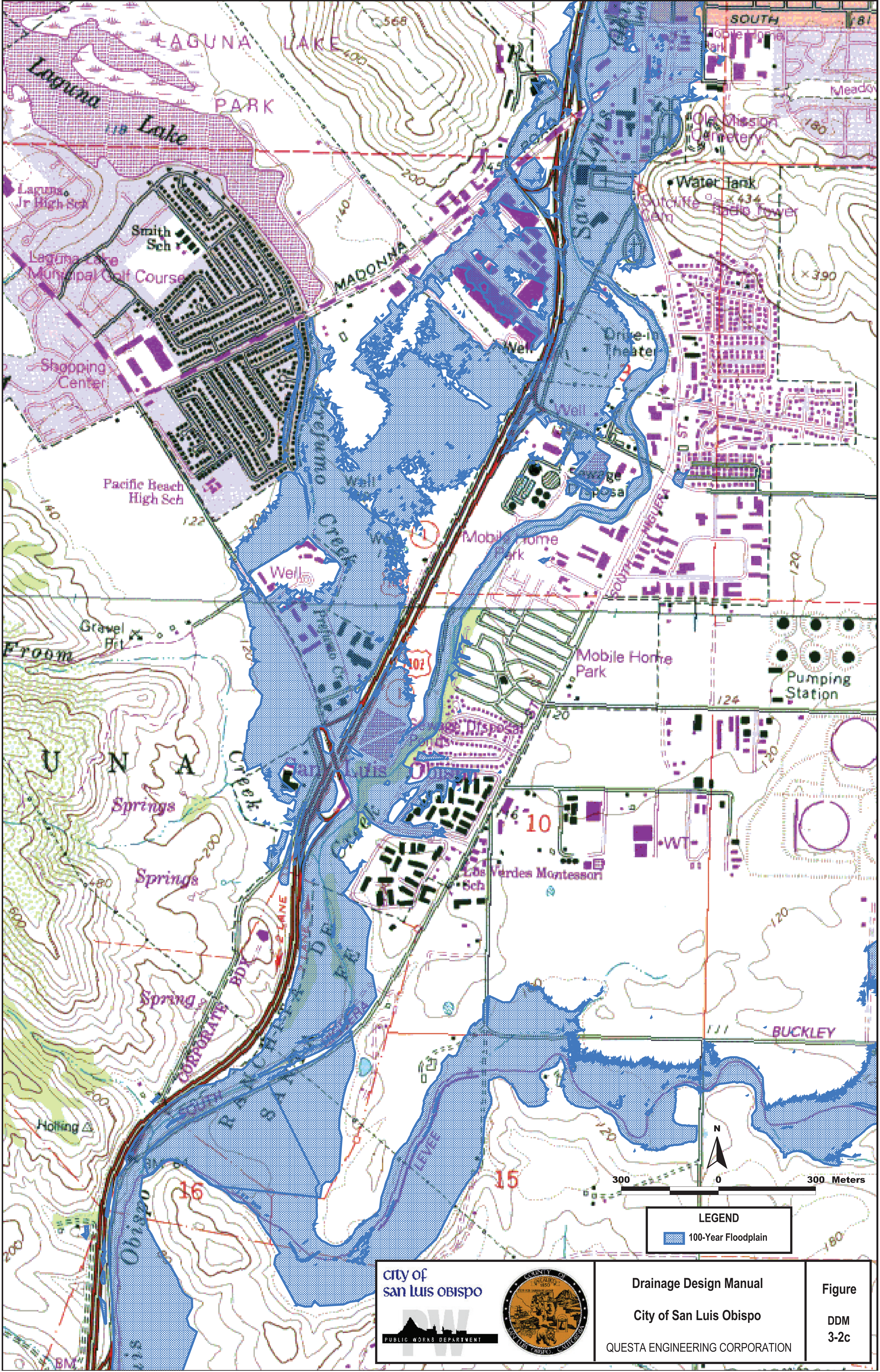


City of
San Luis Obispo
PUBLIC WORKS DEPARTMENT

Drainage Design Manual

City of San Luis Obispo

QUESTA ENGINEERING CORPORATION

Figure

DDM
3-2c

Cannon

HEC-RAS Output for Pre-Project Conditions

Plan: RTA-EX-HS   SLO Creek   Between Split an RS: 14865.47   Profile: Questa100

E.G. Elev (ft)	143.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.065	0.035
W.S. Elev (ft)	142.96	Reach Len. (ft)	476.80	443.50	208.24
Crit W.S. (ft)		Flow Area (sq ft)		749.89	1085.55
E.G. Slope (ft/ft)	0.010075	Area (sq ft)		749.89	1085.55
Q Total (cfs)	13066.72	Flow (cfs)		6777.85	6288.87
Top Width (ft)	775.52	Top Width (ft)		88.00	687.52
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)		9.04	5.79
Max Chl Dpth (ft)	13.44	Hydr. Depth (ft)		8.52	1.58
Conv. Total (cfs)	130178.0	Conv. (cfs)		67524.8	62653.3
Length Wtd. (ft)	318.81	Wetted Per. (ft)		95.92	687.89
Min Ch El (ft)	129.53	Shear (lb/sq ft)		4.92	0.99
Alpha	1.15	Stream Power (lb/ft s)		44.44	5.75
Frctn Loss (ft)	2.06	Cum Volume (acre-ft)	3.99	299.38	90.86
C & E Loss (ft)	0.14	Cum SA (acres)	4.92	29.51	44.71

Plan: RTA-EX-HS   SLO Creek   Between Split an RS: 14730.29   Profile: Questa100

E.G. Elev (ft)	141.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.		0.064	0.035
W.S. Elev (ft)	141.24	Reach Len. (ft)	442.42	398.39	152.13
Crit W.S. (ft)	140.47	Flow Area (sq ft)		887.63	1710.29
E.G. Slope (ft/ft)	0.004499	Area (sq ft)		887.63	1710.29
Q Total (cfs)	13066.72	Flow (cfs)		5504.92	7561.79
Top Width (ft)	986.12	Top Width (ft)		102.37	883.75
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)		6.20	4.42
Max Chl Dpth (ft)	14.07	Hydr. Depth (ft)		8.67	1.94
Conv. Total (cfs)	194798.4	Conv. (cfs)		82067.3	112731.1
Length Wtd. (ft)	264.50	Wetted Per. (ft)		110.65	884.10
Min Ch El (ft)	127.17	Shear (lb/sq ft)		2.25	0.54
Alpha	1.09	Stream Power (lb/ft s)		13.97	2.40
Frctn Loss (ft)	1.28	Cum Volume (acre-ft)	3.99	291.04	84.18
C & E Loss (ft)	0.00	Cum SA (acres)	4.92	28.54	40.96

Plan: RTA-EX-HS   SLO Creek   Between Split an RS: 14608.87   Profile: Questa100

E.G. Elev (ft)	140.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.		0.065	0.035
W.S. Elev (ft)	139.95	Reach Len. (ft)	447.90	428.90	232.91
Crit W.S. (ft)		Flow Area (sq ft)		1058.73	1539.37
E.G. Slope (ft/ft)	0.005244	Area (sq ft)		1058.73	1539.37
Q Total (cfs)	13066.72	Flow (cfs)		6419.26	6647.46
Top Width (ft)	1074.38	Top Width (ft)		144.38	930.00
Vel Total (ft/s)	5.03	Avg. Vel. (ft/s)		6.06	4.32
Max Chl Dpth (ft)	15.05	Hydr. Depth (ft)		7.33	1.66
Conv. Total (cfs)	180445.5	Conv. (cfs)		88647.1	91798.4
Length Wtd. (ft)	319.82	Wetted Per. (ft)		151.04	931.01
Min Ch El (ft)	124.90	Shear (lb/sq ft)		2.29	0.54
Alpha	1.09	Stream Power (lb/ft s)		13.91	2.34
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	3.99	282.14	78.50
C & E Loss (ft)	0.07	Cum SA (acres)	4.92	27.41	37.79

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14478.14 Profile: Questa100

E.G. Elev (ft)	139.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.065	0.043
W.S. Elev (ft)	139.16	Reach Len. (ft)	317.75	349.93	298.39
Crit W.S. (ft)	137.30	Flow Area (sq ft)		1195.56	2725.97
E.G. Slope (ft/ft)	0.001944	Area (sq ft)		1195.56	2725.97
Q Total (cfs)	13066.72	Flow (cfs)		5169.06	7897.66
Top Width (ft)	1206.07	Top Width (ft)		128.52	1077.54
Vel Total (ft/s)	3.33	Avg. Vel. (ft/s)		4.32	2.90
Max Chl Dpth (ft)	15.63	Hydr. Depth (ft)		9.30	2.53
Conv. Total (cfs)	296331.0	Conv. (cfs)		117225.4	179105.6
Length Wtd. (ft)	323.41	Wetted Per. (ft)		134.59	1079.02
Min Ch El (ft)	123.52	Shear (lb/sq ft)		1.08	0.31
Alpha	1.12	Stream Power (lb/ft s)		4.66	0.89
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	3.99	271.04	67.10
C & E Loss (ft)	0.01	Cum SA (acres)	4.92	26.06	32.42

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14371.48 Profile: Questa100

E.G. Elev (ft)	138.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.		0.065	0.066
W.S. Elev (ft)	138.38	Reach Len. (ft)	209.97	366.63	299.25
Crit W.S. (ft)	133.45	Flow Area (sq ft)		1366.33	2450.58
E.G. Slope (ft/ft)	0.002223	Area (sq ft)		1366.33	2450.58
Q Total (cfs)	12603.54	Flow (cfs)		7291.25	5312.29
Top Width (ft)	1042.23	Top Width (ft)		118.10	924.13
Vel Total (ft/s)	3.30	Avg. Vel. (ft/s)		5.34	2.17
Max Chl Dpth (ft)	17.09	Hydr. Depth (ft)		11.57	2.65
Conv. Total (cfs)	267303.5	Conv. (cfs)		154637.3	112666.2
Length Wtd. (ft)	333.99	Wetted Per. (ft)		123.07	930.23
Min Ch El (ft)	121.29	Shear (lb/sq ft)		1.54	0.37
Alpha	1.69	Stream Power (lb/ft s)		8.22	0.79
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	3.99	260.75	49.37
C & E Loss (ft)	0.01	Cum SA (acres)	4.92	25.07	25.57

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14259.74 Profile: Questa100

E.G. Elev (ft)	137.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.065	0.070
W.S. Elev (ft)	137.56	Reach Len. (ft)	315.78	298.13	82.09
Crit W.S. (ft)	135.75	Flow Area (sq ft)		906.85	2376.18
E.G. Slope (ft/ft)	0.003034	Area (sq ft)		906.85	2376.18
Q Total (cfs)	10876.35	Flow (cfs)		4814.83	6061.53
Top Width (ft)	952.87	Top Width (ft)		100.73	852.14
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)		5.31	2.55
Max Chl Dpth (ft)	17.38	Hydr. Depth (ft)		9.00	2.79
Conv. Total (cfs)	197458.4	Conv. (cfs)		87412.4	110046.0
Length Wtd. (ft)	191.61	Wetted Per. (ft)		108.69	857.33
Min Ch El (ft)	120.18	Shear (lb/sq ft)		1.58	0.52
Alpha	1.47	Stream Power (lb/ft s)		8.39	1.34
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	3.99	251.19	32.79
C & E Loss (ft)	0.01	Cum SA (acres)	4.92	24.15	19.47

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14168.87 Profile: Questa100

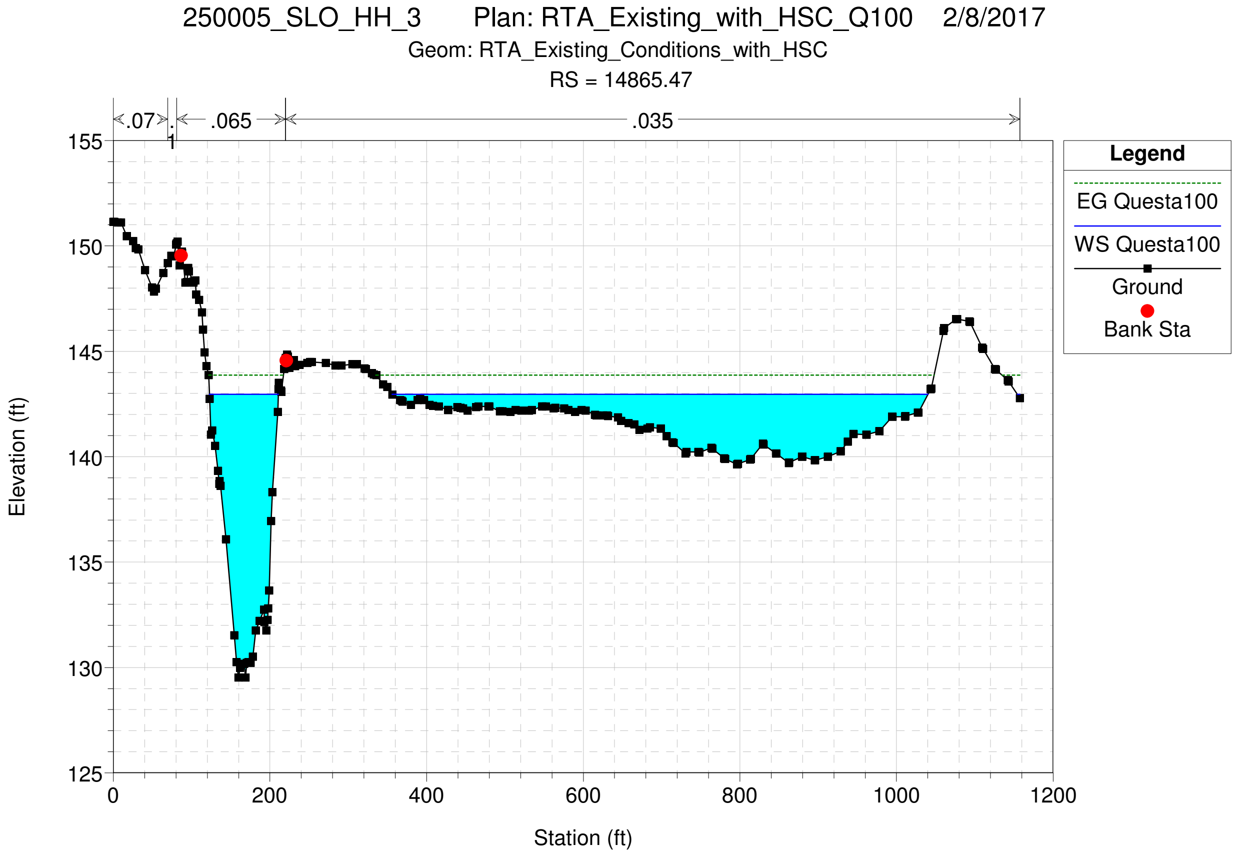
E.G. Elev (ft)	137.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.065	0.070
W.S. Elev (ft)	136.73	Reach Len. (ft)	151.80	119.42	64.08
Crit W.S. (ft)	135.66	Flow Area (sq ft)		967.44	1972.20
E.G. Slope (ft/ft)	0.004172	Area (sq ft)		967.44	1972.20
Q Total (cfs)	10554.71	Flow (cfs)		6049.35	4505.36
Top Width (ft)	1035.17	Top Width (ft)		102.96	932.21
Vel Total (ft/s)	3.59	Avg. Vel. (ft/s)		6.25	2.28
Max Chl Dpth (ft)	18.07	Hydr. Depth (ft)		9.40	2.12
Conv. Total (cfs)	163416.9	Conv. (cfs)		93661.1	69755.8
Length Wtd. (ft)	99.61	Wetted Per. (ft)		111.00	934.38
Min Ch El (ft)	118.67	Shear (lb/sq ft)		2.27	0.55
Alpha	1.91	Stream Power (lb/ft s)		14.19	1.26
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	3.99	244.77	28.69
C & E Loss (ft)	0.02	Cum SA (acres)	4.92	23.46	17.79

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14132.47 Profile: Questa100

E.G. Elev (ft)	136.82	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.		0.065	0.050
W.S. Elev (ft)	136.51	Reach Len. (ft)	0.33	0.33	0.33
Crit W.S. (ft)	128.34	Flow Area (sq ft)		1429.85	1636.69
E.G. Slope (ft/ft)	0.001964	Area (sq ft)		1429.85	1636.69
Q Total (cfs)	10431.13	Flow (cfs)		7423.33	3007.79
Top Width (ft)	1103.64	Top Width (ft)		111.95	991.69
Vel Total (ft/s)	3.40	Avg. Vel. (ft/s)		5.19	1.84
Max Chl Dpth (ft)	18.72	Hydr. Depth (ft)		12.77	1.65
Conv. Total (cfs)	235350.2	Conv. (cfs)		167487.5	67862.7
Length Wtd. (ft)	0.33	Wetted Per. (ft)		123.27	993.13
Min Ch El (ft)	117.78	Shear (lb/sq ft)		1.42	0.20
Alpha	1.74	Stream Power (lb/ft s)		7.39	0.37
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	3.99	241.49	26.04
C & E Loss (ft)	0.03	Cum SA (acres)	4.92	23.16	16.37

Plan: RTA-EX-HS SLO Creek Between Split an RS: 14121.55 Profile: Questa100

E.G. Elev (ft)	136.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.		0.025	0.025
W.S. Elev (ft)	135.43	Reach Len. (ft)	113.52	137.86	123.72
Crit W.S. (ft)	130.38	Flow Area (sq ft)		1139.28	325.45
E.G. Slope (ft/ft)	0.001037	Area (sq ft)		1139.28	325.45
Q Total (cfs)	10431.13	Flow (cfs)		9973.76	457.37
Top Width (ft)	769.87	Top Width (ft)		109.62	660.24
Vel Total (ft/s)	7.12	Avg. Vel. (ft/s)		8.75	1.41
Max Chl Dpth (ft)	17.49	Hydr. Depth (ft)		10.39	0.49
Conv. Total (cfs)	323942.3	Conv. (cfs)		309738.6	14203.6
Length Wtd. (ft)	133.25	Wetted Per. (ft)		116.46	660.63
Min Ch El (ft)	117.95	Shear (lb/sq ft)		0.63	0.03
Alpha	1.45	Stream Power (lb/ft s)		5.54	0.04
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	3.99	240.53	25.28
C & E Loss (ft)	0.28	Cum SA (acres)	4.92	23.15	15.70


250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017
Geom: RTA_Existing_Conditions_with_HSC
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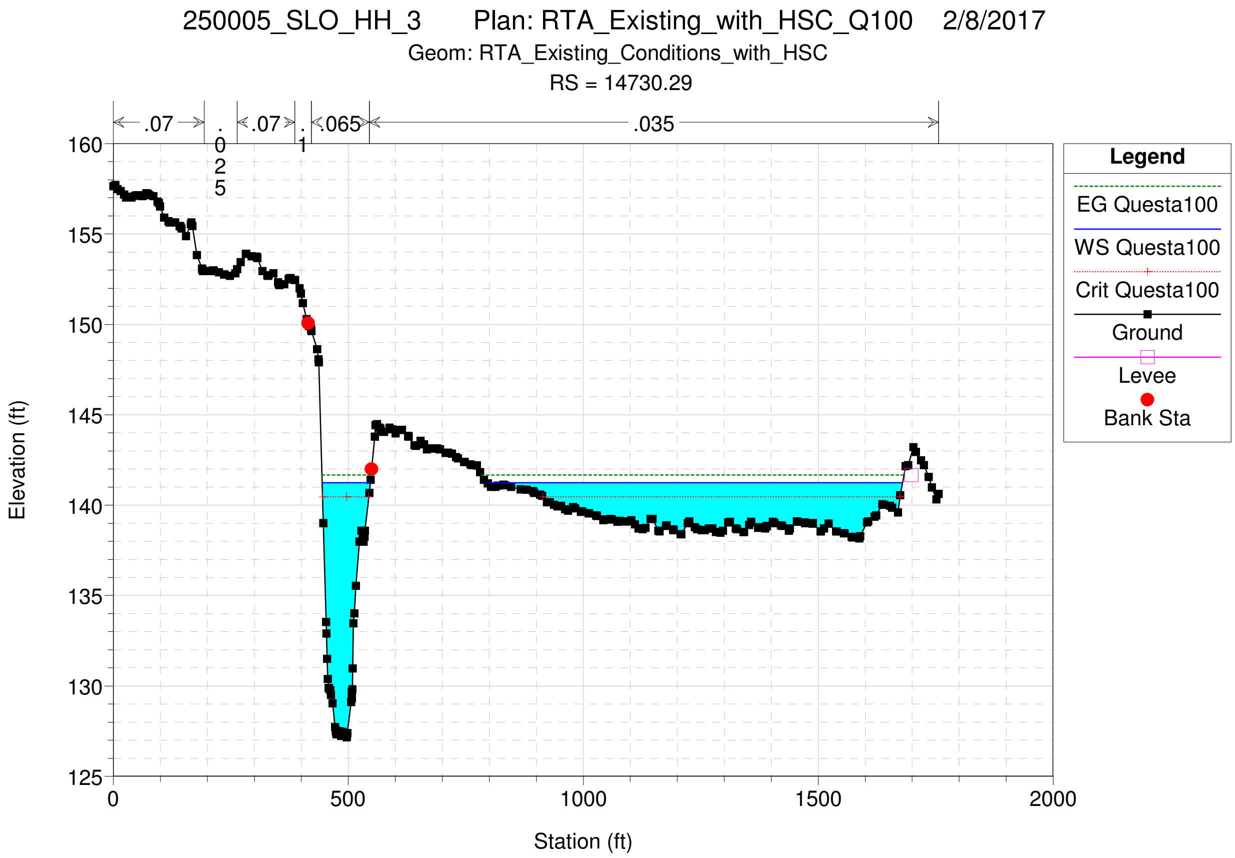
WS Questa100
Ground
Bank Sta


250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017
Geom: RTA_Existing_Conditions_with_HSC
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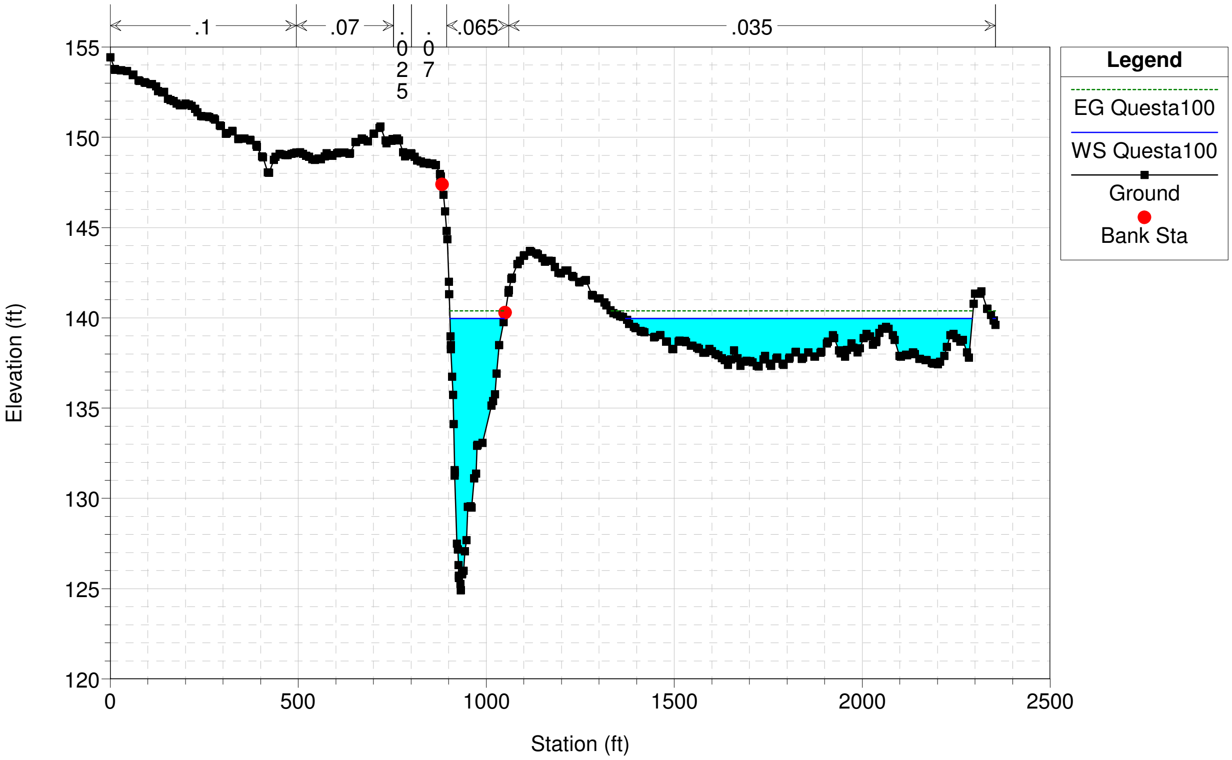
EG Questa100
WS Questa100
Crit Questa100
Ground
Levee
Bank Sta

250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017

Geom: RTA_Existing_Conditions_with_HSC

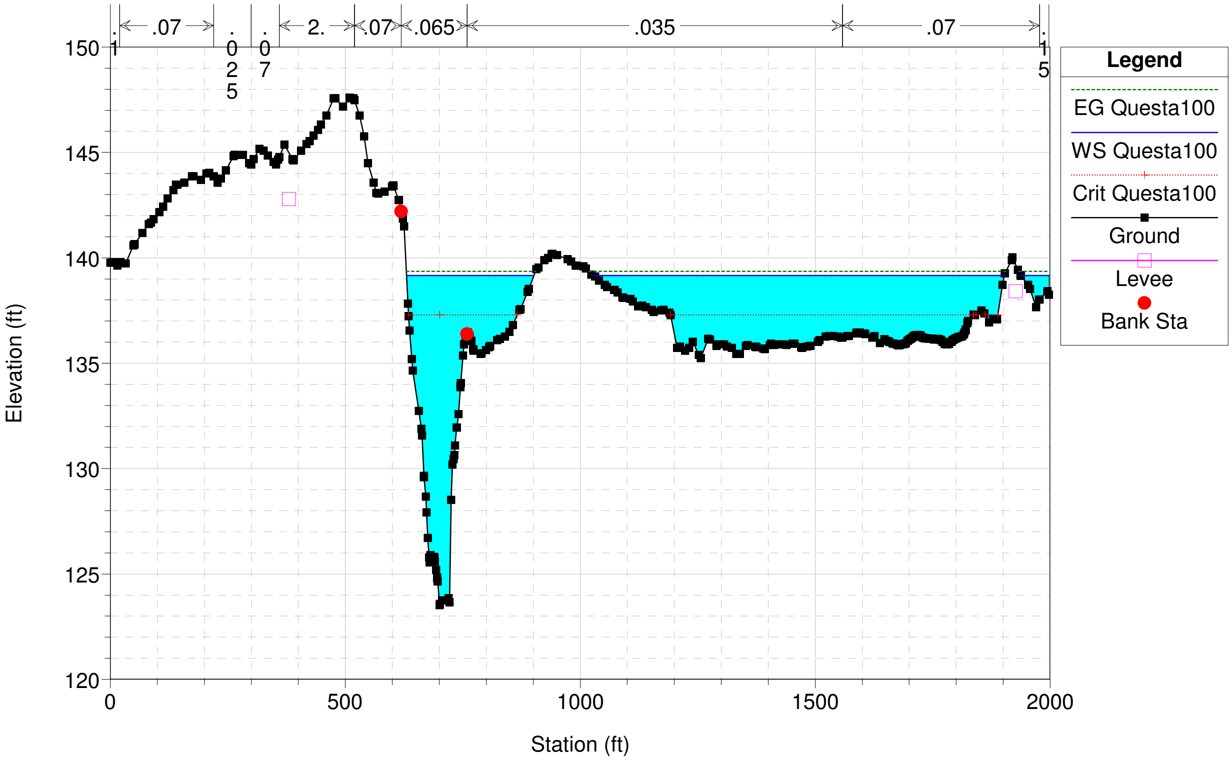
RS = 14608.87

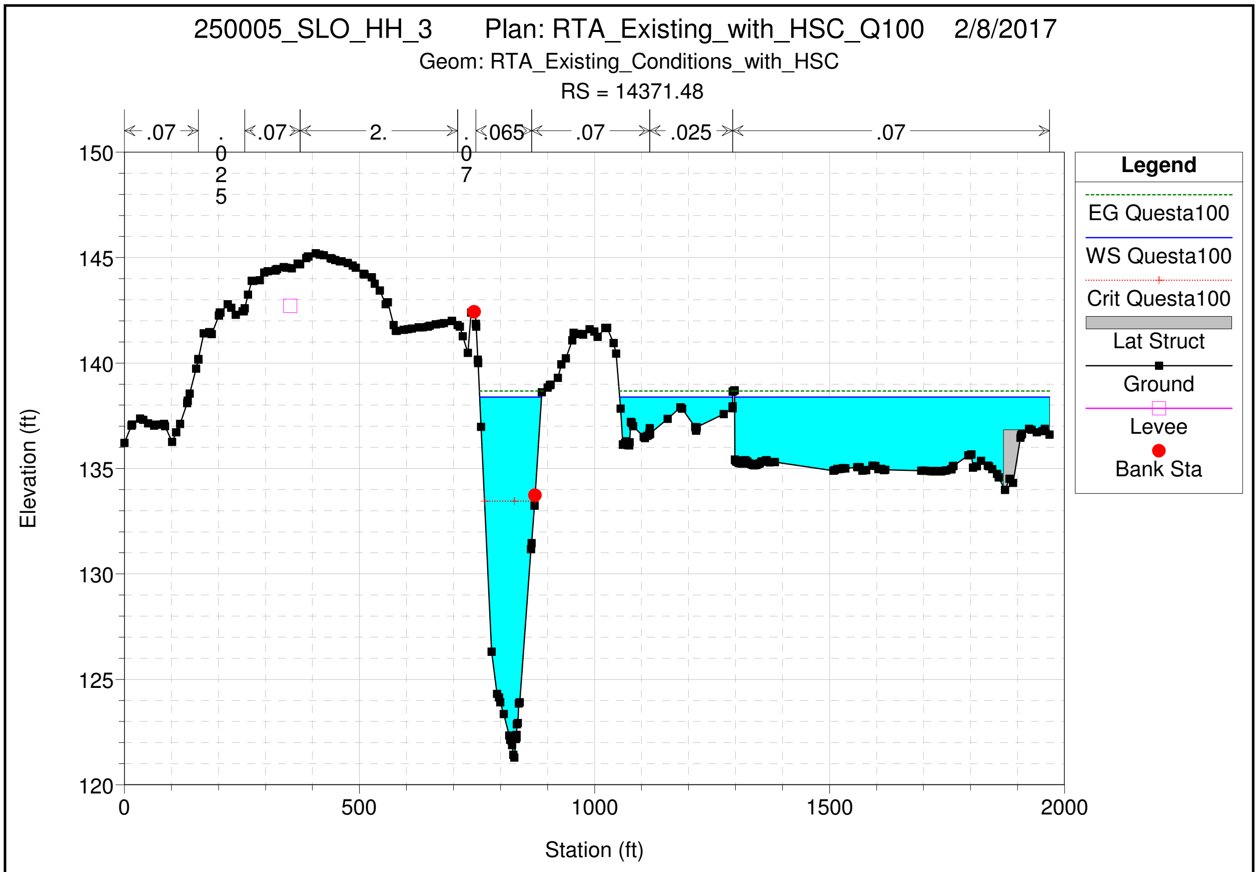


250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017

Geom: RTA_Existing_Conditions_with_HSC

RS = 14478.14




250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017
Geom: RTA_Existing_Conditions_with_HSC
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Lat Struct
Ground
Levee
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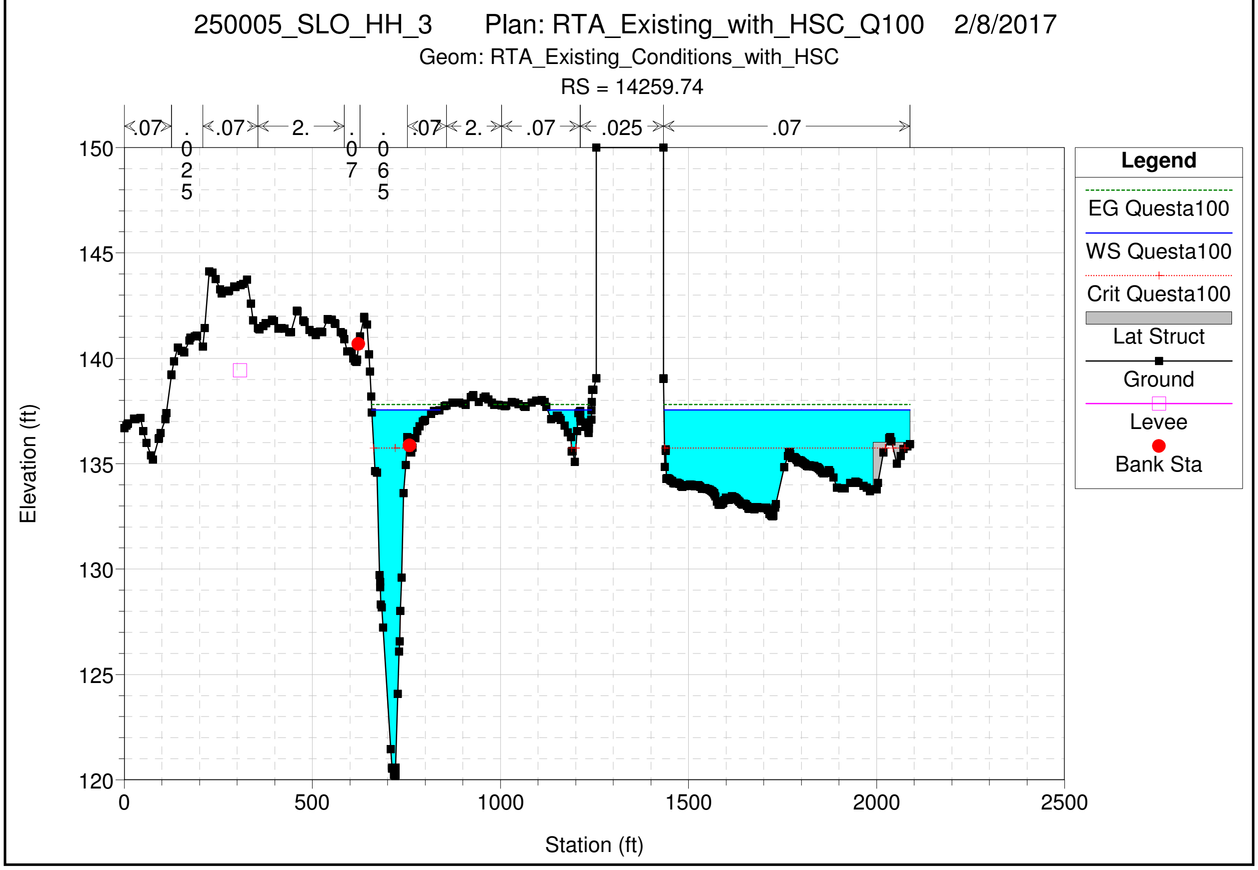
250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017
Geom: RTA_Existing_Conditions_with_HSC
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Station (ft)
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Legend
EG Questa100
WS Questa100
Crit Questa100
Lat Struct
Ground
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250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017

Geom: RTA_Existing_Conditions_with_HSC

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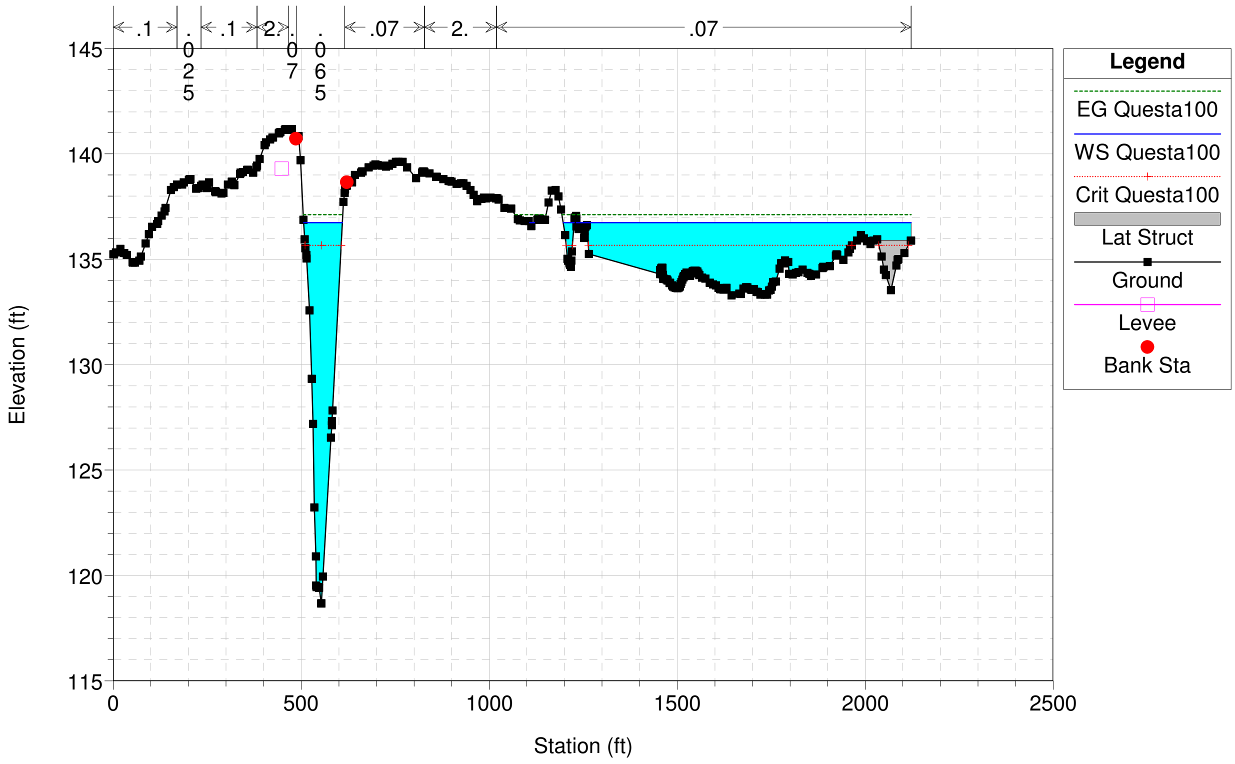
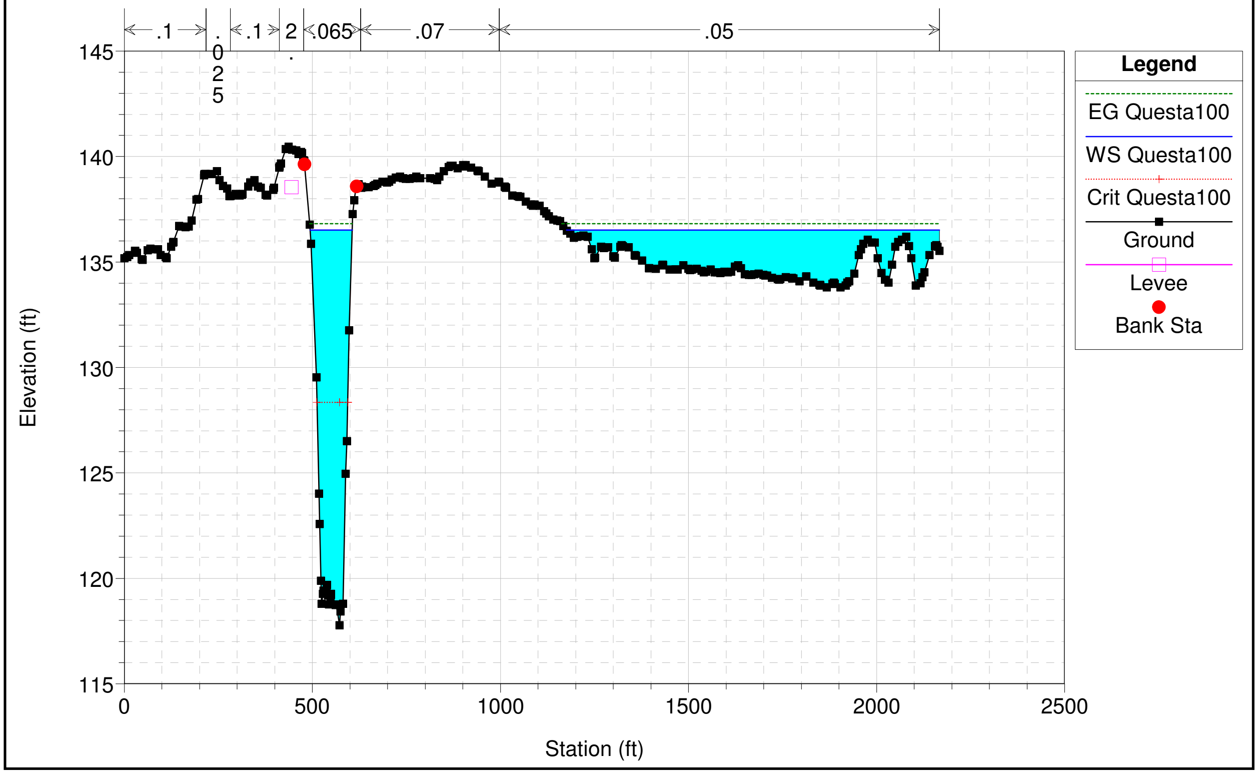
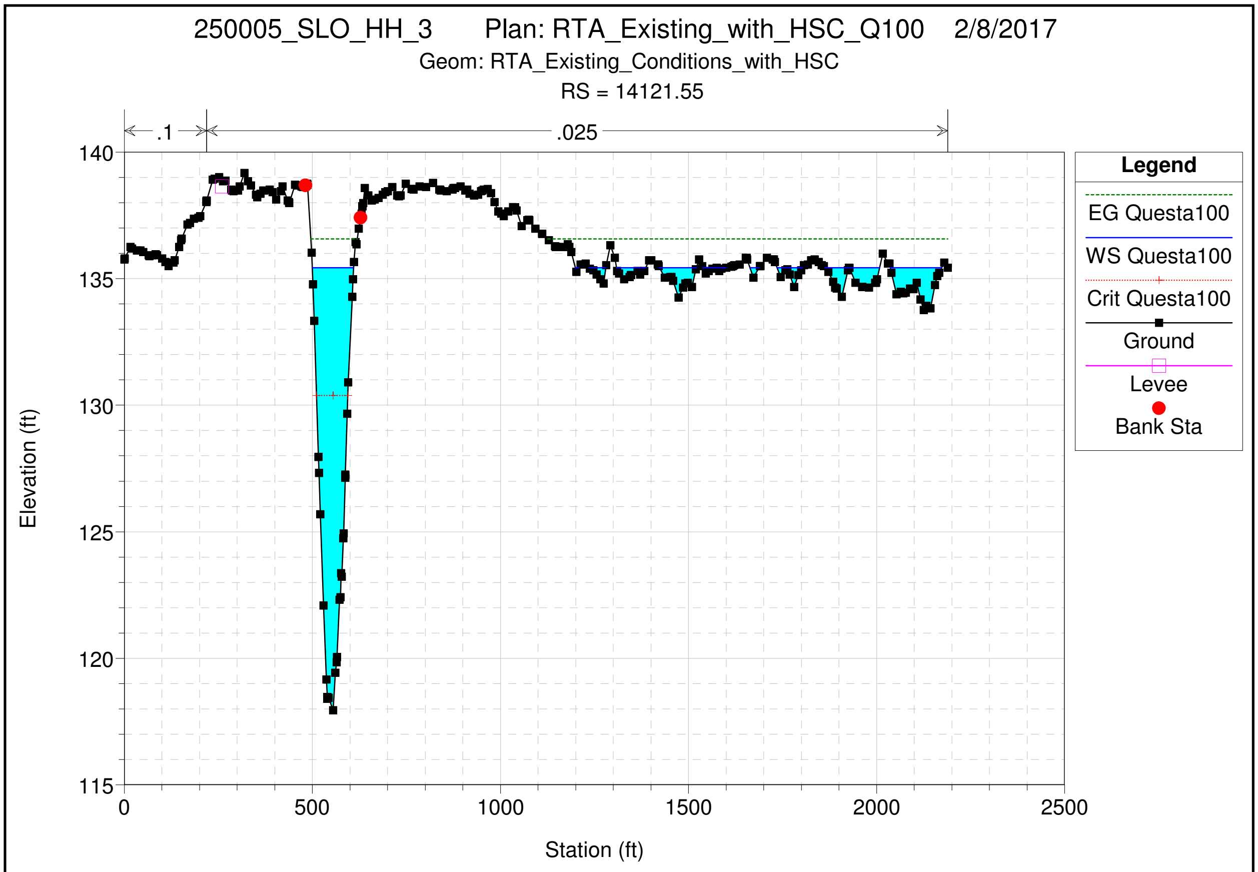


