Costco Re-Zone

Santa Barbara-North of Santa Ynez County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Discount Club	1.00	1000sqft	0.02	1,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.1	**Precipitation Freq (Days)**	37
Climate Zone	4			**Operational Year**	2020
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Club discount warehouse

Construction Phase -

Demolition -

Vehicle Trips - ITE Handbook Trip generation: Vol 3 Land Use 857 Discount Club

Energy Use -

Table Name	Column Name	Default Value	New Value

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	0.0715	0.6706	0.4792	9.2000e-004	0.0728	0.0357	0.1084	0.0120	0.0330	0.0450	0.0000	84.9499	84.9499	0.0204	0.0000	85.4588
Maximum	**0.0715**	**0.6706**	**0.4792**	**9.2000e-004**	**0.0728**	**0.0357**	**0.1084**	**0.0120**	**0.0330**	**0.0450**	**0.0000**	**84.9499**	**84.9499**	**0.0204**	**0.0000**	**85.4588**

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	0.0715	0.6706	0.4792	9.2000e-004	0.0728	0.0357	0.1084	0.0120	0.0330	0.0450	0.0000	84.9498	84.9498	0.0204	0.0000	85.4588
Maximum	**0.0715**	**0.6706**	**0.4792**	**9.2000e-004**	**0.0728**	**0.0357**	**0.1084**	**0.0120**	**0.0330**	**0.0450**	**0.0000**	**84.9498**	**84.9498**	**0.0204**	**0.0000**	**85.4588**

	ROG	NOx	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	1-7-2019	4-6-2019	0.4255	0.4255
2	4-7-2019	7-6-2019	0.2967	0.2967
		Highest	0.4255	0.4255

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	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
Mobile	0.0133	0.0421	0.1177	2.3000e-004	0.0189	2.9000e-004	0.0192	5.0900e-003	2.7000e-004	5.3600e-003	0.0000	20.8865	20.8865	1.2600e-003	0.0000	20.9180
Waste						0.0000	0.0000		0.0000	0.0000	0.8930	0.0000	0.8930	0.0443	0.0000	1.9999
Water						0.0000	0.0000		0.0000	0.0000	0.0262	0.0000	0.0262	9.0000e-005	6.0000e-005	0.0455
Total	**0.0184**	**0.0422**	**0.1178**	**2.3000e-004**	**0.0189**	**3.0000e-004**	**0.0192**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**0.9192**	**21.0423**	**21.9615**	**0.0456**	**6.0000e-005**	**23.1202**

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	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
Mobile	0.0133	0.0421	0.1177	2.3000e-004	0.0189	2.9000e-004	0.0192	5.0900e-003	2.7000e-004	5.3600e-003	0.0000	20.8865	20.8865	1.2600e-003	0.0000	20.9180
Waste						0.0000	0.0000		0.0000	0.0000	0.8930	0.0000	0.8930	0.0443	0.0000	1.9999
Water						0.0000	0.0000		0.0000	0.0000	0.0262	0.0000	0.0262	9.0000e-005	6.0000e-005	0.0455
Total	**0.0184**	**0.0422**	**0.1178**	**2.3000e-004**	**0.0189**	**3.0000e-004**	**0.0192**	**5.0900e-003**	**2.8000e-004**	**5.3700e-003**	**0.9192**	**21.0423**	**21.9615**	**0.0456**	**6.0000e-005**	**23.1202**

	ROG	NOx	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

Costco Re-Zone - Santa Barbara-North of Santa Ynez County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/7/2019	1/18/2019	5	10	
2	Site Preparation	Site Preparation	1/19/2019	1/21/2019	5	1	
3	Grading	Grading	1/22/2019	1/23/2019	5	2	
4	Building Construction	Building Construction	1/24/2019	6/12/2019	5	100	
5	Paving	Paving	6/13/2019	6/19/2019	5	5	
6	Architectural Coating	Architectural Coating	6/20/2019	6/26/2019	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,500; Non-Residential Outdoor: 500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Costco Re-Zone - Santa Barbara-North of Santa Ynez County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	593.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 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					0.0660	0.0000	0.0660	0.0100	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**0.0660**	**2.6900e-003**	**0.0687**	**0.0100**	**2.5600e-003**	**0.0126**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

3.2 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	2.8700e-003	0.0990	0.0285	2.3000e-004	5.0500e-003	5.4000e-004	5.5900e-003	1.3800e-003	5.2000e-004	1.9000e-003	0.0000	23.4588	23.4588	2.0700e-003	0.0000	23.5106
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.3400e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2602	0.2602	1.0000e-005	0.0000	0.2605
Total	**3.0500e-003**	**0.0991**	**0.0298**	**2.3000e-004**	**5.3600e-003**	**5.4000e-004**	**5.9000e-003**	**1.4600e-003**	**5.2000e-004**	**1.9800e-003**	**0.0000**	**23.7190**	**23.7190**	**2.0800e-003**	**0.0000**	**23.7711**

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					0.0660	0.0000	0.0660	0.0100	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7700e-003	0.0430	0.0385	6.0000e-005		2.6900e-003	2.6900e-003		2.5600e-003	2.5600e-003	0.0000	5.2601	5.2601	1.0000e-003	0.0000	5.2852
Total	**4.7700e-003**	**0.0430**	**0.0385**	**6.0000e-005**	**0.0660**	**2.6900e-003**	**0.0687**	**0.0100**	**2.5600e-003**	**0.0126**	**0.0000**	**5.2601**	**5.2601**	**1.0000e-003**	**0.0000**	**5.2852**

3.2 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	2.8700e-003	0.0990	0.0285	2.3000e-004	5.0500e-003	5.4000e-004	5.5900e-003	1.3800e-003	5.2000e-004	1.9000e-003	0.0000	23.4588	23.4588	2.0700e-003	0.0000	23.5106
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8000e-004	1.5000e-004	1.3400e-003	0.0000	3.1000e-004	0.0000	3.1000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2602	0.2602	1.0000e-005	0.0000	0.2605
Total	**3.0500e-003**	**0.0991**	**0.0298**	**2.3000e-004**	**5.3600e-003**	**5.4000e-004**	**5.9000e-003**	**1.4600e-003**	**5.2000e-004**	**1.9800e-003**	**0.0000**	**23.7190**	**23.7190**	**2.0800e-003**	**0.0000**	**23.7711**

3.3 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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

3.3 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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0130	0.0130	0.0000	0.0000	0.0130
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0130**	**0.0130**	**0.0000**	**0.0000**	**0.0130**

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					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-004	4.4600e-003	2.0700e-003	0.0000		1.8000e-004	1.8000e-004		1.7000e-004	1.7000e-004	0.0000	0.4378	0.4378	1.4000e-004	0.0000	0.4413
Total	**3.6000e-004**	**4.4600e-003**	**2.0700e-003**	**0.0000**	**2.7000e-004**	**1.8000e-004**	**4.5000e-004**	**3.0000e-005**	**1.7000e-004**	**2.0000e-004**	**0.0000**	**0.4378**	**0.4378**	**1.4000e-004**	**0.0000**	**0.4413**

3.3 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	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0130	0.0130	0.0000	0.0000	0.0130
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0130**	**0.0130**	**0.0000**	**0.0000**	**0.0130**

3.4 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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**7.5000e-004**	**5.4000e-004**	**1.2900e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

3.4 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0521	0.0521	0.0000	0.0000	0.0521
Total	**4.0000e-005**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0521**	**0.0521**	**0.0000**	**0.0000**	**0.0521**

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					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.5000e-004	8.6000e-003	7.6900e-003	1.0000e-005		5.4000e-004	5.4000e-004		5.1000e-004	5.1000e-004	0.0000	1.0520	1.0520	2.0000e-004	0.0000	1.0570
Total	**9.5000e-004**	**8.6000e-003**	**7.6900e-003**	**1.0000e-005**	**7.5000e-004**	**5.4000e-004**	**1.2900e-003**	**4.1000e-004**	**5.1000e-004**	**9.2000e-004**	**0.0000**	**1.0520**	**1.0520**	**2.0000e-004**	**0.0000**	**1.0570**

3.4 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	2.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0521	0.0521	0.0000	0.0000	0.0521
Total	**4.0000e-005**	**3.0000e-005**	**2.7000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0521**	**0.0521**	**0.0000**	**0.0000**	**0.0521**

3.5 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	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

3.5 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0479	0.4910	0.3772	5.7000e-004		0.0303	0.0303		0.0279	0.0279	0.0000	51.1502	51.1502	0.0162	0.0000	51.5548
Total	**0.0479**	**0.4910**	**0.3772**	**5.7000e-004**		**0.0303**	**0.0303**		**0.0279**	**0.0279**	**0.0000**	**51.1502**	**51.1502**	**0.0162**	**0.0000**	**51.5548**

3.5 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 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	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