250005_SLO_HH_3 Plan: RTA_Existing_with_HSC_Q100 2/8/2017

Geom: RTA_Existing_Conditions_with_HSC

RS = 14132.47

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Station (ft)
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EG Questa100
WS Questa100
Crit Questa100
Ground
Levee
Bank Sta

Cannon

HEC-RAS Output for Post-Project Conditions

Plan: PROP_D32   SLO Creek   Between Split an RS: 14865.47   Profile: Questa100

E.G. Elev (ft)	143.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.91	Wt. n-Val.		0.065	0.035
W.S. Elev (ft)	142.97	Reach Len. (ft)	476.80	443.50	208.24
Crit W.S. (ft)		Flow Area (sq ft)		750.04	1086.73
E.G. Slope (ft/ft)	0.010054	Area (sq ft)		750.04	1086.73
Q Total (cfs)	13066.05	Flow (cfs)		6772.80	6293.25
Top Width (ft)	775.61	Top Width (ft)		88.00	687.61
Vel Total (ft/s)	7.11	Avg. Vel. (ft/s)		9.03	5.79
Max Chl Dpth (ft)	13.44	Hydr. Depth (ft)		8.52	1.58
Conv. Total (cfs)	130307.5	Conv. (cfs)		67545.0	62762.5
Length Wtd. (ft)	318.84	Wetted Per. (ft)		95.93	687.98
Min Ch El (ft)	129.53	Shear (lb/sq ft)		4.91	0.99
Alpha	1.15	Stream Power (lb/ft s)		44.32	5.74
Frctn Loss (ft)	2.06	Cum Volume (acre-ft)	3.84	298.30	81.93
C & E Loss (ft)	0.14	Cum SA (acres)	4.66	29.46	42.69

Plan: PROP_D32   SLO Creek   Between Split an RS: 14730.29   Profile: Questa100

E.G. Elev (ft)	141.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.		0.064	0.035
W.S. Elev (ft)	141.24	Reach Len. (ft)	442.42	398.39	152.13
Crit W.S. (ft)	140.47	Flow Area (sq ft)		887.26	1707.11
E.G. Slope (ft/ft)	0.004517	Area (sq ft)		887.26	1707.11
Q Total (cfs)	13066.05	Flow (cfs)		5512.12	7553.93
Top Width (ft)	985.91	Top Width (ft)		102.35	883.57
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)		6.21	4.42
Max Chl Dpth (ft)	14.07	Hydr. Depth (ft)		8.67	1.93
Conv. Total (cfs)	194413.5	Conv. (cfs)		82016.4	112397.1
Length Wtd. (ft)	263.74	Wetted Per. (ft)		110.63	883.92
Min Ch El (ft)	127.17	Shear (lb/sq ft)		2.26	0.54
Alpha	1.09	Stream Power (lb/ft s)		14.05	2.41
Frctn Loss (ft)	1.26	Cum Volume (acre-ft)	3.84	289.97	75.25
C & E Loss (ft)	0.00	Cum SA (acres)	4.66	28.49	38.94

Plan: PROP_D32   SLO Creek   Between Split an RS: 14608.87   Profile: Questa100

E.G. Elev (ft)	140.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.		0.065	0.035
W.S. Elev (ft)	139.99	Reach Len. (ft)	447.90	428.90	232.91
Crit W.S. (ft)		Flow Area (sq ft)		1063.86	1572.38
E.G. Slope (ft/ft)	0.005035	Area (sq ft)		1063.86	1572.38
Q Total (cfs)	13066.05	Flow (cfs)		6331.65	6734.40
Top Width (ft)	1078.07	Top Width (ft)		144.70	933.38
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)		5.95	4.28
Max Chl Dpth (ft)	15.09	Hydr. Depth (ft)		7.35	1.68
Conv. Total (cfs)	184142.9	Conv. (cfs)		89233.4	94909.5
Length Wtd. (ft)	318.20	Wetted Per. (ft)		151.37	934.43
Min Ch El (ft)	124.90	Shear (lb/sq ft)		2.21	0.53
Alpha	1.08	Stream Power (lb/ft s)		13.15	2.27
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	3.84	281.04	69.53
C & E Loss (ft)	0.07	Cum SA (acres)	4.66	27.36	35.76

Plan: PROP_D32   SLO Creek   Between Split an RS: 14478.14   Profile: Questa100

E.G. Elev (ft)	139.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.		0.065	0.043
W.S. Elev (ft)	139.26	Reach Len. (ft)	317.75	349.93	298.39
Crit W.S. (ft)	137.30	Flow Area (sq ft)		1208.72	2836.83
E.G. Slope (ft/ft)	0.001787	Area (sq ft)		1208.72	2836.83
Q Total (cfs)	13066.05	Flow (cfs)		5040.90	8025.15
Top Width (ft)	1217.42	Top Width (ft)		128.76	1088.66
Vel Total (ft/s)	3.23	Avg. Vel. (ft/s)		4.17	2.83
Max Chl Dpth (ft)	15.74	Hydr. Depth (ft)		9.39	2.61
Conv. Total (cfs)	309046.3	Conv. (cfs)		119230.6	189815.8
Length Wtd. (ft)	322.59	Wetted Per. (ft)		134.85	1090.24
Min Ch El (ft)	123.52	Shear (lb/sq ft)		1.00	0.29
Alpha	1.11	Stream Power (lb/ft s)		4.17	0.82
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	3.84	269.86	57.74
C & E Loss (ft)	0.01	Cum SA (acres)	4.66	26.02	30.36

Plan: PROP_D32   SLO Creek   Between Split an RS: 14371.48   Profile: Questa100

E.G. Elev (ft)	138.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.28	Wt. n-Val.		0.065	0.039
W.S. Elev (ft)	138.55	Reach Len. (ft)	209.97	366.63	299.25
Crit W.S. (ft)	133.39	Flow Area (sq ft)		1385.63	1801.03
E.G. Slope (ft/ft)	0.001940	Area (sq ft)		1385.63	1801.03
Q Total (cfs)	12494.26	Flow (cfs)		6957.67	5536.58
Top Width (ft)	903.95	Top Width (ft)		118.43	785.51
Vel Total (ft/s)	3.92	Avg. Vel. (ft/s)		5.02	3.07
Max Chl Dpth (ft)	17.25	Hydr. Depth (ft)		11.70	2.29
Conv. Total (cfs)	283697.0	Conv. (cfs)		157982.3	125714.7
Length Wtd. (ft)	335.74	Wetted Per. (ft)		123.44	789.80
Min Ch El (ft)	121.29	Shear (lb/sq ft)		1.36	0.28
Alpha	1.19	Stream Power (lb/ft s)		6.83	0.85
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	3.84	259.44	41.85
C & E Loss (ft)	0.01	Cum SA (acres)	4.66	25.03	23.94

Plan: PROP_D32   SLO Creek   Between Split an RS: 14259.74   Profile: Questa100

E.G. Elev (ft)	137.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	137.51	Reach Len. (ft)	315.78	298.13	82.09
Crit W.S. (ft)	136.60	Flow Area (sq ft)		902.04	1372.60
E.G. Slope (ft/ft)	0.004164	Area (sq ft)		902.04	1372.60
Q Total (cfs)	10687.44	Flow (cfs)		5596.34	5091.10
Top Width (ft)	800.83	Top Width (ft)		100.65	700.18
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)		6.20	3.71
Max Chl Dpth (ft)	17.33	Hydr. Depth (ft)		8.96	1.96
Conv. Total (cfs)	165613.3	Conv. (cfs)		86721.3	78892.0
Length Wtd. (ft)	201.43	Wetted Per. (ft)		108.60	703.11
Min Ch El (ft)	120.18	Shear (lb/sq ft)		2.16	0.51
Alpha	1.21	Stream Power (lb/ft s)		13.40	1.88
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	3.84	249.81	30.95
C & E Loss (ft)	0.01	Cum SA (acres)	4.66	24.10	18.84

Plan: PROP_D32   SLO Creek   Between Split an RS: 14168.87   Profile: Questa100

E.G. Elev (ft)	137.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.065	0.070
W.S. Elev (ft)	136.68	Reach Len. (ft)	151.80	119.42	64.08
Crit W.S. (ft)	133.13	Flow Area (sq ft)		961.61	1919.52
E.G. Slope (ft/ft)	0.004234	Area (sq ft)		961.61	1919.52
Q Total (cfs)	10389.33	Flow (cfs)		6046.64	4342.70
Top Width (ft)	1029.12	Top Width (ft)		102.60	926.52
Vel Total (ft/s)	3.61	Avg. Vel. (ft/s)		6.29	2.26
Max Chl Dpth (ft)	18.01	Hydr. Depth (ft)		9.37	2.07
Conv. Total (cfs)	159674.0	Conv. (cfs)		92931.0	66743.0
Length Wtd. (ft)	100.16	Wetted Per. (ft)		110.63	928.59
Min Ch El (ft)	118.67	Shear (lb/sq ft)		2.30	0.55
Alpha	1.93	Stream Power (lb/ft s)		14.45	1.24
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	3.84	243.43	27.85
C & E Loss (ft)	0.02	Cum SA (acres)	4.66	23.41	17.30

Plan: PROP_D32   SLO Creek   Between Split an RS: 14132.47   Profile: Questa100

E.G. Elev (ft)	136.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.065	0.050
W.S. Elev (ft)	136.45	Reach Len. (ft)	0.33	0.33	0.33
Crit W.S. (ft)	128.25	Flow Area (sq ft)		1422.95	1575.64
E.G. Slope (ft/ft)	0.001992	Area (sq ft)		1422.95	1575.64
Q Total (cfs)	10280.91	Flow (cfs)		7430.86	2850.05
Top Width (ft)	1099.60	Top Width (ft)		111.59	988.02
Vel Total (ft/s)	3.43	Avg. Vel. (ft/s)		5.22	1.81
Max Chl Dpth (ft)	18.66	Hydr. Depth (ft)		12.75	1.59
Conv. Total (cfs)	230349.8	Conv. (cfs)		166492.9	63857.0
Length Wtd. (ft)	0.33	Wetted Per. (ft)		122.89	989.39
Min Ch El (ft)	117.78	Shear (lb/sq ft)		1.44	0.20
Alpha	1.75	Stream Power (lb/ft s)		7.52	0.36
Frctn Loss (ft)	0.00	Cum Volume (acre-ft)	3.84	240.16	25.28
C & E Loss (ft)	0.03	Cum SA (acres)	4.66	23.11	15.89

Plan: PROP_D32   SLO Creek   Between Split an RS: 14121.55   Profile: Questa100

E.G. Elev (ft)	136.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.14	Wt. n-Val.		0.025	0.025
W.S. Elev (ft)	135.38	Reach Len. (ft)	113.52	137.86	123.72
Crit W.S. (ft)	130.29	Flow Area (sq ft)		1133.35	291.51
E.G. Slope (ft/ft)	0.001031	Area (sq ft)		1133.35	291.51
Q Total (cfs)	10280.91	Flow (cfs)		9880.02	400.89
Top Width (ft)	708.81	Top Width (ft)		109.26	599.55
Vel Total (ft/s)	7.22	Avg. Vel. (ft/s)		8.72	1.38
Max Chl Dpth (ft)	17.43	Hydr. Depth (ft)		10.37	0.49
Conv. Total (cfs)	320212.1	Conv. (cfs)		307725.9	12486.2
Length Wtd. (ft)	133.33	Wetted Per. (ft)		116.08	599.91
Min Ch El (ft)	117.95	Shear (lb/sq ft)		0.63	0.03
Alpha	1.40	Stream Power (lb/ft s)		5.48	0.04
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	3.84	239.21	24.56
C & E Loss (ft)	0.28	Cum SA (acres)	4.66	23.11	15.26

250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017
Geom: RTA_Prop_Conditions_D32_with_HSC
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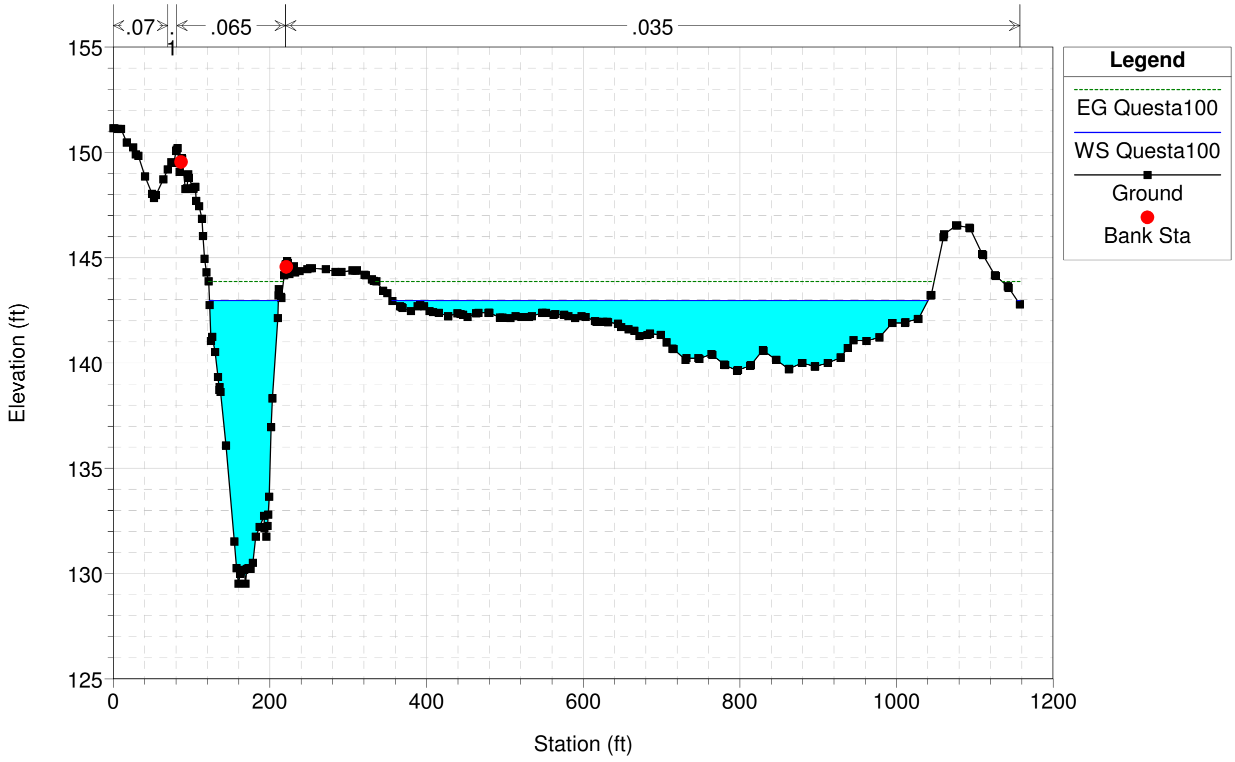

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Geom: RTA_Prop_Conditions_D32_with_HSC
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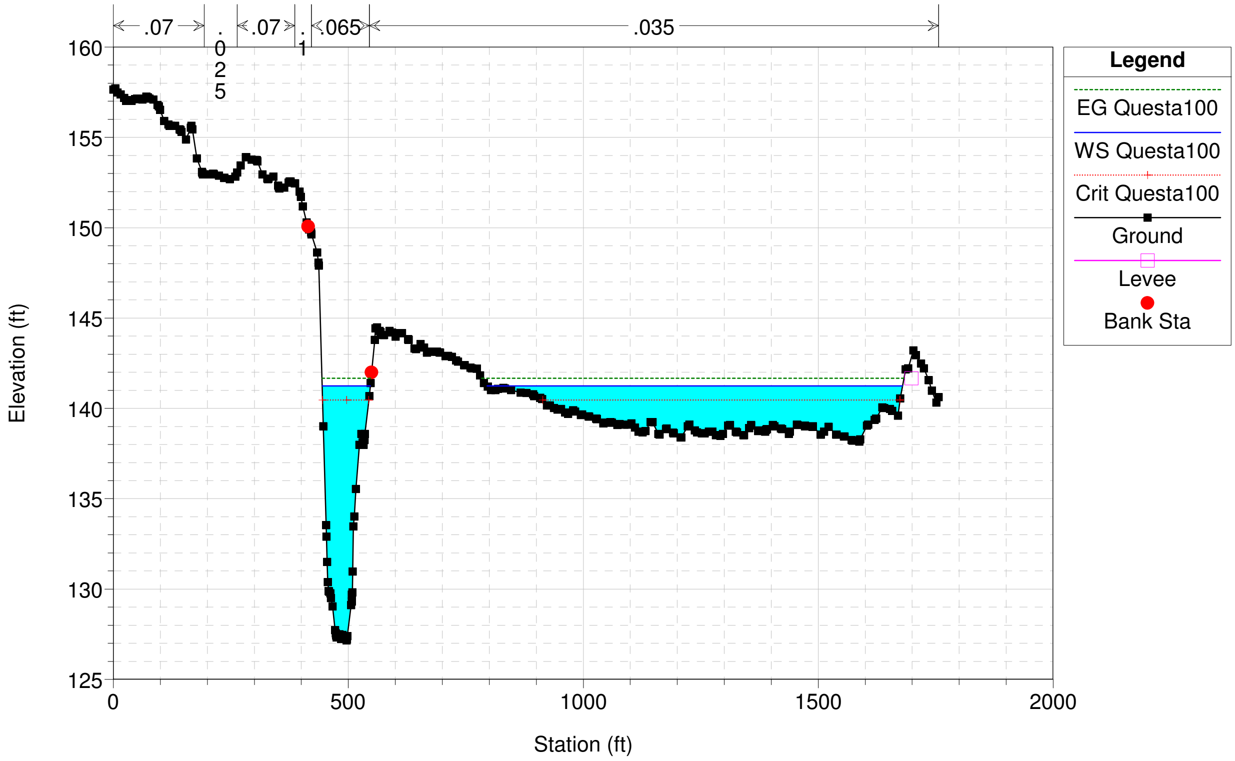

250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017

Geom: RTA_Prop_Conditions_D32_with_HSC

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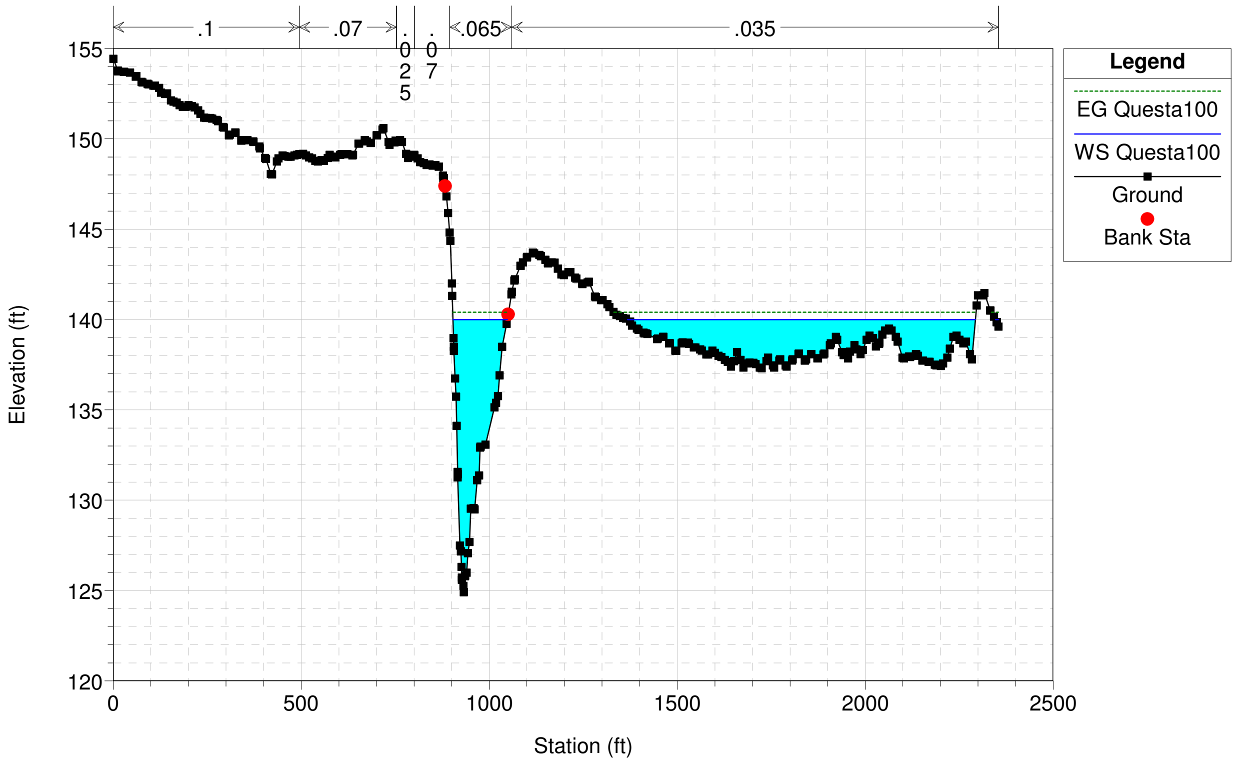

250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017

Geom: RTA_Prop_Conditions_D32_with_HSC

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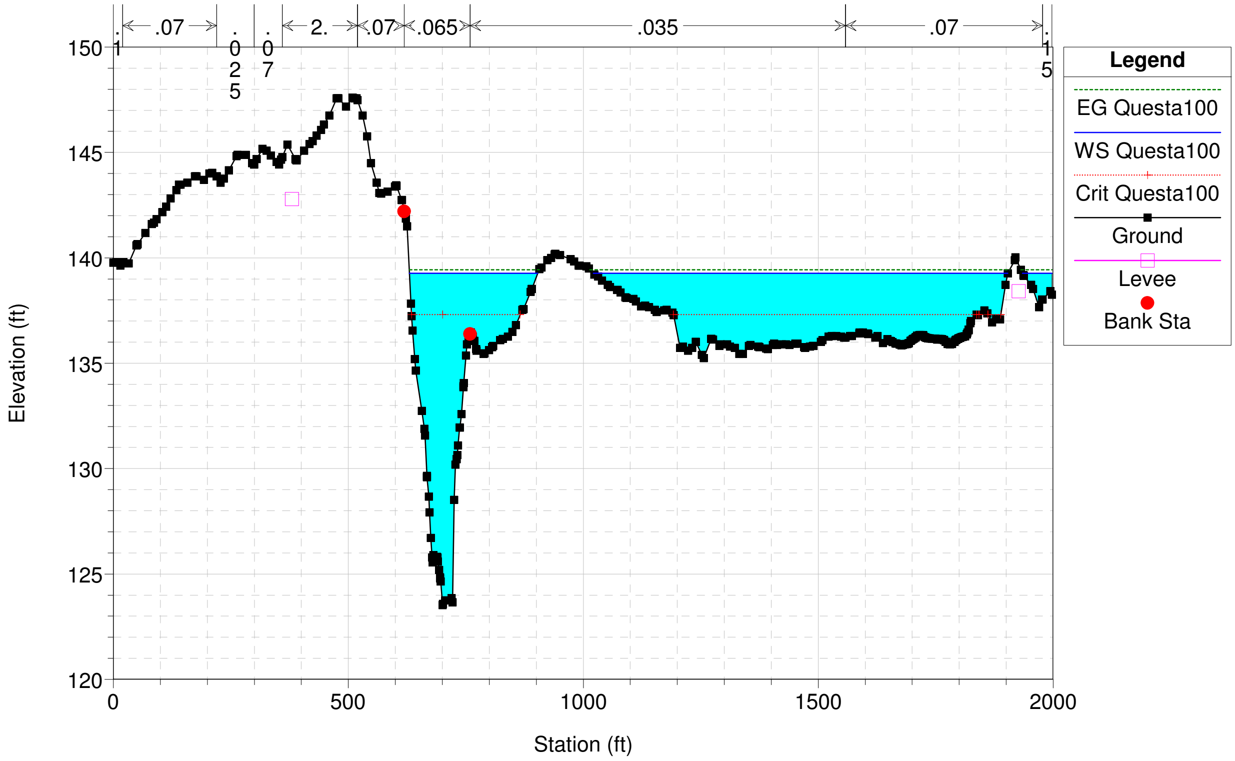

250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017

Geom: RTA_Prop_Conditions_D32_with_HSC

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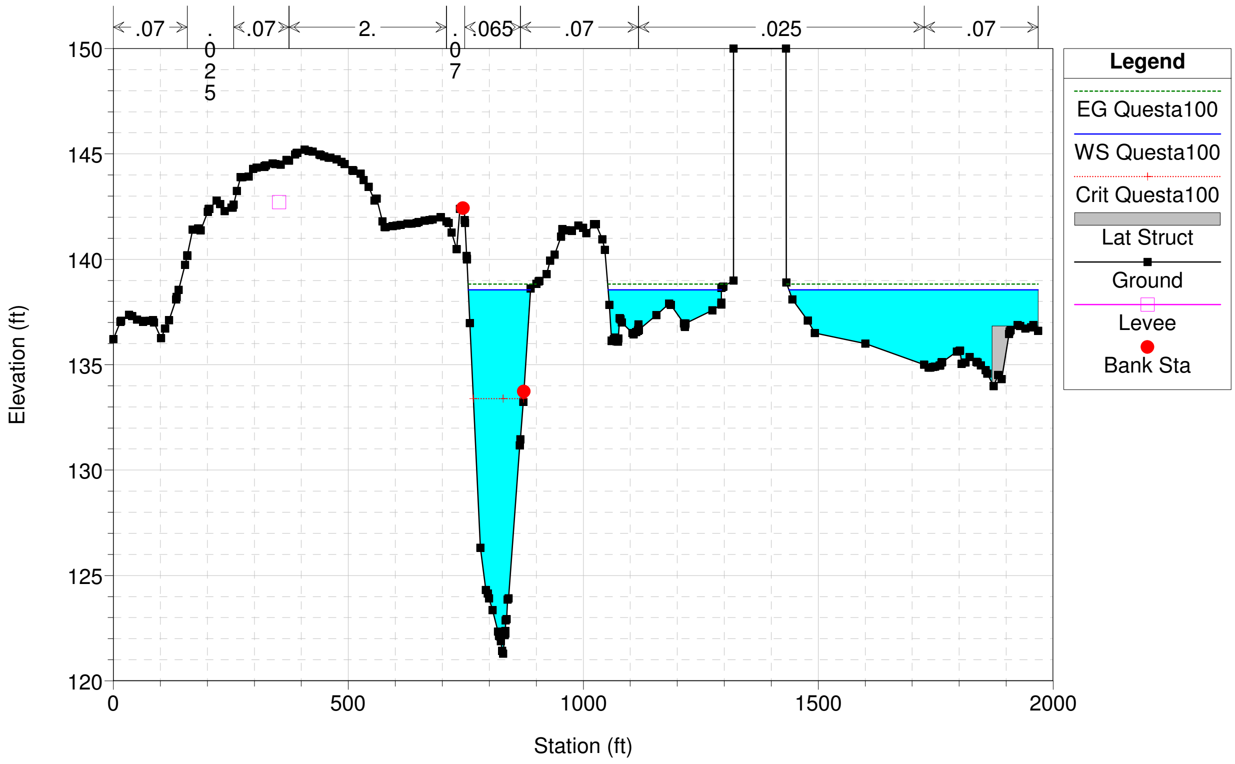

250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017

Geom: RTA_Prop_Conditions_D32_with_HSC

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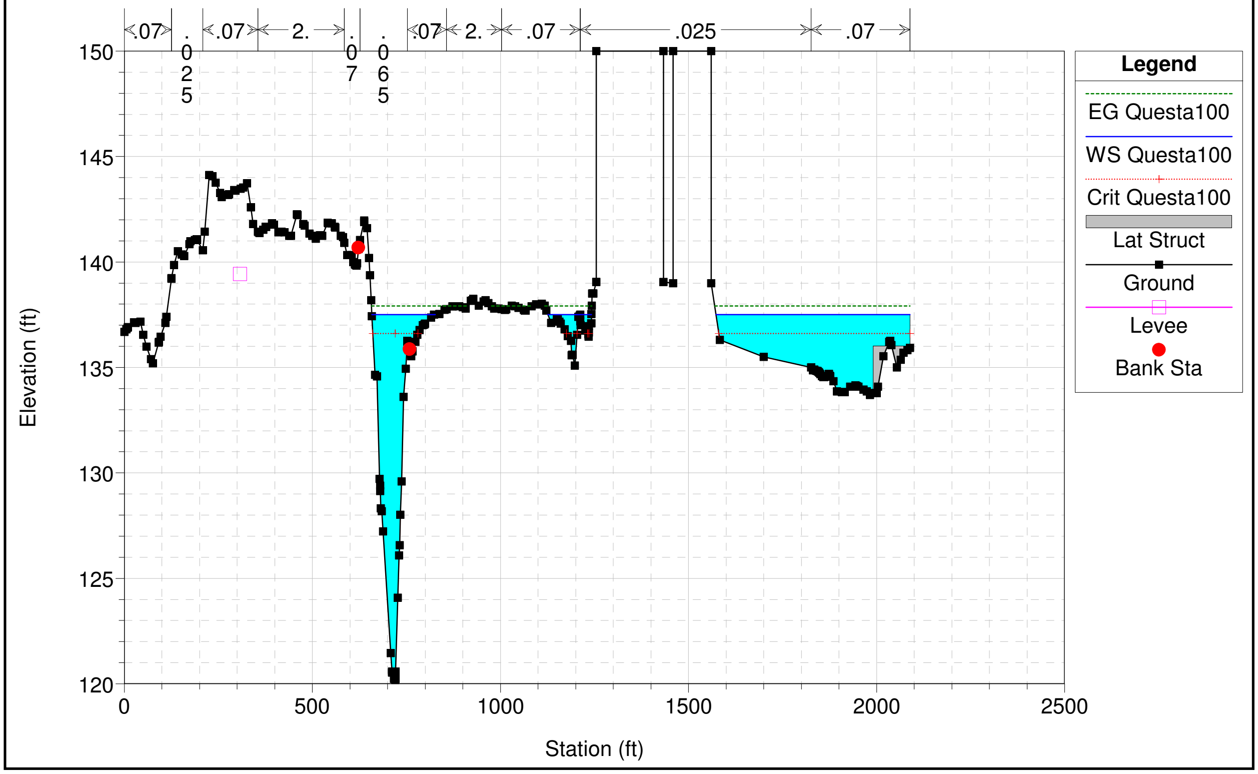

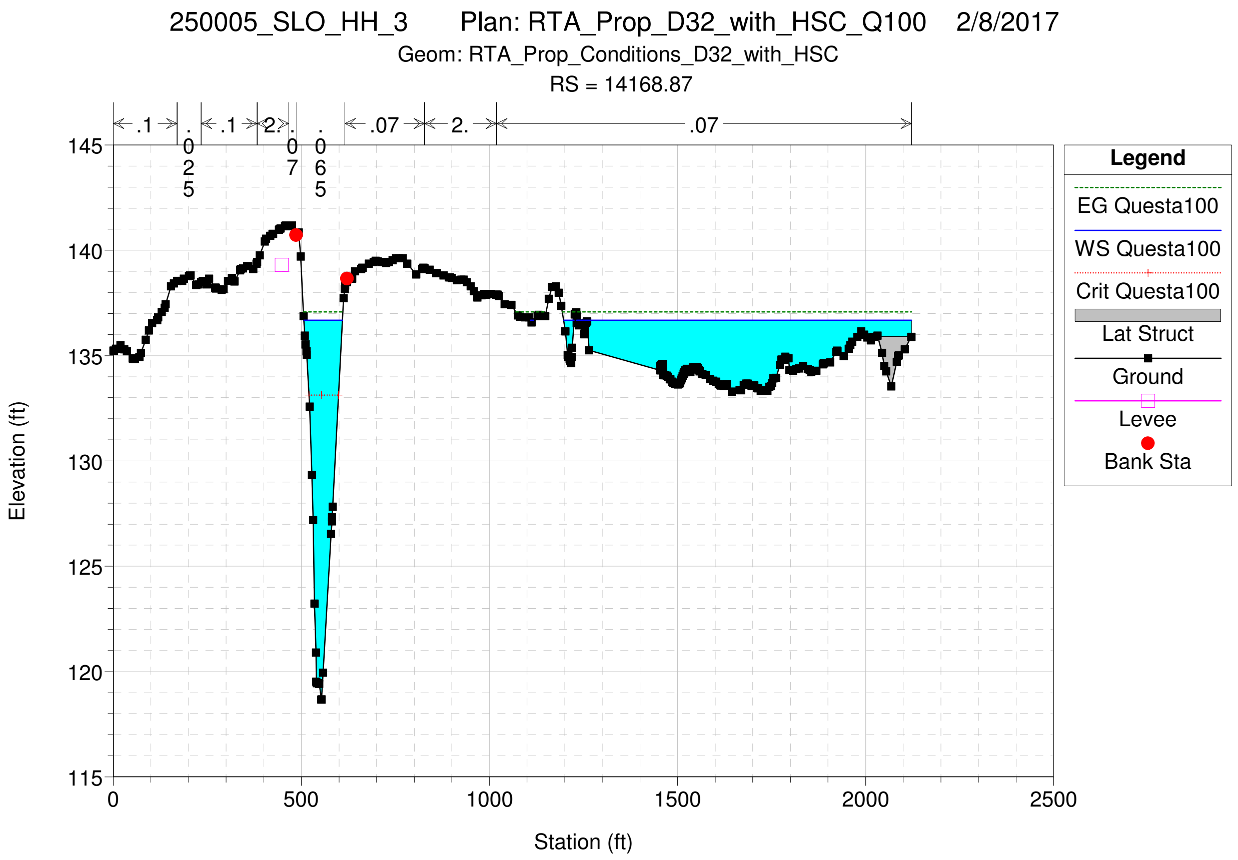
250005_SLO_HH_3 Plan: RTA_Prop_D32_with_HSC_Q100 2/8/2017
Geom: RTA_Prop_Conditions_D32_with_HSC
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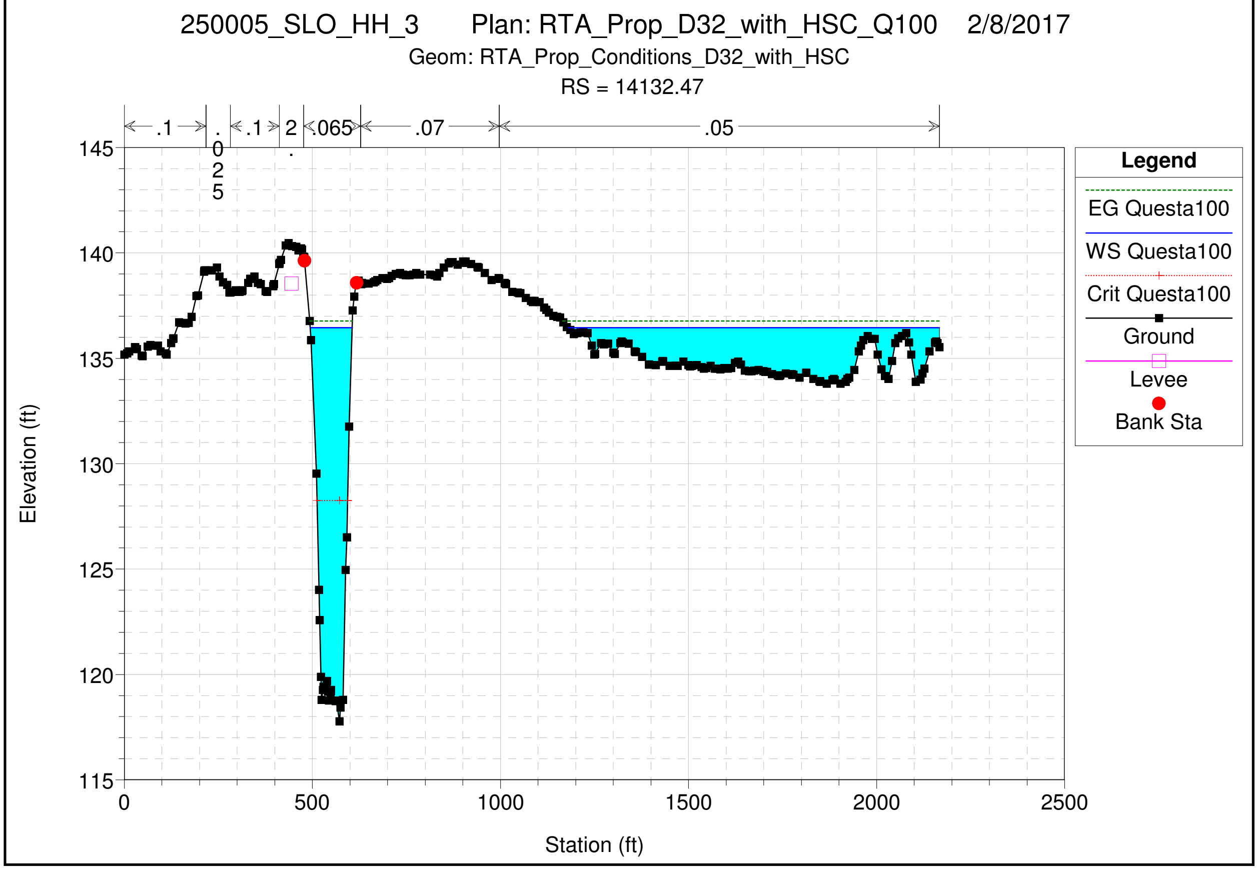
WS Questa100
Crit Questa100
Lat Struct
Ground
Levee
Bank Sta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Geom: RTA_Prop_Conditions_D32_with_HSC
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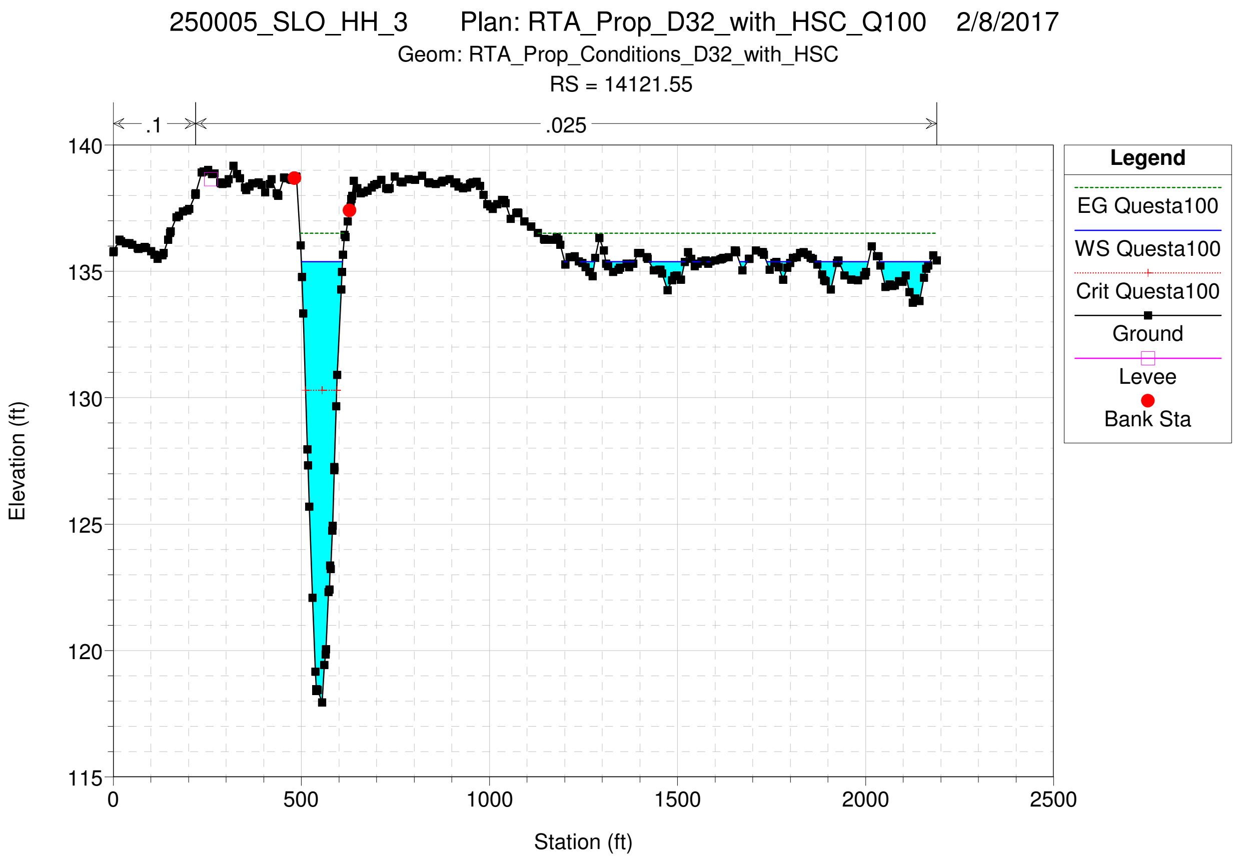
.1
.025
.1
2.
.065
.07
.05
Elevation (ft)
145
140
135
130
125
120
115
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG Questa100
WS Questa100
Crit Questa100
Ground
Levee
Bank Sta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.025
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135
130
125
120
115
Elevation (ft)
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG Questa100
WS Questa100
Crit Questa100
Ground
Levee
Bank Sta

Cannon

MEMO

DATE: April 7, 2017

TO: Hal Hannula, City of San Luis Obispo

CC:

FROM: Seth Stevens, PE

SUBJECT: RTA Maintenance Facility – Preliminary Floodplain Impact Analysis – San Luis Ranch CLOMR Model

PROJECT NO.: 150823

This memorandum is supplemental to the memorandum prepared by Cannon with the subject “RTA Maintenance Facility – Preliminary Floodplain Impact Analysis” dated February 9, 2017. The analysis presented in that memorandum was done using the City of San Luis Obispo’s HEC-RAS hydraulic model for the San Luis Obispo Creek System, referred to as the Questa model. The city requested additional analysis for the proposed San Luis Obispo Regional Transit Authority (RTA) Maintenance Facility using a hydraulic model that was developed by Wallace Group to support a Conditional Letter of Map Revision (CLOMR) to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) associated with the San Luis Ranch (SLR) development project, referred to herein as the SLR CLOMR model. An analysis was performed with the SLR CLOMR model to estimate the impacts of the proposed RTA maintenance facility project on the floodplain and the results from that analysis are presented in this memorandum.

Introduction and Background

The RTA proposes the construction of a maintenance facility and associated site improvements on an existing 6.44 acre parcel located at the northeast corner of the intersection of Prado Road and Elks Lane in the City of San Luis Obispo. The site is bounded by an existing drive-in movie theater to the north, a future Homeless Service Center to the east, Prado Road to the south, and Elks Lane to the west.