3.6 Paving - 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	1.6000e-004	1.4000e-004	1.2100e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2342	0.2342	1.0000e-005	0.0000	0.2344
Total	**1.6000e-004**	**1.4000e-004**	**1.2100e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2342**	**0.2342**	**1.0000e-005**	**0.0000**	**0.2344**

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	2.0700e-003	0.0196	0.0179	3.0000e-005		1.1100e-003	1.1100e-003		1.0300e-003	1.0300e-003	0.0000	2.3931	2.3931	6.8000e-004	0.0000	2.4102
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0700e-003**	**0.0196**	**0.0179**	**3.0000e-005**		**1.1100e-003**	**1.1100e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**2.3931**	**2.3931**	**6.8000e-004**	**0.0000**	**2.4102**

3.6 Paving - 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	1.6000e-004	1.4000e-004	1.2100e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2342	0.2342	1.0000e-005	0.0000	0.2344
Total	**1.6000e-004**	**1.4000e-004**	**1.2100e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2342**	**0.2342**	**1.0000e-005**	**0.0000**	**0.2344**

3.7 Architectural Coating - 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					
Archit. Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.0123**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0116					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7000e-004	4.5900e-003	4.6000e-003	1.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	0.6383	0.6383	5.0000e-005	0.0000	0.6397
Total	**0.0123**	**4.5900e-003**	**4.6000e-003**	**1.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**0.6383**	**0.6383**	**5.0000e-005**	**0.0000**	**0.6397**

3.7 Architectural Coating - 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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0133	0.0421	0.1177	2.3000e-004	0.0189	2.9000e-004	0.0192	5.0900e-003	2.7000e-004	5.3600e-003	0.0000	20.8865	20.8865	1.2600e-003	0.0000	20.9180
Unmitigated	0.0133	0.0421	0.1177	2.3000e-004	0.0189	2.9000e-004	0.0192	5.0900e-003	2.7000e-004	5.3600e-003	0.0000	20.8865	20.8865	1.2600e-003	0.0000	20.9180

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Discount Club	41.80	53.75	33.67	49,865	49,865
Total	41.80	53.75	33.67	49,865	49,865

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
Discount Club	6.60	5.50	6.40	16.70	64.30	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Discount Club	0.553205	0.030828	0.204091	0.129951	0.023898	0.006086	0.017139	0.018453	0.002761	0.002481	0.007244	0.002707	0.001156

5.0 Energy Detail

Historical Energy Use: Y

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
NaturalGas Unmitigated	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568

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					
Discount Club	2920	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
Total		**2.0000e-005**	**1.4000e-004**	**1.2000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1558**	**0.1558**	**0.0000**	**0.0000**	**0.1568**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Discount Club	2920	2.0000e-005	1.4000e-004	1.2000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1558	0.1558	0.0000	0.0000	0.1568
Total		**2.0000e-005**	**1.4000e-004**	**1.2000e-004**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1558**	**0.1558**	**0.0000**	**0.0000**	**0.1568**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Discount Club	12250	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Discount Club	12250	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	5.0700e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

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	1.1600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**5.0700e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0262	9.0000e-005	6.0000e-005	0.0455
Unmitigated	0.0262	9.0000e-005	6.0000e-005	0.0455

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Discount Club	0.0740725 / 0.0453993	0.0262	9.0000e-005	6.0000e-005	0.0455
Total		**0.0262**	**9.0000e-005**	**6.0000e-005**	**0.0455**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Discount Club	0.0740725 / 0.0453993	0.0262	9.0000e-005	6.0000e-005	0.0455
Total		**0.0262**	**9.0000e-005**	**6.0000e-005**	**0.0455**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.8930	0.0443	0.0000	1.9999
Unmitigated	0.8930	0.0443	0.0000	1.9999

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Discount Club	4.3	0.8930	0.0443	0.0000	1.9999
Total		**0.8930**	**0.0443**	**0.0000**	**1.9999**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Discount Club	4.3	0.8930	0.0443	0.0000	1.9999
Total		**0.8930**	**0.0443**	**0.0000**	**1.9999**

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

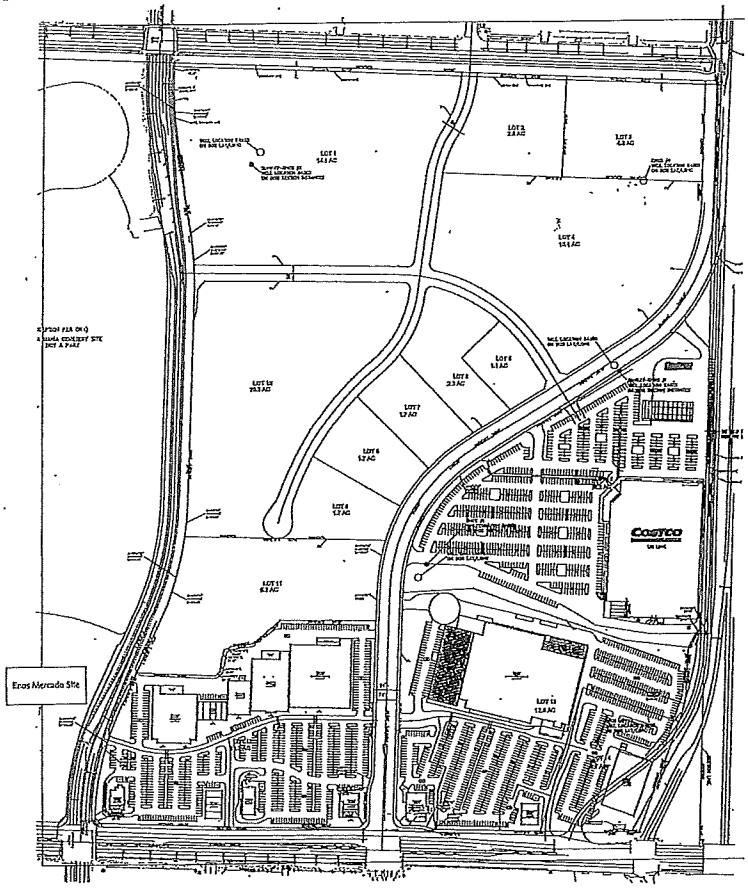
User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ENOS RANCHOS SPECIFIC PLAN
CITY OF SANTA MARIA, CALIFORNIA

TRAFFIC AND CIRCULATION STUDY



November 18, 2015 **ATE #15041.01**

City of Santa Maria
Public Works Department
110 South Pine Street, Suite 101
Santa Maria, CA 93454

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100 N. Hope Avenue, Suite 4, Santa Barbara, CA 93110-1686 ! (805) 687-4418 ! FAX (805) 682-8509

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Richard L. Pool, P.E.
Scott A. Schell, AICP, PTP

November 18, 2015

1504101R02

Hallie Holden, P.E., T.E.
Public Works Department
City of Santa Maria
110 South Pine Street, Suite 101
Santa Maria, CA 93454

TRAFFIC AND CIRCULATION STUDY FOR THE ENOS RANCHOS SPECIFIC PLAN, CITY OF SANTA MARIA

Associated Transportation Engineers (ATE) has prepared the following traffic and circulation study for the Enos Ranchos Specific Plan. The study reviews the potential traffic and circulation impacts associated with the project and identifies mitigation measures where appropriate.

We appreciate the opportunity to assist you with the project.

Associated Transportation Engineers

Scott A. Schell, AICP, PTP
Principal Transportation Planner

CONTENTS

TABLES

FIGURES

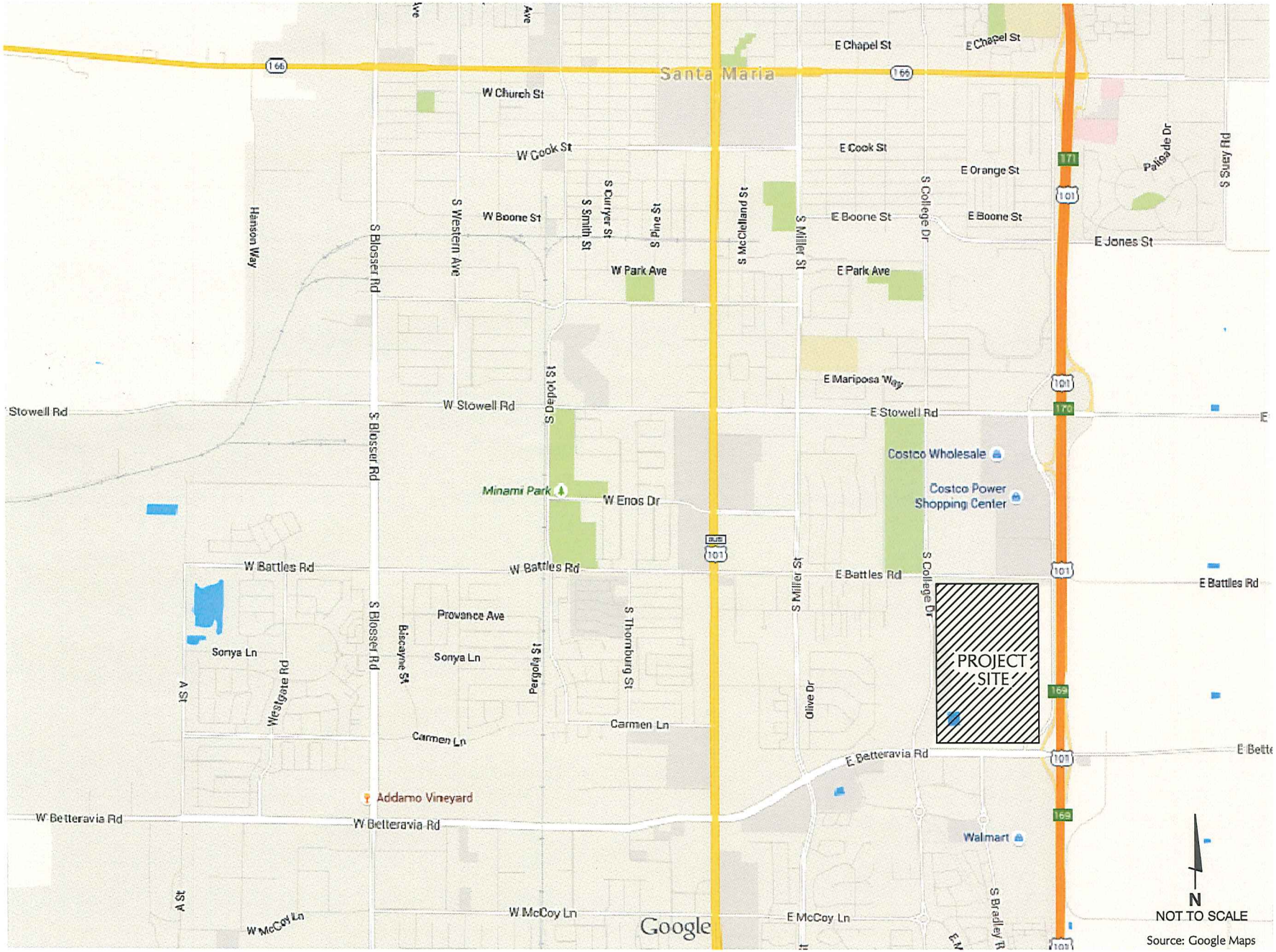
INTRODUCTION

The following report contains analyses of the potential traffic and circulation impacts associated with the Enos Ranchos Specific Plan (the "Specific Plan") located in the City of Santa Maria. The report evaluates existing and future traffic conditions in the study area assuming full development of the Specific Plan. The roadways and intersections analyzed in the study were determined based on input provided by staff at the City of Santa Maria. The study also reviews the Specific Plan's access and circulation system. An analysis of the Specific Plan's consistency with the policies outlined in the Congestion Management Program (CMP) administered by the Santa Barbara County Association of Governments (SBCAG) is also provided.

PROJECT DESCRIPTION

The Specific Plan is generally bounded by Battles Road on the north, Betteravia Road on the south, U.S. 101 on the east, and College Drive on the west. Figure 1 illustrates the location of the Specific Plan within the City. The Specific Plan application includes subdividing the property into 16 lots for development. Figure 2 shows the site plan. A range of uses are envisioned for the Specific Plan area, as listed in Table 1.

Primary access to the Specific Plan area would be provided by Battles Road, Betteravia Road, Bradley Road, and College Drive. As planned for in the City Circulation Element, the Specific Plan includes realigning the segment of Bradley Road north of Betteravia Road (within the Specific Plan boundaries) so that it connects to the segment of Bradley Road south of Betteravia Road, resulting in a conventional four-legged intersection at Betteravia Road/Bradley Road controlled by traffic signals. The segment of Bradley Road within the site boundaries will be constructed to the City's four-lane arterial standards. The existing two-lane segment of College Drive within the site boundaries, between Battles Road and Betteravia Road, will be widened to four-lane arterial standards as part of the required frontage improvements. In addition, the north side of Betteravia Road will be widened to six-lane arterial standards along the Specific Plan's frontage (the south side has been improved to six-lane arterial standards by the developments along that frontage). The Specific Plan also includes the "East-West Collector" road between College Drive and Bradley Road planned in the Circulation Element as well as the extension of Shepherd Drive south of Battles Road (see Figure 2 – Project Site Plan).



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PROJECT SITE LOCATION

FIGURE 1

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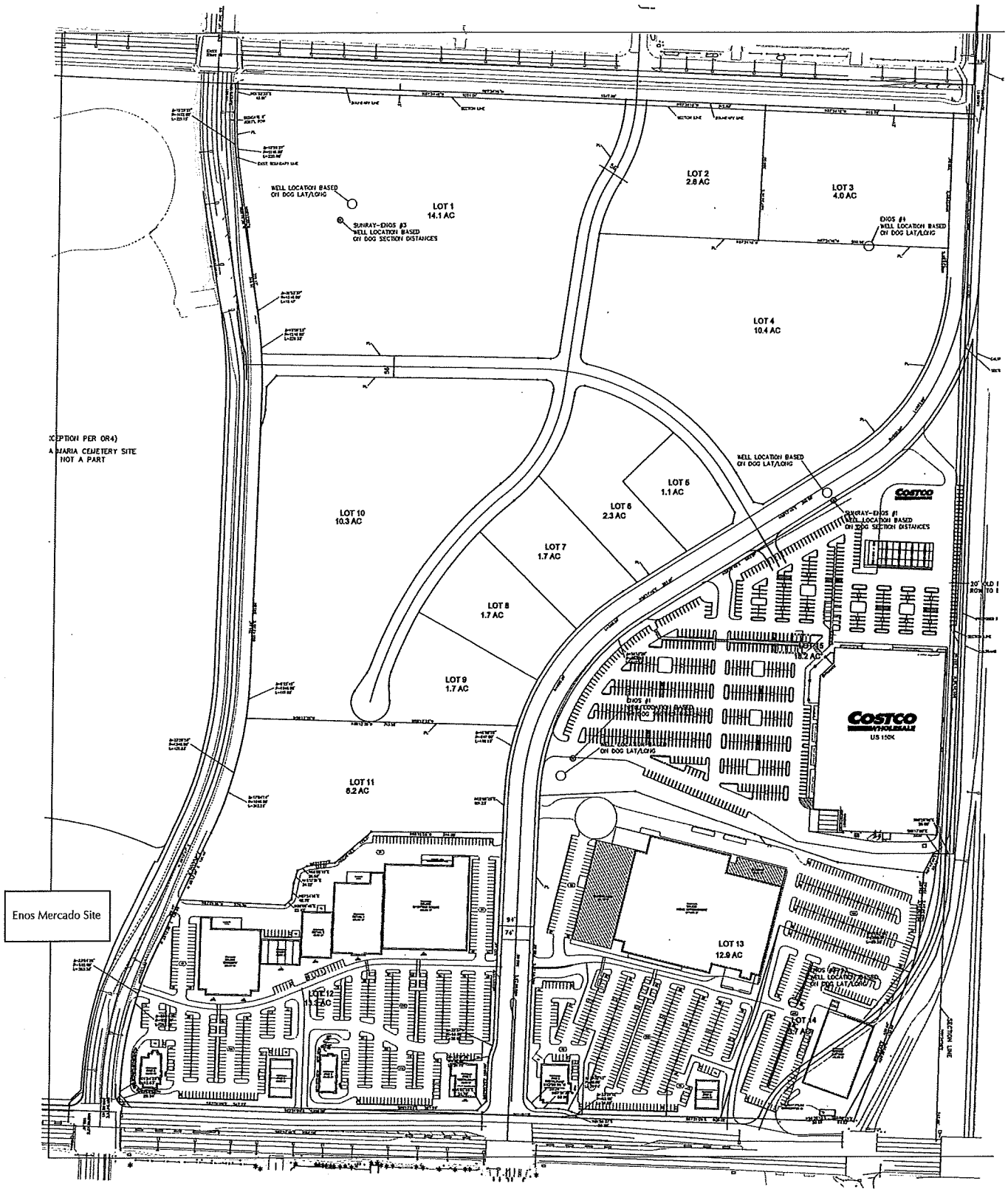

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PROJECT SITE PLAN

FIGURE 2

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Table 1
Enos Ranchos Specific Plan – Land Use Summary