The FEMA FIRM Number 06079C1068G, effective November 16, 2012, shows the project site within Zone AE of the 1% annual chance floodplain boundary (100-yr floodplain) of San Luis Obispo Creek. Zone AE includes areas where base flood elevations have been determined. The base flood elevation varies across the project site from approximately 141.9’ at the northwest corner of the site to approximately 138.6’ at the southeast corner of the site.

In addition, the project site is located within the 100-yr floodplain as shown on Figure DDM 3-2c 1 in the City of San Luis Obispo’s Drainage Design Manual (DDM), which is Volume 3 of the City’s Waterway Management Plan. The project site is also located within Special Floodplain Management Zone #2, as identified by Figure DDM 3-1 in the DDM. These areas have been determined to have a potentially significant effect on downstream flooding and bank stability, and therefore development of these areas is restricted in the following ways:

- The project shall not cause the 100-year flood elevation to increase more than 2.5 inches
- The project shall not cause stream velocities to increase more than 0.3 ft/s
- The project shall not cause a significant net decrease in floodplain storage volume unless several exceptions are met.

The proposed project is currently in the preliminary design stages. An analysis was conducted to estimate the effects of the preliminary design on the existing floodplain with respect to the restrictions listed above for development in Special Floodplain Management Zone #2. The results of that analysis are presented in this memorandum.

Methodology

The analysis of the project impacts on the floodplain was performed using the SLR CLOMR hydraulic model. The model is a 1-dimensional HEC-RAS model developed by Wallace Group. The model was modified and ran using HEC-RAS 5.0.3.

The model has one cross-section that passes through the project site: 2836.46. The geometry for this cross-section was revised to reflect the pre-project conditions and the post-project conditions, as described below. Three cross-sections were added to model (2335.41, 2555.03, and 2645.20) to better account for the adjacent Homeless Service Center (HSC) and proposed RTA maintenance facility.

Pre-project Conditions

The SLR CLOMR model was modified to create a scenario for the pre-project conditions to use as a baseline for the floodplain analysis. The geometry file within the model called “ExCon Geometry” was used as the basis for the pre-project model. The cross-sections that pass through the project site (2335.41, 2555.03, 2645.20, and 2836.46) were modified to reflect the proposed grading and building for the HSC that is planned to be constructed on the adjacent property to the east of the project site. A Manning’s n value of 0.025 was used for the paved areas associated with the HSC. All other components of the model were unchanged. The resulting geometry was saved to a file called “ExCon Geometry-RTA EG with HSC FG”. Figure 1 shows the pre-project conditions with the HEC-RAS cross-sections overlain.

A steady-flow analysis run was conducted with the geometry described above using the steady flow file “ExCon Flow” and a mixed flow regime. The model results for cross-sections within the vicinity of the proposed project are included in Table 1.

Post-project Conditions

The geometry file developed for the pre-project conditions was modified to reflect the preliminary grading and building layout associated with the proposed RTA maintenance facility Concept D.3.2 developed by Garcia Architecture + Design. The preliminary grading was based on a finish floor elevation of 139.00 ft for the building. . A Manning’s n value of 0.025 was used for the paved areas associated with the proposed RTA maintenance facility. The resulting geometry was saved to a file called “ExCon Geometry-RTA FG with HSC FG”. Figure 2 shows the post-project conditions with the HEC-RAS cross-sections overlain.

A steady-flow analysis run was conducted with the geometry for the post-project conditions using the steady flow file “ExCon Flow” and a mixed flow regime. The model results for cross-sections within the vicinity of the proposed project are included in Table 1.

Results

The results of the two model runs are shown in Table 1. The table shows the flow, water surface elevation (WSE), and average velocity at each cross-section for both scenarios.

Table 1 - HEC-RAS Results

	Pre-project Conditions			Post-project Conditions		
Cross-section	Flow (cfs)	WSE (ft)	Velocity (ft/s)	Flow (cfs)	WSE (ft)	Velocity (ft/s)
3403.43	5,590	140.40	5.7	5,590	140.40	5.7
2836.46	5,590	138.86	2.7	5,590	138.57	2.9
2645.2	5,590	137.83	3.4	5,590	137.79	5.4
2555.03	5,590	137.69	3.3	5,590	137.57	4.9
2335.41	5,590	137.59	2.0	5,590	137.57	2.4
2240	5,590	137.57	1.6	5,590	137.57	1.6
2214.79	5,590	137.41	3.2	5,590	137.41	3.2
1976.2	5,590	136.95	2.7	5,590	136.95	2.7

The changes in flow, water surface elevation, and average velocity for post-project conditions compared to the pre-project conditions are shown in Table 2. The modeling shows a decrease in water surface elevation and increase in flow velocity through the project site, which are likely the result of the smoother surface of the pavement associated with the proposed project. The modeling shows that the proposed project would not cause a rise in the water surface elevation beyond the allowable 2.5 inches; however the increase in flow velocity for cross-sections 2645.2, 2555.03, and 2335.41 is greater than the allowed 0.3 ft/s.

Table 2 - Change in Flow Characteristics from Pre-project to Post-project

Cross-section	Change in Flow (cfs)	Change in WSE (in)	Change in Velocity (ft/s)
3403.43	0	0.0	0.0
2836.46	0	-3.5	0.2
2645.2	0	-0.5	2.0
2555.03	0	-1.4	1.6
2335.41	0	-0.2	0.4
2240	0	0.0	0.0
2214.79	0	0.0	0.0
1976.2	0	0.0	0.0
3403.43	0	0.0	0.0

The effect of the proposed project on floodplain storage was not quantitatively analyzed as part of this study. However, since the entire project property is shown within the City's 100-year floodplain and there is anticipated to be a substantial amount of imported fill required to elevate the building pad, it is expected that the proposed project will have a significant effect on the floodplain storage volume that currently exists on the project site.

Limitations

The hydraulic model used for this analysis is still being revised by Wallace Group as a result of comments from FEMA on the SLR CLOMR, which is still a work in progress.

Attachments

1. Figure 1 – HEC-RAS Cross-sections Pre-project Conditions
2. Figure 2 – HEC-RAS Cross-sections Post-project Conditions
3. Figure 3 – Preliminary Grading Plan
4. FEMA Flood Insurance Rate Map
5. Drainage Design Manual Figure DDM 1 – Special Floodplain Management Zones
6. Drainage Design Manual Figure DDM 3-2c – City's 100-yr Floodplain
7. HEC-RAS Output for Pre-project Conditions
8. HEC-RAS Output for Post-project Conditions

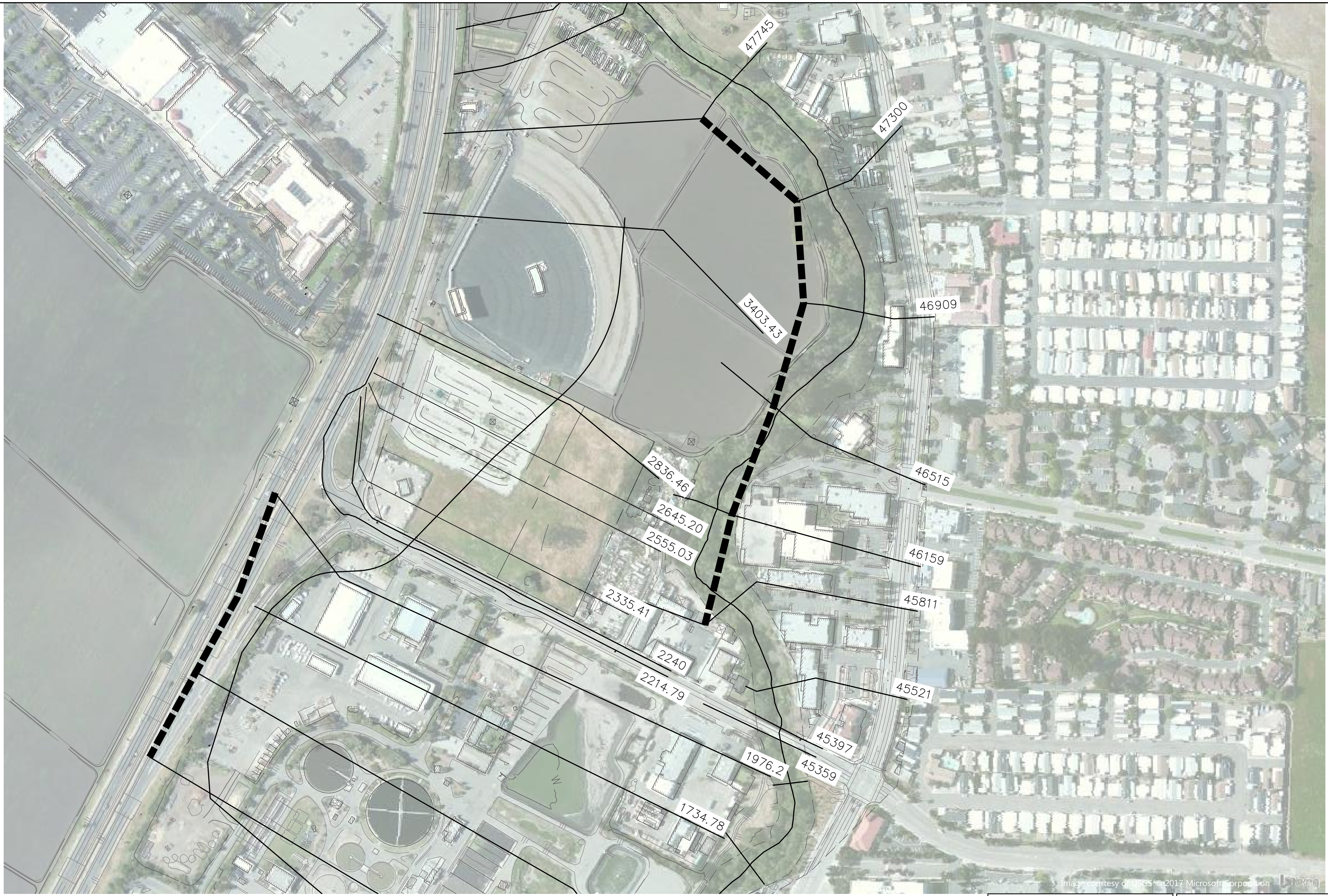


Image courtesy of USGS © 2017 Microsoft Corporation

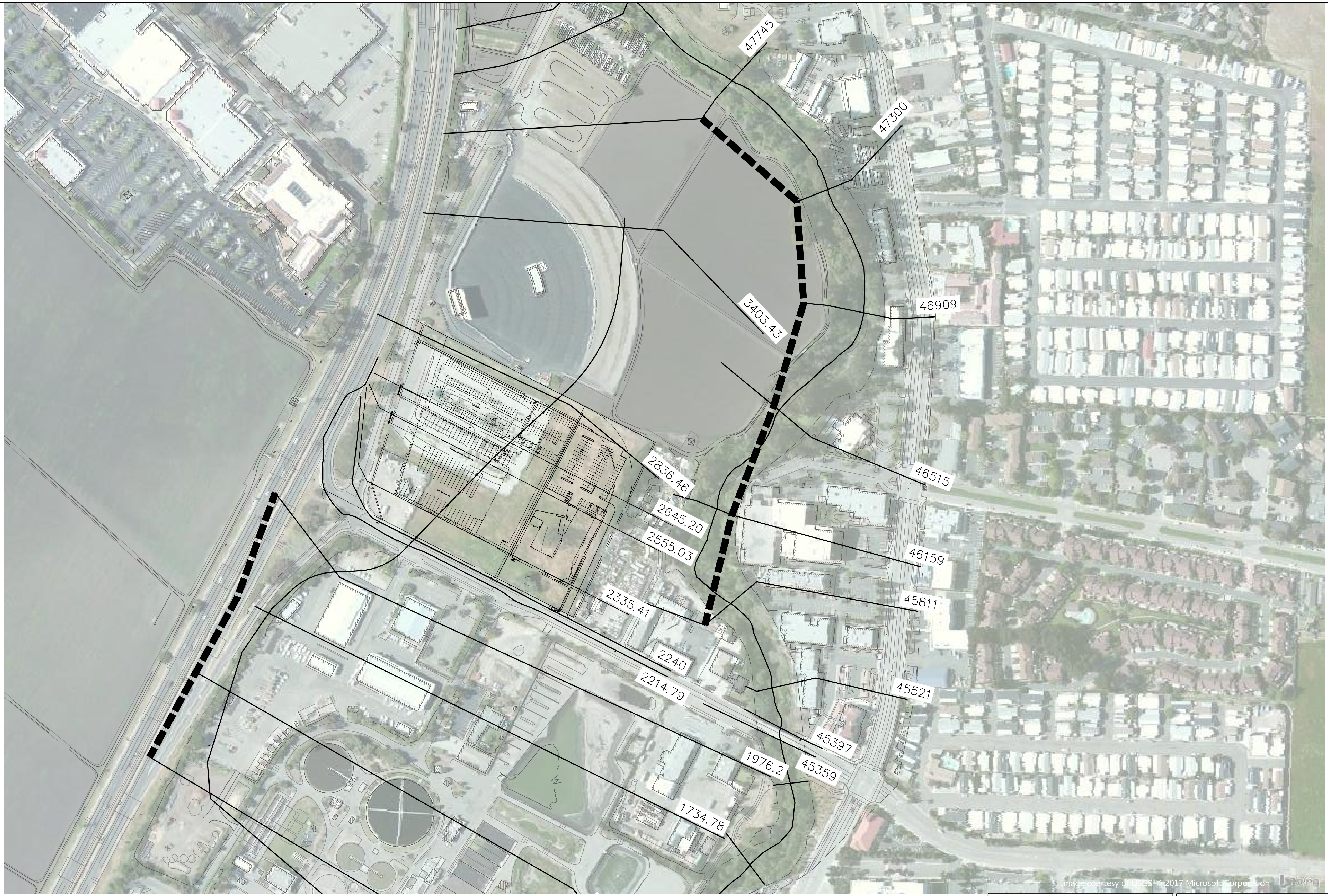
FIGURE 1

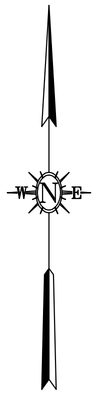
Cannon

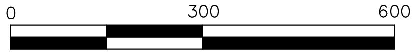
1050 Southwood Drive
San Luis Obispo, CA 93401
P 805.544.7407 F 805.544.3863

RTA MAINTENANCE FACILITY
HEC–RAS CROSS–SECTIONS
PRE–PROJECT CONDITIONS
SAN LUIS OBISPO, CA

DRAWN BY STS	DATE 4/6/17	CA JOB NO. 150823
CHECKED BY	SCALE 1" = 300'	SHEET 1 OF 1







1 INCH = 300 FEET

FIGURE 2

Cannon

1050 Southwood Drive
San Luis Obispo, CA 93401
P 805.544.7407 F 805.544.3863

RTA MAINTENANCE FACILITY
HEC–RAS CROSS–SECTIONS
POST–PROJECT CONDITIONS
SAN LUIS OBISPO, CA

DRAWN BY STS	DATE 4/6/17	CA JOB NO. 150823
CHECKED BY	SCALE 1" = 300'	SHEET 1 OF 1

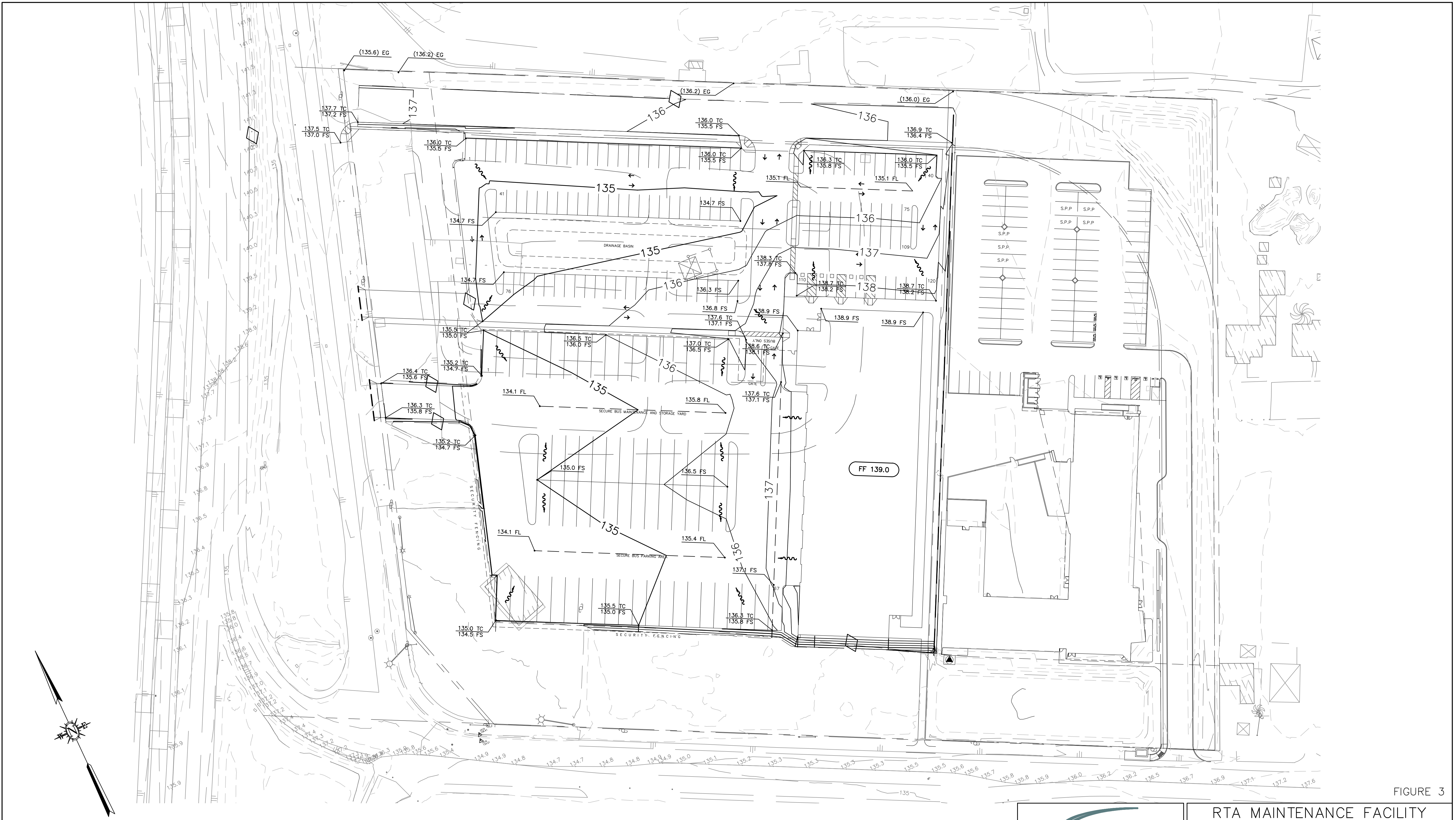


FIGURE 3

0 80 160

1 INCH = 80 FEET

Cannon

1050 Southwood Drive
San Luis Obispo, CA 93401
P 805.544.7407 F 805.544.3863

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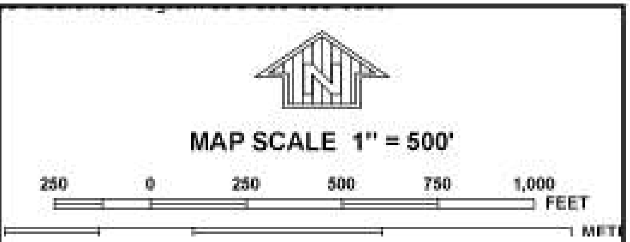
RTA MAINTENANCE FACILITY
PRELIMINARY GRADING PLAN

SAN LUIS OBISPO, CA

DRAWN BY STS	DATE 4/6/17	CA JOB NO. 150823
CHECKED BY	SCALE 1" = 80'	SHEET 1 OF 1



MAP SCALE 1" = 500'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1068G

FIRM
FLOOD INSURANCE RATE MAP
SAN LUIS OBISPO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1068 OF 2050

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN LUIS OBISPO COUNTY	060304	1068	G
SAN LUIS OBISPO, CITY OF	060310	1068	G

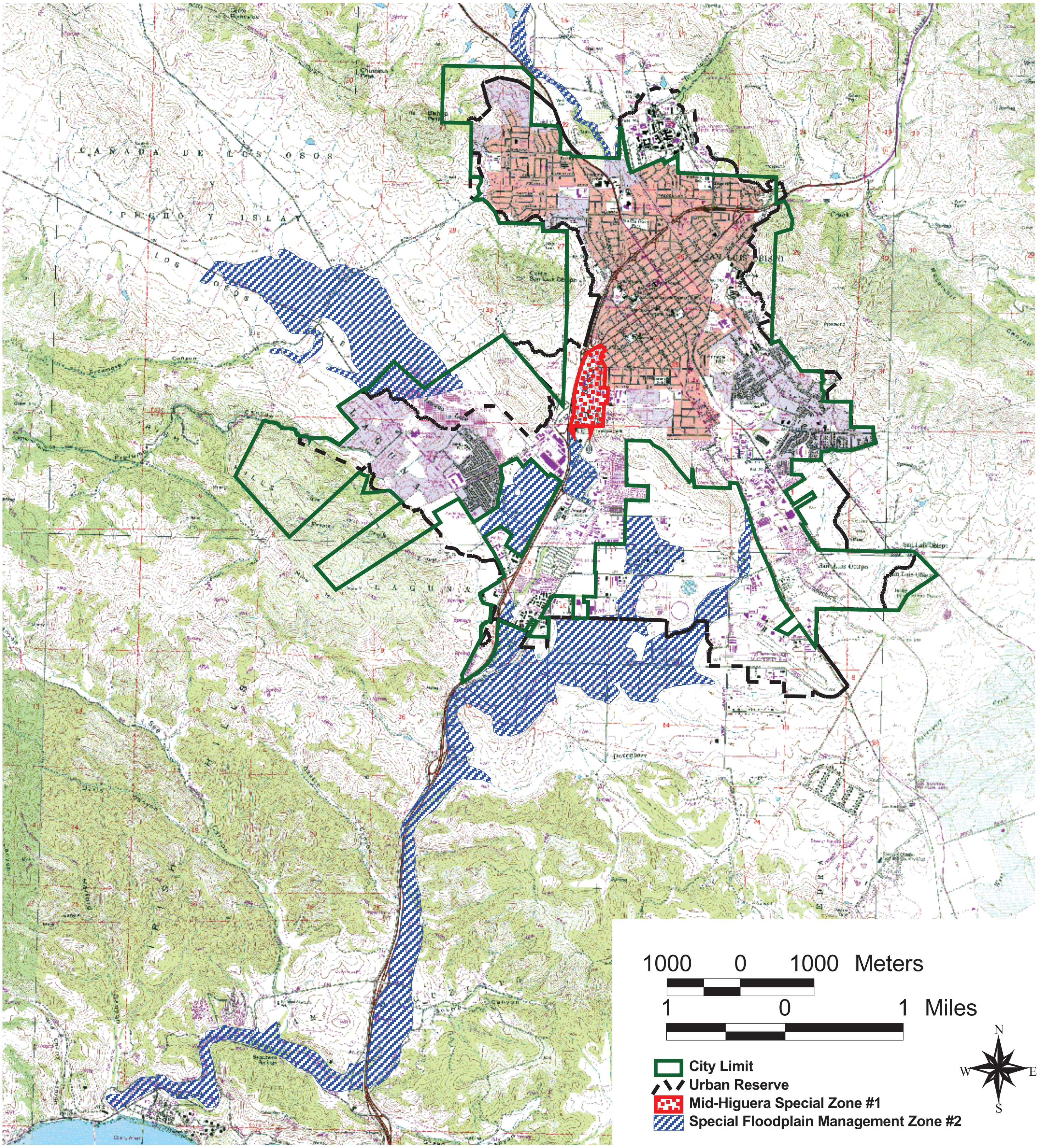
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06079C1068G

MAP REVISED
NOVEMBER 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



city of
san luis obispo

PUBLIC WORKS DEPARTMENT

Special Floodplain Management Zones

Drainage Design Manual
City of San Luis Obispo

QUESTA ENGINEERING CORPORATION

Figure

DDM
3-1

FILE REFERENCE: c:\arcview projects\98202 slo phase ii\98202_floodplain_management.apr
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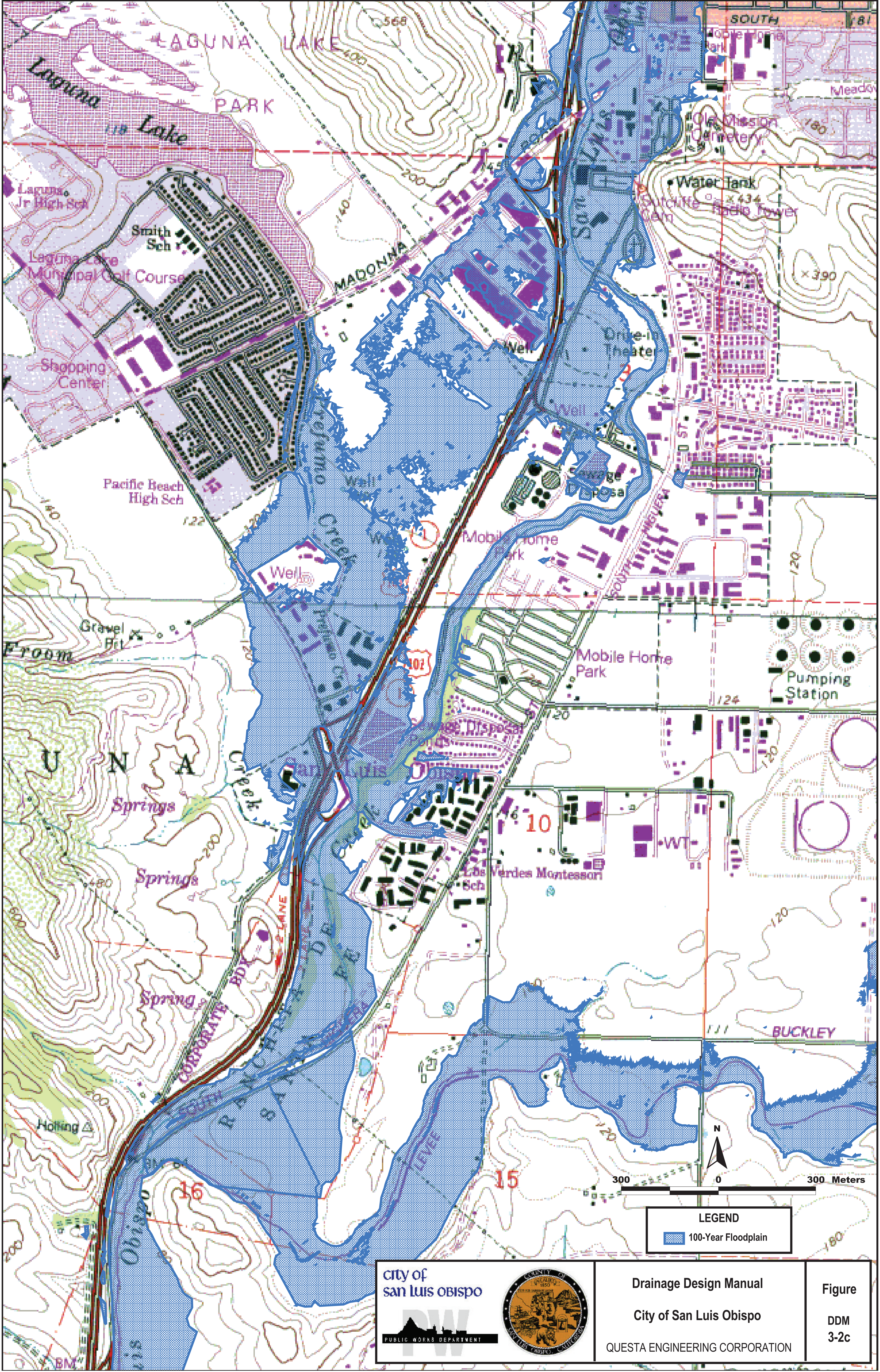


City of San Luis Obispo

PW PUBLIC WORKS DEPARTMENT

Drainage Design Manual

City of San Luis Obispo

QUESTA ENGINEERING CORPORATION

Figure

DDM 3-2c

HEC-RAS Output for Pre-Project Conditions

Plan: RTA_Existing   SLO Creek   SLO Overflow RS: 3403.43   Profile: 100-YR

E.G. Elev (ft)	140.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	140.40	Reach Len. (ft)	566.97	566.97	566.97
Crit W.S. (ft)	140.40	Flow Area (sq ft)	62.83	918.89	
E.G. Slope (ft/ft)	0.016735	Area (sq ft)	62.83	918.89	
Q Total (cfs)	5590.00	Flow (cfs)	192.07	5397.93	
Top Width (ft)	980.96	Top Width (ft)	151.31	829.66	
Vel Total (ft/s)	5.69	Avg. Vel. (ft/s)	3.06	5.87	
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	0.42	1.11	
Conv. Total (cfs)	43211.8	Conv. (cfs)	1484.7	41727.1	
Length Wtd. (ft)	566.97	Wetted Per. (ft)	151.31	830.66	
Min Ch El (ft)	138.29	Shear (lb/sq ft)	0.43	1.16	
Alpha	1.04	Stream Power (lb/ft s)	1.33	6.79	
Frctn Loss (ft)	1.76	Cum Volume (acre-ft)	3.53	94.51	11.99
C & E Loss (ft)	0.12	Cum SA (acres)	4.14	42.39	5.95

Plan: RTA_Existing   SLO Creek   SLO Overflow RS: 2836.46   Profile: 100-YR

E.G. Elev (ft)	138.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	138.86	Reach Len. (ft)	591.67	591.67	591.67
Crit W.S. (ft)	137.39	Flow Area (sq ft)	0.10	2086.48	
E.G. Slope (ft/ft)	0.001262	Area (sq ft)	0.10	2086.48	
Q Total (cfs)	5590.00	Flow (cfs)	0.02	5589.98	
Top Width (ft)	882.23	Top Width (ft)	2.18	880.05	
Vel Total (ft/s)	2.68	Avg. Vel. (ft/s)	0.19	2.68	
Max Chl Dpth (ft)	3.75	Hydr. Depth (ft)	0.04	2.37	
Conv. Total (cfs)	157339.6	Conv. (cfs)	0.5	157339.1	
Length Wtd. (ft)	591.67	Wetted Per. (ft)	2.18	881.40	
Min Ch El (ft)	135.11	Shear (lb/sq ft)	0.00	0.19	
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.50	
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	3.12	74.95	11.99
C & E Loss (ft)	0.01	Cum SA (acres)	3.14	31.26	5.95

Plan: RTA_Existing   SLO Creek   SLO Overflow RS: 2645.2   Profile: 100-YR

E.G. Elev (ft)	138.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.031	0.035	
W.S. Elev (ft)	137.83	Reach Len. (ft)	90.17	90.17	90.17
Crit W.S. (ft)		Flow Area (sq ft)	132.97	1517.28	
E.G. Slope (ft/ft)	0.002043	Area (sq ft)	132.97	1517.28	
Q Total (cfs)	5590.00	Flow (cfs)	211.72	5378.28	
Top Width (ft)	850.05	Top Width (ft)	248.18	601.87	
Vel Total (ft/s)	3.39	Avg. Vel. (ft/s)	1.59	3.54	
Max Chl Dpth (ft)	3.67	Hydr. Depth (ft)	0.54	2.52	
Conv. Total (cfs)	123674.3	Conv. (cfs)	4684.1	118990.2	
Length Wtd. (ft)	90.17	Wetted Per. (ft)	248.92	604.35	
Min Ch El (ft)	134.16	Shear (lb/sq ft)	0.07	0.32	
Alpha	1.06	Stream Power (lb/ft s)	0.11	1.14	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	2.22	50.47	11.99
C & E Loss (ft)	0.01	Cum SA (acres)	1.44	21.20	5.95

Plan: RTA_Existing SLO Creek SLO Overflow RS: 2555.03 Profile: 100-YR

E.G. Elev (ft)	137.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	137.69	Reach Len. (ft)	219.62	219.62	219.62
Crit W.S. (ft)		Flow Area (sq ft)	23.47	1691.95	
E.G. Slope (ft/ft)	0.001575	Area (sq ft)	23.47	1691.95	
Q Total (cfs)	5590.00	Flow (cfs)	33.95	5556.05	
Top Width (ft)	657.32	Top Width (ft)	37.72	619.60	
Vel Total (ft/s)	3.26	Avg. Vel. (ft/s)	1.45	3.28	
Max Chl Dpth (ft)	4.35	Hydr. Depth (ft)	0.62	2.73	
Conv. Total (cfs)	140839.9	Conv. (cfs)	855.3	139984.6	
Length Wtd. (ft)	219.62	Wetted Per. (ft)	38.11	621.92	
Min Ch El (ft)	133.34	Shear (lb/sq ft)	0.06	0.27	
Alpha	1.01	Stream Power (lb/ft s)	0.09	0.88	
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	2.06	47.15	11.99
C & E Loss (ft)	0.03	Cum SA (acres)	1.15	19.94	5.95

Plan: RTA_Existing SLO Creek SLO Overflow RS: 2335.41 Profile: 100-YR

E.G. Elev (ft)	137.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.032	0.035	
W.S. Elev (ft)	137.59	Reach Len. (ft)	94.85	94.85	94.85
Crit W.S. (ft)		Flow Area (sq ft)	127.29	2661.34	
E.G. Slope (ft/ft)	0.000448	Area (sq ft)	127.29	2661.34	
Q Total (cfs)	5590.00	Flow (cfs)	105.57	5484.43	
Top Width (ft)	946.50	Top Width (ft)	183.15	763.35	
Vel Total (ft/s)	2.00	Avg. Vel. (ft/s)	0.83	2.06	
Max Chl Dpth (ft)	4.87	Hydr. Depth (ft)	0.70	3.49	
Conv. Total (cfs)	264071.9	Conv. (cfs)	4987.1	259084.9	
Length Wtd. (ft)	94.85	Wetted Per. (ft)	183.99	766.44	
Min Ch El (ft)	132.72	Shear (lb/sq ft)	0.02	0.10	
Alpha	1.04	Stream Power (lb/ft s)	0.02	0.20	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	1.68	36.18	11.99
C & E Loss (ft)	0.01	Cum SA (acres)	0.59	16.45	5.95

Plan: RTA_Existing SLO Creek SLO Overflow RS: 2240 Profile: 100-YR

E.G. Elev (ft)	137.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.035	
W.S. Elev (ft)	137.57	Reach Len. (ft)	30.00	30.00	30.00
Crit W.S. (ft)		Flow Area (sq ft)		3502.83	
E.G. Slope (ft/ft)	0.000347	Area (sq ft)		3502.83	
Q Total (cfs)	5590.00	Flow (cfs)		5590.00	
Top Width (ft)	1221.75	Top Width (ft)		1221.75	
Vel Total (ft/s)	1.60	Avg. Vel. (ft/s)		1.60	
Max Chl Dpth (ft)	4.28	Hydr. Depth (ft)		2.87	
Conv. Total (cfs)	300098.7	Conv. (cfs)		300098.7	
Length Wtd. (ft)	30.00	Wetted Per. (ft)		1221.92	
Min Ch El (ft)	133.29	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.10	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1.54	29.47	11.99
C & E Loss (ft)	0.01	Cum SA (acres)	0.39	14.29	5.95

Plan: RTA_Existing SLO Creek SLO Overflow RS: 2214.79 Profile: 100-YR

E.G. Elev (ft)	137.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.035	0.035
W.S. Elev (ft)	137.41	Reach Len. (ft)	143.00	240.00	185.00
Crit W.S. (ft)		Flow Area (sq ft)		1499.02	252.99
E.G. Slope (ft/ft)	0.003228	Area (sq ft)		1499.02	252.99
Q Total (cfs)	5590.00	Flow (cfs)		5046.37	543.63
Top Width (ft)	1209.99	Top Width (ft)		909.14	300.85
Vel Total (ft/s)	3.19	Avg. Vel. (ft/s)		3.37	2.15
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		1.65	0.84
Conv. Total (cfs)	98387.7	Conv. (cfs)		88819.4	9568.3
Length Wtd. (ft)	225.83	Wetted Per. (ft)		909.18	300.89
Min Ch El (ft)	134.73	Shear (lb/sq ft)		0.33	0.17
Alpha	1.05	Stream Power (lb/ft s)		1.12	0.36
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	1.54	27.74	11.90
C & E Loss (ft)	0.02	Cum SA (acres)	0.39	13.55	5.84

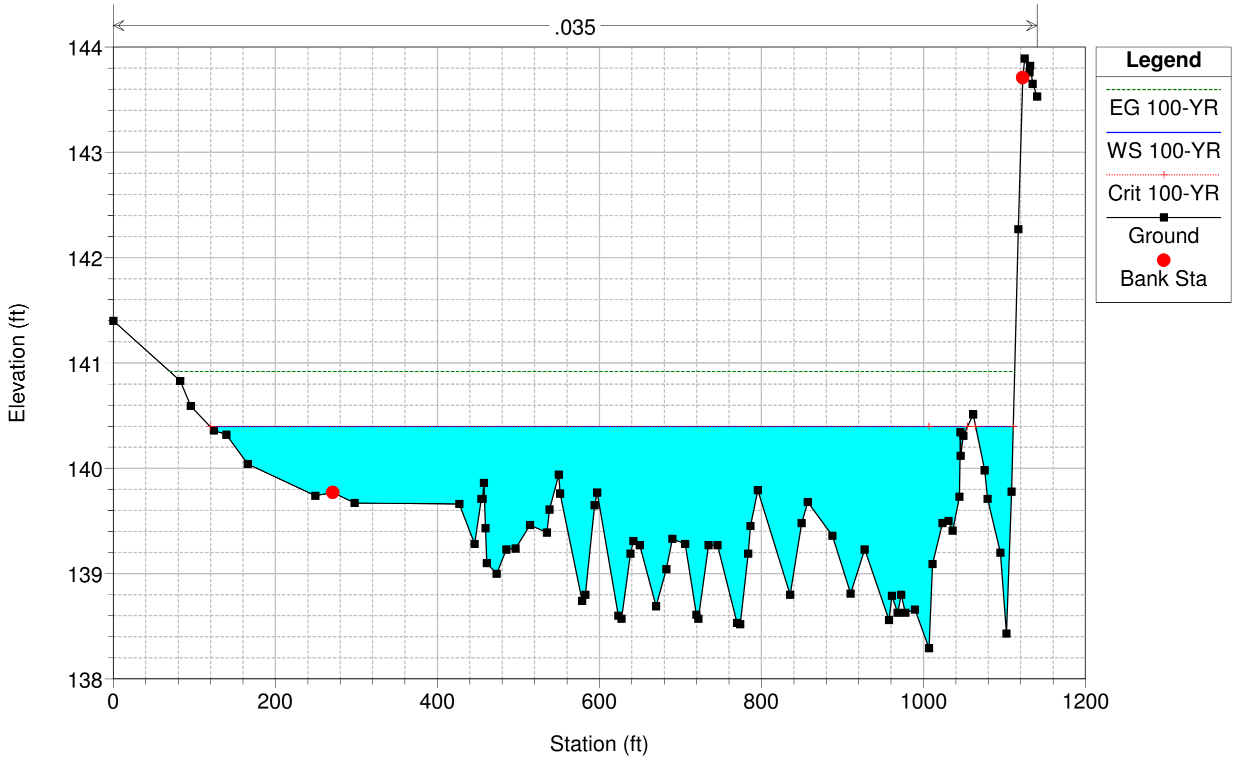
Plan: RTA_Existing SLO Creek SLO Overflow RS: 1976.2 Profile: 100-YR

E.G. Elev (ft)	137.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	0.035
W.S. Elev (ft)	136.95	Reach Len. (ft)	241.42	241.42	241.42
Crit W.S. (ft)		Flow Area (sq ft)		1300.93	801.12
E.G. Slope (ft/ft)	0.001605	Area (sq ft)	100.93	1300.93	801.12
Q Total (cfs)	5590.00	Flow (cfs)		3253.36	2336.64
Top Width (ft)	1190.98	Top Width (ft)	62.12	729.58	399.28
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)		2.50	2.92
Max Chl Dpth (ft)	4.79	Hydr. Depth (ft)		1.78	2.01
Conv. Total (cfs)	139511.1	Conv. (cfs)		81195.0	58316.1
Length Wtd. (ft)	241.42	Wetted Per. (ft)		729.85	402.50
Min Ch El (ft)	133.60	Shear (lb/sq ft)		0.18	0.20
Alpha	1.02	Stream Power (lb/ft s)		0.45	0.58
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	1.37	20.03	9.67
C & E Loss (ft)	0.04	Cum SA (acres)	0.29	9.04	4.35

ExCon_Model Plan: RTA EG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA EG with HSC FG