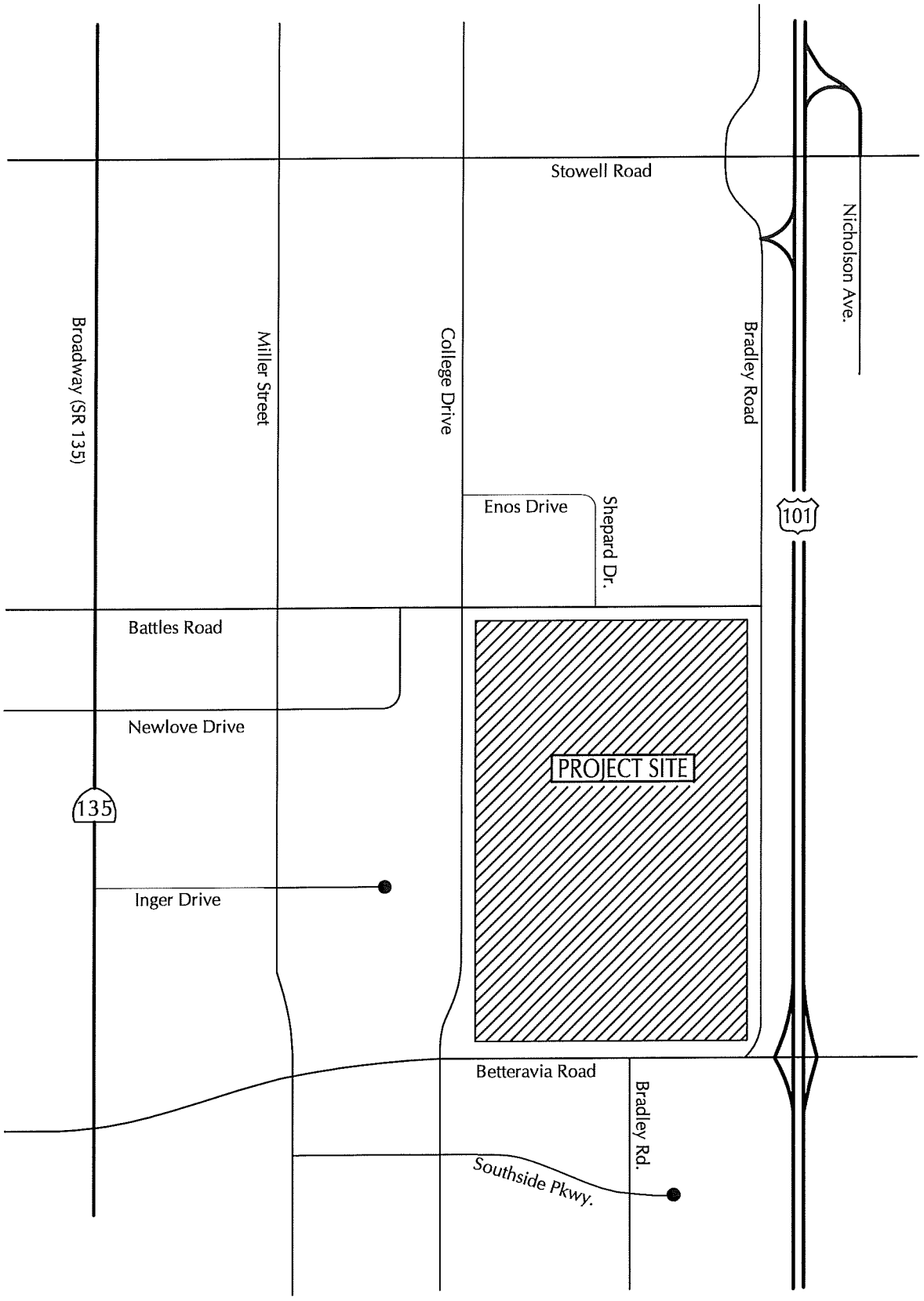
Lot #	Land Use	Size
Lot 1	Multi-Family Residential	310 DU
Lot 2	Auto Dealer	22,500 SF
Lot 3	Auto Dealer	35,000 SF
Lot 4	Auto Dealer	67,500 SF
Lot 5	Retail	10,000 SF
Lot 6	Car Wash	3,600 SF
Lot 7	Auto Dealer	10,000 SF
Lot 8	Auto Dealer	10,000 SF
Lot 9	Auto Dealer	10,000 SF
Lot 10	Public School	650 Students
Lot 11	Park	6.5 Acres
Lot 12	Major Sporting Goods Grocery Store Medium Retail Tenants Small Retail Tenants Restaurant Fast-Food Restaurant w/ Drive Thru Fast-Food Restaurant w/ Drive Thru	50,000 SF 28,000 SF 34,900 SF 12,500 SF 5,500 SF 4,425 SF 4,400 SF
Lot 13	Home Improvement Store Restaurant Fast-Food Restaurant w/ Drive Thru	103,000 SF 7,400 SF 2,600 SF
Lot 14	Regional Bank Office Bank w/Drive Thru	70,000 SF 5,000 SF
Lot 15	Regional Commercial (Costco) Costco Gas Station	153,000 SF 24 Fueling Positions

EXISTING CONDITIONS

Street Network

The Specific Plan is served by a network of highways, arterial, and collector streets, as shown on Figure 3. The following text provides a brief discussion of the major components of the study-area street network.

U.S. 101, located east of the Specific Plan site, is a freeway that serves as the major north-south link through the Santa Maria Valley and is the principal inter-city route along the Pacific Coast. U.S. 101 is a 6-lane freeway within the Santa Maria area, with 4 lanes provided north and south of the City. Access between the Specific Plan site and the freeway would be provided via the interchanges at Stowell Road and Betteravia Road.



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EXISTING STREET NETWORK

FIGURE 3

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East-West Surface Streets

Stowell Road is an east-west arterial located north of the Specific Plan area. Stowell Road extends from Black Road on the west to Philbric Road east of U.S. 101. Traffic signals control the intersections of Stowell Road and Broadway, Miller Street, and College Drive. The Stowell Road/U.S. 101 NB ramps intersection is controlled by a two-way stop.

Battles Road is a four-lane arterial that runs east-west along the Specific Plan's north frontage. Battles Road extends from Bradley Road on the east to "A" Street on the west. Traffic signals control the intersections of Battles Road at Broadway, Miller Street, and College Drive. Stop signs control the intersections of Battles Road/Shepherd Drive and Battles Road/Bradley Road.

Inger Drive is a two-lane local road that extends east from SR 135 to its terminus east of Miller Street adjacent to the Specific Plan. Traffic signals control the Inger Drive/Miller Street intersection.

Betteravia Road, located along the Specific Plan's south frontage, is an east-west arterial that serves as the primary access route between U.S. 101 and the southwestern area of the City. Betteravia Road contains three eastbound lanes and two westbound lanes along the frontage of the Enos Ranchos Specific Plan. The roadway is a six-lane arterial between the Specific Plan area and South Broadway. Within the study-area, traffic signals control the intersections of Betteravia Road at Broadway, Miller Street, College Drive, Bradley Road(S), and the U.S. 101 NB and SB Ramps.

Southside Parkway is a two-lane road located south of Betteravia Road. Southside Parkway runs east-west from Miller Street to Bradley Road. Roundabouts control the intersections of Southside Parkway/College Drive and Southside Parkway/Bradley Road.

North-South Surface Streets

Broadway (State Route 135) extends from U.S. 101 near the northern Santa Maria city limit line to its junction with State Route 1 south of Orcutt. State Route 135 is a four- to six-lane arterial that serves as the primary north-south route through the Santa Maria/Orcutt area. The roadway is named "Broadway" north of Santa Maria Way and the "Orcutt Expressway" south of Santa Maria Way. Broadway contains six lanes and is signalized with left-turn channelization at the Stowell Road, Battles Road, and Betteravia Road intersections within the study area.

Miller Street is a north-south facility providing a secondary access route for the eastern area of Santa Maria. Many local drivers use this facility as an alternative to Broadway for north-south travel. Within the study-area, Miller Street contains four lanes and is controlled by traffic signals at the Stowell Road, Battles Road, Inger Drive, and Betteravia Road intersections.

College Drive, located along the Specific Plan's west frontage, is a north-south arterial that extends south from Donovan Road on the north to Santa Maria Way on the south. Adjacent to the Specific Plan, College Drive contains two lanes. Within the study-area, traffic signals control the intersections of College Drive at Stowell Road, Battles Road, and Betteravia Road. The College Drive/Southside Parkway intersection is configured as a roundabout.