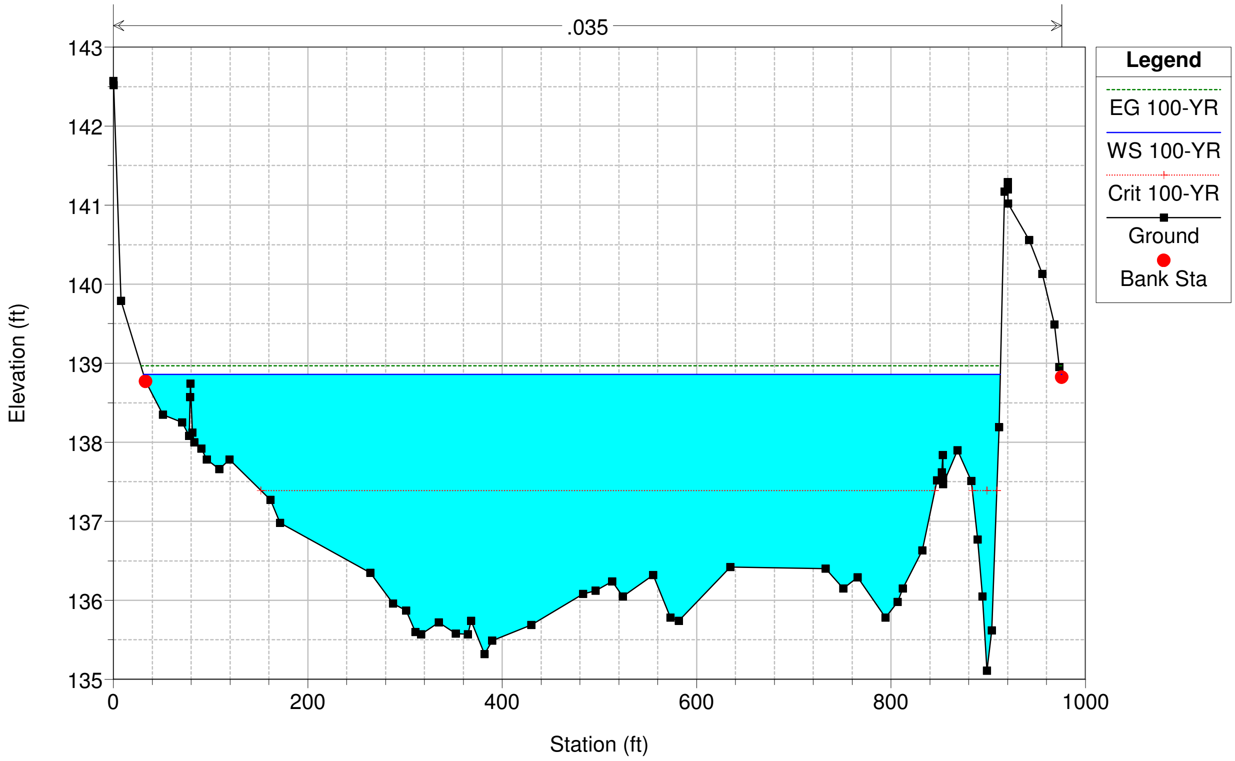
RS = 3403.43

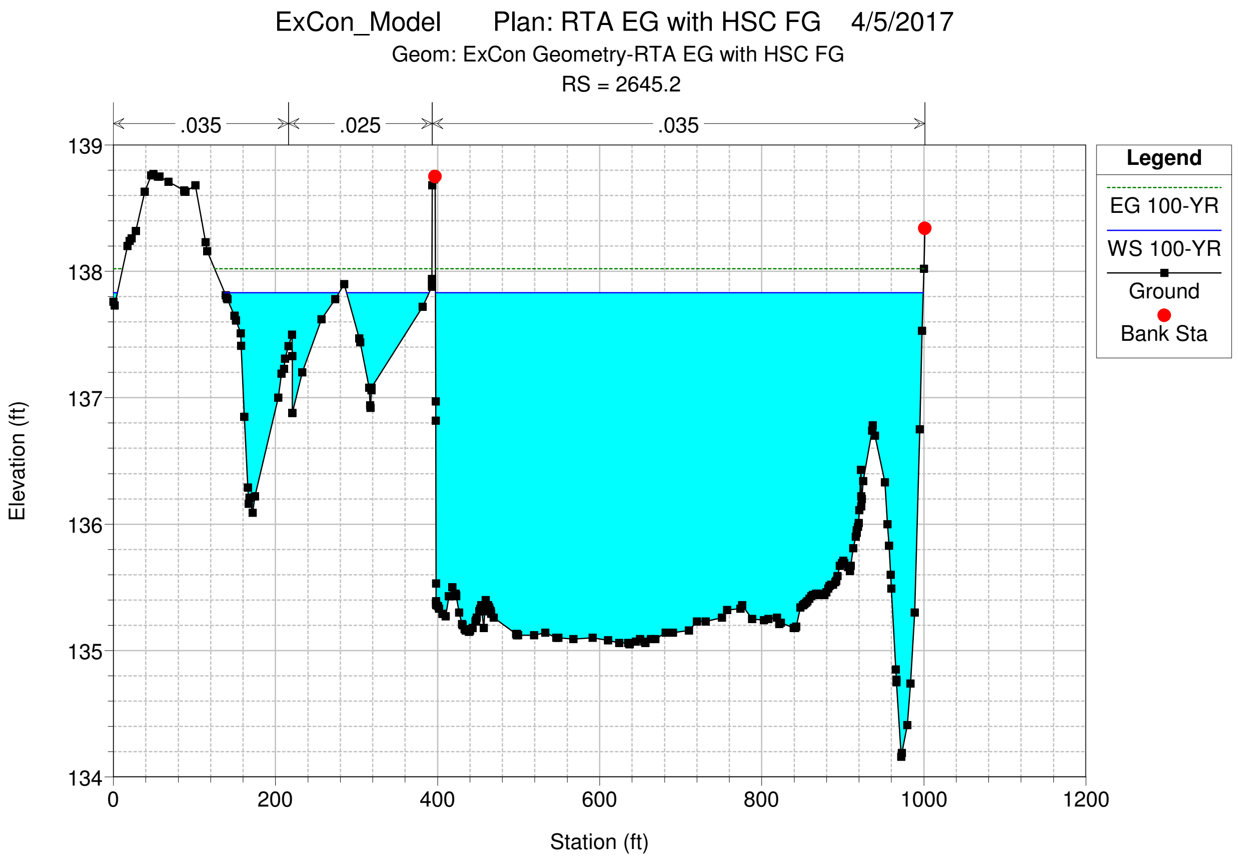


ExCon_Model Plan: RTA EG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA EG with HSC FG

RS = 2836.46

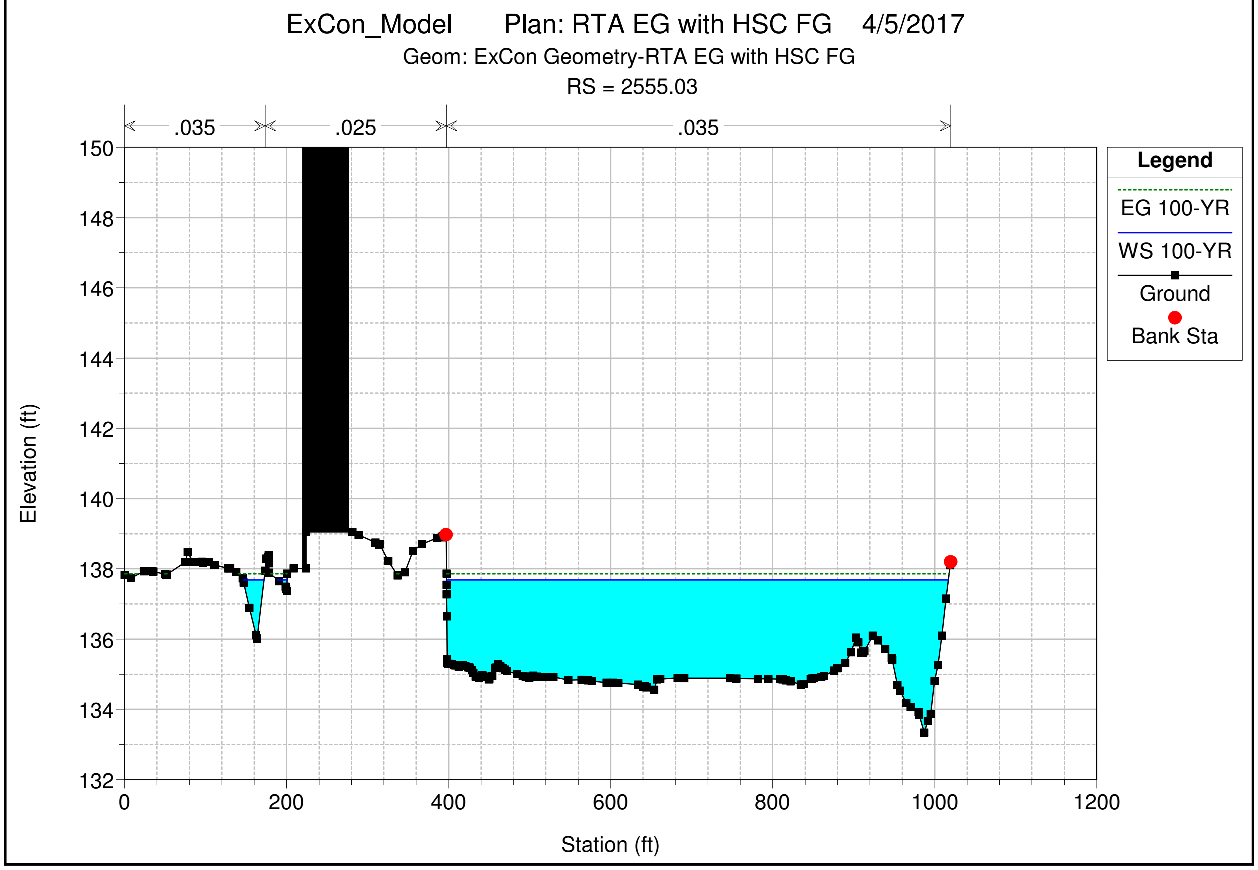




ExCon_Model Plan: RTA EG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA EG with HSC FG

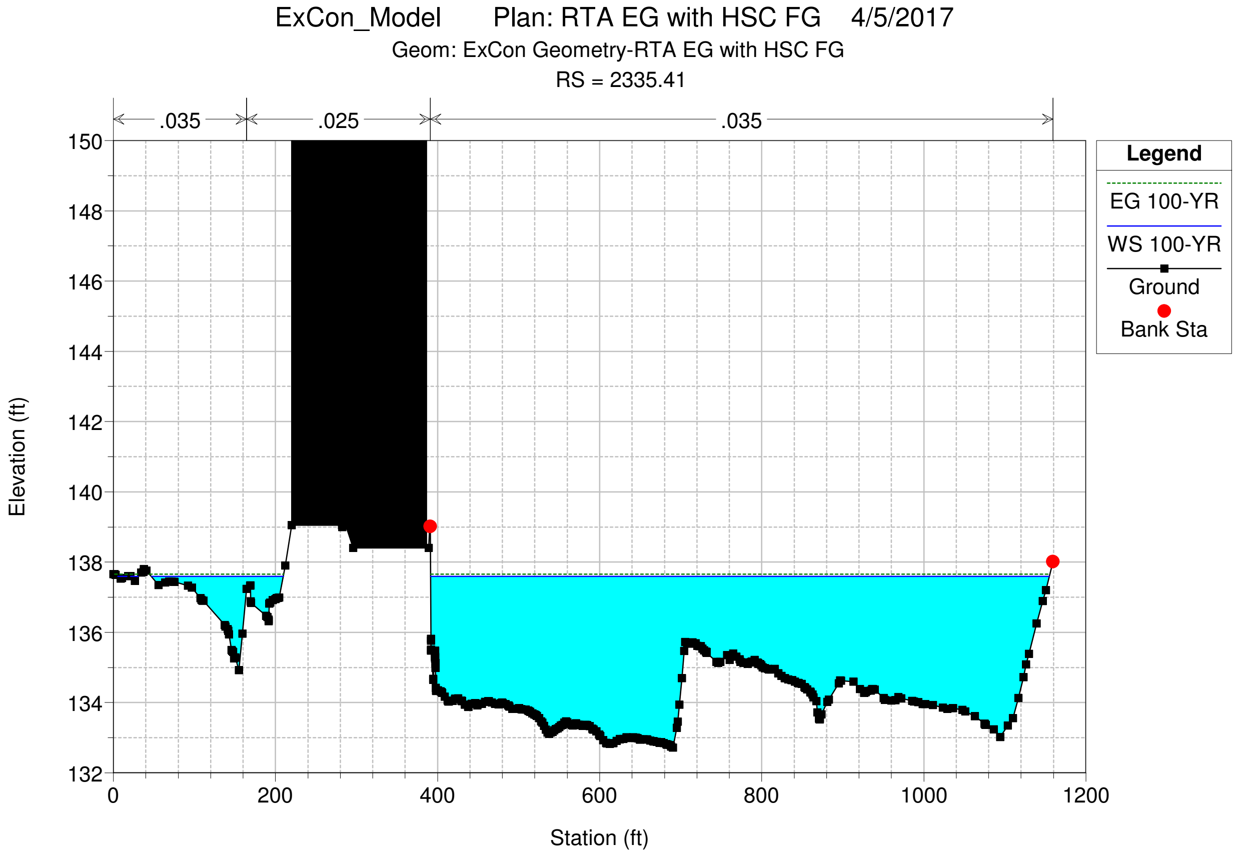
RS = 2645.2

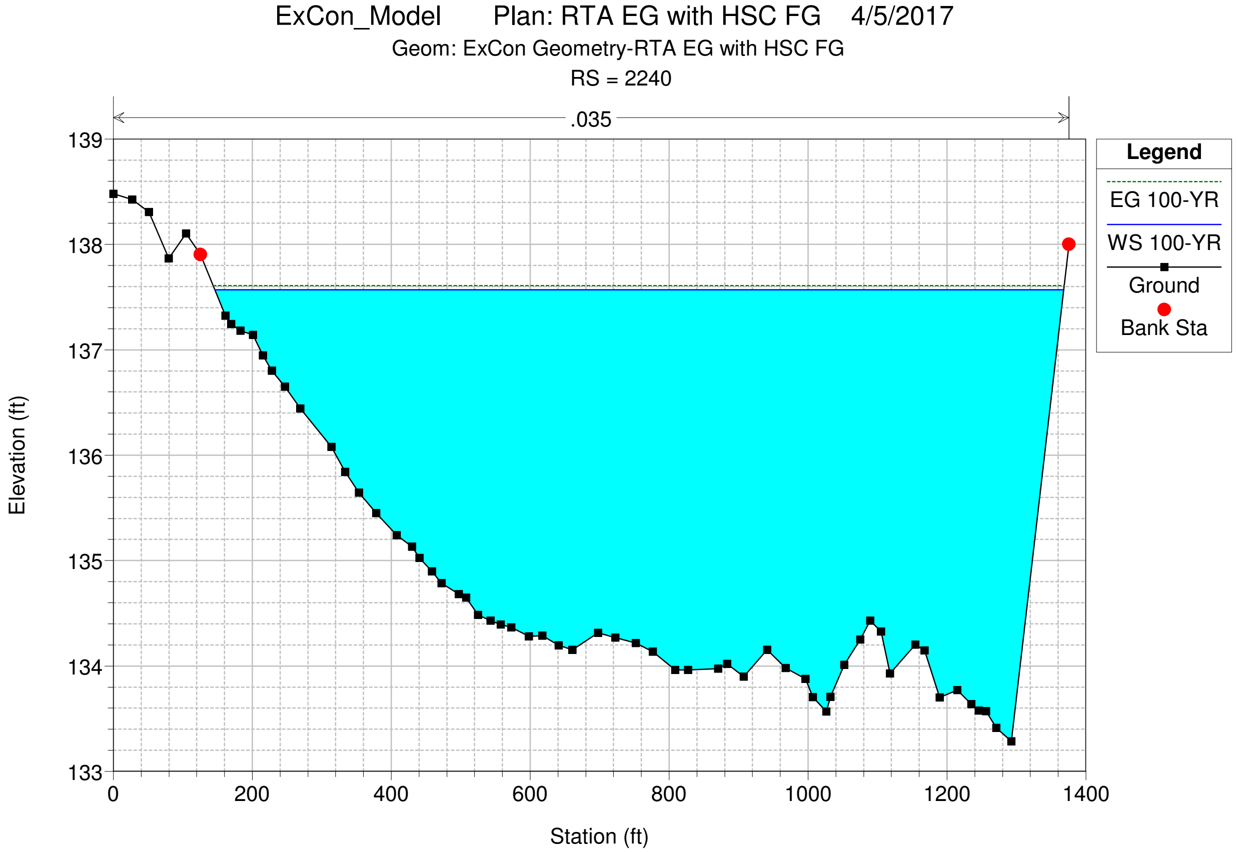


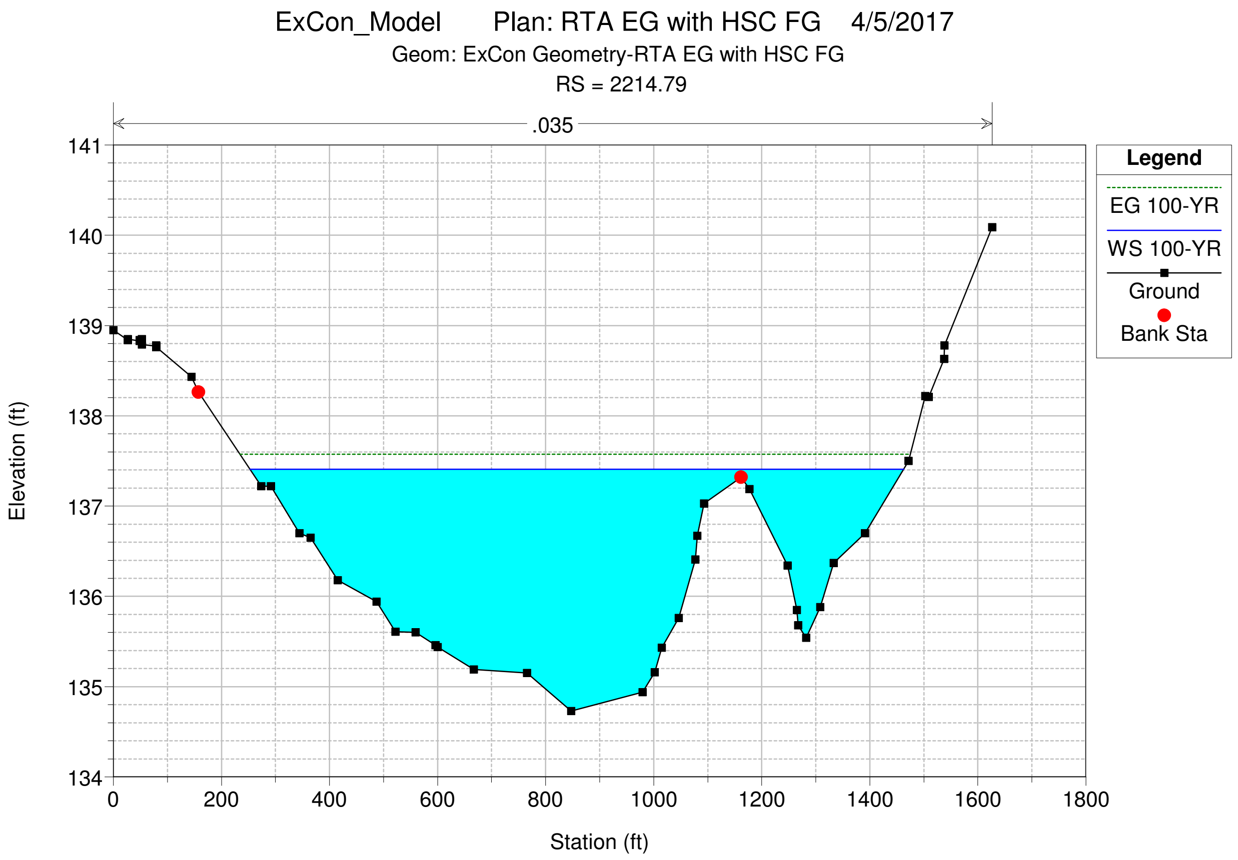
ExCon_Model Plan: RTA EG with HSC FG 4/5/2017

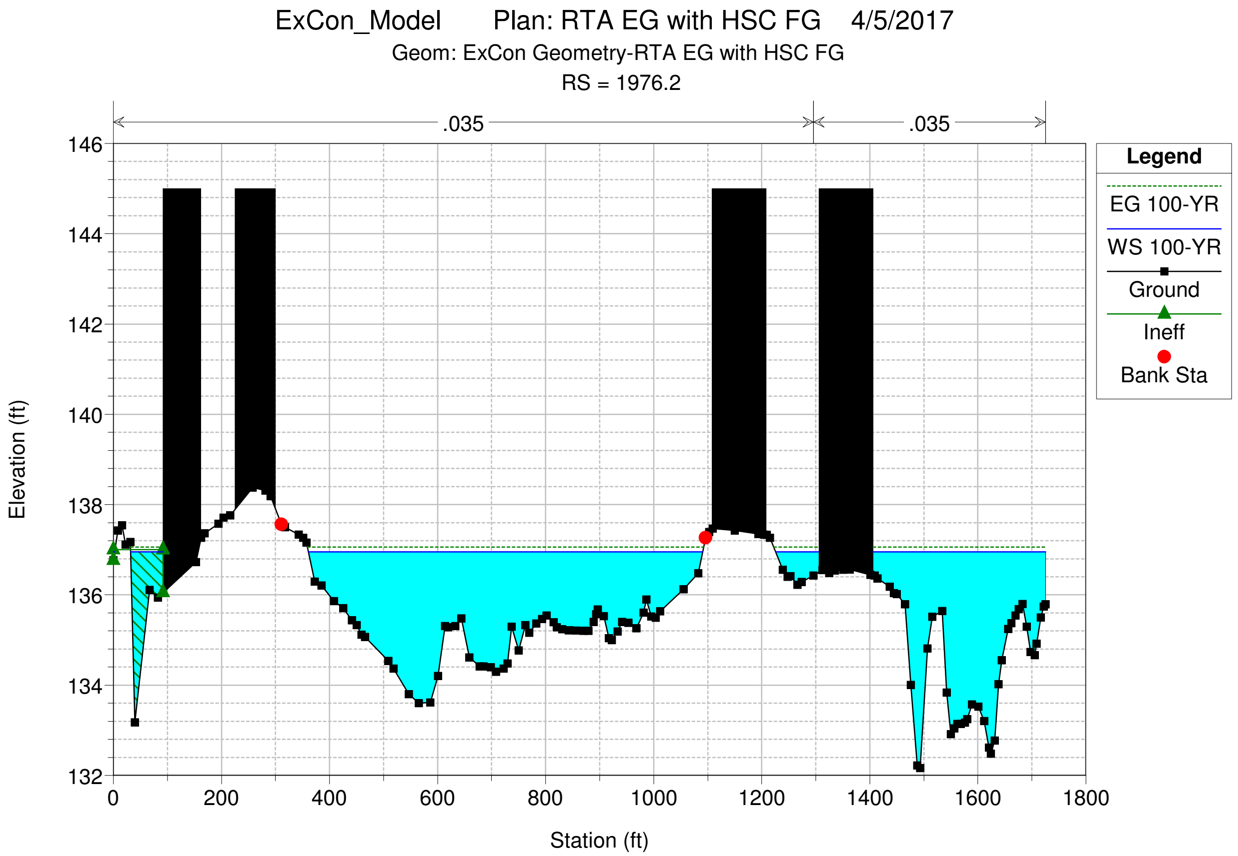
Geom: ExCon Geometry-RTA EG with HSC FG

RS = 2555.03


ExCon_Model Plan: RTA EG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA EG with HSC FG
RS = 2335.41
.035
.025
.035
Legend
EG 100-YR
WS 100-YR
Ground
Bank Sta
Elevation (ft)
150
148
146
144
142
140
138
136
134
132
0
200
400
600
800
1000
1200
Station (ft)


ExCon_Model Plan: RTA EG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA EG with HSC FG
RS = 2240
.035
Legend
EG 100-YR
WS 100-YR
Ground
Bank Sta
Elevation (ft)
139
138
137
136
135
134
133
0
200
400
600
800
1000
1200
1400
Station (ft)


ExCon_Model Plan: RTA EG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA EG with HSC FG
RS = 2214.79
.035
Legend
EG 100-YR
WS 100-YR
Ground
Bank Sta
Elevation (ft)
141
140
139
138
137
136
135
134
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)


ExCon_Model Plan: RTA EG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA EG with HSC FG
RS = 1976.2
.035
.035
Legend
EG 100-YR
WS 100-YR
Ground
Ineff
Bank Sta
Elevation (ft)
146
144
142
140
138
136
134
132
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)

HEC-RAS Output for Post-Project Conditions

Plan: RTA_Proposed   SLO Creek   SLO Overflow RS: 3403.43   Profile: 100-YR

E.G. Elev (ft)	140.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.035	0.035	
W.S. Elev (ft)	140.40	Reach Len. (ft)	566.97	566.97	566.97
Crit W.S. (ft)	140.40	Flow Area (sq ft)	62.83	918.89	
E.G. Slope (ft/ft)	0.016735	Area (sq ft)	62.83	918.89	
Q Total (cfs)	5590.00	Flow (cfs)	192.07	5397.93	
Top Width (ft)	980.96	Top Width (ft)	151.31	829.66	
Vel Total (ft/s)	5.69	Avg. Vel. (ft/s)	3.06	5.87	
Max Chl Dpth (ft)	2.11	Hydr. Depth (ft)	0.42	1.11	
Conv. Total (cfs)	43211.8	Conv. (cfs)	1484.7	41727.1	
Length Wtd. (ft)	566.97	Wetted Per. (ft)	151.31	830.66	
Min Ch El (ft)	138.29	Shear (lb/sq ft)	0.43	1.16	
Alpha	1.04	Stream Power (lb/ft s)	1.33	6.79	
Frctn Loss (ft)	1.50	Cum Volume (acre-ft)	6.51	67.43	11.99
C & E Loss (ft)	0.12	Cum SA (acres)	4.22	32.84	5.95

Plan: RTA_Proposed   SLO Creek   SLO Overflow RS: 2836.46   Profile: 100-YR

E.G. Elev (ft)	138.71	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.035	0.026	
W.S. Elev (ft)	138.57	Reach Len. (ft)	191.26	191.26	191.26
Crit W.S. (ft)	137.48	Flow Area (sq ft)	400.98	1522.10	
E.G. Slope (ft/ft)	0.001031	Area (sq ft)	400.98	1522.10	
Q Total (cfs)	5590.00	Flow (cfs)	1069.14	4520.86	
Top Width (ft)	871.00	Top Width (ft)	144.90	726.10	
Vel Total (ft/s)	2.91	Avg. Vel. (ft/s)	2.67	2.97	
Max Chl Dpth (ft)	7.07	Hydr. Depth (ft)	2.77	2.10	
Conv. Total (cfs)	174096.0	Conv. (cfs)	33297.5	140798.5	
Length Wtd. (ft)	191.26	Wetted Per. (ft)	146.58	727.56	
Min Ch El (ft)	135.11	Shear (lb/sq ft)	0.18	0.13	
Alpha	1.01	Stream Power (lb/ft s)	0.47	0.40	
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	3.49	51.55	11.99
C & E Loss (ft)	0.04	Cum SA (acres)	2.29	22.72	5.95

Plan: RTA_Proposed   SLO Creek   SLO Overflow RS: 2645.2   Profile: 100-YR

E.G. Elev (ft)	138.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.031	0.029	
W.S. Elev (ft)	137.79	Reach Len. (ft)	90.17	90.17	90.17
Crit W.S. (ft)		Flow Area (sq ft)	122.66	907.22	
E.G. Slope (ft/ft)	0.005130	Area (sq ft)	122.66	907.22	
Q Total (cfs)	5590.00	Flow (cfs)	304.26	5285.74	
Top Width (ft)	691.93	Top Width (ft)	235.13	456.80	
Vel Total (ft/s)	5.43	Avg. Vel. (ft/s)	2.48	5.83	
Max Chl Dpth (ft)	3.63	Hydr. Depth (ft)	0.52	1.99	
Conv. Total (cfs)	78044.0	Conv. (cfs)	4247.9	73796.1	
Length Wtd. (ft)	90.17	Wetted Per. (ft)	235.82	457.71	
Min Ch El (ft)	134.16	Shear (lb/sq ft)	0.17	0.63	
Alpha	1.10	Stream Power (lb/ft s)	0.41	3.70	
Frctn Loss (ft)	0.31	Cum Volume (acre-ft)	2.34	46.21	11.99
C & E Loss (ft)	0.04	Cum SA (acres)	1.46	20.12	5.95

Plan: RTA_Proposed SLO Creek SLO Overflow RS: 2555.03 Profile: 100-YR

E.G. Elev (ft)	137.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.035	0.027	
W.S. Elev (ft)	137.57	Reach Len. (ft)	219.62	219.62	219.62
Crit W.S. (ft)		Flow Area (sq ft)	19.62	1133.35	
E.G. Slope (ft/ft)	0.002470	Area (sq ft)	19.62	1133.35	
Q Total (cfs)	5590.00	Flow (cfs)	34.63	5555.37	
Top Width (ft)	513.47	Top Width (ft)	30.17	483.30	
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	1.77	4.90	
Max Chl Dpth (ft)	4.23	Hydr. Depth (ft)	0.65	2.35	
Conv. Total (cfs)	112484.5	Conv. (cfs)	696.8	111787.7	
Length Wtd. (ft)	219.62	Wetted Per. (ft)	30.49	484.10	
Min Ch El (ft)	133.34	Shear (lb/sq ft)	0.10	0.36	
Alpha	1.02	Stream Power (lb/ft s)	0.18	1.77	
Frctn Loss (ft)	0.20	Cum Volume (acre-ft)	2.19	44.10	11.99
C & E Loss (ft)	0.08	Cum SA (acres)	1.18	19.15	5.95

Plan: RTA_Proposed SLO Creek SLO Overflow RS: 2335.41 Profile: 100-YR

E.G. Elev (ft)	137.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.029	0.029	
W.S. Elev (ft)	137.57	Reach Len. (ft)	94.85	94.85	94.85
Crit W.S. (ft)		Flow Area (sq ft)	167.56	2206.44	
E.G. Slope (ft/ft)	0.000454	Area (sq ft)	167.56	2206.44	
Q Total (cfs)	5590.00	Flow (cfs)	183.36	5406.64	
Top Width (ft)	839.13	Top Width (ft)	198.30	640.83	
Vel Total (ft/s)	2.35	Avg. Vel. (ft/s)	1.09	2.45	
Max Chl Dpth (ft)	4.85	Hydr. Depth (ft)	0.84	3.44	
Conv. Total (cfs)	262258.3	Conv. (cfs)	8602.6	253655.7	
Length Wtd. (ft)	94.85	Wetted Per. (ft)	202.57	643.56	
Min Ch El (ft)	132.72	Shear (lb/sq ft)	0.02	0.10	
Alpha	1.05	Stream Power (lb/ft s)	0.03	0.24	
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	1.72	35.68	11.99
C & E Loss (ft)	0.02	Cum SA (acres)	0.61	16.32	5.95

Plan: RTA_Proposed SLO Creek SLO Overflow RS: 2240 Profile: 100-YR

E.G. Elev (ft)	137.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.035	
W.S. Elev (ft)	137.57	Reach Len. (ft)	30.00	30.00	30.00
Crit W.S. (ft)		Flow Area (sq ft)		3502.83	
E.G. Slope (ft/ft)	0.000347	Area (sq ft)		3502.83	
Q Total (cfs)	5590.00	Flow (cfs)		5590.00	
Top Width (ft)	1221.75	Top Width (ft)		1221.75	
Vel Total (ft/s)	1.60	Avg. Vel. (ft/s)		1.60	
Max Chl Dpth (ft)	4.28	Hydr. Depth (ft)		2.87	
Conv. Total (cfs)	300098.7	Conv. (cfs)		300098.7	
Length Wtd. (ft)	30.00	Wetted Per. (ft)		1221.92	
Min Ch El (ft)	133.29	Shear (lb/sq ft)		0.06	
Alpha	1.00	Stream Power (lb/ft s)		0.10	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1.54	29.47	11.99
C & E Loss (ft)	0.01	Cum SA (acres)	0.39	14.29	5.95

Plan: RTA_Proposed SLO Creek SLO Overflow RS: 2214.79 Profile: 100-YR

E.G. Elev (ft)	137.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.035	0.035
W.S. Elev (ft)	137.41	Reach Len. (ft)	143.00	240.00	185.00
Crit W.S. (ft)		Flow Area (sq ft)		1499.02	252.99
E.G. Slope (ft/ft)	0.003228	Area (sq ft)		1499.02	252.99
Q Total (cfs)	5590.00	Flow (cfs)		5046.37	543.63
Top Width (ft)	1209.99	Top Width (ft)		909.14	300.85
Vel Total (ft/s)	3.19	Avg. Vel. (ft/s)		3.37	2.15
Max Chl Dpth (ft)	2.68	Hydr. Depth (ft)		1.65	0.84
Conv. Total (cfs)	98387.7	Conv. (cfs)		88819.4	9568.3
Length Wtd. (ft)	225.83	Wetted Per. (ft)		909.18	300.89
Min Ch El (ft)	134.73	Shear (lb/sq ft)		0.33	0.17
Alpha	1.05	Stream Power (lb/ft s)		1.12	0.36
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	1.54	27.74	11.90
C & E Loss (ft)	0.02	Cum SA (acres)	0.39	13.55	5.84

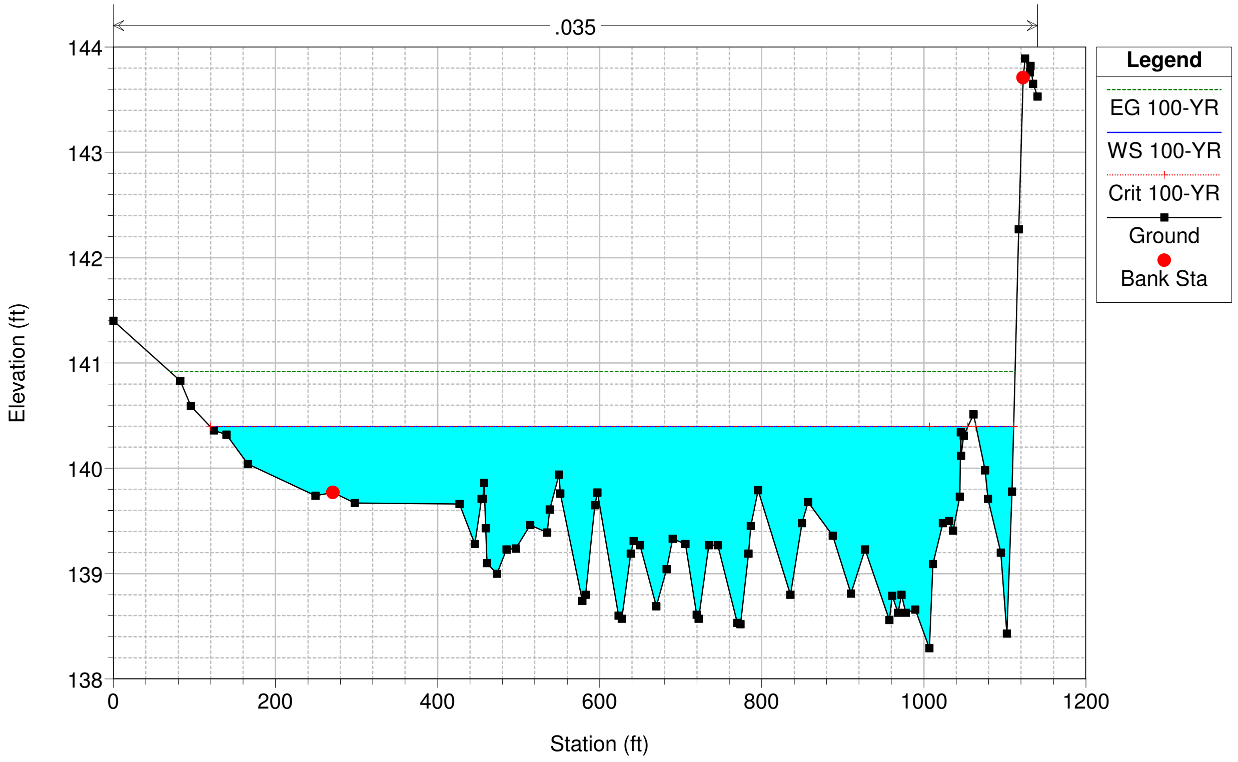
Plan: RTA_Proposed SLO Creek SLO Overflow RS: 1976.2 Profile: 100-YR

E.G. Elev (ft)	137.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.035	0.035
W.S. Elev (ft)	136.95	Reach Len. (ft)	241.42	241.42	241.42
Crit W.S. (ft)		Flow Area (sq ft)		1300.93	801.12
E.G. Slope (ft/ft)	0.001605	Area (sq ft)	100.93	1300.93	801.12
Q Total (cfs)	5590.00	Flow (cfs)		3253.36	2336.64
Top Width (ft)	1190.98	Top Width (ft)	62.12	729.58	399.28
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)		2.50	2.92
Max Chl Dpth (ft)	4.79	Hydr. Depth (ft)		1.78	2.01
Conv. Total (cfs)	139511.1	Conv. (cfs)		81195.0	58316.1
Length Wtd. (ft)	241.42	Wetted Per. (ft)		729.85	402.50
Min Ch El (ft)	133.60	Shear (lb/sq ft)		0.18	0.20
Alpha	1.02	Stream Power (lb/ft s)		0.45	0.58
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	1.37	20.03	9.67
C & E Loss (ft)	0.04	Cum SA (acres)	0.29	9.04	4.35

ExCon_Model Plan: RTA FG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA FG with HSC FG

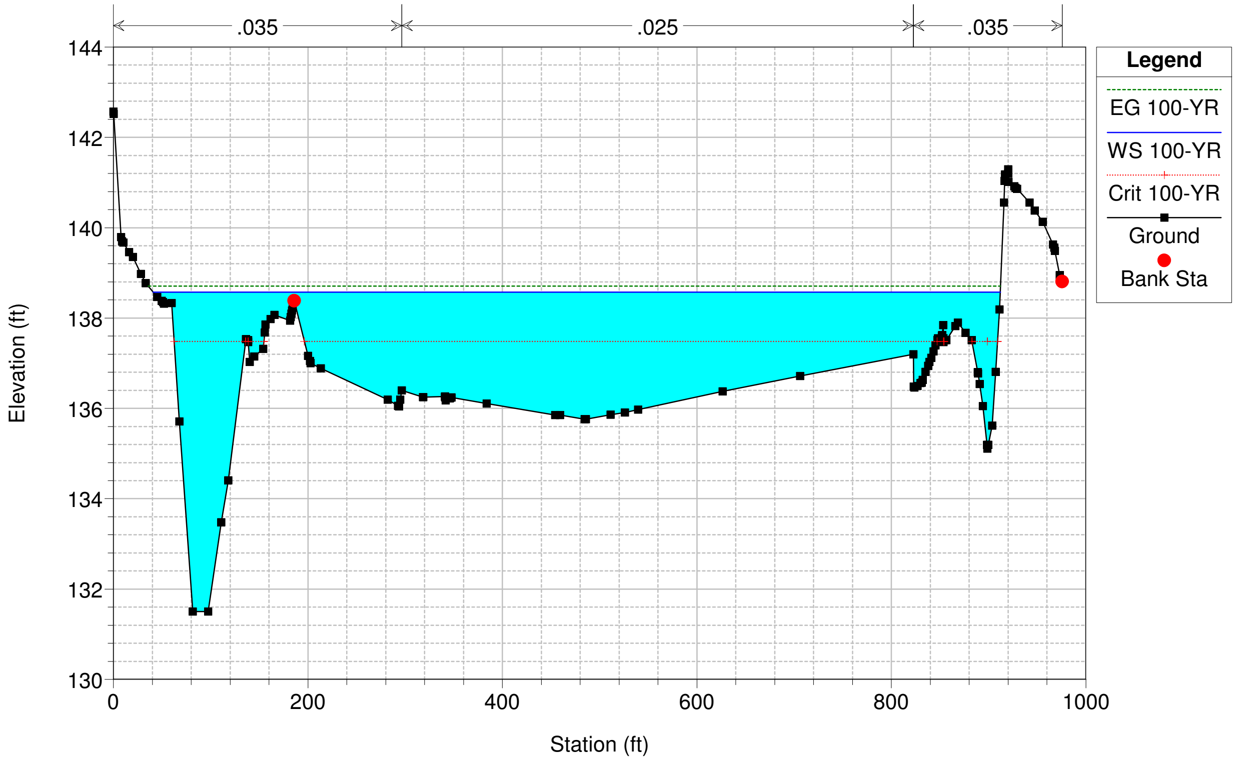
RS = 3403.43



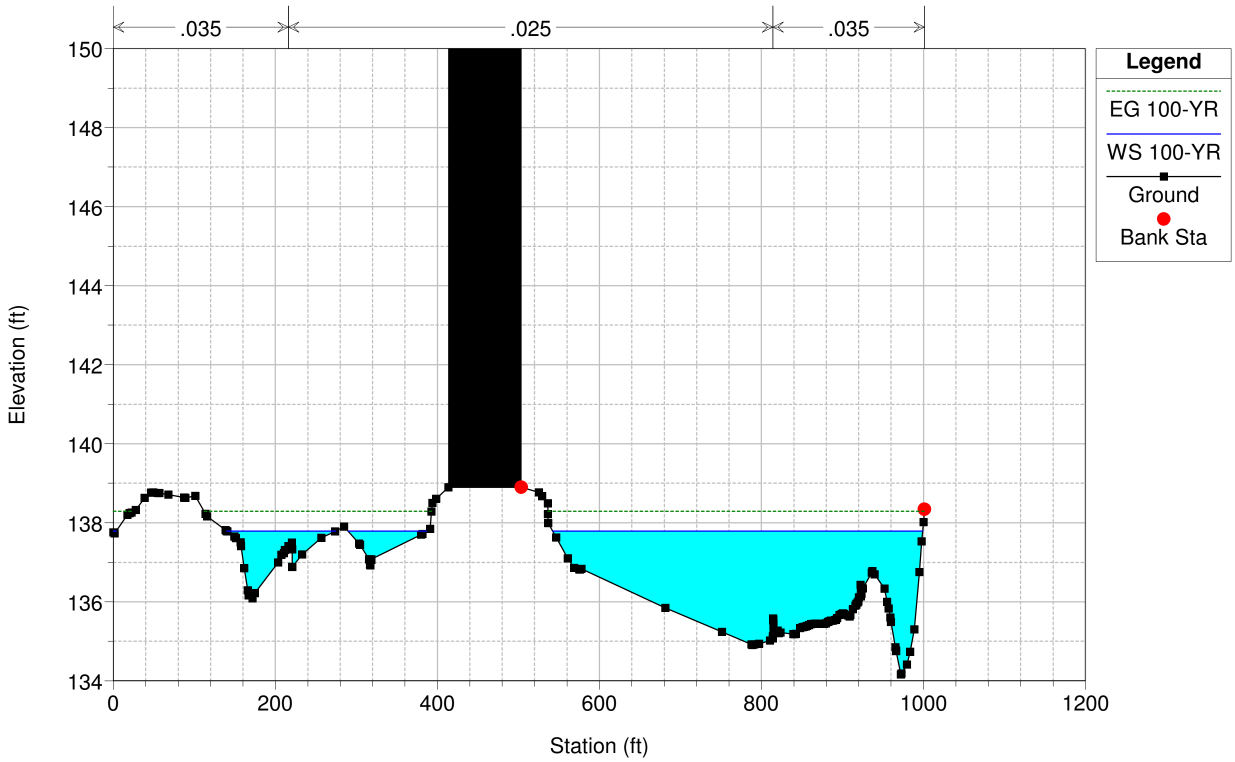
ExCon_Model Plan: RTA FG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA FG with HSC FG

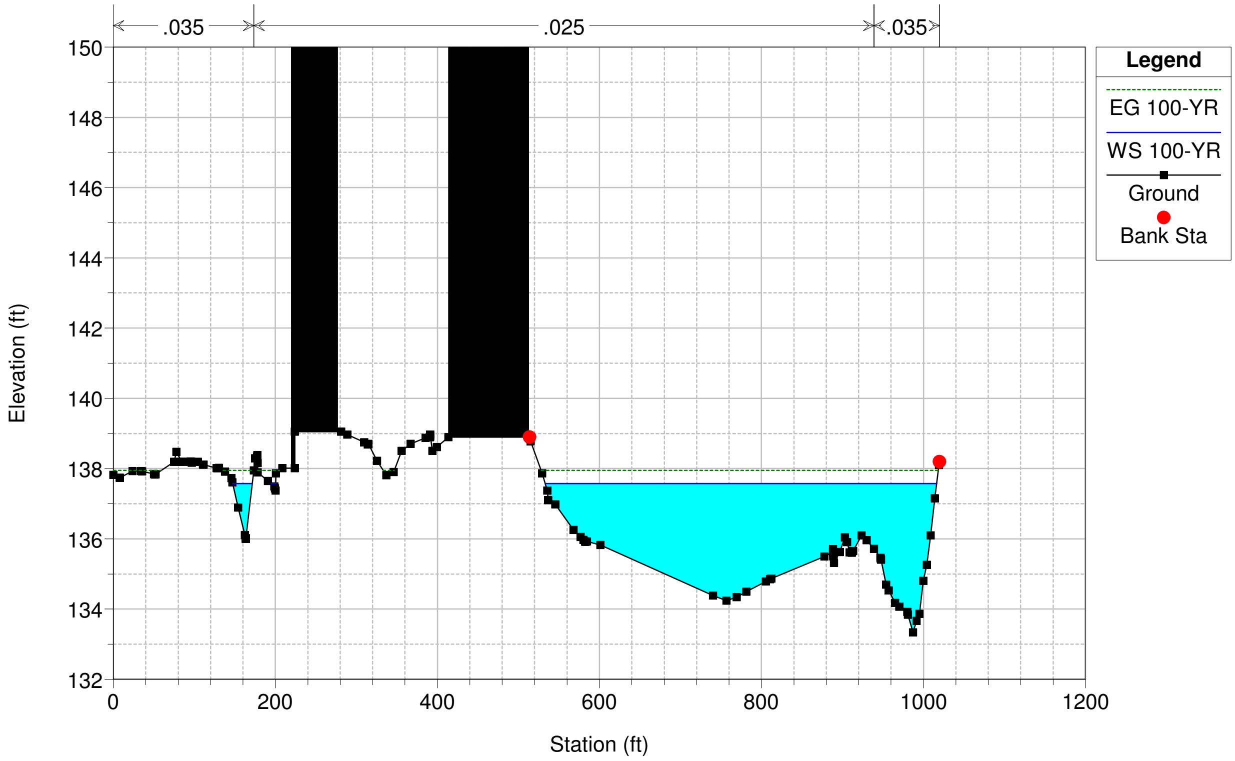
RS = 2836.46



ExCon_Model Plan: RTA FG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA FG with HSC FG
RS = 2645.2