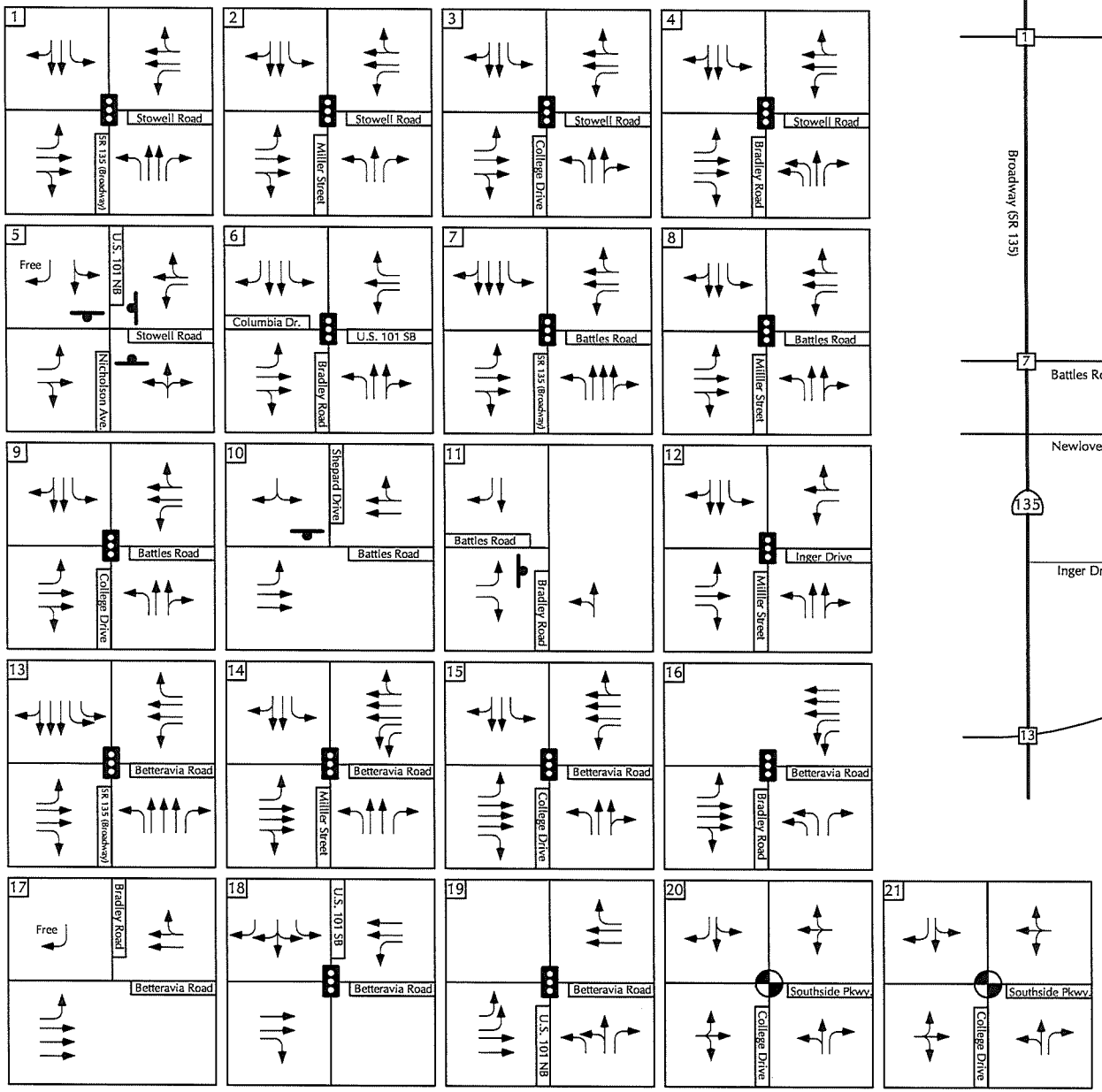
Bradley Road, which traverses the Specific Plan area, is a north-south arterial frontage road paralleling the west side of U.S. 101. The north and south legs of Bradley Road at Betteravia Road are offset by approximately 600 feet. The segment from Battles Road to Betteravia Road is two lanes wide and referred to as Bradley Road North (N). From Betteravia Road south, Bradley Road has been constructed to four-lane arterial standards and is referred to as Bradley Road South (S). The Specific Plan includes realigning the segment of Bradley Road north of Betteravia Road so that it connects opposite the segment of Bradley Road south of Betteravia Road, resulting in a conventional four-legged intersection at Betteravia Road/Bradley Road. Within the study-area, traffic signals control the Bradley Road intersections at Stowell Road, U.S. 101 SB Ramps-Columbia Square; and at the Bradley Road(S)/Betteravia Road intersection. The Bradley Road/Battles Road "T" intersection is controlled by a one-way stop (Battles Road stopped). The Bradley Road/Southside Parkway intersection is configured as a roundabout.

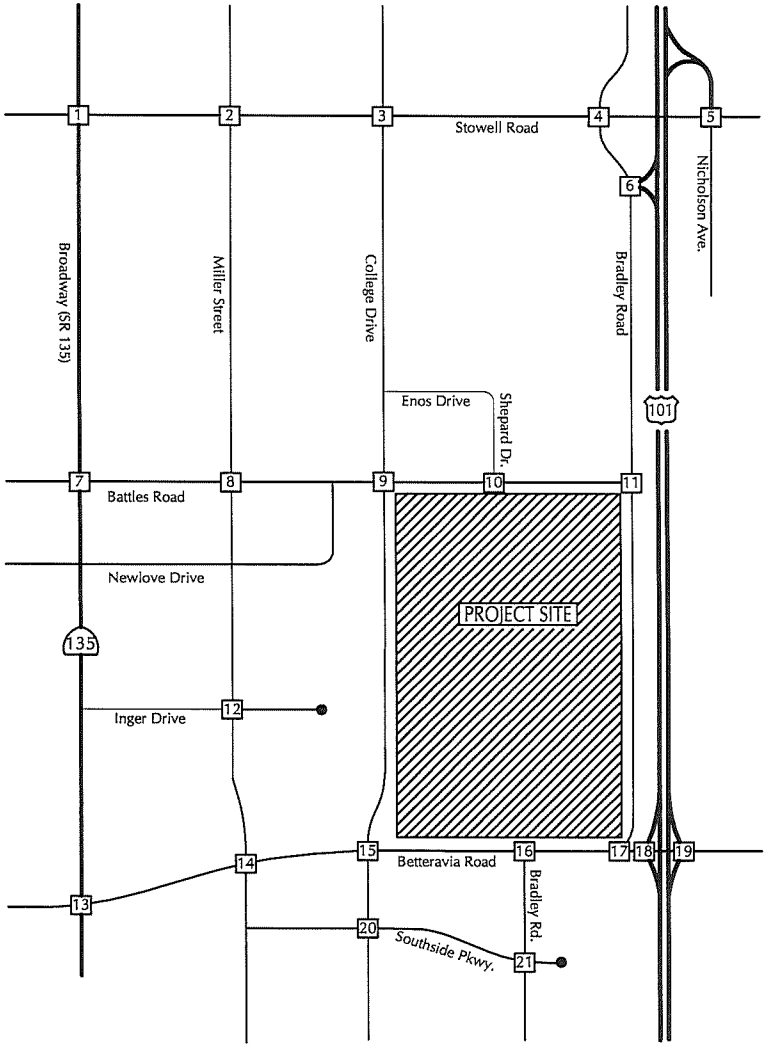
Shepherd Drive is a two-lane local road that extends northerly from Battles Road north of the Specific Plan area. The Battles Road/Shepherd Drive "T" intersection is controlled by a one-way stop (Shepherd Drive stopped).

Intersection Operations

Because traffic flow on urban arterials is most constrained at intersections, detailed traffic flow analyses focus on the operating conditions of critical intersections during peak travel periods. "Levels of Service" (LOS) A through F are used to rate intersection operations, with LOS A indicating very good operation and LOS F indicating poor operation (more complete definitions are contained in the Technical Appendix for reference). The City of Santa Maria considers LOS D as the performance standard for intersections (maintain LOS D or better).

Figure 4 shows the location of the study-area intersections and illustrates the existing lane geometries and traffic controls. Existing peak hour traffic volumes were obtained from traffic count data collected in 2015 (see Technical Appendix for count data). Counts were conducted during the A.M. peak period (7:00-9:00 A.M.) and P.M. peak period (4:00-6:00 P.M.). The peak 1-hour volumes were then identified for the analysis. Figure 5 presents the existing peak hour traffic volumes for the study-area intersections.