ExCon_Model Plan: RTA FG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA FG with HSC FG
RS = 2555.03



ExCon_Model Plan: RTA FG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA FG with HSC FG

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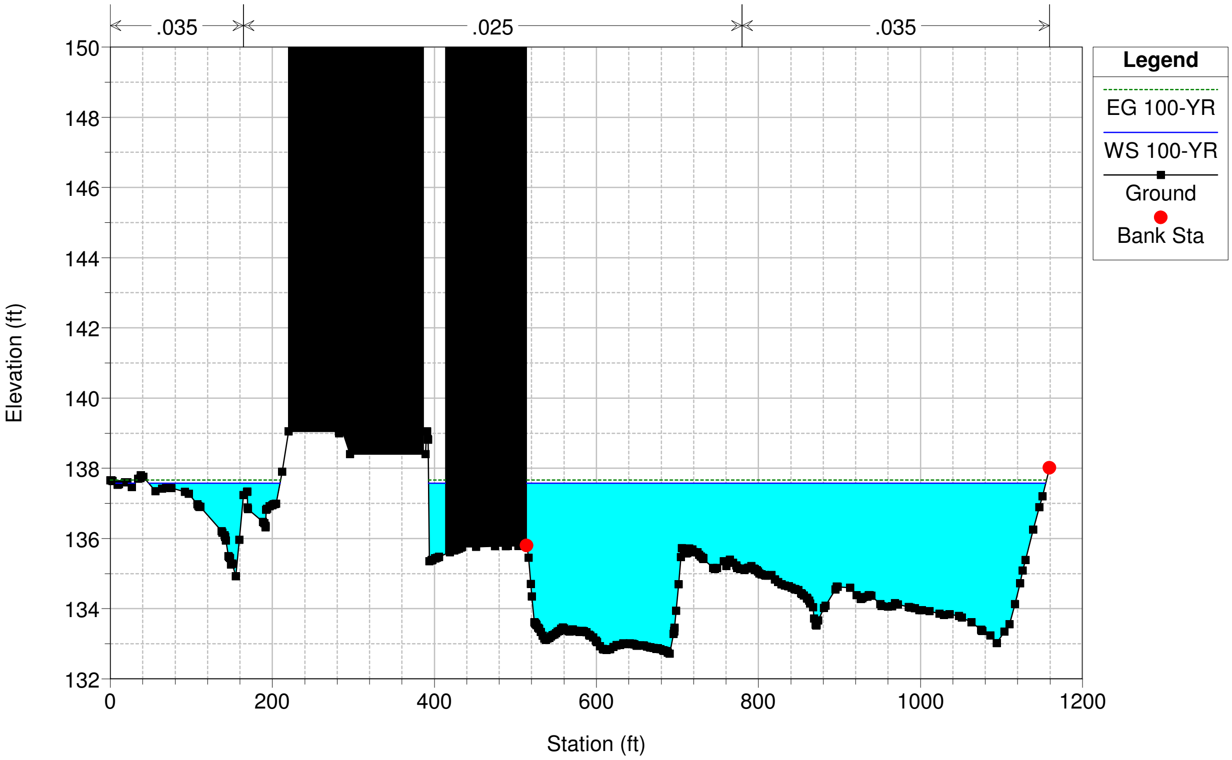
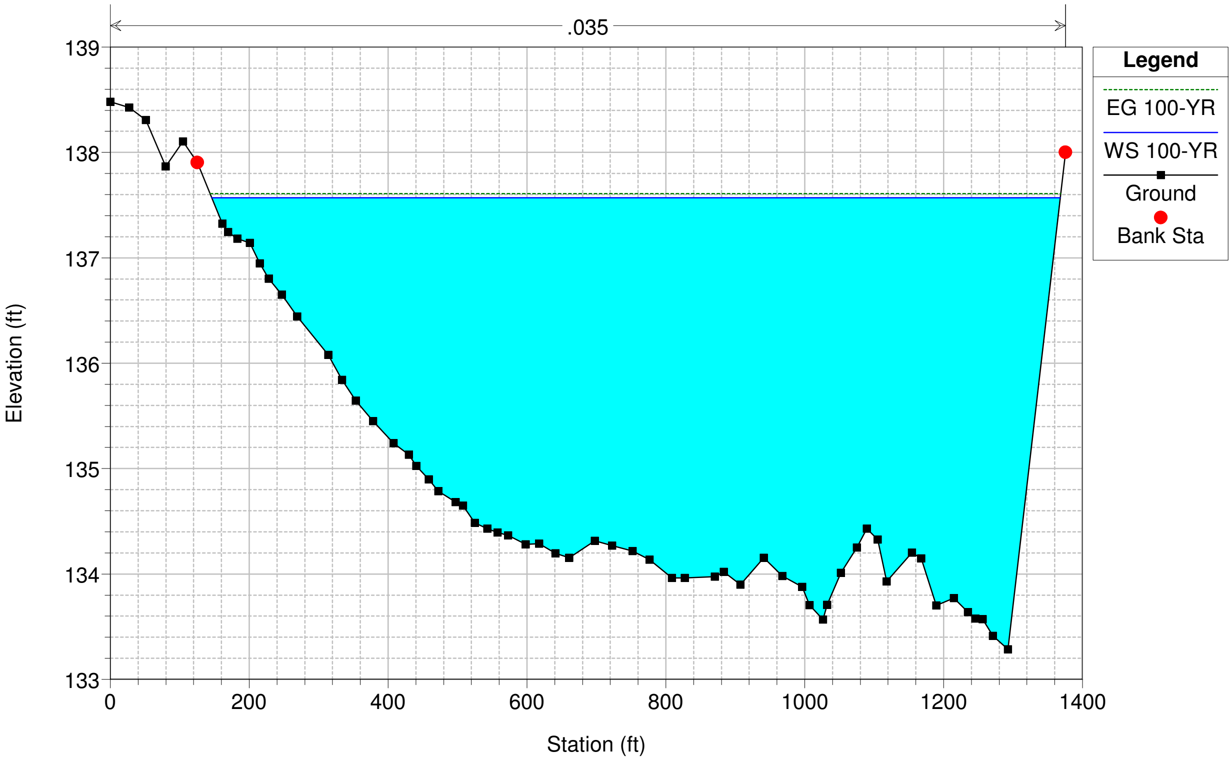
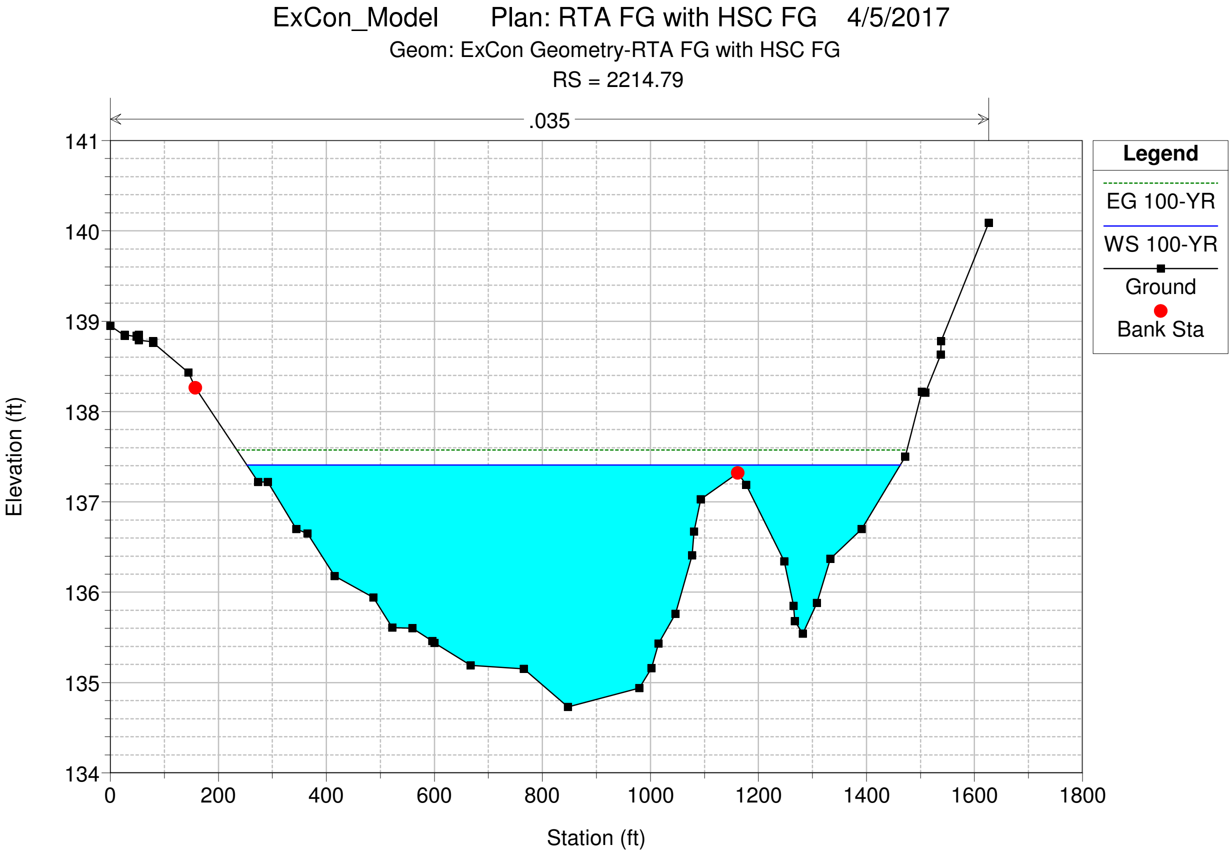


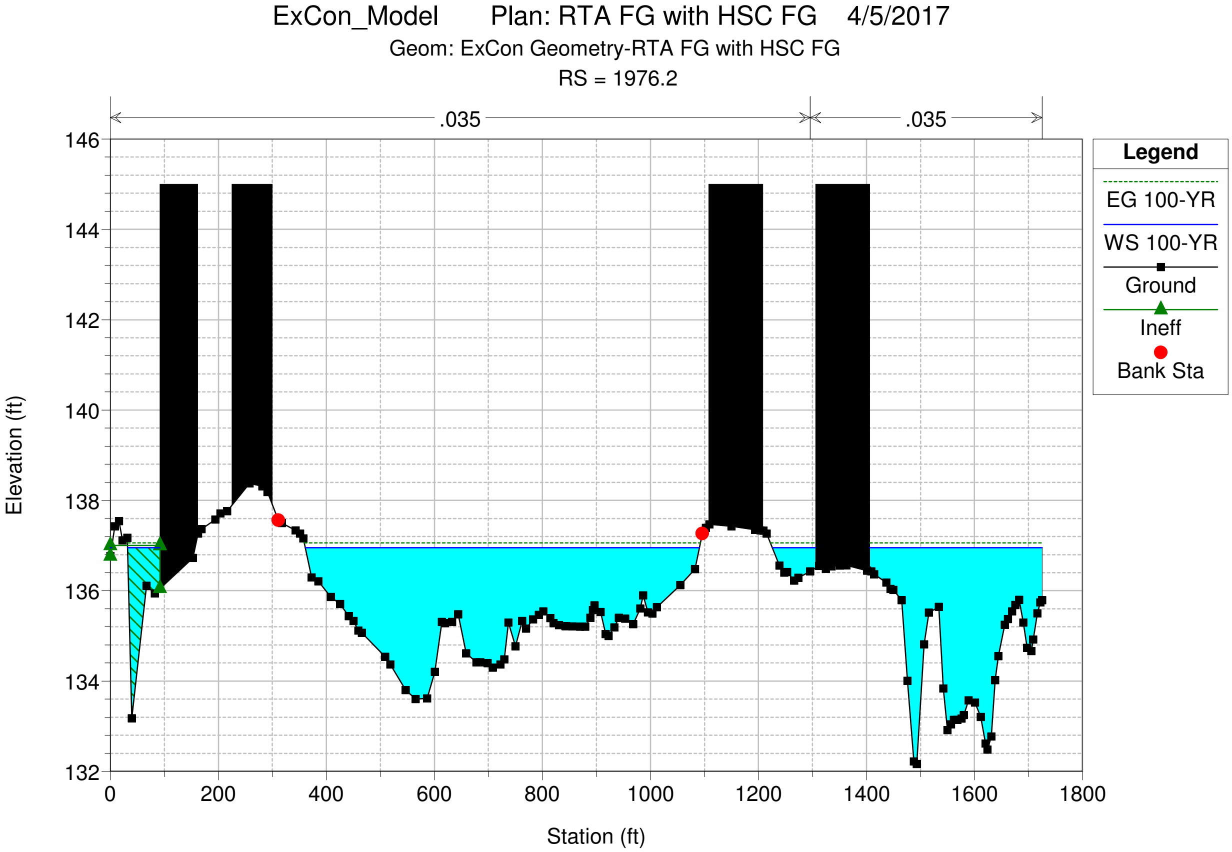
ExCon_Model Plan: RTA FG with HSC FG 4/5/2017

Geom: ExCon Geometry-RTA FG with HSC FG

RS = 2240




ExCon_Model Plan: RTA FG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA FG with HSC FG
RS = 2214.79
.035
Elevation (ft)
141
140
139
138
137
136
135
134
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)
Legend
EG 100-YR
WS 100-YR
Ground
Bank Sta


ExCon_Model Plan: RTA FG with HSC FG 4/5/2017
Geom: ExCon Geometry-RTA FG with HSC FG
RS = 1976.2
.035
.035
Elevation (ft)
146
144
142
140
138
136
134
132
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)
Legend
EG 100-YR
WS 100-YR
Ground
Ineff
Bank Sta

Appendix E

Noise Measurement Data

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Appendix F

Transportation Impact Analysis

San Luis Obispo Regional Transit Authority

RTA Maintenance Facility Project Transportation Impact Analysis

REGIONAL TRANSIT AUTHORITY

Prepared for:

Rincon Consultants, Inc.

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers

Prepared by:

omni·means
ENGINEERING SOLUTIONS

San Luis Obispo Regional Transit Authority

RTA Maintenance Facility Project

Transportation Impact Analysis

Prepared for:
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July 2017

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Introduction

Rincon Consultants, Inc., has retained Omni-Means to perform a Transportation Impact Analysis (TIA) for the proposed San Luis Obispo Regional Transit Authority (SLORTA) Maintenance Facility Project (Project). This TIA has been prepared to present the results of the existing and existing plus project impact analysis associated with the proposed development. Analysis of Existing conditions and Existing plus Project conditions will be presented in this Draft TIA.

The proposed Project is a 6.5-acre parcel (Assessor's Parcel Number [APN] 053-041-071), located at 253 Elks Lane adjacent to the intersection of Elks Lane and Prado Road, in the City of San Luis Obispo, California. The site is regionally accessible from United States Highway 101 (U.S. 101) which runs in the north-south direction, parallel to Elks Lane, west of the site. Figure 1 identifies the study area and vicinity map.

The site is currently occupied by a small U-Haul facility, including a building and parking lot, in the southwest corner of the site. The remainder of the property is vacant with a leased employee parking/carpool area for a distant construction site. One high-voltage electric power transmission tower is located near the center of the site.

This TIA presents the projected transportation impact conditions associated with development of the overall project under Existing Conditions for vehicular related impacts and any mitigation measures required to mitigate impacts to less than significant, at the following study locations:

Intersections:

The City of San Luis Obispo has identified three (3) intersections for analysis:

1. Prado Road/US 101 Northbound Ramps/Elks Lane
2. Elks Lane/Higuera Street
3. Prado Road/Higuera Street

\---

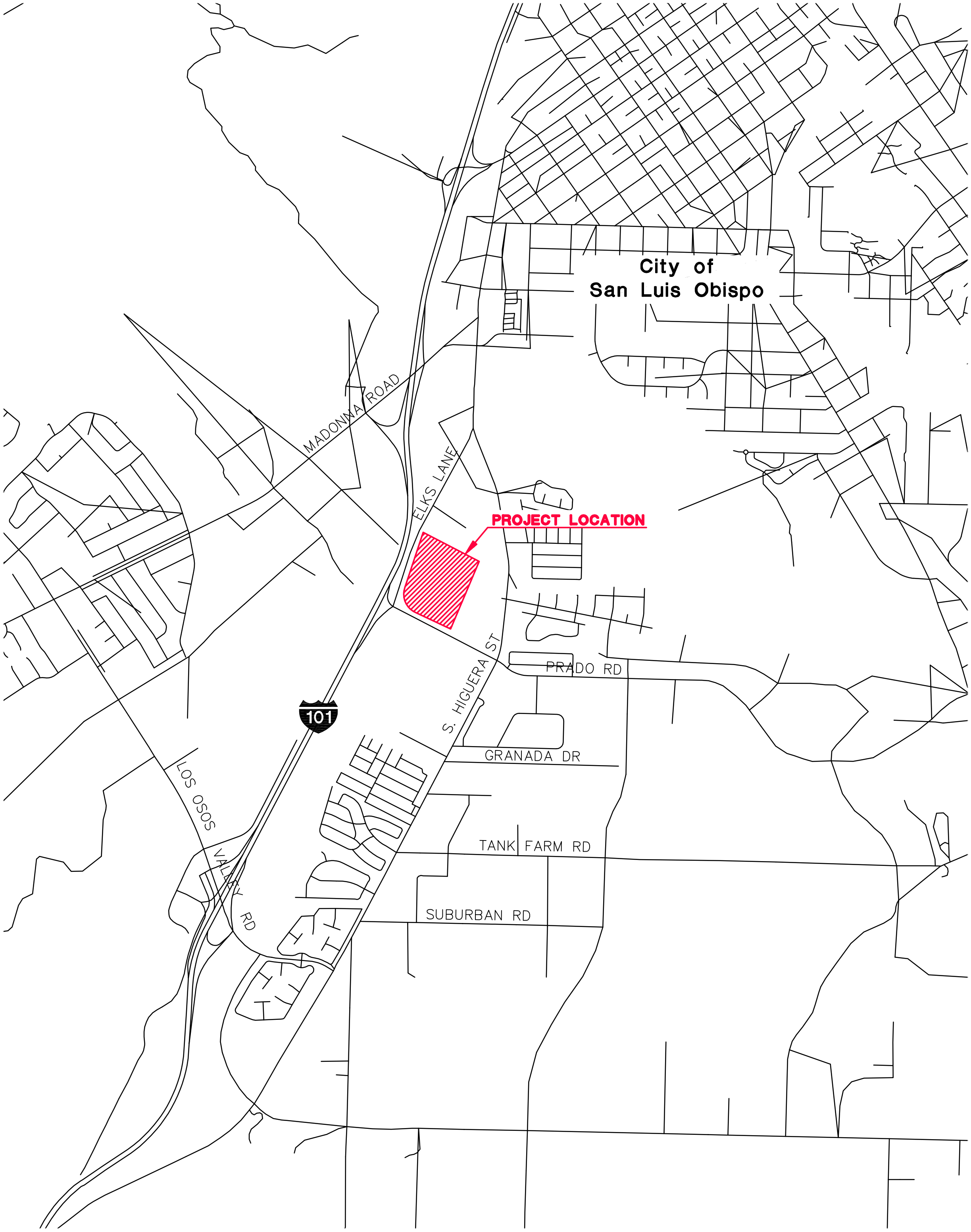
4. Elks Lane/Project Driveway #1 (Project only)
5. Elks Lane/Project Driveway #2 (Project only)

Roadway Segment:

1. Prado Road between Elks Lane and Higuera Street

Two (2) project intersections have been included in the analysis for the plus project scenario. For each scenario, intersection AM and PM peak hour capacity analyses identifying traffic operations is provided. Existing turning movement count data was provided by the City of San Luis Obispo, or collected by Omni-Means or Metro Traffic Data, Inc., for weekday AM and PM peak hours, along with the City-maintained "Master" Synchro networks that are used to develop the project Synchro files.

As needed, counts were also obtained from the City's Traffic Counts and Speed Surveys database (online). Figure 2 presents the study locations and intersection lane geometries and the existing peak hour volumes at the study intersections. Figure 3 presents the Average Daily Traffic (ADT) along the street segment. The AM peak hour is defined as the one continuous hour of peak traffic flow counted between 7:00 a.m. and 9:00 a.m., and the PM peak hour is defined as the one continuous hour of peak traffic flow counted between 4:00 p.m. and 6:00 p.m. under typical weekday conditions.



RTA Maintenance Facility Project TIA

Figure 1

Study Area Map

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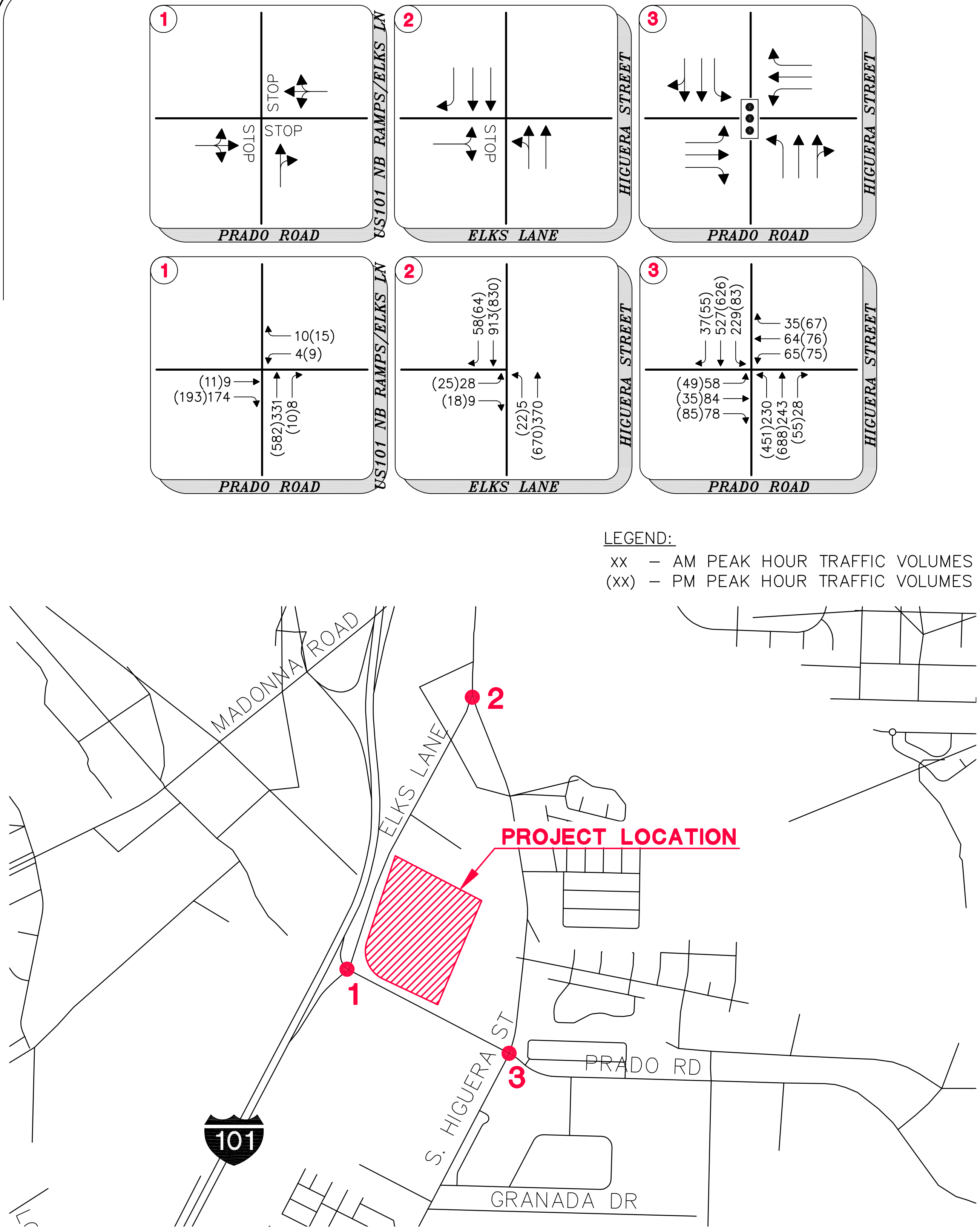
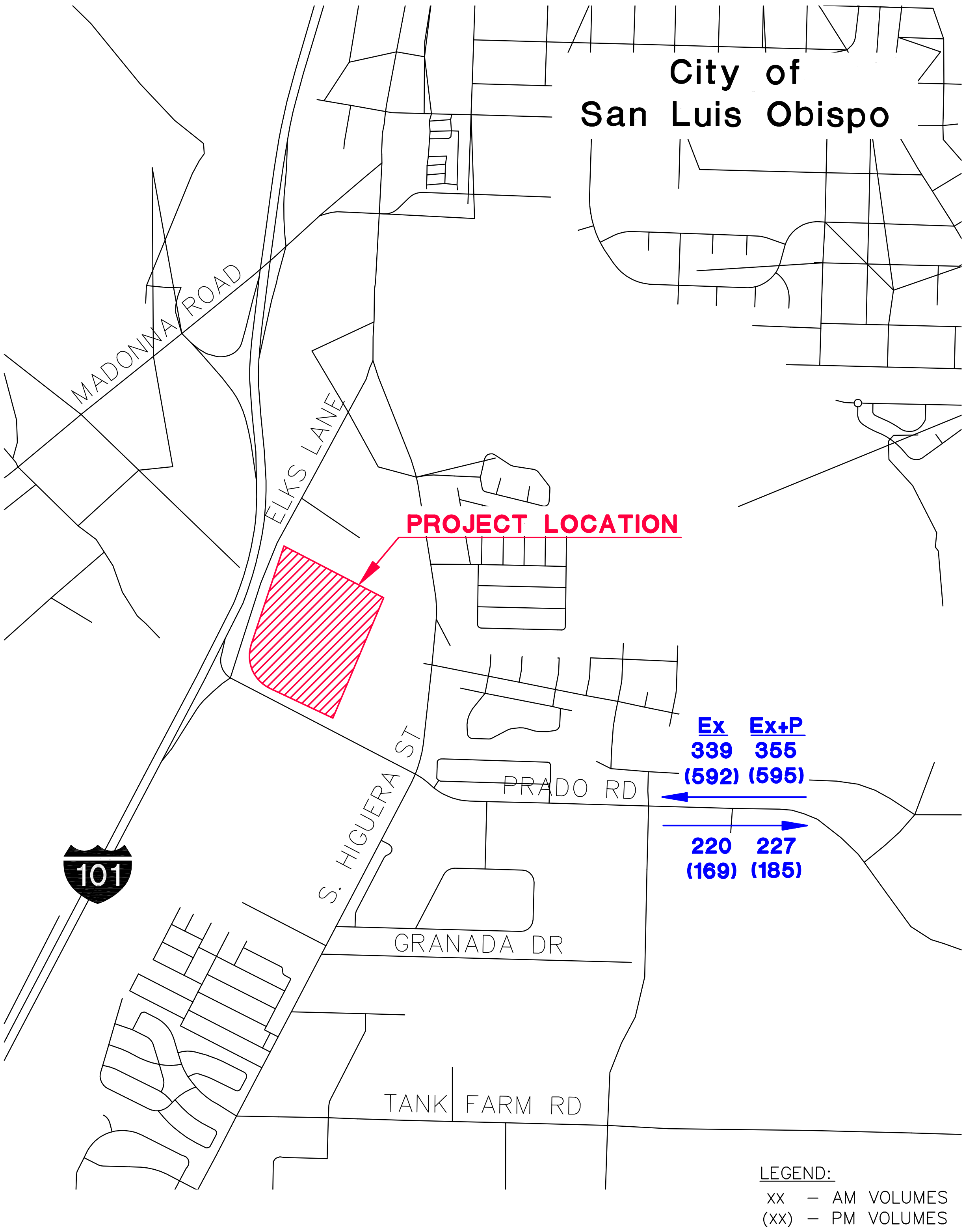


RTA Maintenance Facility Project TIA

Figure 2

Existing Lane Geometrics and Control and Peak Hour Traffic Volumes



RTA Maintenance Facility Project TIA

Figure 3

Existing Roadway Segment Daily Traffic Volumes

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Existing Transportation System

The following roadways provide primary circulation within the City of San Luis Obispo and in the vicinity of the proposed project.

US 101 is a major north-south freeway facility that traverses along coastal California. US 101 serves as the principal inter-regional auto and truck travel route that connects San Luis Obispo County (and other portions of the Central Coast) with the San Francisco Bay Area to the north and the Los Angeles urban basin to the south. Within San Luis Obispo County, US 101 provides major connections between and through several cities and communities.

Through the San Luis Obispo area, US 101 represents a major recreational as well as commuter travel route and generally consists of a four-lane divided freeway with 65 mph posted speed limits. Within the City of San Luis Obispo, US 101 forms full-access interchanges at Los Osos Valley Road, Madonna Road, Marsh Street, Broad Street, Osos Street and California Boulevard, as well as partial interchange access at Higuera Street, Prado Road, Grand Avenue and Monterey Street.

Higuera Street (S. Higuera Street) is a north-south arterial within the study area. Higuera Street connects to downtown San Luis Obispo to the north and terminates to the south at its interchange with US 101. South of Marsh Street, it provides a four-lane roadway with Class II bike lanes and continuous sidewalks. The posted speed limit within the study area is 45 mph.

Prado Road is an east-west two-lane corridor that extends eastward from the US 101 Northbound Ramps and ends east of Higuera Street. It is functionally classified as a Regional Route/Highway. Planned changes to Prado Road include extension west from US 101 to Madonna Road and east to Broad Street. Prado Road is a two-lane roadway with sidewalks on both sides and on-street parking at various locations. The posted speed limit within the study area is 35 mph.

Elks Lane is a north-south connector street segment within the study area that connects U.S 101 Off-Ramp/Prado Street/Elks Lane intersection to S. Higuera Street/Elks Lane intersection. The street segment it is a two-lane roadway that does not have a posted speed limit sign.

Analysis Methodology and Technical Parameters

This TIA provides a “planning level” evaluation of traffic condition, which is considered sufficient for CEQA/NEPA clearance purposes. The “planning level” evaluation incorporates appropriate heavy vehicle adjustment factors, peak-hour factors, and signal lost-time factors. LOS operations have been determined using HCM-2010 methodologies for determining intersection delay, incorporating the aforementioned factors. The following section outlines the analysis methodology and technical parameters used to quantify operations for the vehicular transportation mode indentified in the TIA.

Intersection LOS Methodologies

Levels of Service (LOS) have been calculated for all intersection control types using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, 2010.* Traffic operations have been quantified through the determination of “Level of Service” (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade A through F is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. LOS definitions for different types of intersection controls for vehicles are outlined in Table 1.

Synchro 9 Modeling

Synchro 9 (Trafficware) will be used to implement HCM 2010 analysis methodologies for vehicular delay at the study intersections. For signalized and all-way stop-controlled intersections, LOS determination is based on the calculated average delay for all approaches and movements. For a two-way stop-controlled intersection, an LOS determination is based upon the calculated average delay for all movements of the worst-performing approach. The peak hour capacity tables contained in this report present the intersection delay and LOS estimates as calculated using the Synchro software. Synchro output worksheets are provided in the Technical Appendix.

TABLE 1: INTERSECTION LOS CRITERIA FOR VEHICLES

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle (sec)	
				Signalized/ Roundabouts	Unsignalized/ All-Way Stop
A	*Stable Flow*	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	< 10.0
B	*Stable Flow*	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and < 20.0	>10.0 and < 15.0
C	*Stable Flow*	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	>20.0 and < 35.0	>15.0 and < 25.0
D	*Approaching Unstable Flow*	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and < 55.0	>25.0 and < 35.0
E	*Unstable Flow*	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and < 80.0	>35.0 and < 50.0
F	*Forced Flow*	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0

References: 2010 Highway Capacity Manual

Applicable Level of Service Policies

The City of San Luis Obispo *Circulation Element* contains Level of Service (LOS) policies for all modes of transportation. The City's goal is to maintain the LOS objective. However if the project causes the LOS to exceed the minimum LOS standard, the project is considered to have caused an impact. Table 2 shows the standard acceptable LOS threshold by mode. For purposes of this report, the LOS threshold for vehicles will apply at City intersections and roadways. Bicycle, pedestrian and transit LOS is not evaluated for this study.

TABLE 2:
LOS OBJECTIVE AND MINIMUM STANDARD FOR ALL MODES OF TRANSPORTATION-CITY OF SAN LUIS OBISPO

Travel Mode	Objective LOS	Minimum LOS Standard
Bicycle	B	D
Pedestrian	B	C
Transit	C	Baseline LOS or LOS D, whichever is lower
Vehicle	C	E (Downtown), D (All Other Routes)

In addition to the City's policies, Caltrans has also established the measure of effectiveness (MOE) for the evaluation of impacts in CEQA level projects on State facilities. Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) contains the following policy pertaining to the LOS standards within Caltrans jurisdiction:

> *The Level of Service (LOS) for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.) Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.*

Consistent with Caltrans policy, the study considers LOS C as the standard acceptable threshold for State highway facilities, such as US 101 and ramp terminals.

Significance Thresholds

Consistent with the City's adopted *Multimodal Transportation Impact Study Guidelines*, the project impacts will be considered significant if:

Automobiles: Intersections

A. Signalized Intersections: Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards and the V/C ratio is increased by 0.01 or more.

B. Unsignalized Intersections: Project traffic causes minimum LOS standards to be exceeded or further degrades already exceeded LOS standards, the V/C ratio is increased by 0.01 or more, and a traffic signal warrant analysis is satisfied.

C. Project traffic causes or exacerbates 95th percentile turning movement queues exceeding available turn pocket capacity.

D. The project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards for the overall intersection or individual lane groups.

Automobiles: Segments

A. Project traffic causes minimum LOS standards for either direction to be exceeded or further degrades already exceeded LOS standards and the average segment speed decreases by 1 mph or more.

B. The project proposes roadway geometry changes that cause minimum LOS standards to be exceeded or further degrades already exceeded LOS standards.

Existing Traffic Operations

Intersections

The *Existing* condition analysis investigates current traffic operation within the City of San Luis Obispo in the vicinity of the project site. Figure 2 shows existing intersection lane geometries and control and existing peak hour volumes at the study intersections. Existing AM and PM peak hour intersection traffic operations are quantifies using intersection lane geometrics and traffic volumes. Table 3 shows the peak hour intersections LOS operations at study locations under existing conditions.

TABLE 3:
EXISTING CONDITIONS: INTERSECTION LOS

				AM Peak Hour			PM Peak Hour		
#	Intersection	Control Type	Target LOS	Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Prado Road Elks Lane/ U.S. 101	AWSC	C	9.9	A	No	20.1	C	No
2	Elks Lane/Higuera Road	TWSC	D	26.4	D	No	27.5	D	No
3	Higuera Street/Prado Road	Signal	D	19.7	B	--	26.7	C	--

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control
2. LOS = Delay based on worst minor street approach for TWSC intersections; average of all approaches for AWSC, Signal
3. Warrant = Based on California MUTCD Warrant 3

As presented in Table 3, all of the study intersections are currently operating at acceptable LOS. None of the unsignalized intersections currently meet the Peak-Hour Warrant-3 during the AM or PM peak hour periods under the “Existing” conditions scenario.

Roadway Segments

The City's "Master" Synchro networks for the AM, Midday (MID), and PM peak hours were used to develop the vehicular segment analysis for the segment study road. The Existing conditions analysis for the study segments are presented below. Table 4 provides a summary of the Existing vehicular AM and PM peak hour conditions for the study segments.

TABLE 4:
EXISTING CONDITIONS SEGMENT LOS TABLES: VEHICLE ANALYSIS

SEGMENT # 1	AM Peak Hour			Automobile Mode				
Roadway	From	To	Direction	LOS Threshold	Travel Speed (mph)	Base Free-Flow Speed BFFS (mph)	Travel Speed /BFFS (%)	LOS
Prado Road	S. Higuera Street	US 101 NB Ramps/Elks	WB	D	27.2	37.5	73%	B
Prado Road	US 101 NB Ramps/Elks	S. Higuera Street	EB	D	22.7	37.5	61%	C

SEGMENT # 1	PM Peak Hour			Automobile Mode				
Roadway	From	To	Direction	LOS Threshold	Travel Speed (mph)	Base Free-Flow Speed BFFS (mph)	Travel Speed /BFFS (%)	LOS
Prado Road	S. Higuera Street	US 101 NB Ramps/Elks	WB	D	21.1	37.5	56%	C
Prado Road	US 101 NB Ramps/Elks	S. Higuera Street	EB	D	20.4	37.3	55%	C

As shown in the Table 4, the roadway segment Prado Street from S. Higuera Street to US 101 NB Ramps/Elks Lane is currently operating at acceptable LOS during the AM and PM peak hour under the Existing conditions scenario.

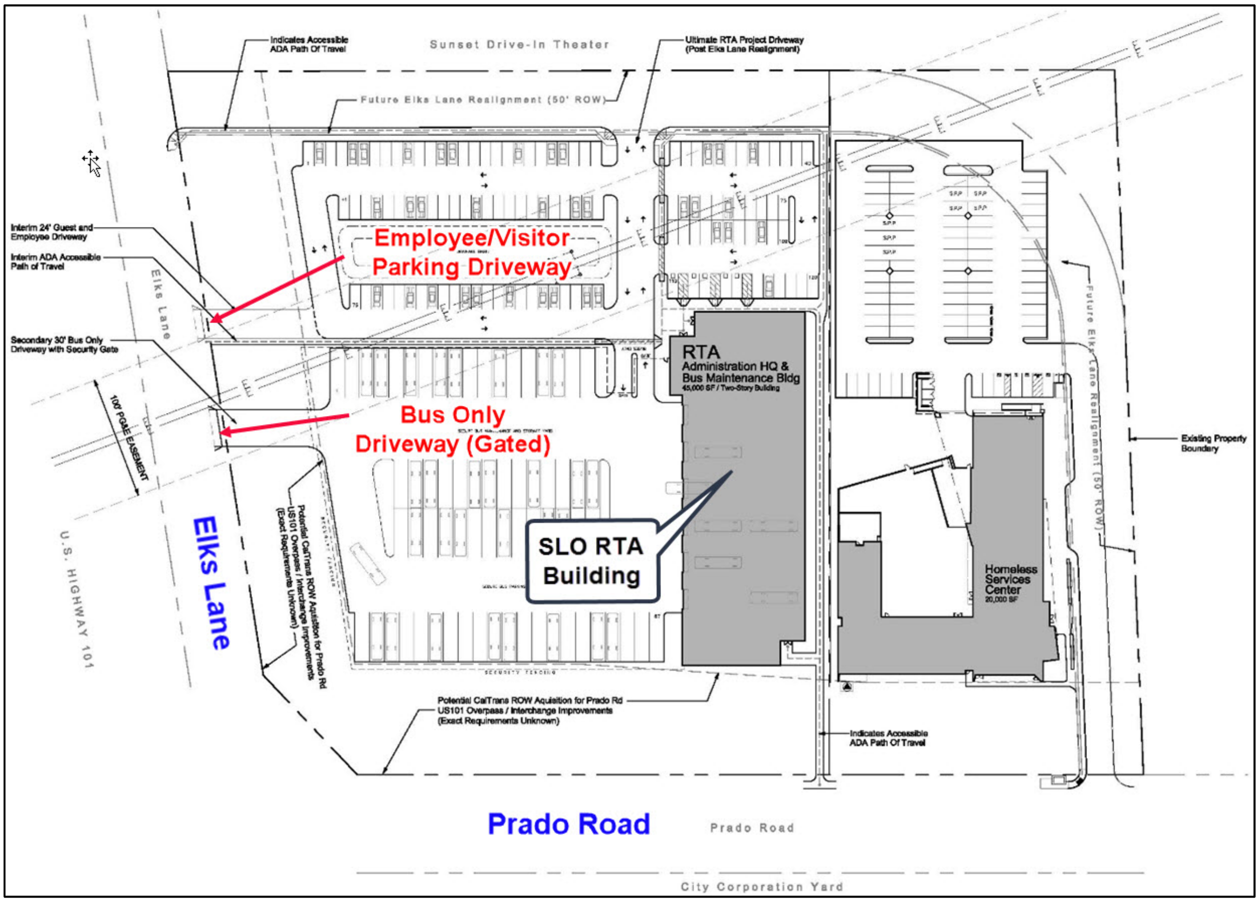
Project Description

The term “project,” as used in this study, refers to the development of a 6.5-acre parcel (Assessor’s Parcel Number [APN] 053-041-071), located at 253 Elks Lane adjacent to the intersection of Elks Lane and Prado Road, in the City of San Luis Obispo, California. The project proposed development of a bus transit maintenance and storage facility with accompanying office spaces.

Project Site Access

According to the site plan as shown below, the proposed project will develop two project site access driveways along Elks Lane as shown in Figure 4. The northern access driveway (Project Driveway #1) will accommodate employee/visitor trips and will be the most utilized access point. Project Driveway #2, located just south of Project Driveway #1, will provide access to bus only trips. Both driveways assume full access to/from Elks Lane and are analyzed as stop-controlled intersect for trips that exit the site. Based upon the site plan, throat depths are adequate to maintain on-site internal circulation.

FIGURE 4 –
PROJECT SITE ACCESS



Project Trip Generation

Trip generation was developed based upon the project description provided in the SLORTA Request for Proposal (RFP) – RTA Maintenance Facility Project (February 3, 2017). This RFP outlined square feet and number of employees for this facility. Trip generation rates for administrative and operations office space and for the maintenance and storage facilities were calculated based upon information provided in the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 9th Edition*. Trip generation rates for bus operators and truck deliveries were obtained from raw data provided in the RFP.

Table 5 identifies estimated project trip generation for the proposed project. As shown in Table 5, the project is estimated to generate 562 daily trips, including 76 AM peak hour trips and 82 PM peak hour trips. ITE lane use 710 was used for office trips for administrative and operations personnel.

TABLE 5:
PROJECT TRIP GENERATION

			AM Peak Hour Trip Rate/Unit			**PM Peak Hour Trip Rate/Unit**		
Land Use Category (ITE Code)	**Unit**	**Daily Trip Rate/Unit**	**Total**	**In %**	**Out %**	**Total**	**In %**	**Out %**
General Office Building (710)	ksf	11.03	1.56	88%	12%	1.49	17%	83%
Warehousing (150)	ksf	3.08	0.51	72%	28%	0.59	35%	65%
Bus Operator								
To/From Work	EMP	2.0	0.14	90%	10%	0.14	10%	90%
Drive Bus Route	Bus	2.0	0.14	0%	100%	0.14	100%	0%
Truck Deliveries	Vehicle	2.0	0.15	50%	50%	0.15	50%	50%
			AM Peak Hour Trips			**PM Peak Hour Trips**		
Description	**Quantity (Units)**	**Daily Trips**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
Administrative/Operations Office Space	**13.40**	148	21	18	3	20	3	17
Maintenance Yard/Storage	**87.68**	270	45	32	13	52	18	34
Bus Operator	**30**							
To/From Work	30	60	4	4	0	4	0	4
Bus Route Driver	30	60	4	0	4	4	4	0
Truck Deliveries	12	24	2	1	1	2	1	1
Sub-Total Estimated Trips		*562*	*76*	*55*	*21*	*82*	*27*	*55*
Estimated Project Trips		**562**	**76**	**55**	**21**	**82**	**27**	**55**

Notes:

1. EMP = Employees; ksf = 1,000 square feet.

2. Typical daily operations would employ no more than 50 persons on the project site at any given time per SLORTA Maintenance Facility Initial Study.