LEGEND

- Lane Geometry
- Signalized Intersection
- Stopped Approach
- Roundabout

N
NOT TO SCALE

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INTERSECTION LANE GEOMETRY AND TRAFFIC CONTROLS

FIGURE 4

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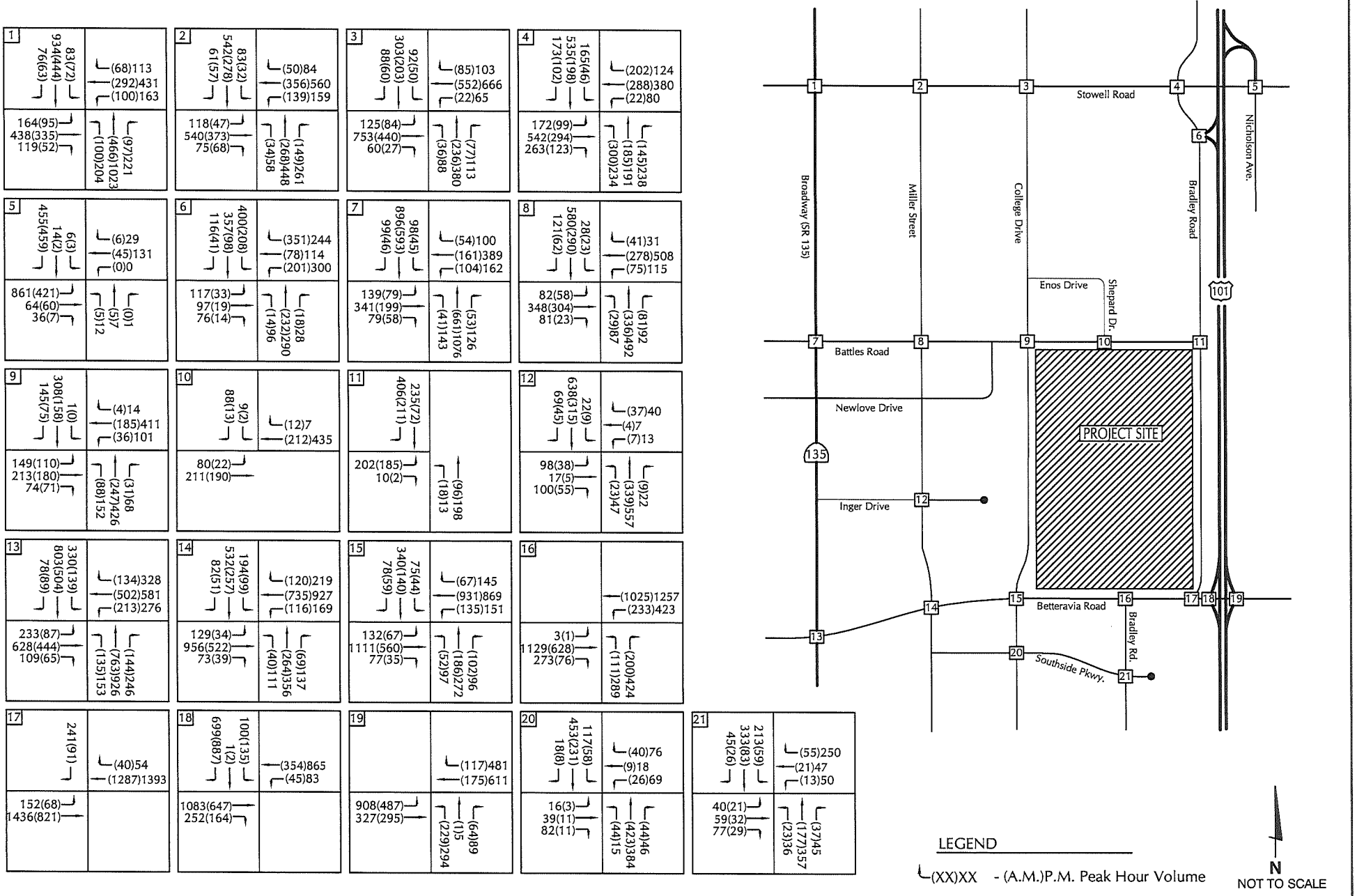

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EXISTING TRAFFIC VOLUMES

FIGURE 5

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Levels of service for the signalized intersections were calculated using the intersection capacity utilization (ICU) methodology, which is the level of service method adopted by the City and SBCAG. This "critical movement analysis" models the traffic flows and attributes of signalized intersections (saturation flow rates, heavy vehicles, signal timing, etc.). Pursuant to the ICU method, levels of service were calculated and reported based on the ICU ratio. The ICU ratio, which is expressed as a percentage, is the proportion of an intersection's capacity used to accommodate the traffic demands. For example, if an intersection is operating at 80% of capacity (ICU = 0.80), then 20% of the capacity is not being used.

Levels of service for stop-sign controlled intersections were calculated using the methodology outlined in the Highway Capacity Manual (HCM).[1] Each movement required to stop or yield has a level of service rating and there is an overall level of service rating presented for the intersection. Pursuant to the HCM methods, levels of service were calculated and reported based on the average seconds of delay per vehicle for the stop and yield movements. The unsignalized levels of service assume the lane geometries at the intersections as well as the HCM recommended inputs values for other attributes of the intersection (e.g. % heavy vehicles, flared approaches, etc.).

Table 2 lists the existing traffic controls and levels of service for the study-area intersections.

[1] Highway Capacity Manual, Transportation Research Board, 2010.

Table 2
Existing Levels of Service

Intersection	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
		ICU	LOS	ICU	LOS
Stowell Rd/Broadway	Signal	0.50	LOS A	0.82	LOS D
Stowell Rd/Miller St	Signal	0.51	LOS A	0.72	LOS C
Stowell Rd/College Dr	Signal	0.47	LOS A	0.62	LOS B
Stowell Rd/Bradley Rd	Signal	0.50	LOS A	0.65	LOS B
Stowell Rd/U.S. 101 NB(a)	Stop Sign	10.1 Sec.	LOS B	12.7 Sec.	LOS B
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.52	LOS A	0.69	LOS B
Battles Rd/Broadway	Signal	0.42	LOS A	0.64	LOS B
Battles Rd/Miller St	Signal	0.39	LOS A	0.59	LOS A
Battles Rd/College Dr	Signal	0.35	LOS A	0.56	LOS A
Battles Rd/Shepard Dr(a)	Stop-Sign	8.4 Sec.	LOS A	9.7 Sec.	LOS A
Battles Rd/Bradley Rd(a)	Stop Sign	10.9 Sec.	LOS B	14.8 Sec.	LOS B
Inger Dr/Miller St	Signal	0.26	LOS A	0.42	LOS A
Betteravia Rd/Broadway	Signal	0.58	LOS A	0.77	LOS C
Betteravia Rd/Miller St	Signal	0.44	LOS A	0.68	LOS B
Betteravia Rd/College Dr	Signal	0.46	LOS A	0.60	LOS A
Betteravia Rd/Bradley Rd(S)	Signal	0.40	LOS A	0.63	LOS B
Betteravia Rd/Bradley Rd(N)(a)	Stop Sign	13.2 Sec.	LOS B	16.9 Sec.	LOS C
Betteravia Rd/U.S. 101 SB	Signal	0.52	LOS A	0.65	LOS B
Betteravia Rd/U.S. 101 NB	Signal	0.40	LOS A	0.72	LOS C
Southside Pkwy/College Dr(a)	Roundabout	7.1 Sec.	LOS A	9.1 Sec.	LOS A
Southside Pkwy/Bradley Rd(a)	Roundabout	4.8 Sec.	LOS A	10.5 Sec.	LOS B

(a) Stop Sign or Roundabout control. LOS based on average delay per vehicle in seconds.

The data presented in Table 2 show that the study-area intersections currently operate at LOS D or better during the A.M. and P.M. peak hours, which meet the City's LOS D operating standard.

IMPACT THRESHOLDS

The City of Santa Maria considers LOS D acceptable for roadway and intersection operations, with mitigations required for LOS E and F. Similarly, the Congestion Management Program (CMP) administered by SBCAG considers LOS D acceptable for CMP roadways and intersections, with deficiency plans required when operations degrade to LOS E or F. Potential impacts to the CMP roadway network are discussed in a separate section of the report (see Congestion Management Program Analysis).

PROJECT-SPECIFIC ANALYSIS

Trip Generation

The following trip generation forecasts were developed jointly by ATE and City staff. Trip generation estimates were calculated using rates presented in the Institute of Transportation Engineers (ITE) Trip Generation manual and the San Diego Association of Governments (SANDAG) Traffic Generators manual.[2] A worksheet showing the detailed calculations is included in the Technical Appendix for reference. Table 3 summarizes the trip generation estimates for each of the lots within the Specific Plan.

The data presented in Table 3 show that buildout of the Specific Plan would result in 34,306 average daily trips (ADT), with 2,085 trips occurring during the A.M. peak hour period and 2,992 trips occurring during the P.M. peak hour period.

[2] Trip Generation, Institute of Transportation Engineers, 9th edition, 2012.

Traffic Generators, San Diego Association of Government, April 2002.

Table 3
Project Trip Generation

Lot	Land Use	Size	ADT		A.M. Peak		P.M. Peak	
			Rate	Trips	Rate	Trips	Rate	Trips
Lot 1	Multi-Family Housing(a)	310 DU	6.65	2,062	0.51	158	0.62	192
Lot 2	Auto Dealer(b)	22,500 SF	32.30	727	1.92	43	2.62	59
Lot 3	Auto Dealer(b)	35,000 SF	32.30	1,131	1.92	67	2.62	92
Lot 4	Auto Dealer(b)	67,500 SF	32.30	2,180	1.92	130	2.62	177
Lot 5	Retail(c)	10,000 SF	44.32	443	1.32	13	2.71	27
Lot 6	Car Wash(d)	3,600 SF	NA	900	NA	36	NA	81
Lot 7	Auto Dealer(b)	10,000 SF	32.30	323	1.92	19	2.62	26
Lot 8	Auto Dealer(b)	10,000 SF	32.30	323	1.92	19	2.62	26
Lot 9	Auto Dealer(b)	10,000 SF	32.32	323	1.92	19	2.62	26
Lot 10	Public School(e)	650 Students	1.29	839	0.45	293	0.15	98
Lot 11	Park(f)	6.5 Acres	50.00	325	6.50	42	4.50	29
Lot 12	Shopping Center(g)	139,725 SF	42.70	5,966	0.96	134	3.71	518
Lot 13	Home Improvement(h)	103,000 SF	30.74	3,166	1.49	153	2.33	240
	Restaurant(i)	7,400 SF	127.15	941	10.81	80	9.85	73
	Fast Food Restaurant(j)	2,600 SF	496.12	1,290	45.42	118	32.65	85
Lot 14	Regional Bank Office(k)	70,000 SF	11.65	816	1.80	126	1.74	122
	Bank w/Drive Thru(l)	5,000 SF	148.15	741	12.08	60	24.30	122
Lot 15	Commercial (Costco)(m)	153,000 SF	50.75	7,765	1.85	283	4.35	666
	Service Station (Costco)(n)	24 Positions	168.56	4,045	12.16	292	13.87	333
Totals				**34,306**		**2,085**		**2,992**

(a) ITE Code 220 rates (Apartment).
(b) ITE Code 841 rates (Automobile Sales).
(c) ITE Code 826 rates (Specialty Retail). SANDAG rates for A.M. peak hour since ITE does not have A.M. rate.
(d) SANDAG rates (Automatic Car Wash),
(e) ITE Code 520 rates (Elementary School).
(f) SANDAG rates (City Park).
(g) ITE Code 820 rates (Shopping Center).
(h) ITE Code 862 rates (Home Improvement Superstore).
(i) ITE Code 932 rates (High Turnover Sit-Down Restaurant).
(j) ITE Code 934 rates (Fast Food Restaurant with Drive Thru).
(k) ITE Code 715 rates (Single Tenant Office Building).
(l) ITE Code 912 rates (Drive-In Bank).
(m) ITE Code 813 rates (Free-Standing Discount Superstore).
(n) ITE Code 944 rates (Gasoline/Service Station).

Trip Distribution & Assignment

Trip distribution percentages were developed for the proposed Specific Plan using the City of Santa Maria Traffic Model. A "select zone" analysis was run to determine the distribution pattern for the Specific Plan. The land uses for the Specific Plan were coded into the traffic model and the model was then run to determine the routing of Specific Plan traffic. Figure 6 shows the trip distribution pattern developed for the Specific Plan as well as the assignment of peak hour traffic generated by the Specific Plan traffic at the study-area intersections.

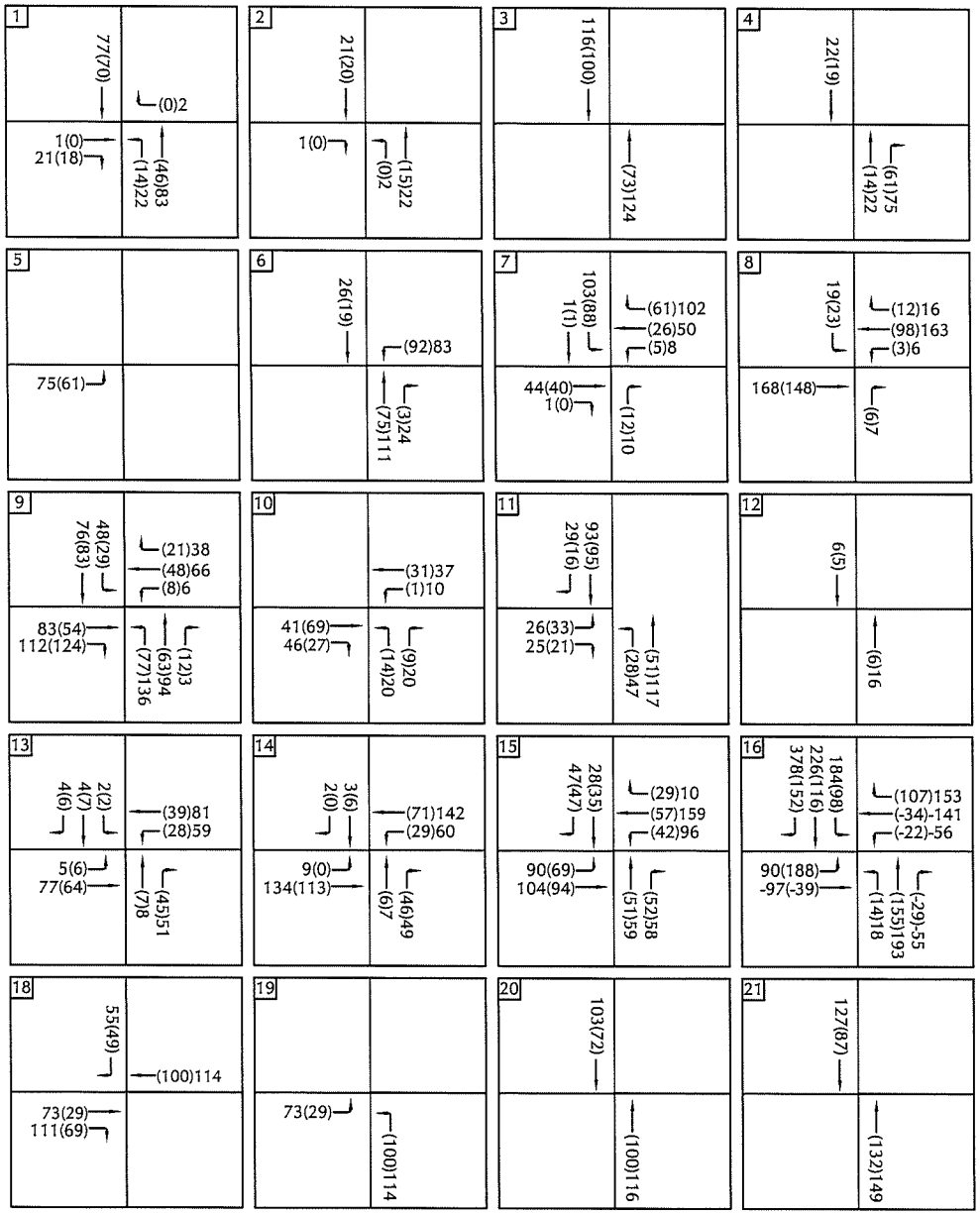
The trip distribution and assignment of Specific Plan traffic accounts for "Primary" and "Pass-By" trips that would be generated by the commercial uses (retail stores and restaurants). Primary trips are those trips with the sole purpose of patronizing the commercial stores and restaurants (i.e. from home to retail stores or restaurants and then return home). Pass-by trips would be drawn from the existing traffic streams on the streets that front the Specific Plan site (i.e. existing vehicles on Betteravia Road, College Drive, and Bradley Road that would stop at the commercial uses along their way). ITE studies show a rate of 34% for retail centers. To be conservative, a 25% pass-by rate was applied to the traffic generation for the retail uses on Lots 12 and 13; and a 20% pass-by rate was applied to the traffic generation for the Costco Store on Lot 15.