3. Maintenance yard/storage sq. ft. is derived from Table 1: RTA20-Year Functional Space Requirements and includes maintenance area and outdoor storage.

4. Trip rates based upon assumptions from the SLORTA RFP - RTA Maintenance Facility Project (February 3, 2017). Daily trip rates assume 2.0 trips ends for bus operators and truck deliveries.

5. Bus operators work varying shifts throughout the day and buses generally run from 5:30 a.m. to 9:00 p.m.; therefore, arrivals and departures vary based upon the transit route; peak hour rates for bus operators and truck deliveries assume trips will vary throughout the day.

6. Trip rates based on ITE Trip Generation Manual 9th Edition average rates.

Existing SLORTA Closure

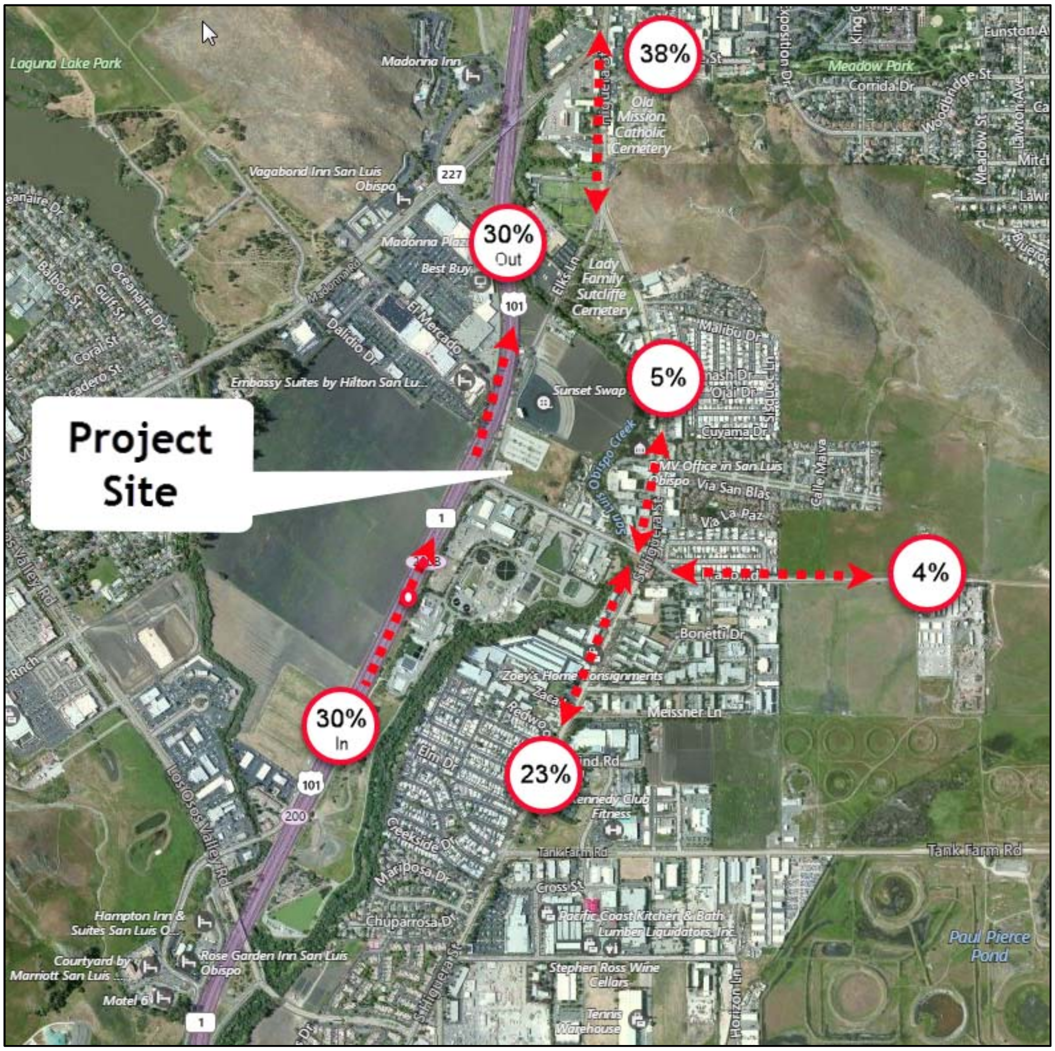
As part of the proposed trip generation estimate, closure of the existing maintenance facility, which is generally located east of Higuera Street between Tank Farm Road and Suburban Road (less than a mile) from the proposed project, Omni-Means collected data pertaining to existing traffic volumes at the current location. Based upon the arrivals and departures at the existing site, Omni-Means adjusted AM and PM peak hour volumes to reflect closure of the that facility. As a result, trips were not “double counted” when the proposed project was considered.

Project Trip Nature, Distribution, and Assignment

The project is expected to “generate” and “attract” trips throughout the City and from other locations throughout the area. Directional trip distribution for project generated trips was estimated based upon use of the City of San Luis Obispo Citywide Travel Demand Model, existing traffic flow patterns, geographic location of the project sites, and location of other similar destinations. This resulted in a distribution of all project trips throughout the study area that is shown in Figure 5 and summarized below:

- 38% to/from Higuera Street n/o Elks Lane
- 30% to/from U.S. 101
- 5% to/from Higuera Street n/o Prado Road
- 23% to/from Higuera Street s/o Prado Road
- 4% to/from Prado Road e/o Higuera Street

FIGURE 5 –
PROJECT TRIP DISTRIBUTION



Existing plus Project Traffic Operations

Intersections

The *Existing plus Project* conditions were developed by superimposing proposed AM and PM peak hour project-generated trips (Table 5) using the proposed project trip distribution (Figure 5) onto existing traffic volumes (Figure 3). The resulting *Existing plus Project* traffic volumes are presented in Figure 7. Table 6 presents the results of the *Existing plus Project* conditions analysis.

TABLE 6:
EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LOS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Prado Road Elks Lane/ U.S. 101	AWSC	C	10.4	B	No	21.5	C	No
2	Elks Lane/Higuera Road	TWSC	D	28.4	D	No	34.4	D	No
3	Higuera Street/Prado Road	Signal	D	20.1	B	--	27.0	C	--
4	Elks Lane/Project Drwy #1	TWSC	D	8.9	A	No	9.0	A	No
5	Elks Lane/Project Drwy #1	TWSC	D	8.8	A	No	7.4	A	No

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections; average of all approaches for AWSC, Signal

3. Warrant = Based on California MUTCD Warrant 3

As presented in Table 6, all of the study intersections are projected to operate at acceptable LOS. None of the unsignalized intersections are anticipated to meet the Peak-Hour Warrant-3 during the AM or PM peak hour periods under the "Existing plus Project" conditions scenario.

Roadway Segments

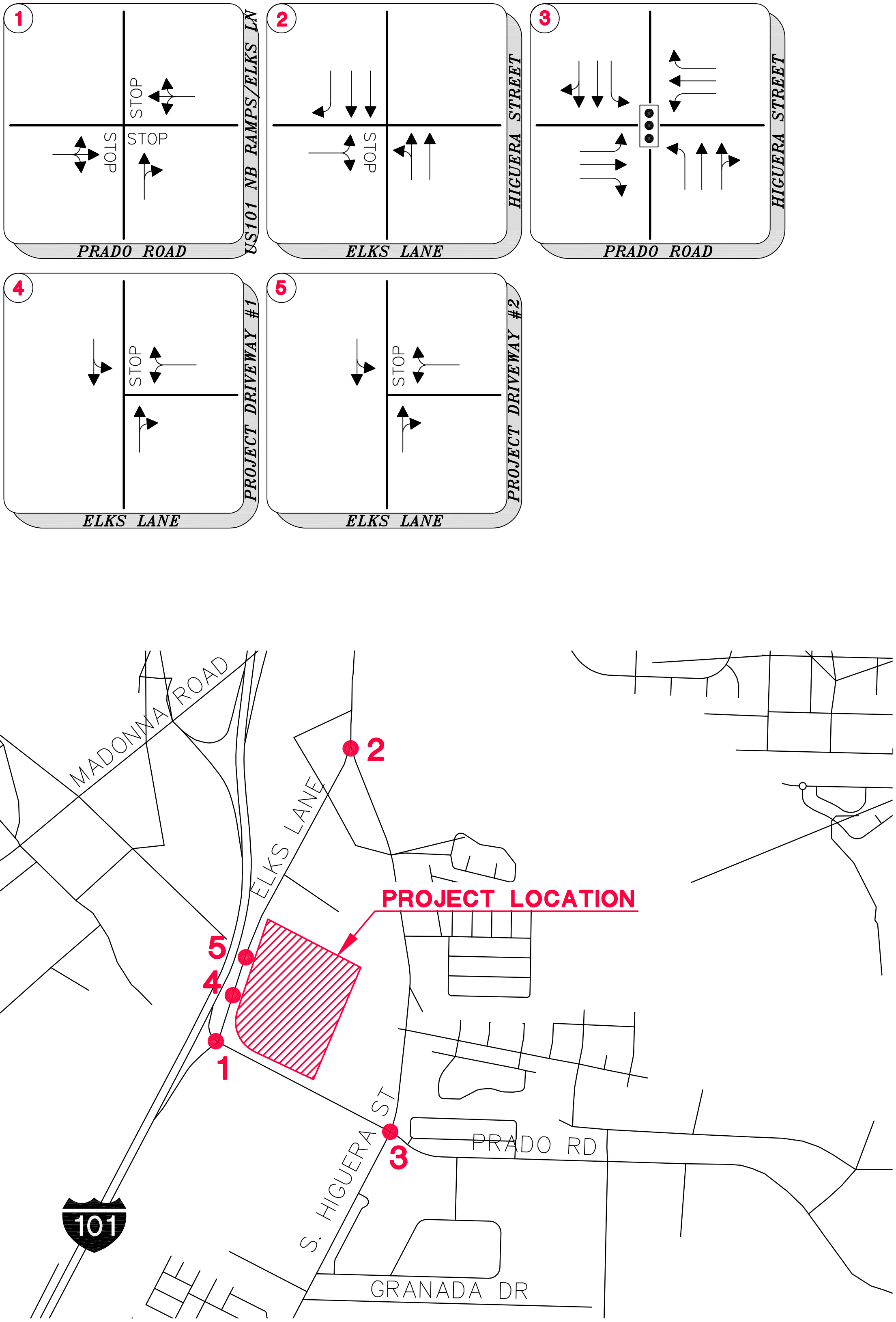
Table 7 provides a summary of the Existing plus Project vehicular AM and PM peak hour conditions for the study segments.

TABLE 7:
EXISTING PLUS PROJECT CONDITIONS SEGMENT LOS TABLES:
VEHICULAR ANALYSIS

SEGMENT # 1	AM Peak Hour			Automobile Mode				
Roadway	From	To	Direction	LOS Threshold	Travel Speed (mph)	Base Free-Flow Speed BFFS (mph)	Travel Speed /BFFS (%)	LOS
Prado Road	S. Higuera Street	US 101 NB Ramps/Elks	WB	D	26.9	37.5	72%	B
Prado Road	US 101 NB Ramps/Elks	S. Higuera Street	EB	D	22.5	37.5	60%	C

SEGMENT # 1	PM Peak Hour			Automobile Mode				
Roadway	From	To	Direction	LOS Threshold	Travel Speed (mph)	Base Free-Flow Speed BFFS (mph)	Travel Speed /BFFS (%)	LOS
Prado Road	S. Higuera Street	US 101 NB Ramps/Elks	WB	D	21.1	37.5	56%	C
Prado Road	US 101 NB Ramps/Elks	S. Higuera Street	EB	D	20.4	37.3	55%	C

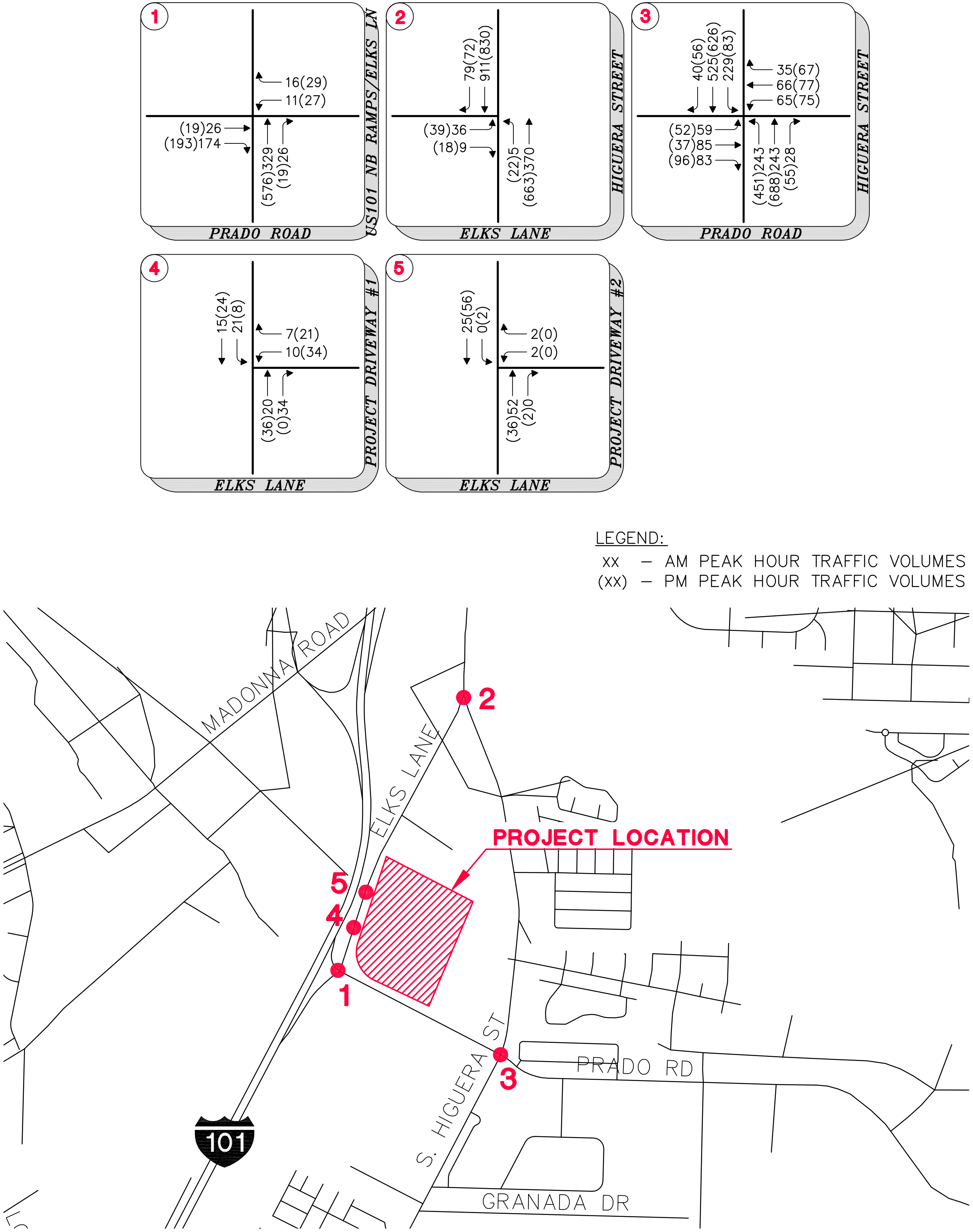
As shown in Table 7, the roadway segment Prado Street from S. Higuera Street to US 101 NB Ramps/Elks Lane is forecast to operate at acceptable LOS during the AM and PM peak hour for Existing Conditions.



RTA Maintenance Facility Project TIA

Figure 6

Existing plus Project Lane Geometrics and Control



RTA Maintenance Facility Project TIA

Figure 7

Existing plus Project Peak Hour Traffic Volumes

7/18/2017 10:44 AM L:\PRJ\2328\T2328\T2328TG001.DWG

Conclusion

Based upon the analysis provided in this TIA, development of the SLORTA Maintenance Facility is not expected to result in significant traffic impacts under Existing plus Project conditions. The intersections and roadway segments currently operate at acceptable LOS standards. With addition of project trips, the study intersections and roadway segment are projected to continue to operate within the acceptable LOS standards. As a result, capacity increasing transportation improvements are not recommended under Existing or Existing plus Project Conditions.

Technical Appendices

- Table 1: RTA20-Year Functional Space Requirements: SLORTA RFP - RTA Maintenance Facility Project (February 3, 2017)
- Segment Analysis Worksheets
- Synchro Worksheets
- Traffic Signal Warrant Worksheets
- Traffic Counts

TABLE 1: RTA20-Year Functional Space Requirements

January 2015

Input Data	
Administrative Employees on Site	40
Total Employees on Site	86
Number of Peak Buses	46
Annual Vehicle Service Miles	2,336,960
Number of Staff Cars	9
Number of Vans/Trucks in Fleet	4
Number of Mini-Buses in Fleet (16-32 psgr)	24
Number of Large Buses in Fleet	37

Program Element	**Factor**	**Ind Var**	**Y Int**		**Square Feet**	
Administrative Space	258	40	752		11,100	
Managers Office						
Conference Room						
Employee Support						
Passenger Services						
Storage						
Operations Space	22	61	938		2,300	
Superintendent's Office						
Dispatcher's Office						
Clerical Office						
Training/Drivers Room						
Lunch Room						
Locker Room						
Radio Room						
Maintenance Area	1,389	23	564		33,000	
Work Bays	2.34	2	3.79	9		
Parts Storage	233	23	(1,923)	3,500		
Maintenance Storage	52	23	(402)	800		
Parts Cleaning				180		
Maintenance Offices				500		
Mechanic's Locker Room				300		
Total Building Minimum Floor Area					46,400	
Outdoor Circulation, Storage, Servicing, Inspection						
Full-Size Bus Storage	900	37			33,300	
Mini-Bus Storage	675	24			16,200	
Van/Truck Storage	420	4			1,680	
Service Lane / Wash					3,500	
Circulation (Depending On Site)					27,340	
Employee Parking	300	86			25,800	
Staff Vehicle Parking	300	9			2,700	
Visitor Parking	300	12			3,600	
Subtotal: Pavement					114,120	
Subtotal: Developed Area					*160,520*	
Landscaping & Setbacks (25 percent)					40,130	
Total Minimum Site Area					200,650	Sq. Ft.
				or	4.6	Acres

Source: Transit Garage Planning Guidelines: A Review, USDOT, 1987.

SEGMENT ANALYSIS INPUTS

Project Name:	**SLORTA Maintenance Facility**					
Analyst **RS**	SEGMENT #	**1**	Roadway	**Prado Road**	*Direction A:*	*Direction B:*
Date **7/6/2017**	PEAK HOUR:	**AM**	From	**S. Higuera Street**	**WB**	**EB**
Analysis Conditions:	**Existing Conditions**		To	**US 101 NB Ramps/Elks Lane**	CBD?	**No**

SW Data from SLR

CROSS-SECTION DATA	WB	EB
Number of Thru Travel Lanes	1	1
Outside Travel Lane Width	12.0	12.0
Bike Lane Width	0.0	5.0
Parking Lane Width	0.0	0.0
Median Type (0-3)	0	
Median Width	0.0	
Is Curb Pesent?	Yes	Yes
Is Parking Striped?	No	No
Parking Occupancy %	0%	0%

PEDESTRIAN DATA	WB	EB
Pedestrian Flow Rate (peds/hr)	3	4
Downstream ped score at intersection		
Ped delay at signalized crossing (sec/ped)		
Ped Diversion Distance (ft)	575	558

From Co

BICYCLE DATA	WB	EB
Bicycle Delay at downstream intersection (s/bike)		
Bicycle LOS score at intersection		
Number of Access Points on Right Side		6

SIDEWALK DATA	WB	EB
Sidewalk Width	6.8	9.0
Proportion of Length Adjacent to Window Display	0%	0%
Proportion of Length Adjacent to Building Face	0%	0%
Proportion of Length Adjacent to Fence or Low Wall	3%	6%
Buffer Width	3.6	16.5
% of Length with Buffer	5%	10%
Fixed Obj. Width (inside)	2.9	8.5
Fixed Obj. Width (outside)	1.9	0.0
Is buffer a continuous barrier?	No	No

TRANSIT DATA	WB	EB
ANALYZE TRANSIT STOPS?	No	Yes
Number of Stops	0	1
Route Name		Route 2
Proportion of stops with Shelters		100%
Proportion of stops with Benches		100%
Reentry Delay (sec)		7.0
Stop Location to Intersection		Far Side
Transit Route Headway (min)		40
Avg. Passenger Load Factor (pass/seat)		0.67

From Counts

VEHICLE DATA	WB	EB
Vehicle Flow Rate (vph)	339	220
Peak Hour Factor	0.92	0.92
Heavy Vehicle %	2.0%	2.0%
Left/Right Turns %	2.4%	61.8%
Thru Adj. Saturated Flow (vphpl)	1,863	1,863

EB
S. Higuera Street

EB Downstream Intersection Data	
Intersection Control	Signal
Cycle Length (sec)	91.0
Eff. Green Time (sec)	10.6
Green/Cycle for Thru (%) g/C	18%
Stops/Veh	0.44
Thru Delay (sec/veh)	17.9

Update From Synchro

SEGMENT LAYOUT DATA	WB	EB
Segment Length (ft)	1,742	1,691
Speed Limit (mph)	35	35
Left Turn Pocket?	No	Yes
Percent Restrictive Median	0%	0%
Access Point Density (pts/mi)	11	11
Width of Intersection	96	45

WB
Ramps/Elks Lane

WB Downstream Intersection Data	
Intersection Control	AWSC
Cycle Length (sec)	
Eff. Green Time (sec)	
Green/Cycle for Thru (%) g/C	
Stops/Veh	1.00
Thru Delay (sec/veh)	9.7

DEFAULT VALUES

Pedestrian Mode	WB	EB
Average Pedestrian Walking Speed (ft/s):	3.5	3.5
Parallel Pedestrian Delay (sec)	0.0	0.0
Bicycle Mode	**WB**	**EB**
Pavement Condition	3.0	3.0
Bicycle Running Speed Avg.(mph)	15.0	15.0
Transit Mode	**WB**	**EB**
Transit Acel/Decel Rate (ft/s^2)	4.0	4.0
Prop. of Transit arriving on time	96%	96%
Ridership Elasticity Constant	-0.4	-0.4
Base travel time rate (min/mi)	4.0	4.0
Average Dwell Time (sec)	20.0	20.0
Avg. Passenger Trip Length (mi)	3.7	3.7
IF RNDBT: input v/c ratio for rightmost lane in green box		

SEGMENT ANALYSIS INPUTS

Project Name:	**SLORTA Maintenance Facility**						
Analyst	**RS**	SEGMENT #	**1**	Roadway	**Prado Road**	*Direction A:*	*Direction B:*
Date	**7/6/2017**	PEAK HOUR:	**PM**	From	**S. Higuera Street**	**WB**	**EB**
Analysis Conditions:	**Existing Conditions**			To	**US 101 NB Ramps/Elks Lane**	CBD?	**No**

SW Data from SLR

CROSS-SECTION DATA	WB	EB
Number of Thru Travel Lanes	1	1
Outside Travel Lane Width	12.0	12.0
Bike Lane Width	0.0	5.0
Parking Lane Width	0.0	0.0
Median Type (0-3)	0	
Median Width	0.0	
Is Curb Pesent?	Yes	Yes
Is Parking Striped?	No	No
Parking Occupancy %	0%	0%

PEDESTRIAN DATA	WB	EB	
Pedestrian Flow Rate (peds/hr)	2	3	*From Co*
Downstream ped score at intersection			*Update F*
Ped delay at signalized crossing (sec/ped)			
Ped Diversion Distance (ft)	575	558	

BICYCLE DATA	WB	EB	
Bicycle Delay at downstream intersection (s/bike)			*Update F*
Bicycle LOS score at intersection			
Number of Access Points on Right Side		6	

SIDEWALK DATA	WB	EB
Sidewalk Width	6.8	9.0
Proportion of Length Adjacent to Window Display	0%	0%
Proportion of Length Adjacent to Building Face	0%	0%
Proportion of Length Adjacent to Fence or Low Wall	3%	6%
Buffer Width	3.6	16.5
% of Length with Buffer	5%	10%
Fixed Obj. Width (inside)	2.9	8.5
Fixed Obj. Width (outside)	1.9	0.0
Is buffer a continuous barrier?	No	No

TRANSIT DATA	WB	EB
ANALYZE TRANSIT STOPS?	No	No
Number of Stops		1
Route Name		AM ONLY
Proportion of stops with Shelters		
Proportion of stops with Benches		
Reentry Delay (sec)		
Stop Location to Intersection		
Transit Route Headway (min)		
Avg. Passenger Load Factor (pass/seat)		

From Counts

VEHICLE DATA	WB	EB
Vehicle Flow Rate (vph)	592	169
Peak Hour Factor	0.87	0.87
Heavy Vehicle %	2.0%	2.0%
Left/Right Turns %	1.7%	79.3%
Thru Adj. Saturated Flow (vphpl)	1,863	1,863

EB
S. Higuera Street

EB Downstream Intersection Data		
Intersection Control	Signal	
Cycle Length (sec)	91.0	*Update From Synchro*
Eff. Green Time (sec)	12.0	
Green/Cycle for Thru (%) g/C	17%	
Stops/Veh	0.50	
Thru Delay (sec/veh)	23.5	

SEGMENT LAYOUT DATA	WB	EB
Segment Length (ft)	1,742	1,691
Speed Limit (mph)	35	35
Left Turn Pocket?	No	Yes
Percent Restrictive Median	0%	11%
Access Point Density (pts/mi)	11	11
Width of Intersection	96	45

WB
Ramps/Elks Lane

WB Downstream Intersection Data	
Intersection Control	AWSC
Cycle Length (sec)	
Eff. Green Time (sec)	
Green/Cycle for Thru (%) g/C	
Stops/Veh	1.00
Thru Delay (sec/veh)	19.6

DEFAULT VALUES

Pedestrian Mode	**WB**	**EB**
Average Pedestrian Walking Speed (ft/s):	3.5	3.5
Parallel Pedestrian Delay (sec)	0.0	0.0
Bicycle Mode	**WB**	**EB**
Pavement Condition	3.0	3.0
Bicycle Running Speed Avg.(mph)	15.0	15.0
Transit Mode	**WB**	**EB**
Transit Acel/Decel Rate (ft/s^2)	4.0	4.0
Prop. of Transit arriving on time	96%	96%
Ridership Elasticity Constant	-0.4	-0.4
Base travel time rate (min/mi)	4.0	4.0
Average Dwell Time (sec)	20.0	20.0
Avg. Passenger Trip Length (mi)	3.7	3.7
IF RNDBT: input v/c ratio for rightmost lane in green box	🟩	

omni-means
ENGINEERING SOLUTIONS

SEGMENT ANALYSIS INPUTS

Project Name:	**SLORTA Maintenance Facility**					
Analyst	**RS**	SEGMENT #	**1**	Roadway	**Prado Road**	*Direction A:*	*Direction B:*
Date	**7/14/2017**	PEAK HOUR:	**AM**	From	**S. Higuera Street**	**WB**	**EB**
Analysis Conditions:	**Existing + Project Conditions**			To	**US 101 NB Ramps/Elks Lane**	CBD?	**No**

SW Data from SLR

CROSS-SECTION DATA	WB	EB
Number of Thru Travel Lanes	1	1
Outside Travel Lane Width	12.0	12.0
Bike Lane Width	0.0	5.0
Parking Lane Width	0.0	0.0
Median Type (0-3)	0	
Median Width	0.0	
Is Curb Pesent?	Yes	Yes
Is Parking Striped?	No	No
Parking Occupancy %	0%	0%

PEDESTRIAN DATA	WB	EB
Pedestrian Flow Rate (peds/hr)	3	4
Downstream ped score at intersection		
Ped delay at signalized crossing (sec/ped)		
Ped Diversion Distance (ft)	575	558

From Co

BICYCLE DATA	WB	EB
Bicycle Delay at downstream intersection (s/bike)		
Bicycle LOS score at intersection		
Number of Access Points on Right Side		6

SIDEWALK DATA	WB	EB
Sidewalk Width	6.8	9.0
Proportion of Length Adjacent to Window Display	0%	0%
Proportion of Length Adjacent to Building Face	0%	0%
Proportion of Length Adjacent to Fence or Low Wall	3%	6%
Buffer Width	3.6	16.5
% of Length with Buffer	5%	10%
Fixed Obj. Width (inside)	2.9	8.5
Fixed Obj. Width (outside)	1.9	0.0
Is buffer a continuous barrier?	No	No

TRANSIT DATA	WB	EB
ANALYZE TRANSIT STOPS?	No	Yes
Number of Stops	0	1
Route Name		Route 2
Proportion of stops with Shelters		100%
Proportion of stops with Benches		100%
Reentry Delay (sec)		7.0
Stop Location to Intersection		Far Side
Transit Route Headway (min)		40
Avg. Passenger Load Factor (pass/seat)		0.67

From Counts

VEHICLE DATA	WB	EB
Vehicle Flow Rate (vph)	355	227
Peak Hour Factor	0.92	0.92
Heavy Vehicle %	2.0%	2.0%
Left/Right Turns %	7.3%	62.6%
Thru Adj. Saturated Flow (vphpl)	1,863	1,863

EB
S. Higuera Street

EB Downstream Intersection Data	
Intersection Control	Signal
Cycle Length (sec)	91.0
Eff. Green Time (sec)	10.7
Green/Cycle for Thru (%) g/C	18%
Stops/Veh	0.44
Thru Delay (sec/veh)	18.3

Update From Synchro

SEGMENT LAYOUT DATA	WB	EB
Segment Length (ft)	1,742	1,691
Speed Limit (mph)	35	35
Left Turn Pocket?	No	Yes
Percent Restrictive Median	0%	0%
Access Point Density (pts/mi)	11	11
Width of Intersection	96	45

WB
Ramps/Elks Lane

WB Downstream Intersection Data	
Intersection Control	AWSC
Cycle Length (sec)	
Eff. Green Time (sec)	
Green/Cycle for Thru (%) g/C	
Stops/Veh	1.00
Thru Delay (sec/veh)	9.7

DEFAULT VALUES

Pedestrian Mode	WB	EB
Average Pedestrian Walking Speed (ft/s):	3.5	3.5
Parallel Pedestrian Delay (sec)	0.0	0.0
Bicycle Mode	**WB**	**EB**
Pavement Condition	3.0	3.0
Bicycle Running Speed Avg.(mph)	15.0	15.0
Transit Mode	**WB**	**EB**
Transit Acel/Decel Rate (ft/s^2)	4.0	4.0
Prop. of Transit arriving on time	96%	96%
Ridership Elasticity Constant	-0.4	-0.4
Base travel time rate (min/mi)	4.0	4.0
Average Dwell Time (sec)	20.0	20.0
Avg. Passenger Trip Length (mi)	3.7	3.7
IF RNDBT: input v/c ratio for rightmost lane in green box	🟩	

SEGMENT ANALYSIS INPUTS

Project Name:	**SLORTA Maintenance Facility**		
Analyst	**RS**	SEGMENT #	**1**
Date	**7/14/2017**	PEAK HOUR:	**PM**
Analysis Conditions:	**Existing + Project Conditions**		

Roadway	**Prado Road**	*Direction A:*	*Direction B:*
From	**S. Higuera Street**	**WB**	**EB**
To	**US 101 NB Ramps/Elks Lane**	CBD?	**No**

SW Data from SLR

CROSS-SECTION DATA	WB	EB
Number of Thru Travel Lanes	1	1
Outside Travel Lane Width	12.0	12.0
Bike Lane Width	0.0	5.0
Parking Lane Width	0.0	0.0
Median Type (0-3)	0	
Median Width	0.0	
Is Curb Pesent?	Yes	Yes
Is Parking Striped?	No	No
Parking Occupancy %	0%	0%

SIDEWALK DATA	WB	EB
Sidewalk Width	6.8	9.0
Proportion of Length Adjacent to Window Display	0%	0%
Proportion of Length Adjacent to Building Face	0%	0%
Proportion of Length Adjacent to Fence or Low Wall	3%	6%
Buffer Width	3.6	16.5
% of Length with Buffer	5%	10%
Fixed Obj. Width (inside)	2.9	8.5
Fixed Obj. Width (outside)	1.9	0.0
Is buffer a continuous barrier?	No	No

From Counts

VEHICLE DATA	WB	EB
Vehicle Flow Rate (vph)	595	185
Peak Hour Factor	0.87	0.87
Heavy Vehicle %	2.0%	2.0%
Left/Right Turns %	3.2%	80.0%
Thru Adj. Saturated Flow (vphpl)	1,863	1,863

SEGMENT LAYOUT DATA	WB	EB
Segment Length (ft)	1,742	1,691
Speed Limit (mph)	35	35
Left Turn Pocket?	No	Yes
Percent Restrictive Median	0%	11%
Access Point Density (pts/mi)	11	11
Width of Intersection	96	45

PEDESTRIAN DATA	WB	EB	
Pedestrian Flow Rate (peds/hr)	2	3	*From Co*
Downstream ped score at intersection			*Update F*
Ped delay at signalized crossing (sec/ped)			
Ped Diversion Distance (ft)	575	558	

BICYCLE DATA	WB	EB	
Bicycle Delay at downstream intersection (s/bike)			*Update F*
Bicycle LOS score at intersection			
Number of Access Points on Right Side		6	

TRANSIT DATA	WB	EB
ANALYZE TRANSIT STOPS?	No	No
Number of Stops		1
Route Name		AM ONLY
Proportion of stops with Shelters		
Proportion of stops with Benches		
Reentry Delay (sec)		
Stop Location to Intersection		
Transit Route Headway (min)		
Avg. Passenger Load Factor (pass/seat)		

EB
S. Higuera Street

EB Downstream Intersection Data		
Intersection Control	Signal	
Cycle Length (sec)	91.0	*Update From Synchro*
Eff. Green Time (sec)	12.0	
Green/Cycle for Thru (%) g/C	17%	
Stops/Veh	0.81	
Thru Delay (sec/veh)	23.4	

WB
Ramps/Elks Lane

WB Downstream Intersection Data	
Intersection Control	AWSC
Cycle Length (sec)	
Eff. Green Time (sec)	
Green/Cycle for Thru (%) g/C	
Stops/Veh	1.00
Thru Delay (sec/veh)	19.6

DEFAULT VALUES

Pedestrian Mode	WB	EB
Average Pedestrian Walking Speed (ft/s):	3.5	3.5
Parallel Pedestrian Delay (sec)	0.0	0.0
Bicycle Mode	**WB**	**EB**
Pavement Condition	3.0	3.0
Bicycle Running Speed Avg.(mph)	15.0	15.0
Transit Mode	**WB**	**EB**
Transit Acel/Decel Rate (ft/s^2)	4.0	4.0
Prop. of Transit arriving on time	96%	96%
Ridership Elasticity Constant	-0.4	-0.4
Base travel time rate (min/mi)	4.0	4.0
Average Dwell Time (sec)	20.0	20.0
Avg. Passenger Trip Length (mi)	3.7	3.7
IF RNDBT: input v/c ratio for rightmost lane in green box	🟩	

HCM 2010 AWSC
1: Prado & US 101 NB & Elks Lane

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	9	174	0	4	0	10	0	0	331	8
Future Vol, veh/h	0	0	9	174	0	4	0	10	0	0	331	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	0	2	2	2	2	2
Mvmt Flow	0	0	10	189	0	4	0	11	0	0	360	9
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.5	7.8	10.8
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	29%
Vol Thru, %	98%	5%	0%
Vol Right, %	2%	95%	71%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	339	183	14
LT Vol	0	0	4
Through Vol	331	9	0
RT Vol	8	174	10
Lane Flow Rate	368	199	15
Geometry Grp	1	1	1
Degree of Util (X)	0.439	0.234	0.02
Departure Headway (Hd)	4.413	4.244	4.651
Convergence, Y/N	Yes	Yes	Yes
Cap	822	851	772
Service Time	2.413	2.245	2.663
HCM Lane V/C Ratio	0.448	0.234	0.019
HCM Control Delay	10.8	8.5	7.8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.3	0.9	0.1

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane

Intersection	
Int Delay, s/veh	0.7

Movement	NBL	NBT	SBT	SBR	NEL	NER
Traffic Vol, veh/h	5	370	913	58	28	9
Future Vol, veh/h	5	370	913	58	28	9
Conflicting Peds, #/hr	5	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	70	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	402	992	63	30	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	992	0	-	0	1204	501
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	693	-	-	-	177	515
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	690	-	-	-	175	513
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	796	-

Approach	NB	SB	NE
HCM Control Delay, s	0.1	0	26.4
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	208	690	-	-	-
HCM Lane V/C Ratio	0.193	0.008	-	-	-
HCM Control Delay (s)	26.4	10.3	0	-	-
HCM Lane LOS	D	B	A	-	-
HCM 95th %tile Q(veh)	0.7	0	-	-	-

HCM 2010 Signalized Intersection Summary
3: Higuera & Prado

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑↱		↰	↑↑↱	
Traffic Volume (veh/h)	58	84	78	65	64	35	230	243	28	229	527	37
Future Volume (veh/h)	58	84	78	65	64	35	230	243	28	229	527	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	82	118	110	79	78	43	240	253	29	252	579	41
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.82	0.82	0.82	0.96	0.96	0.96	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	419	346	328	419	346	307	906	103	320	972	69
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.17	0.28	0.28	0.18	0.29	0.29
Sat Flow, veh/h	1249	1863	1535	1136	1863	1538	1774	3188	361	1774	3332	235
Grp Volume(v), veh/h	82	118	110	79	78	43	240	139	143	252	307	313
Grp Sat Flow(s),veh/h/ln	1249	1863	1535	1136	1863	1538	1774	1770	1779	1774	1770	1798
Q Serve(g_s), s	3.1	2.9	3.3	3.4	1.9	1.2	7.1	3.3	3.4	7.4	8.1	8.2
Cycle Q Clear(g_c), s	5.0	2.9	3.3	6.3	1.9	1.2	7.1	3.3	3.4	7.4	8.1	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.13
Lane Grp Cap(c), veh/h	370	419	346	328	419	346	307	503	505	320	516	524
V/C Ratio(X)	0.22	0.28	0.32	0.24	0.19	0.12	0.78	0.28	0.28	0.79	0.59	0.60
Avail Cap(c_a), veh/h	613	782	644	549	782	645	680	968	973	680	968	984
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	17.6	17.7	20.2	17.2	16.9	21.7	15.2	15.3	21.4	16.6	16.7
Incr Delay (d2), s/veh	0.3	0.4	0.5	0.4	0.2	0.2	4.3	0.3	0.3	4.3	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	2.7	2.6	2.0	1.8	1.0	6.9	3.0	3.1	7.2	7.3	7.5
LnGrp Delay(d),s/veh	19.5	17.9	18.3	20.5	17.4	17.1	26.0	15.5	15.6	25.7	17.7	17.7
LnGrp LOS	B	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		310			200			522			872	
Approach Delay, s/veh		18.5			18.6			20.4			20.0	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.9	21.6		18.3	14.5	22.0		18.3
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	21.0	30.0		23.0	21.0	30.0		23.0
Max Q Clear Time (g_c+I1), s	9.4	5.4		7.0	9.1	10.2		8.3
Green Ext Time (p_c), s	0.7	5.4		2.4	0.7	5.0		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	20.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	11	193	0	9	0	15	0	0	582	10
Future Vol, veh/h	0	0	11	193	0	9	0	15	0	0	582	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	0	2	2	2	2	2
Mvmt Flow	0	0	12	210	0	10	0	16	0	0	633	11
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.2	8.8	24
HCM LOS	B	A	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	38%
Vol Thru, %	98%	5%	0%
Vol Right, %	2%	95%	62%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	592	204	24
LT Vol	0	0	9
Through Vol	582	11	0
RT Vol	10	193	15
Lane Flow Rate	643	222	26
Geometry Grp	1	1	1
Degree of Util (X)	0.81	0.304	0.04
Departure Headway (Hd)	4.53	4.934	5.487
Convergence, Y/N	Yes	Yes	Yes
Cap	791	723	645
Service Time	2.588	3.002	3.585
HCM Lane V/C Ratio	0.813	0.307	0.04
HCM Control Delay	24	10.2	8.8
HCM Lane LOS	C	B	A
HCM 95th-tile Q	8.7	1.3	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane

Intersection	
Int Delay, s/veh	1

Movement	NBL	NBT	SBT	SBR	NEL	NER
Traffic Vol, veh/h	22	670	830	64	25	18
Future Vol, veh/h	22	670	830	64	25	18
Conflicting Peds, #/hr	5	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	70	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	728	902	70	27	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	902	0	-	0	1314	456
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	412	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	749	-	-	-	150	551
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	745	-	-	-	142	548
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	603	-

Approach	NB	SB	NE
HCM Control Delay, s	0.6	0	27.5
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	206	745	-	-	-
HCM Lane V/C Ratio	0.227	0.032	-	-	-
HCM Control Delay (s)	27.5	10	0.3	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	-

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑↱		↰	↑↑↱	
Traffic Volume (veh/h)	49	35	85	75	76	67	451	688	55	83	626	55
Future Volume (veh/h)	49	35	85	75	76	67	451	688	55	83	626	55
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	65	47	113	115	117	103	496	756	60	87	659	58
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.75	0.75	0.75	0.65	0.65	0.65	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	367	302	314	367	303	527	1648	131	115	868	76
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.50	0.50	0.06	0.27	0.27
Sat Flow, veh/h	1143	1863	1531	1204	1863	1534	1774	3312	263	1774	3267	287
Grp Volume(v), veh/h	65	47	113	115	117	103	496	404	412	87	357	360
Grp Sat Flow(s),veh/h/ln	1143	1863	1531	1204	1863	1534	1774	1770	1805	1774	1770	1784
Q Serve(g_s), s	3.7	1.5	4.5	6.2	3.8	4.1	19.3	10.5	10.5	3.4	13.1	13.2
Cycle Q Clear(g_c), s	7.5	1.5	4.5	7.6	3.8	4.1	19.3	10.5	10.5	3.4	13.1	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	266	367	302	314	367	303	527	881	898	115	470	474
V/C Ratio(X)	0.24	0.13	0.37	0.37	0.32	0.34	0.94	0.46	0.46	0.76	0.76	0.76
Avail Cap(c_a), veh/h	412	606	498	468	606	499	527	881	898	527	750	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	23.4	24.6	26.5	24.3	24.4	24.3	11.6	11.6	32.5	23.9	23.9
Incr Delay (d2), s/veh	0.5	0.2	0.8	0.7	0.5	0.7	25.5	0.4	0.4	9.6	2.5	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	1.4	3.6	3.8	3.6	3.2	19.0	8.9	9.0	3.6	10.9	11.0
LnGrp Delay(d),s/veh	28.0	23.5	25.4	27.2	24.8	25.1	49.8	11.9	11.9	42.1	26.4	26.4
LnGrp LOS	C	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		225			335			1312			804	
Approach Delay, s/veh		25.8			25.7			26.3			28.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	41.2		20.0	26.0	24.8		20.0
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	21.0	30.0		23.0	21.0	30.0		23.0
Max Q Clear Time (g_c+I1), s	5.4	12.5		9.5	21.3	15.2		9.6
Green Ext Time (p_c), s	0.2	8.6		2.4	0.0	3.7		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	26	174	0	11	0	16	0	0	329	26
Future Vol, veh/h	0	0	26	174	0	11	0	16	0	0	329	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	0	2	2	2	2	2
Mvmt Flow	0	0	28	189	0	12	0	17	0	0	358	28
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.9	8.1	11.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	41%
Vol Thru, %	93%	13%	0%
Vol Right, %	7%	87%	59%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	355	200	27
LT Vol	0	0	11
Through Vol	329	26	0
RT Vol	26	174	16
Lane Flow Rate	386	217	29
Geometry Grp	1	1	1
Degree of Util (X)	0.476	0.263	0.039
Departure Headway (Hd)	4.44	4.357	4.824
Convergence, Y/N	Yes	Yes	Yes
Cap	810	824	740
Service Time	2.473	2.387	2.868
HCM Lane V/C Ratio	0.477	0.263	0.039
HCM Control Delay	11.5	8.9	8.1
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.6	1.1	0.1

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach
Opposing Approach
Opposing Lanes
Conflicting Approach Left
Conflicting Lanes Left
Conflicting Approach Right
Conflicting Lanes Right
HCM Control Delay
HCM LOS

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	NBL	NBT	SBT	SBR	NEL	NER
Traffic Vol, veh/h	5	370	911	79	36	9
Future Vol, veh/h	5	370	911	79	36	9
Conflicting Peds, #/hr	5	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	70	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	402	990	86	39	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	990	0	-	0	1202	500
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	694	-	-	-	177	516
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	803	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	691	-	-	-	175	514
Mov Cap-2 Maneuver	-	-	-	-	175	-
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	796	-

Approach	NB	SB	NE
HCM Control Delay, s	0.1	0	28.4
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	202	691	-	-	-
HCM Lane V/C Ratio	0.242	0.008	-	-	-
HCM Control Delay (s)	28.4	10.3	0	-	-
HCM Lane LOS	D	B	A	-	-
HCM 95th %tile Q(veh)	0.9	0	-	-	-

HCM 2010 Signalized Intersection Summary
3: Higuera & Prado

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	59	85	83	65	66	35	243	243	28	229	525	40
Future Volume (veh/h)	59	85	83	65	66	35	243	243	28	229	525	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	120	117	79	80	43	253	253	29	252	577	44
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.71	0.71	0.71	0.82	0.82	0.82	0.96	0.96	0.96	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	367	420	346	323	420	346	321	925	105	319	959	73
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.18	0.29	0.29	0.18	0.29	0.29
Sat Flow, veh/h	1247	1863	1535	1127	1863	1538	1774	3188	361	1774	3312	252
Grp Volume(v), veh/h	83	120	117	79	80	43	253	139	143	252	308	313
Grp Sat Flow(s),veh/h/ln	1247	1863	1535	1127	1863	1538	1774	1770	1779	1774	1770	1794
Q Serve(g_s), s	3.2	3.0	3.6	3.5	1.9	1.2	7.6	3.4	3.5	7.6	8.3	8.4
Cycle Q Clear(g_c), s	5.2	3.0	3.6	6.5	1.9	1.2	7.6	3.4	3.5	7.6	8.3	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.14
Lane Grp Cap(c), veh/h	367	420	346	323	420	346	321	514	516	319	512	519
V/C Ratio(X)	0.23	0.29	0.34	0.24	0.19	0.12	0.79	0.27	0.28	0.79	0.60	0.60
Avail Cap(c_a), veh/h	599	767	632	533	767	634	667	951	956	667	951	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	17.9	18.1	20.6	17.5	17.2	21.9	15.3	15.3	21.9	17.1	17.1
Incr Delay (d2), s/veh	0.3	0.4	0.6	0.4	0.2	0.2	4.3	0.3	0.3	4.4	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	2.8	2.8	2.0	1.8	1.0	7.4	3.0	3.1	7.4	7.5	7.6
LnGrp Delay(d),s/veh	19.9	18.3	18.7	21.0	17.7	17.4	26.2	15.5	15.6	26.2	18.2	18.2
LnGrp LOS	B	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		320			202			535			873	
Approach Delay, s/veh		18.9			18.9			20.6			20.5	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.1	22.2		18.6	15.1	22.2		18.6
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	21.0	30.0		23.0	21.0	30.0		23.0
Max Q Clear Time (g_c+I1), s	9.6	5.5		7.2	9.6	10.4		8.5
Green Ext Time (p_c), s	0.7	5.4		2.4	0.7	5.0		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

4: Elks Lane & Prj Drwy #1

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	10	7	20	34	21	15
Future Vol, veh/h	10	7	20	34	21	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	8	22	37	23	16

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	40	0	0	59	0
Stage 1	40	-	-	-	-	-
Stage 2	62	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	896	1031	-	-	1545	-
Stage 1	982	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	883	1031	-	-	1545	-
Mov Cap-2 Maneuver	883	-	-	-	-	-
Stage 1	982	-	-	-	-	-
Stage 2	947	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	4.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	938	1545	-
HCM Lane V/C Ratio	-	-	0.02	0.015	-
HCM Control Delay (s)	-	-	8.9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

HCM 2010 TWSC
5: Elks Lane & Prj Drwy #2

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	2	2	52	0	0	25
Future Vol, veh/h	2	2	52	0	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	2	2	57	0	0	27

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	84	57	0	0	57	0
Stage 1	57	-	-	-	-	-
Stage 2	27	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	898	987	-	-	1498	-
Stage 1	946	-	-	-	-	-
Stage 2	975	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	898	987	-	-	1498	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	946	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	940	1498	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

1: Prado & US 101 NB

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Traffic Vol, veh/h	0	0	19	193	0	27	0	29	0	0	576	19
Future Vol, veh/h	0	0	19	193	0	27	0	29	0	0	576	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	0	2	2	2	2	2
Mvmt Flow	0	0	21	210	0	29	0	32	0	0	626	21
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	10.6	9.4	26.5
HCM LOS	B	A	D

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	48%
Vol Thru, %	97%	9%	0%
Vol Right, %	3%	91%	52%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	595	212	56
LT Vol	0	0	27
Through Vol	576	19	0
RT Vol	19	193	29
Lane Flow Rate	647	230	61
Geometry Grp	1	1	1
Degree of Util (X)	0.833	0.323	0.097
Departure Headway (Hd)	4.638	5.044	5.743
Convergence, Y/N	Yes	Yes	Yes
Cap	776	705	628
Service Time	2.714	3.137	3.743
HCM Lane V/C Ratio	0.834	0.326	0.097
HCM Control Delay	26.5	10.6	9.4
HCM Lane LOS	D	B	A
HCM 95th-tile Q	9.4	1.4	0.3

Intersection				
Intersection Delay, s/veh				
Intersection LOS				

Movement	SBU	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane

Intersection	
Int Delay, s/veh	1.4

Movement	NBL	NBT	SBT	SBR	NEL	NER
Traffic Vol, veh/h	22	663	830	72	39	18
Future Vol, veh/h	22	663	830	72	39	18
Conflicting Peds, #/hr	5	0	0	3	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	70	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	39
Mvmt Flow	24	721	902	78	42	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	902	0	-	0	1310	456
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	4.14	-	-	-	6.84	7.68
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.69
Pot Cap-1 Maneuver	749	-	-	-	151	462
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	640	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	745	-	-	-	143	460
Mov Cap-2 Maneuver	-	-	-	-	143	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	605	-

Approach	NB	SB	NE
HCM Control Delay, s	0.6	0	34.4
HCM LOS			D

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	183	745	-	-	-
HCM Lane V/C Ratio	0.339	0.032	-	-	-
HCM Control Delay (s)	34.4	10	0.3	-	-
HCM Lane LOS	D	A	A	-	-
HCM 95th %tile Q(veh)	1.4	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↱		↰	↑↱	
Traffic Volume (veh/h)	52	37	96	75	77	67	451	688	55	83	626	56
Future Volume (veh/h)	52	37	96	75	77	67	451	688	55	83	626	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.97	1.00		0.97	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	69	49	128	115	118	103	496	756	60	87	659	59
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.75	0.75	0.75	0.65	0.65	0.65	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	372	305	312	372	306	524	1644	130	115	867	77
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.50	0.50	0.06	0.27	0.27
Sat Flow, veh/h	1142	1863	1531	1186	1863	1535	1774	3312	263	1774	3261	292
Grp Volume(v), veh/h	69	49	128	115	118	103	496	404	412	87	357	361
Grp Sat Flow(s),veh/h/ln	1142	1863	1531	1186	1863	1535	1774	1770	1805	1774	1770	1783
Q Serve(g_s), s	3.9	1.5	5.2	6.3	3.8	4.1	19.4	10.6	10.6	3.4	13.2	13.2
Cycle Q Clear(g_c), s	7.8	1.5	5.2	7.8	3.8	4.1	19.4	10.6	10.6	3.4	13.2	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		0.16
Lane Grp Cap(c), veh/h	267	372	305	312	372	306	524	878	896	115	470	474
V/C Ratio(X)	0.26	0.13	0.42	0.37	0.32	0.34	0.95	0.46	0.46	0.76	0.76	0.76
Avail Cap(c_a), veh/h	409	603	496	460	603	497	524	878	896	524	747	753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	23.4	24.8	26.6	24.3	24.4	24.5	11.7	11.7	32.7	24.0	24.0
Incr Delay (d2), s/veh	0.5	0.2	0.9	0.7	0.5	0.6	26.4	0.4	0.4	9.6	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	1.5	4.1	3.8	3.6	3.2	19.3	9.0	9.2	3.6	11.1	11.1
LnGrp Delay(d),s/veh	28.1	23.5	25.8	27.3	24.8	25.0	50.9	12.1	12.0	42.3	26.6	26.6
LnGrp LOS	C	C	C	C	C	C	D	B	B	D	C	C
Approach Vol, veh/h		246			336			1312			805	
Approach Delay, s/veh		26.0			25.7			26.7			28.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.6	41.3		20.2	26.0	24.9		20.2
Change Period (Y+Rc), s	5.0	6.0		6.0	5.0	6.0		6.0
Max Green Setting (Gmax), s	21.0	30.0		23.0	21.0	30.0		23.0
Max Q Clear Time (g_c+I1), s	5.4	12.6		9.8	21.4	15.2		9.8
Green Ext Time (p_c), s	0.2	8.6		2.5	0.0	3.6		2.5

Intersection Summary			
HCM 2010 Ctrl Delay			27.0
HCM 2010 LOS			C

4: Elks Lane & Prj Drwy #1

Intersection	
Int Delay, s/veh	4.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	34	21	36	0	8	24
Future Vol, veh/h	34	21	36	0	8	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	23	39	0	9	26

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	82	39	0	0	39	0
Stage 1	39	-	-	-	-	-
Stage 2	43	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	920	1033	-	-	1571	-
Stage 1	983	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	914	1033	-	-	1571	-
Mov Cap-2 Maneuver	914	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	973	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	1571	-
HCM Lane V/C Ratio	-	-	0.063	0.006	-
HCM Control Delay (s)	-	-	9	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

HCM 2010 TWSC
5: Prj Drwy #2 & Elks Lane

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	36	2	2	56
Future Vol, veh/h	0	0	36	2	2	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	10	10	10	10	10	10
Mvmt Flow	0	0	39	2	2	61

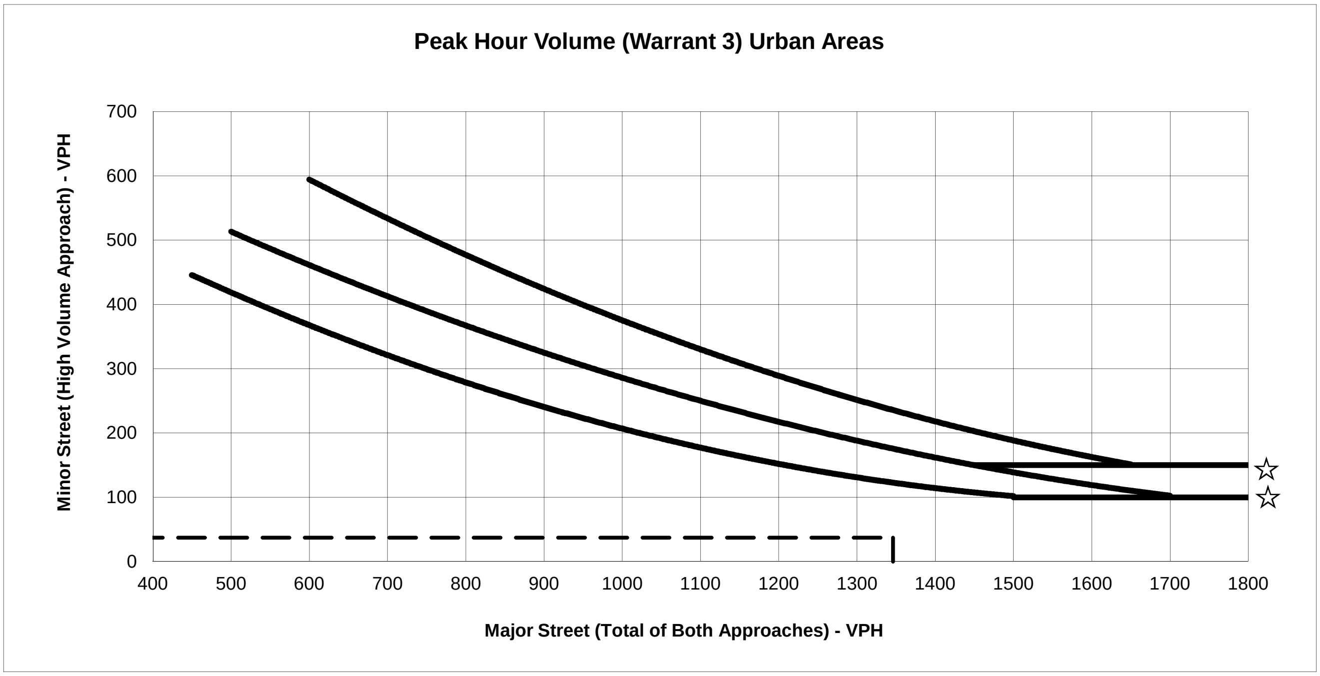
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	105	40	0	0	41	0
Stage 1	40	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.2	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.29	-
Pot Cap-1 Maneuver	874	1009	-	-	1518	-
Stage 1	962	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	873	1009	-	-	1518	-
Mov Cap-2 Maneuver	873	-	-	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1518	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	-	-	0	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

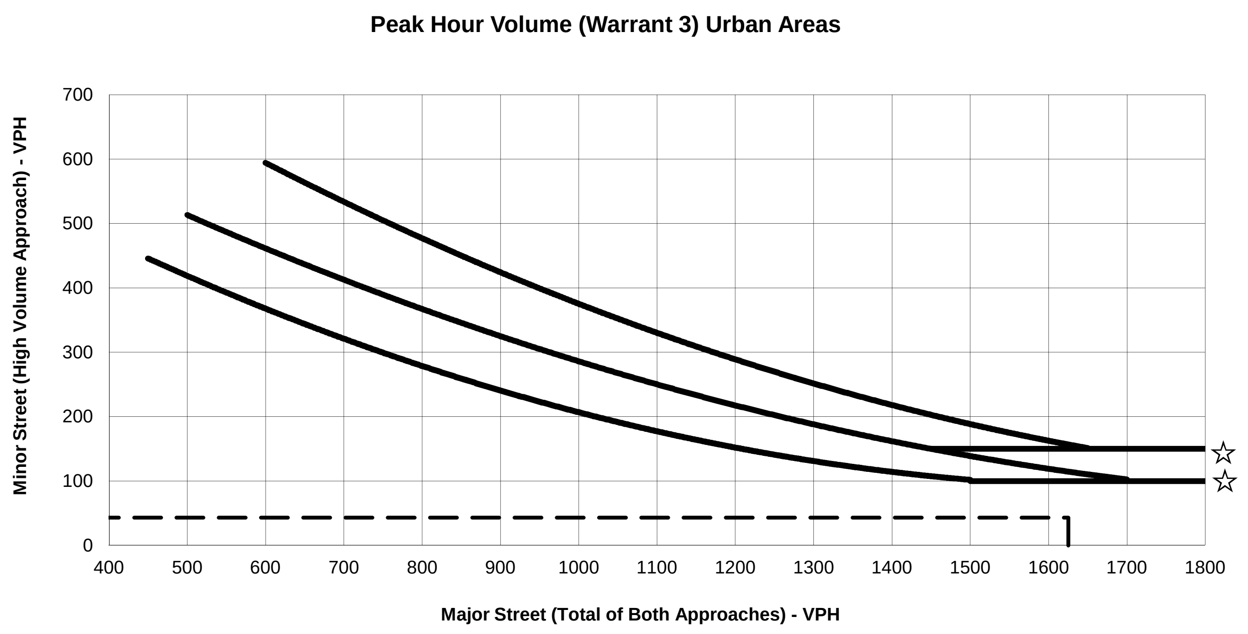


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM)	Existing (AM)	
		Number of Lanes
Major Approach	Higuera Street	
Minor Approach	Elks Lane	
Major St. Volume:	1346	
Minor St. Volume:	37	
Warrant Met?:	No	

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	**Minor Street High Volume Approach**	**Major Street Total of Both Approaches**	**Minor Street High Volume Approach**	**Major Street Total of Both Approaches**	**Minor Street High Volume Approach**
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

SCENARIO (AM/PM) Existing (AM)

Number of Lanes

Major Approach Higuera Street
Minor Approach Elks Lane

Major St. Volume: 1625
Minor St. Volume: 43
Warrant Met?: No

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE: Wed, Feb 3, 16	LOCATION:	San Luis Obispo	PROJECT #:	SC0843
	NORTH & SOUTH:	Higuera	LOCATION #:	52
	EAST & WEST:	Prado	CONTROL:	SIGNAL

NOTES:

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☑ Add U-Turns to Left Turns

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
		Higuera			Higuera			Prado			Prado								
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	1	1	1	1	1	1	2	0	1	2	0		0	0	0	0	
AM	8:00 AM	56	57	8	74	129	10	17	40	20	15	21	10	457	0	0	0	0	0
	8:15 AM	59	56	9	64	147	8	12	20	19	21	20	9	444	0	0	0	0	0
	8:30 AM	57	64	5	45	108	11	15	13	13	13	16	11	371	0	0	0	0	0
	8:45 AM	58	66	6	46	143	8	14	11	26	16	7	5	406	0	0	0	0	0
	9:00 AM	62	67	10	33	94	5	13	12	17	28	8	6	355	0	0	0	0	0
	9:15 AM	53	53	10	31	107	13	9	9	24	10	6	5	330	0	0	0	0	0
	9:30 AM	49	50	3	30	95	11	11	4	15	7	11	16	302	0	0	0	0	0
	9:45 AM	58	79	9	31	98	10	11	8	22	11	7	12	356	0	0	0	0	0
	VOLUMES	452	492	60	354	921	76	102	117	156	121	96	74	3,021	0	0	0	0	0
	APPROACH %	45%	49%	6%	26%	68%	6%	27%	31%	42%	42%	33%	25%						
	APP/DEPART	1,004	/	668	1,351	/	1,198	375	/	531	291	/	624	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	230	243	28	229	527	37	58	84	78	65	64	35	1,678					
	APPROACH %	46%	49%	6%	29%	66%	5%	26%	38%	35%	40%	39%	21%						
	PEAK HR FACTOR		0.963			0.905			0.714			0.820		0.918					
	APP/DEPART	501	/	336	793	/	670	220	/	341	164	/	331	0					
MD	11:15 AM	71	90	8	19	139	7	12	8	14	13	9	15	405	0	0	0	0	0
	11:30 AM	69	125	13	15	152	16	11	7	10	10	14	22	464	0	0	0	0	0
	11:45 AM	91	121	16	22	142	13	9	4	17	11	22	20	488	0	0	0	0	0
	12:00 PM	82	119	9	28	149	9	8	8	13	17	29	38	509	0	0	0	0	0
	12:15 PM	76	136	16	28	159	10	8	7	19	15	24	22	520	0	0	0	0	0
	12:30 PM	77	94	11	20	128	10	15	8	16	13	20	16	428	0	0	0	0	0
	12:45 PM	86	112	11	38	173	11	10	11	17	19	17	18	523	0	0	0	0	0
	1:00 PM	96	113	9	31	139	5	5	7	22	10	15	16	468	0	0	0	0	0
	VOLUMES	648	910	93	201	1,181	81	78	60	128	108	150	167	3,805	0	0	0	0	0
	APPROACH %	39%	55%	6%	14%	81%	6%	29%	23%	48%	25%	35%	39%						
	APP/DEPART	1,651	/	1,155	1,463	/	1,417	266	/	354	425	/	879	0					
	BEGIN PEAK HR		11:30 AM																
	VOLUMES	318	501	54	93	602	48	36	26	59	53	89	102	1,981					
	APPROACH %	36%	57%	6%	13%	81%	6%	30%	21%	49%	22%	36%	42%						
	PEAK HR FACTOR		0.957			0.943			0.890			0.726		0.952					
	APP/DEPART	873	/	639	743	/	714	121	/	173	244	/	455	0					
PM	04:00 PM	115	118	10	22	156	12	12	3	11	21	29	8	517	0	0	0	0	0
	4:15 PM	116	116	14	23	159	3	10	5	19	17	23	23	528	0	0	0	0	0
	4:30 PM	114	131	10	22	161	19	9	7	26	20	48	17	584	0	0	0	0	0
	4:45 PM	119	164	14	24	141	15	19	10	27	18	43	19	613	0	0	0	0	0
	5:00 PM	100	216	14	21	168	12	11	8	19	46	61	44	720	0	0	0	0	0
	5:15 PM	118	177	17	16	156	9	10	10	13	20	31	24	601	0	0	0	0	0
	5:30 PM	131	144	11	16	107	14	12	4	8	10	23	19	499	0	0	0	0	0
	5:45 PM	128	113	11	17	93	4	3	3	14	13	17	9	425	0	0	0	0	0
	VOLUMES	941	1,179	101	161	1,141	88	86	50	137	165	275	163	4,487	0	0	0	0	0
	APPROACH %	42%	53%	5%	12%	82%	6%	32%	18%	50%	27%	46%	27%						
	APP/DEPART	2,221	/	1,428	1,390	/	1,443	273	/	312	603	/	1,304	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	451	688	55	83	626	55	49	35	85	104	183	104	2,518					
	APPROACH %	38%	58%	5%	11%	82%	7%	29%	21%	50%	27%	47%	27%						
	PEAK HR FACTOR		0.905			0.946			0.754			0.647		0.874					
	APP/DEPART	1,194	/	841	764	/	815	169	/	173	391	/	689	0					

Higuera

NORTH SIDE

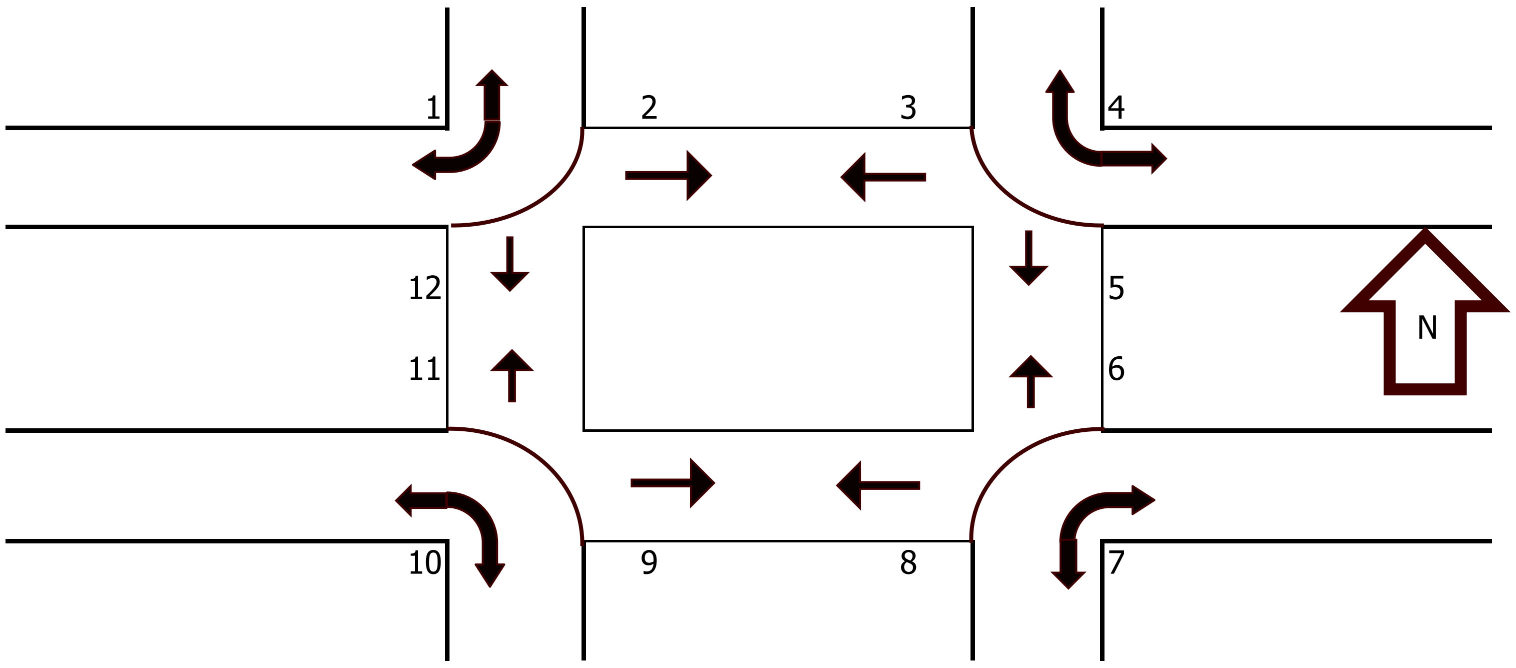
Prado WEST SIDE

EAST SIDE **Prado**

SOUTH SIDE

Higuera

		PEDESTRIAN CROSSINGS												
		1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AM	8:00 AM	0	0	0	0	0	1	0	3	4	4	1	0	13
	8:15 AM	0	0	0	1	0	4	2	0	4	1	1	0	13
	8:30 AM	0	0	0	0	0	1	0	0	1	1	1	0	4
	8:45 AM	0	0	0	2	1	1	0	1	0	0	0	0	5
	9:00 AM	0	1	0	1	1	0	0	0	0	0	1	0	4
	9:15 AM	0	0	0	5	0	1	0	2	0	0	1	1	10
	9:30 AM	0	1	0	0	0	1	0	0	0	0	0	1	3
	9:45 AM	0	0	0	0	1	0	0	2	0	0	0	1	4
	TOTAL	0	2	0	9	3	9	2	8	9	6	5	3	56
MD	11:15 AM	0	1	1	1	1	0	0	1	0	2	0	0	7
	11:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
	11:45 AM	0	0	1	0	0	1	0	0	1	0	0	1	4
	12:00 PM	0	1	0	1	1	0	0	0	2	0	3	0	8
	12:15 PM	0	0	0	1	0	1	0	3	0	0	0	3	8
	12:30 PM	0	0	0	1	0	0	0	0	2	1	1	0	5
	12:45 PM	0	1	0	0	1	0	0	2	1	5	1	0	11
	1:00 PM	0	0	2	1	3	0	0	0	2	0	2	0	10
	TOTAL	0	3	5	5	6	2	0	6	8	8	7	4	54
PM	4:00 PM	0	0	1	0	0	2	0	0	0	1	2	1	7
	4:15 PM	0	0	0	1	1	1	0	0	0	0	0	2	5
	4:30 PM	0	0	1	0	1	0	0	1	0	1	1	0	5
	4:45 PM	0	0	0	1	0	0	0	0	0	1	1	1	4
	5:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	2
	5:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
	5:30 PM	0	0	0	0	1	0	0	0	1	1	1	0	4
	5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
	TOTAL	0	0	2	3	5	3	0	2	1	6	5	4	31



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:	LOCATION: San Luis Obispo	PROJECT #:	SC0843
Wed, Feb 3, 16	NORTH & SOUTH: Higuera	LOCATION #:	52
	EAST & WEST: Prado	CONTROL:	SIGNAL

NOTES:

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		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
		Higuera			Higuera			Prado			Prado			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	LANES:	1	1	1	1	1	1	1	2	0	1	2	0	
AM	8:00 AM	0	1	0	0	0	0	0	0	1	0	0	0	2
	8:15 AM	0	0	0	1	1	0	0	0	0	0	0	0	2
	8:30 AM	0	3	0	0	2	0	0	0	1	0	0	0	6
	8:45 AM	0	0	0	0	3	0	2	0	1	0	1	0	7
	9:00 AM	0	2	1	2	1	0	0	0	0	0	0	0	6
	9:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	9:30 AM	0	3	3	0	3	0	0	0	0	0	0	0	9
	9:45 AM	0	2	0	0	1	0	0	0	0	0	5	0	8
	VOLUMES	0	12	4	3	12	0	2	0	3	0	6	0	42
	APPROACH %	0%	75%	25%	20%	80%	0%	40%	0%	60%	0%	100%	0%	
	APP/DEPART	16	/	14	15	/	15	5	/	7	6	/	6	0
	BEGIN PEAK HR		9:00 AM											
	VOLUMES	0	8	4	2	6	0	0	0	0	0	5	0	25
	APPROACH %	0%	67%	33%	25%	75%	0%	0%	0%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.500			0.667			0.000			0.250		0.694
	APP/DEPART	12	/	8	8	/	6	0	/	6	5	/	5	0
MD	11:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	11:30 AM	0	2	0	0	1	0	0	0	2	0	0	0	5
	11:45 AM	1	4	1	0	6	1	0	0	1	0	0	0	14
	12:00 PM	0	8	0	0	3	0	0	0	0	0	1	1	13
	12:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	3
	12:30 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
	12:45 PM	0	0	0	1	1	0	0	0	1	0	0	0	3
	1:00 PM	0	3	0	0	4	0	0	1	1	0	0	1	10
	VOLUMES	1	21	1	1	18	2	0	1	5	0	1	2	53
	APPROACH %	4%	91%	4%	5%	86%	10%	0%	17%	83%	0%	33%	67%	
	APP/DEPART	23	/	23	21	/	23	6	/	3	3	/	4	0
	BEGIN PEAK HR		11:30 AM											
	VOLUMES	1	16	1	0	10	2	0	0	3	0	1	1	35
	APPROACH %	6%	89%	6%	0%	83%	17%	0%	0%	100%	0%	50%	50%	
	PEAK HR FACTOR		0.563			0.429			0.375			0.250		0.625
	APP/DEPART	18	/	17	12	/	13	3	/	1	2	/	4	0
PM	04:00 PM	1	2	0	0	1	0	0	0	0	0	0	0	4
	4:15 PM	1	3	0	0	0	0	0	0	1	0	0	0	5
	4:30 PM	1	3	0	1	3	0	0	0	0	0	0	1	9
	4:45 PM	2	3	0	0	0	0	0	0	0	0	0	0	5
	5:00 PM	0	4	0	0	1	0	0	0	1	0	0	1	7
	5:15 PM	0	2	0	0	3	0	0	0	0	0	0	0	5
	5:30 PM	0	3	0	0	1	0	0	0	0	0	0	0	4
	5:45 PM	0	4	0	0	1	0	0	0	0	0	0	1	6
	VOLUMES	5	24	0	1	10	0	0	0	2	0	0	3	45
	APPROACH %	17%	83%	0%	9%	91%	0%	0%	0%	100%	0%	0%	100%	
	APP/DEPART	29	/	27	11	/	12	2	/	1	3	/	5	0
	BEGIN PEAK HR		4:15 PM											
	VOLUMES	3	12	0	1	7	0	0	0	1	0	0	2	26
	APPROACH %	20%	80%	0%	13%	88%	0%	0%	0%	100%	0%	0%	100%	
	PEAK HR FACTOR		0.750			0.500			0.250			0.500		0.722
	APP/DEPART	15	/	14	8	/	8	1	/	1	2	/	3	0

Higuera

NORTH SIDE

Prado WEST SIDE

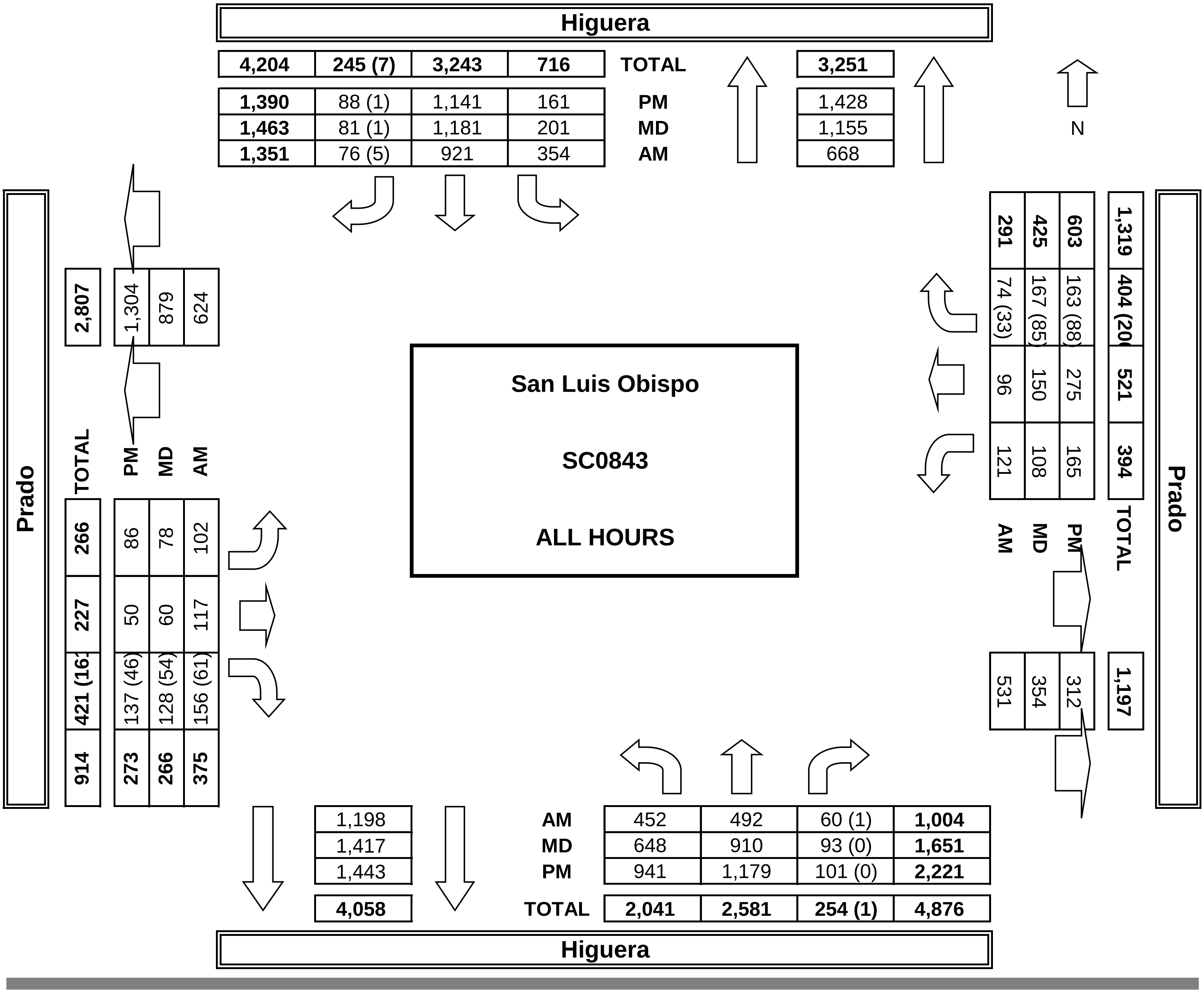
EAST SIDE **Prado**

SOUTH SIDE

Higuera

AimTD LLC

TURNING MOVEMENT COUNTS



San Luis Obispo

SC0843

ALL HOURS

Higuera (north)

TOTAL	**4,204**	**245 (7)**	**3,243**	**716**
PM	**1,390**	88 (1)	1,141	161
MD	**1,463**	81 (1)	1,181	201
AM	**1,351**	76 (5)	921	354

TOTAL	**3,251**
PM	1,428
MD	1,155
AM	668

Prado (east)

AM	**291**	74 (33)	96	121
MD	**425**	167 (85)	150	108
PM	**603**	163 (88)	275	165
TOTAL	**1,319**	**404 (20**	**521**	**394**

AM	531
MD	354
PM	312
TOTAL	**1,197**

Prado (west)

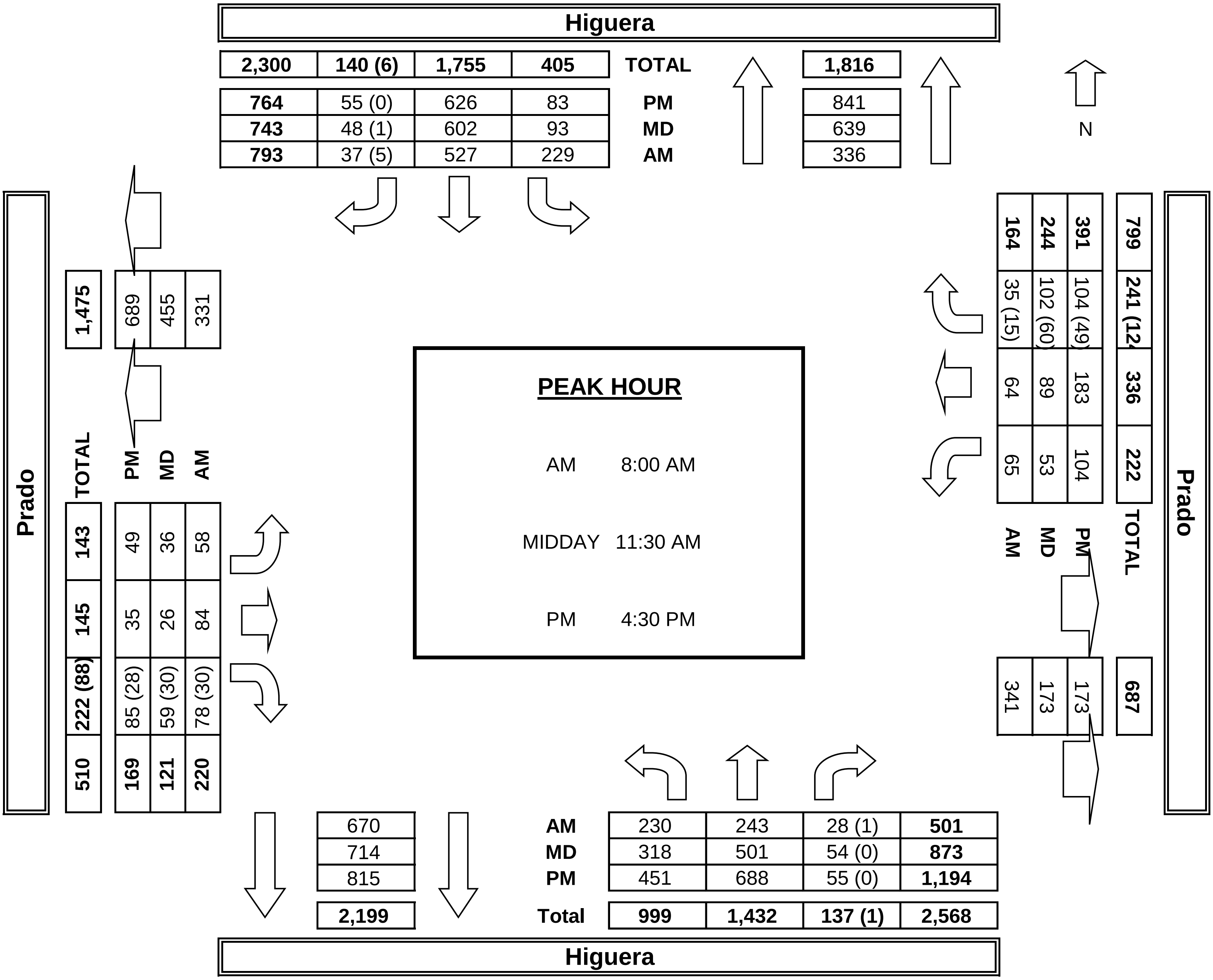
TOTAL	**2,807**
PM	1,304
MD	879
AM	624

TOTAL	**266**	**227**	**421 (16**	**914**
PM	86	50	137 (46)	**273**
MD	78	60	128 (54)	**266**
AM	102	117	156 (61)	**375**

Higuera (south)

AM	1,198
MD	1,417
PM	1,443
TOTAL	**4,058**

AM	452	492	60 (1)	**1,004**
MD	648	910	93 (0)	**1,651**
PM	941	1,179	101 (0)	**2,221**
TOTAL	**2,041**	**2,581**	**254 (1)**	**4,876**



2,300	140 (6)	1,755	405	TOTAL
764	55 (0)	626	83	PM
743	48 (1)	602	93	MD
793	37 (5)	527	229	AM

1,816
841
639
336

1,475	689	455	331
TOTAL	PM	MD	AM
143	49	36	58
145	35	26	84
222 (88)	85 (28)	59 (30)	78 (30)
510	169	121	220

PEAK HOUR

AM	8:00 AM
MIDDAY	11:30 AM
PM	4:30 PM

164	244	391	799
35 (15)	102 (60)	104 (49)	241 (12
64	89	183	336
65	53	104	222
AM	MD	PM	TOTAL
341	173	173	687

670
714
815
2,199

AM	230	243	28 (1)	501
MD	318	501	54 (0)	873
PM	451	688	55 (0)	1,194
Total	999	1,432	137 (1)	2,568

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Wed, Feb 3, 16

LOCATION:	San Luis Obispo	PROJECT #:	SC0843
NORTH & SOUTH:	Higuera	LOCATION #:	51
EAST & WEST:	Margarita	CONTROL:	SIGNAL

NOTES:

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☑ Add U-Turns to Left Turns

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				U-TURNS				
			Higuera			Higuera			Margarita			Margarita							
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB	TTL
	LANES:	1	2	0	1	2	0	0.5	0.5	1	0.5	0.5	1		0	0	0	0	
AM	8:00 AM	6	84	4	13	175	8	2	0	2	16	0	26	336	0	0	0	0	0
	8:15 AM	3	76	6	17	220	14	0	1	2	10	1	10	360	0	0	0	0	0
	8:30 AM	7	64	7	14	177	8	2	0	1	10	0	11	301	0	0	0	0	0
	8:45 AM	4	71	4	10	168	11	0	0	4	14	1	24	311	0	0	0	0	0
	9:00 AM	8	70	5	15	118	4	5	0	6	5	0	14	250	0	0	0	0	0
	9:15 AM	6	52	2	7	137	10	8	1	7	8	0	9	247	0	0	0	0	0
	9:30 AM	8	59	8	3	113	12	4	0	6	7	0	14	234	0	0	0	0	0
	9:45 AM	6	73	9	7	139	10	6	0	3	9	0	12	274	0	0	0	0	0
	VOLUMES	48	549	45	86	1,247	77	27	2	31	79	2	120	2,313	0	0	0	0	0
	APPROACH %	7%	86%	7%	6%	88%	5%	45%	3%	52%	39%	1%	60%						
	APP/DEPART	642	/	696	1,410	/	1,357	60	/	133	201	/	127	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	20	295	21	54	740	41	4	1	9	50	2	71	1,308					
	APPROACH %	6%	88%	6%	6%	89%	5%	29%	7%	64%	41%	2%	58%						
	PEAK HR FACTOR		0.894			0.832			0.875			0.732		0.908					
	APP/DEPART	336	/	370	835	/	799	14	/	76	123	/	63	0					
MD	11:15 AM	4	108	4	6	140	7	9	1	4	7	0	12	302	0	0	0	0	0
	11:30 AM	8	136	12	8	148	8	7	0	8	14	0	11	360	0	0	0	0	0
	11:45 AM	9	143	5	16	150	9	6	0	11	9	0	13	371	0	0	0	0	0
	12:00 PM	8	144	10	6	163	2	11	1	5	6	0	13	369	0	0	0	0	0
	12:15 PM	9	145	6	15	163	2	7	0	9	12	1	10	379	0	0	0	0	0
	12:30 PM	5	119	4	11	164	5	11	0	3	7	0	7	336	0	0	0	0	0
	12:45 PM	7	128	10	11	198	11	10	1	7	9	1	15	408	0	0	1	0	1
	1:00 PM	5	131	4	17	164	10	7	0	11	9	0	12	370	0	0	0	0	0
	VOLUMES	55	1,054	55	90	1,290	54	68	3	58	73	2	93	2,895	0	0	1	0	1
	APPROACH %	5%	91%	5%	6%	90%	4%	53%	2%	45%	43%	1%	55%						
	APP/DEPART	1,164	/	1,214	1,434	/	1,421	129	/	148	168	/	112	0					
	BEGIN PEAK HR		12:15 PM																
	VOLUMES	26	523	24	54	689	28	35	1	30	37	2	44	1,493					
	APPROACH %	5%	91%	4%	7%	89%	4%	53%	2%	45%	45%	2%	53%						
	PEAK HR FACTOR		0.895			0.876			0.917			0.830		0.915					
	APP/DEPART	573	/	601	771	/	756	66	/	79	83	/	57	0					
PM	03:00 PM	10	100	10	21	172	2	1	0	10	9	1	12	348	0	0	0	1	1
	3:15 PM	6	125	7	19	184	4	1	0	10	16	0	12	384	0	0	0	0	0
	3:30 PM	5	187	9	31	181	5	10	0	5	15	0	6	454	0	0	0	0	0
	3:45 PM	3	141	11	12	202	9	7	2	6	12	0	16	421	0	0	0	0	0
	4:00 PM	6	139	8	14	173	4	9	0	11	11	0	17	392	0	0	0	0	0
	4:15 PM	2	140	10	20	163	3	7	0	9	5	0	9	368	0	0	0	0	0
	4:30 PM	4	132	13	12	174	1	5	0	10	5	0	17	373	0	0	0	0	0
	4:45 PM	3	209	17	23	152	2	10	0	6	10	0	16	448	0	0	0	2	2
	VOLUMES	39	1,173	85	152	1,401	30	50	2	67	83	1	105	3,188	0	0	0	3	3
	APPROACH %	3%	90%	7%	10%	89%	2%	42%	2%	56%	44%	1%	56%						
	APP/DEPART	1,297	/	1,328	1,583	/	1,548	119	/	242	189	/	70	0					
	BEGIN PEAK HR		3:15 PM																
	VOLUMES	20	592	35	76	740	22	27	2	32	54	0	51	1,651					
	APPROACH %	3%	91%	5%	9%	88%	3%	44%	3%	52%	51%	0%	49%						
	PEAK HR FACTOR		0.805			0.939			0.763			0.938		0.909					
	APP/DEPART	647	/	670	838	/	826	61	/	113	105	/	42	0					

Higuera

NORTH SIDE

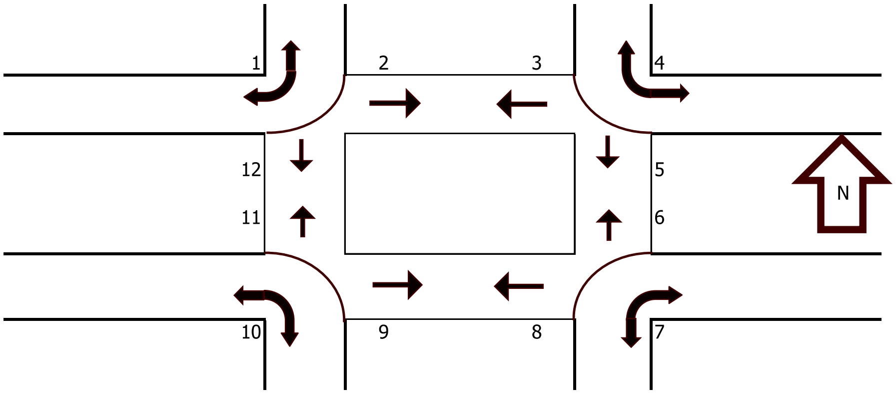
Margarita WEST SIDE

EAST SIDE **Margarita**

SOUTH SIDE

Higuera

		PEDESTRIAN CROSSINGS												
		1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AM	8:00 AM	0	0	0	2	0	2	0	0	0	0	0	0	4
	8:15 AM	0	0	0	0	0	2	0	0	0	0	1	0	3
	8:30 AM	0	0	0	3	0	2	1	0	0	0	0	0	6
	8:45 AM	0	1	0	1	1	1	1	1	0	0	0	0	6
	9:00 AM	0	0	1	1	4	1	0	0	0	0	0	0	7
	9:15 AM	0	0	0	2	0	0	2	0	0	0	1	0	5
	9:30 AM	0	0	0	0	0	0	1	0	0	3	0	0	4
	9:45 AM	0	0	0	0	0	0	2	0	0	0	0	1	3
	TOTAL	0	1	1	9	5	8	7	1	0	3	2	1	38
MD	11:15 AM	0	1	1	1	1	1	0	1	0	0	1	0	7
	11:30 AM	0	0	1	0	1	2	0	0	0	2	0	0	6
	11:45 AM	0	0	0	0	0	1	0	0	0	0	0	1	2
	12:00 PM	0	1	0	0	3	0	0	0	0	0	0	0	4
	12:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
	12:30 PM	0	0	0	0	0	1	0	0	0	2	0	0	3
	12:45 PM	0	0	0	2	3	2	0	0	5	0	0	3	15
	1:00 PM	0	0	1	0	1	1	0	1	0	0	2	1	7
	TOTAL	0	2	3	3	9	8	2	2	5	4	3	5	46
PM	3:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
	3:15 PM	0	7	0	3	1	1	1	0	0	0	0	6	19
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
	3:45 PM	0	0	0	3	1	1	1	0	0	0	0	0	6
	4:00 PM	0	0	0	1	0	0	0	0	0	0	2	0	3
	4:15 PM	0	0	0	1	0	2	0	1	0	1	0	1	6
	4:30 PM	0	0	1	2	0	1	0	0	0	0	1	0	5
	4:45 PM	0	0	0	1	2	0	0	0	1	0	0	1	5
	TOTAL	0	7	1	11	4	6	2	1	1	1	3	9	46



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Wed, Feb 3, 16

LOCATION:	San Luis Obispo	PROJECT #:	SC0843
NORTH & SOUTH:	Higuera	LOCATION #:	51
EAST & WEST:	Margarita	CONTROL:	SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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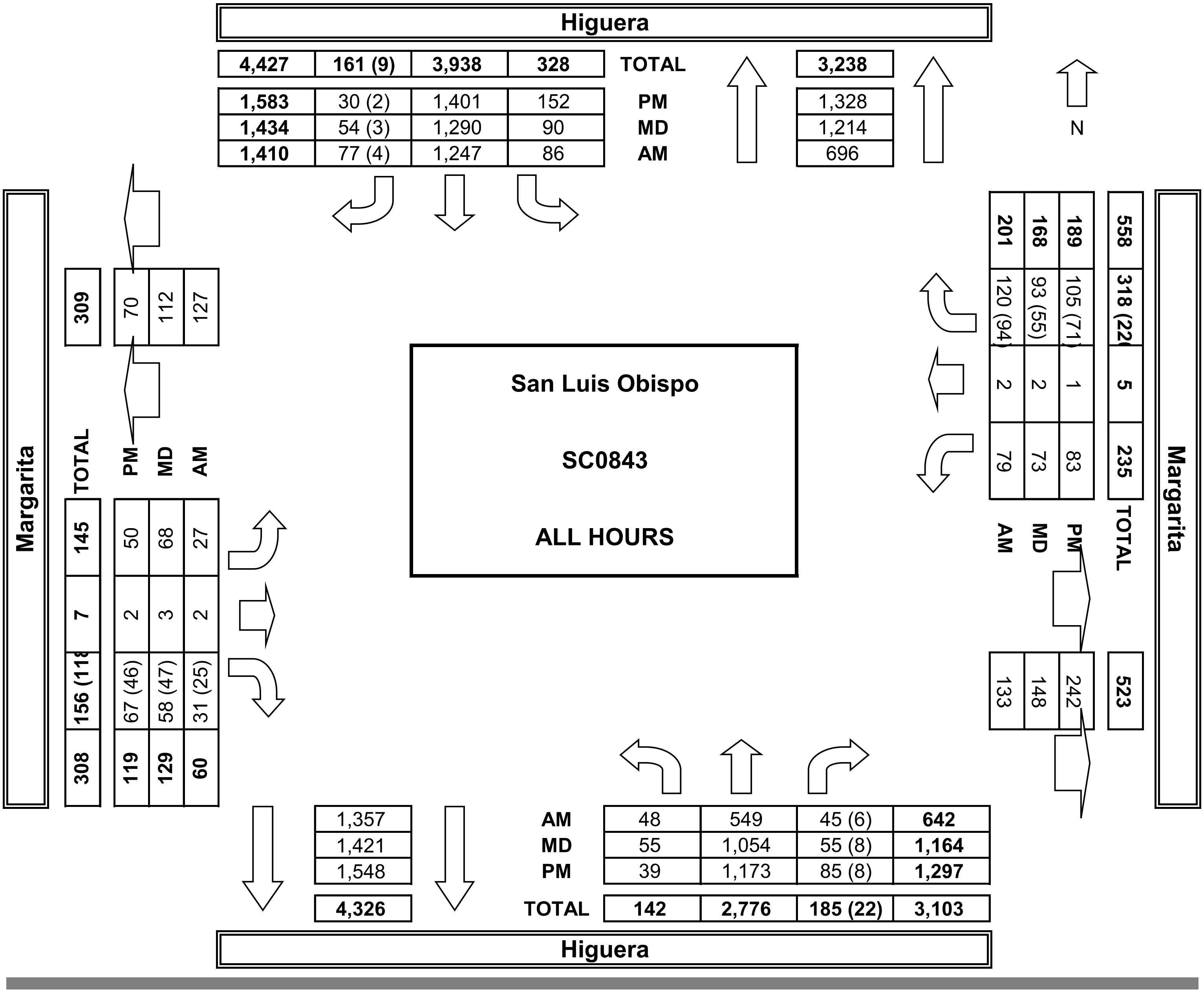
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
			Higuera			Higuera			Margarita			Margarita		
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	1	2	0	0.5	0.5	1	0.5	0.5	1	
AM	8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
	8:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
	8:30 AM	0	1	0	0	2	0	0	0	0	0	0	0	3
	8:45 AM	0	3	1	0	3	0	0	0	0	0	0	1	8
	9:00 AM	0	1	0	0	3	0	0	0	0	0	0	1	5
	9:15 AM	0	1	0	0	2	0	0	0	0	0	0	1	4
	9:30 AM	0	3	0	0	1	0	0	0	0	1	0	0	5
	9:45 AM	0	3	0	0	1	0	0	0	0	0	0	0	4
	VOLUMES	0	13	1	0	15	0	0	0	0	1	0	3	33
	APPROACH %	0%	93%	7%	0%	100%	0%	0%	0%	0%	25%	0%	75%	
	APP/DEPART	14	/	16	15	/	16	0	/	1	4	/	0	0
	BEGIN PEAK HR		8:45 AM											
	VOLUMES	0	8	1	0	9	0	0	0	0	1	0	3	22
	APPROACH %	0%	89%	11%	0%	100%	0%	0%	0%	0%	25%	0%	75%	
	PEAK HR FACTOR		0.563			0.750			0.000			1.000		0.688
	APP/DEPART	9	/	11	9	/	10	0	/	1	4	/	0	0
MD	11:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	11:30 AM	0	1	0	0	2	0	0	1	1	1	0	0	6
	11:45 AM	0	3	0	0	6	0	0	1	0	0	0	0	10
	12:00 PM	0	8	1	0	3	0	0	0	0	0	0	0	12
	12:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
	12:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
	12:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
	1:00 PM	0	2	1	0	4	1	0	0	0	0	0	0	8
	VOLUMES	0	17	2	1	17	1	1	2	1	1	0	0	43
	APPROACH %	0%	89%	11%	5%	89%	5%	25%	50%	25%	100%	0%	0%	
	APP/DEPART	19	/	18	19	/	19	4	/	5	1	/	1	0
	BEGIN PEAK HR		11:30 AM											
	VOLUMES	0	13	1	0	11	0	1	2	1	1	0	0	30
	APPROACH %	0%	93%	7%	0%	100%	0%	25%	50%	25%	100%	0%	0%	
	PEAK HR FACTOR		0.389			0.458			0.500			0.250		0.625
	APP/DEPART	14	/	14	11	/	13	4	/	3	1	/	0	0
PM	03:00 PM	0	1	0	0	3	0	0	0	0	0	0	1	5
	3:15 PM	0	2	0	0	2	0	0	1	0	0	0	0	5
	3:30 PM	0	5	1	2	1	0	0	0	0	0	0	2	11
	3:45 PM	0	4	0	0	0	1	0	1	1	0	0	0	7
	4:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
	4:15 PM	0	0	2	0	1	0	0	0	0	0	0	0	3
	4:30 PM	0	8	0	1	2	0	0	0	0	0	0	0	11
	4:45 PM	0	4	0	0	1	0	0	0	0	0	0	0	5
	VOLUMES	0	26	3	3	11	1	0	2	1	0	0	3	50
	APPROACH %	0%	90%	10%	20%	73%	7%	0%	67%	33%	0%	0%	100%	
	APP/DEPART	29	/	29	15	/	12	3	/	8	3	/	1	0
	BEGIN PEAK HR		3:00 PM											
	VOLUMES	0	12	1	2	6	1	0	2	1	0	0	3	28
	APPROACH %	0%	92%	8%	22%	67%	11%	0%	67%	33%	0%	0%	100%	
	PEAK HR FACTOR		0.542			0.750			0.375			0.375		0.636
	APP/DEPART	13	/	15	9	/	7	3	/	5	3	/	1	0

AimTD LLC

TURNING MOVEMENT COUNTS



San Luis Obispo

SC0843

ALL HOURS

Higuera

4,427	**161 (9)**	**3,938**	**328**	**TOTAL**	**3,238**
1,583	30 (2)	1,401	152	**PM**	1,328
1,434	54 (3)	1,290	90	**MD**	1,214
1,410	77 (4)	1,247	86	**AM**	696

Margarita

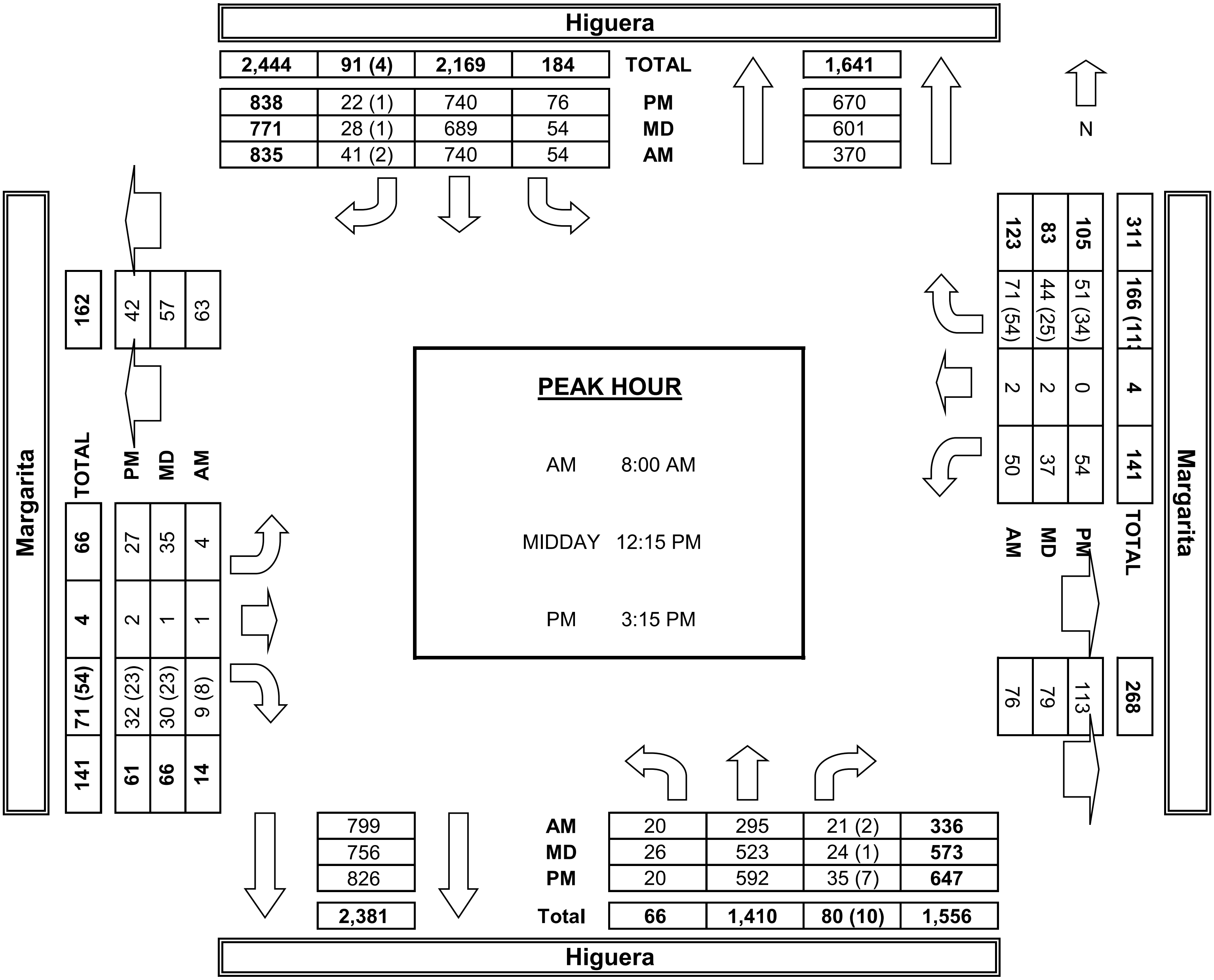
TOTAL	**PM**	**MD**	**AM**
309	70	112	127
145	50	68	27
7	2	3	2
156 (11	67 (46)	58 (47)	31 (25)
308	**119**	**129**	**60**

Margarita

AM	**MD**	**PM**	**TOTAL**
201	**168**	**189**	**558**
120 (94)	93 (55)	105 (71)	**318 (22**
2	2	1	**5**
79	73	83	**235**
133	148	242	**523**

1,357	**AM**	48	549	45 (6)	**642**
1,421	**MD**	55	1,054	55 (8)	**1,164**
1,548	**PM**	39	1,173	85 (8)	**1,297**
4,326	**TOTAL**	**142**	**2,776**	**185 (22)**	**3,103**

Higuera



2,444	**91 (4)**	**2,169**	**184**	**TOTAL**
838	22 (1)	740	76	**PM**
771	28 (1)	689	54	**MD**
835	41 (2)	740	54	**AM**

1,641
670
601
370

162	42	57	63
TOTAL	**PM**	**MD**	**AM**
66	27	35	4
4	2	1	1
71 (54)	32 (23)	30 (23)	9 (8)
141	**61**	**66**	**14**

123	**83**	**105**	**311**
71 (54)	44 (25)	51 (34)	**166 (11**
2	2	0	**4**
50	37	54	**141**
AM	**MD**	**PM**	**TOTAL**
76	79	113	**268**

PEAK HOUR

AM 8:00 AM

MIDDAY 12:15 PM

PM 3:15 PM

AM	20	295	21 (2)	**336**
MD	26	523	24 (1)	**573**
PM	20	592	35 (7)	**647**
Total	**66**	**1,410**	**80 (10)**	**1,556**

799
756
826
2,381

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Wed, Mar 16, 16

LOCATION: San Luis Obispo
NORTH & SOUTH: Higuera
EAST & WEST: Madonna

PROJECT #: SC0843
LOCATION #: 50
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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☑ Add U-Turns to Left Turns

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
		Higuera			Higuera			Madonna			Madonna			
		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	LANES:	1	2	0	0	2	2	1.5	0.5	1	1	0.5	0.5	
AM	8:00 AM	27	62	0	2	83	98	170	4	148	0	3	1	598
	8:15 AM	27	74	0	0	82	108	141	0	156	0	3	0	591
	8:30 AM	29	54	0	0	92	92	144	5	145	1	4	1	567
	8:45 AM	29	63	1	7	73	90	138	1	132	1	5	0	540
	9:00 AM	33	62	0	1	64	83	117	6	103	0	4	2	475
	9:15 AM	38	67	0	1	66	60	134	3	102	2	2	0	475
	9:30 AM	36	66	2	1	59	98	93	0	94	1	5	3	458
	9:45 AM	25	51	0	1	52	92	114	1	78	1	5	3	423
	VOLUMES	244	499	3	13	571	721	1,051	20	958	6	31	10	4,127
	APPROACH %	33%	67%	0%	1%	44%	55%	52%	1%	47%	13%	66%	21%	
	APP/DEPART	746	/	1,561	1,305	/	1,535	2,029	/	35	47	/	996	0
	BEGIN PEAK HR		8:00 AM											
	VOLUMES	112	253	1	9	330	388	593	10	581	2	15	2	2,296
	APPROACH %	31%	69%	0%	1%	45%	53%	50%	1%	49%	11%	79%	11%	
	PEAK HR FACTOR		0.906			0.957			0.919			0.792		0.960
	APP/DEPART	366	/	849	727	/	913	1,184	/	19	19	/	515	0
MD	11:15 AM	53	103	2	0	66	141	129	0	69	0	3	1	567
	11:30 AM	41	99	0	2	90	137	115	3	98	1	8	4	598
	11:45 AM	36	97	2	4	116	152	122	1	90	1	6	5	632
	12:00 PM	56	114	1	2	109	177	111	1	114	2	9	3	699
	12:15 PM	47	97	0	2	101	161	124	2	80	2	1	4	621
	12:30 PM	66	90	2	3	117	140	113	3	121	5	7	3	670
	12:45 PM	48	112	0	4	115	147	149	5	111	5	6	1	703
	1:00 PM	44	97	2	1	111	144	125	2	100	0	2	6	634
	VOLUMES	391	809	9	18	825	1,199	988	17	783	16	42	27	5,124
	APPROACH %	32%	67%	1%	1%	40%	59%	55%	1%	44%	19%	49%	32%	
	APP/DEPART	1,209	/	1,829	2,042	/	1,624	1,788	/	39	85	/	1,632	0
	BEGIN PEAK HR		12:00 PM											
	VOLUMES	217	413	3	11	442	625	497	11	426	14	23	11	2,693
	APPROACH %	34%	65%	0%	1%	41%	58%	53%	1%	46%	29%	48%	23%	
	PEAK HR FACTOR		0.925			0.936			0.881			0.800		0.958
	APP/DEPART	633	/	922	1,078	/	882	934	/	24	48	/	865	0
PM	03:00 PM	42	109	1	4	92	153	144	2	109	2	15	3	676
	3:15 PM	53	81	0	0	95	190	150	3	121	0	7	0	700
	3:30 PM	56	97	1	3	135	160	151	2	108	1	14	2	730
	3:45 PM	76	86	1	1	107	170	161	0	97	2	8	3	712
	4:00 PM	62	82	0	4	120	143	136	3	91	2	18	3	664
	4:15 PM	49	85	1	2	90	138	142	0	89	1	4	5	606
	4:30 PM	55	77	0	1	105	168	123	1	100	2	21	1	654
	4:45 PM	49	122	0	3	74	182	139	1	93	4	17	0	684
	VOLUMES	442	739	4	18	818	1,304	1,146	12	808	14	104	17	5,426
	APPROACH %	37%	62%	0%	1%	38%	61%	58%	1%	41%	10%	77%	13%	
	APP/DEPART	1,185	/	1,902	2,140	/	1,640	1,966	/	34	135	/	1,850	0
	BEGIN PEAK HR		3:00 PM											
	VOLUMES	227	373	3	8	429	673	606	7	435	5	44	8	2,818
	APPROACH %	38%	62%	0%	1%	39%	61%	58%	1%	42%	9%	77%	14%	
	PEAK HR FACTOR		0.925			0.931			0.956			0.713		0.965
	APP/DEPART	603	/	987	1,110	/	869	1,048	/	18	57	/	944	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	2	0	0	2
0	2	0	0	2
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	5	0	0	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Higuera

NORTH SIDE

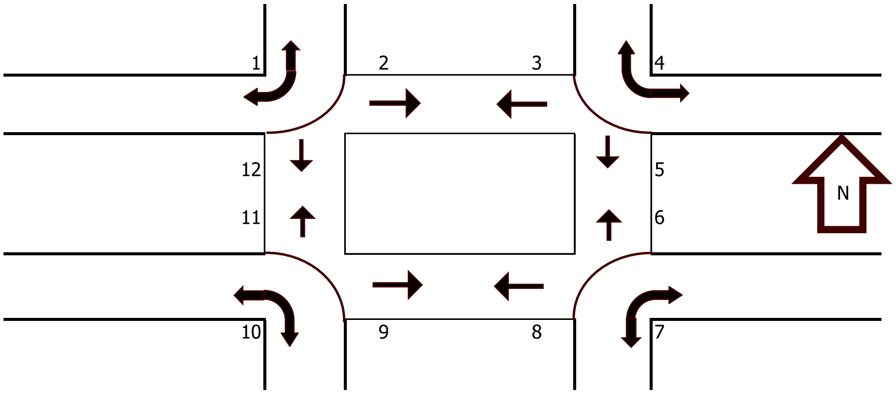
Madonna WEST SIDE

EAST SIDE **Madonna**

SOUTH SIDE

Higuera

		PEDESTRIAN CROSSINGS												
		1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AM	8:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
	8:15 AM	0	0	0	0	2	1	0	1	0	0	1	1	6
	8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	3
	8:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
	9:15 AM	0	0	0	0	1	1	0	0	0	0	0	0	2
	9:30 AM	0	0	0	0	1	2	0	0	1	0	2	1	7
	9:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
	TOTAL	0	1	0	0	4	4	0	2	1	0	7	5	24
MD	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
	12:00 PM	0	0	0	0	2	0	0	3	0	0	4	0	9
	12:15 PM	0	0	0	0	0	0	0	0	0	0	1	2	3
	12:30 PM	0	0	0	0	0	0	0	0	1	0	5	0	6
	12:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	1:00 PM	0	0	0	0	0	0	0	0	1	0	1	1	3
	TOTAL	0	0	0	0	2	0	0	3	2	0	13	3	23
PM	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	1	2	0	0	2	0	0	0	5
	3:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
	3:45 PM	0	0	0	0	1	1	0	1	0	0	2	1	6
	4:00 PM	0	0	0	0	0	0	0	1	0	0	3	1	5
	4:15 PM	0	0	0	0	0	0	0	5	0	0	7	1	13
	4:30 PM	0	0	0	0	0	0	0	1	4	0	2	3	10
	4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
	TOTAL	0	0	0	0	2	3	0	8	6	1	16	6	42



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com

DATE:
Wed, Mar 16, 16

LOCATION: San Luis Obispo
NORTH & SOUTH: Higuera
EAST & WEST: Madonna

PROJECT #: SC0843
LOCATION #: 50
CONTROL: SIGNAL

NOTES:

AM
PM
MD
OTHER
OTHER

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		NORTHBOUND Higuera			SOUTHBOUND Higuera			EASTBOUND Madonna			WESTBOUND Madonna			
	LANES:	NL 1	NT 2	NR 0	SL 0	ST 2	SR 2	EL 1.5	ET 0.5	ER 1	WL 1	WT 0.5	WR 0.5	TOTAL
AM	8:00 AM	1	0	0	0	1	0	3	0	1	0	0	0	6
	8:15 AM	1	0	0	0	0	0	1	0	0	0	0	0	2
	8:30 AM	1	0	0	0	2	0	3	0	0	0	0	0	6
	8:45 AM	0	3	0	0	1	0	3	0	1	0	0	0	8
	9:00 AM	0	1	0	0	2	0	2	0	0	0	0	0	5
	9:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	2
	9:30 AM	0	4	0	0	3	0	0	0	0	1	0	0	8
	9:45 AM	1	3	0	0	0	0	1	0	0	0	0	0	5
	VOLUMES	5	11	0	0	10	0	13	0	2	1	0	0	42
	APPROACH %	31%	69%	0%	0%	100%	0%	87%	0%	13%	100%	0%	0%	
	APP/DEPART	16	/	24	10	/	13	15	/	0	1	/	5	0
	BEGIN PEAK HR		8:45 AM											
	VOLUMES	1	8	0	0	7	0	5	0	1	1	0	0	23
	APPROACH %	11%	89%	0%	0%	100%	0%	83%	0%	17%	100%	0%	0%	
	PEAK HR FACTOR		0.563			0.583			0.375			0.250		0.719
	APP/DEPART	9	/	13	7	/	9	6	/	0	1	/	1	0
MD	11:15 AM	0	2	0	0	5	0	4	1	1	0	1	0	14
	11:30 AM	0	0	0	0	4	2	0	2	0	1	1	0	10
	11:45 AM	0	2	0	0	2	0	1	0	0	0	0	0	5
	12:00 PM	0	1	0	0	2	0	0	1	0	0	0	0	4
	12:15 PM	0	2	0	0	1	2	3	0	0	0	0	0	8
	12:30 PM	0	0	0	0	3	0	1	1	0	0	0	0	5
	12:45 PM	0	1	0	0	2	0	1	0	1	1	1	0	7
	1:00 PM	0	2	0	0	1	4	0	0	0	0	0	0	7
	VOLUMES	0	10	0	0	20	8	10	5	2	2	3	0	60
	APPROACH %	0%	100%	0%	0%	71%	29%	59%	29%	12%	40%	60%	0%	
	APP/DEPART	10	/	20	28	/	24	17	/	5	5	/	11	0
	BEGIN PEAK HR		11:15 AM											
	VOLUMES	0	5	0	0	13	2	5	4	1	1	2	0	33
	APPROACH %	0%	100%	0%	0%	87%	13%	50%	40%	10%	33%	67%	0%	
	PEAK HR FACTOR		0.625			0.625			0.417			0.375		0.589
	APP/DEPART	5	/	10	15	/	15	10	/	4	3	/	4	0
PM	03:00 PM	0	0	0	0	1	0	1	0	1	0	1	0	4
	3:15 PM	0	2	0	0	1	1	1	0	1	0	0	0	6
	3:30 PM	0	2	0	0	6	0	1	0	0	0	0	0	9
	3:45 PM	0	1	0	0	1	0	2	0	1	0	0	0	5
	4:00 PM	1	3	0	0	3	2	1	0	0	0	0	0	10
	4:15 PM	0	1	0	0	3	0	1	0	0	0	0	0	5
	4:30 PM	1	6	0	0	0	0	0	2	0	0	0	0	9
	4:45 PM	0	3	0	0	3	0	0	1	1	0	0	0	8
	VOLUMES	2	18	0	0	18	3	7	3	4	0	1	0	56
	APPROACH %	10%	90%	0%	0%	86%	14%	50%	21%	29%	0%	100%	0%	
	APP/DEPART	20	/	25	21	/	22	14	/	3	1	/	6	0
	BEGIN PEAK HR		4:00 PM											
	VOLUMES	2	13	0	0	9	2	2	3	1	0	0	0	32
	APPROACH %	13%	87%	0%	0%	82%	18%	33%	50%	17%	0%	0%	0%	
	PEAK HR FACTOR		0.536			0.550			0.750			0.000		0.800
	APP/DEPART	15	/	15	11	/	10	6	/	3	0	/	4	0

Higuera

NORTH SIDE

Madonna WEST SIDE

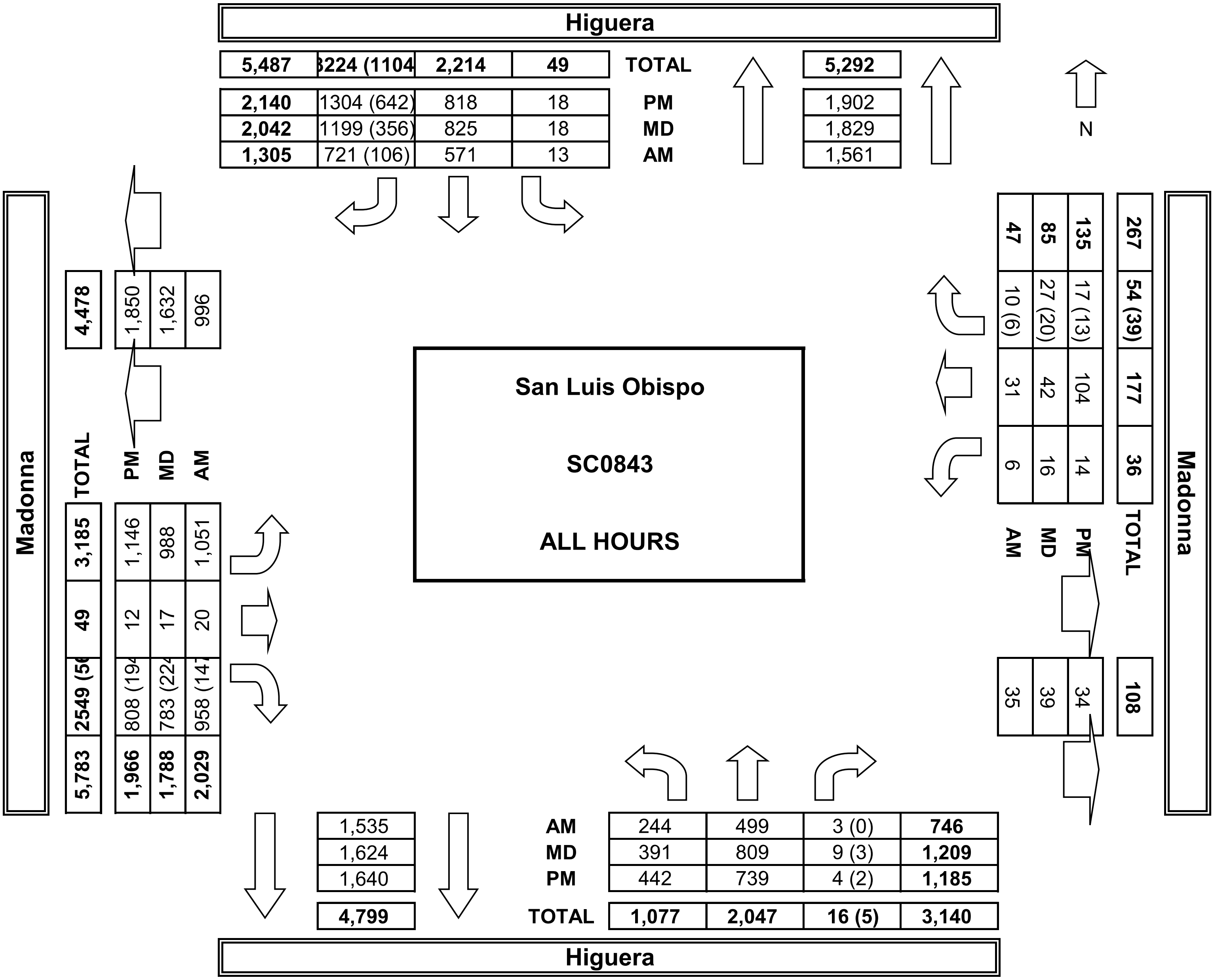
EAST SIDE **Madonna**

SOUTH SIDE

Higuera

AimTD LLC

TURNING MOVEMENT COUNTS



San Luis Obispo

SC0843

ALL HOURS

Higuera

5,487	**3224 (1104**	**2,214**	**49**	**TOTAL**
2,140	1304 (642)	818	18	**PM**
2,042	1199 (356)	825	18	**MD**
1,305	721 (106)	571	13	**AM**

5,292	**TOTAL**
1,902	**PM**
1,829	**MD**
1,561	**AM**

Madonna

TOTAL	**PM**	**MD**	**AM**
4,478	1,850	1,632	996
3,185	1,146	988	1,051
49	12	17	20
2549 (5	808 (19	783 (22	958 (14
5,783	**1,966**	**1,788**	**2,029**

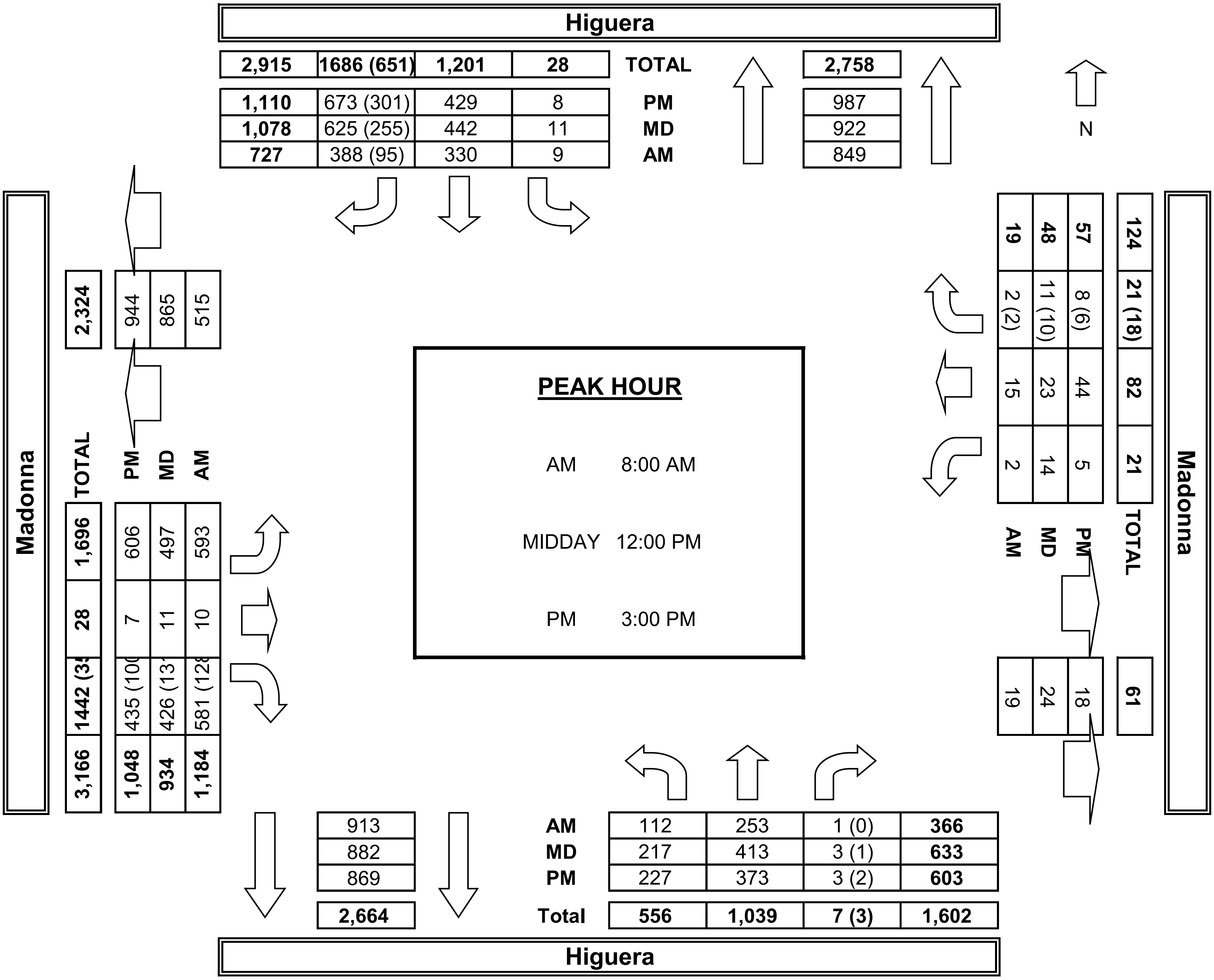
Madonna

AM	**MD**	**PM**	**TOTAL**
47	**85**	**135**	**267**
10 (6)	27 (20)	17 (13)	**54 (39)**
31	42	104	**177**
6	16	14	**36**
35	39	34	**108**

AM	244	499	3 (0)	**746**
MD	391	809	9 (3)	**1,209**
PM	442	739	4 (2)	**1,185**
TOTAL	**1,077**	**2,047**	**16 (5)**	**3,140**

AM	1,535
MD	1,624
PM	1,640
TOTAL	**4,799**

Higuera



2,915	**1686 (651)**	**1,201**	**28**	**TOTAL**
1,110	673 (301)	429	8	**PM**
1,078	625 (255)	442	11	**MD**
727	388 (95)	330	9	**AM**

2,758
987
922
849

TOTAL	**PM**	**MD**	**AM**
2,324	944	865	515

TOTAL	**PM**	**MD**	**AM**
1,696	606	497	593
28	7	11	10
1442 (3	435 (10	426 (13	581 (12
3,166	**1,048**	**934**	**1,184**

AM	**MD**	**PM**	**TOTAL**
19	**48**	**57**	**124**
2 (2)	11 (10)	8 (6)	**21 (18)**
15	23	44	**82**
2	14	5	**21**

AM	**MD**	**PM**	**TOTAL**
19	24	18	**61**

PEAK HOUR

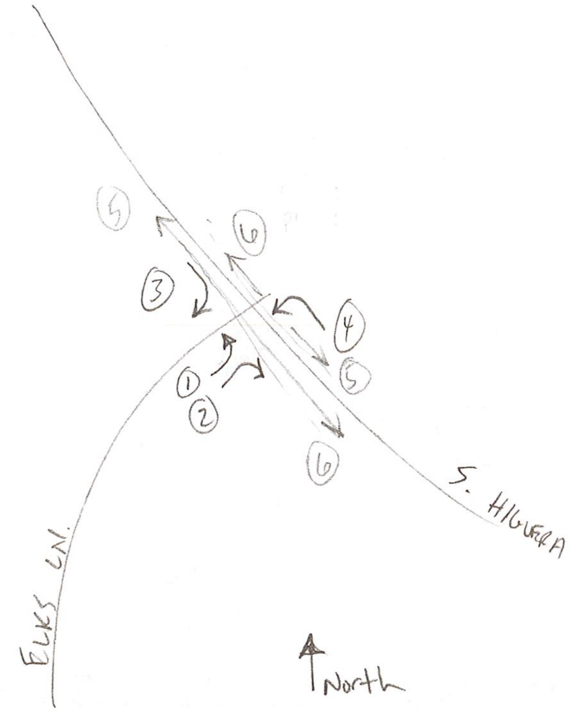
AM 8:00 AM

MIDDAY 12:00 PM

PM 3:00 PM

913
882
869
2,664

AM	112	253	1 (0)	**366**
MD	217	413	3 (1)	**633**
PM	227	373	3 (2)	**603**
Total	**556**	**1,039**	**7 (3)**	**1,602**



Red = Truck

					Bike		Ped	
	①	②	③	④	⑥	⑤	⑥	⑤
Thurs, 6/22/17								
4:30 - 4:45	卌 |	卌 |	卌 |||| 卌 ||	卌 |||	卌	|||| ↓↓	||	|| ↓
4:45 - 5	卌 卌	卌	卌 卌 卌	|	卌 1	||| ↓	|	
5 - 5:15	卌	|||	卌 卌 卌	卌 |||	||||	|		||
5:15 - 5:30	||||	||||	卌 卌 卌 卌	卌	||||	|||		|
Wed, 6/28/17								
7:30 - 7:45	卌 |	|	卌 卌	|	|	卌 |	|	|
7:45 - 8	卌 ||	卌	卌 卌 卌 |||	|||	|||	卌 ||		
8 - 8:15	卌 卌 |	|	卌 卌 ||||	|	|||	卌 ||	||||	|
8:15 - 8:30	BIKE ||||	||	卌 卌 卌 |		|||	||||	||	|||

NOTES

- SLORTA ROUTE 2A ③ ↓ @8:27A