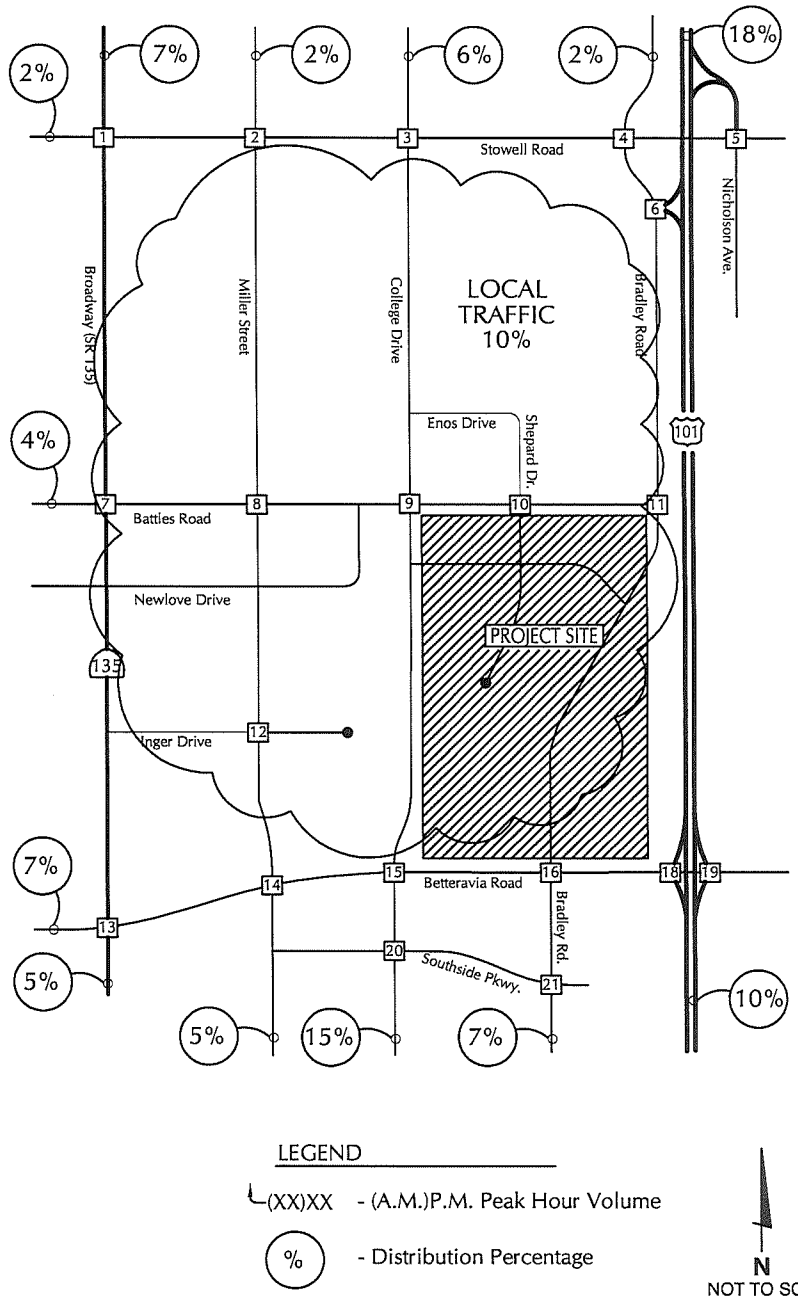
In addition, some of the patrons of the Costco gas station would come from patrons at the Costco store (i.e. people shopping at the store and buying gas at the fueling station). Studies show that about 40% of Costco gas station patrons also shop at the Costco store. Those trips would be internal trips within the Costco lot. The trip distribution and assignment of the Costco gas station traffic therefore assumes that 40% of that traffic would internal to the Costco lot and the remaining 60% would be gas patrons only.

The assignment of Specific Plan traffic to the study-area street network assumes the street network changes that would be implemented by the Specific Plan, including widening of College Drive to four-lane arterial standards, realigning Bradley Road and widening to four-lane arterial standards, constructing the new East-West collector road between College Drive and Bradley Road, and extending Shepard Drive south of Battles Road (see Figure 2 – Project Site Plan). The assignment of Specific Plan traffic also accounts for the driveway locations planned for each of the 15 lots and turn movement restrictions envisioned at each driveway

Project-Specific Intersection Impacts

Levels of service were calculated for the study-area intersections assuming the Existing + Project volumes shown on Figure 7. Tables 4 and 5 compare the Existing and Existing + Project peak hour levels of service for the A.M. and P.M. peak hour period; and identify impacts based on the City's LOS D standard.





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PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 6

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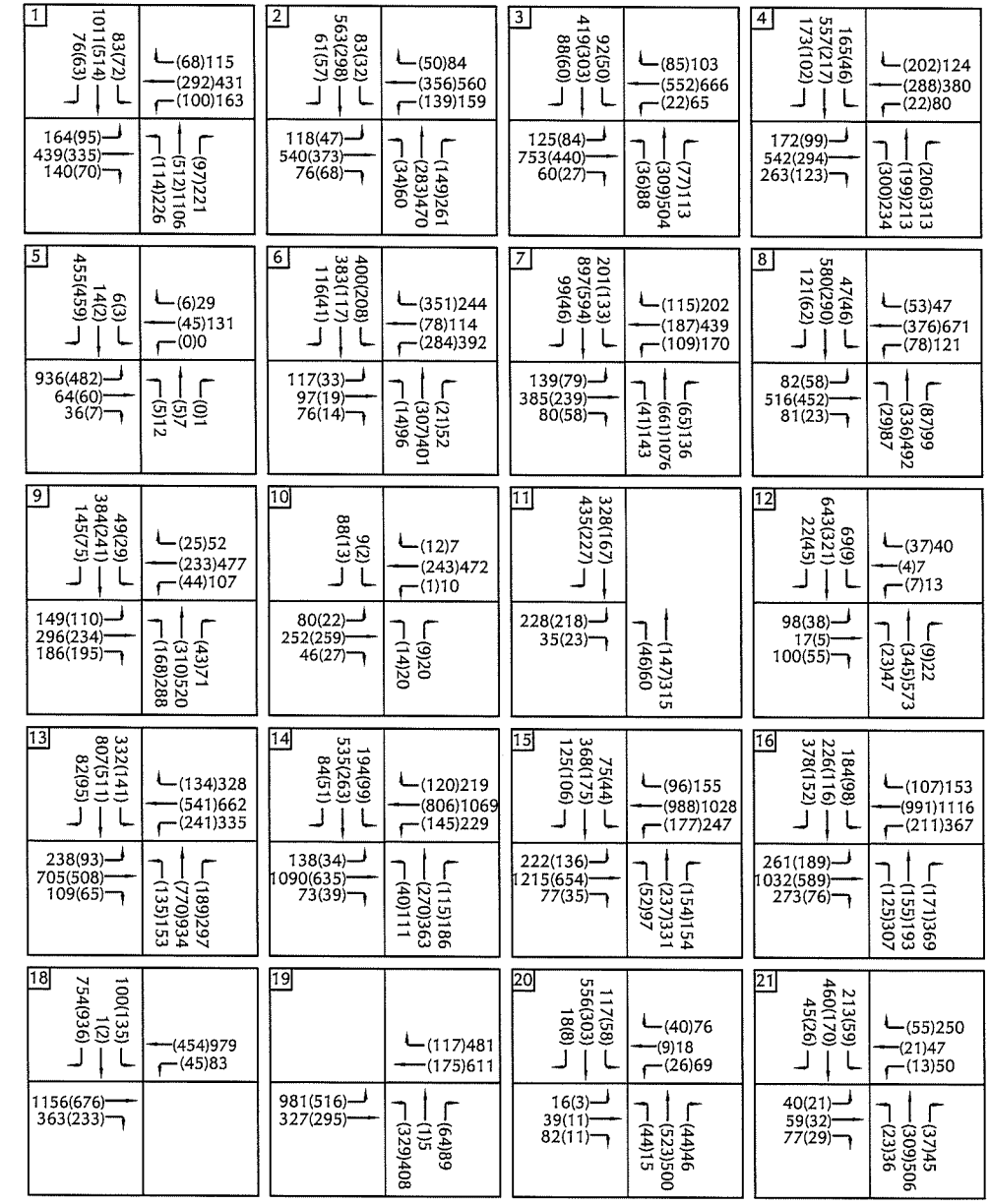

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EXISTING + PROJECT TRAFFIC VOLUMES

FIGURE 7

MMF - #15041.01

Table 4
Existing + Project A.M. Peak Hour Levels of Service

Intersection	Control	Existing		Existing + Project		Impact?
		ICU	LOS	ICU	LOS	
Stowell Rd/Broadway	Signal	0.50	LOS A	0.54	LOS A	NO
Stowell Rd/Miller St	Signal	0.51	LOS A	0.52	LOS A	NO
Stowell Rd/College Dr	Signal	0.47	LOS A	0.49	LOS A	NO
Stowell Rd/Bradley Rd	Signal	0.50	LOS A	0.50	LOS A	NO
Stowell Rd/U.S. 101 NB(a)	Stop Sign	10.1 Sec.	LOS B	10.3 Sec.	LOS B	NO
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.52	LOS A	0.55	LOS A	NO
Battles Rd/Broadway	Signal	0.42	LOS A	0.49	LOS A	NO
Battles Rd/Miller St	Signal	0.39	LOS A	0.46	LOS A	NO
Battles Rd/College Dr	Signal	0.35	LOS A	0.45	LOS A	NO
Battles Rd/Shepard Dr(a)	Stop-Sign	8.4 Sec.	LOS A	9.3 Sec.	LOS A	NO
Battles Rd/Bradley Rd(a)	Stop Sign	10.9 Sec.	LOS B	15.1 Sec.	LOS C	NO
Inger Dr/Miller St	Signal	0.26	LOS A	0.27	LOS A	NO
Betteravia Rd/Broadway	Signal	0.58	LOS A	0.62	LOS B	NO
Betteravia Rd/Miller St	Signal	0.44	LOS A	0.46	LOS A	NO
Betteravia Rd/College Dr	Signal	0.46	LOS A	0.55	LOS A	NO
Betteravia Rd/Bradley Rd(b)	Signal	0.40	LOS A	0.54	LOS A	NO
Betteravia Rd/U.S. 101 SB	Signal	0.52	LOS A	0.54	LOS A	NO
Betteravia Rd/U.S. 101 NB	Signal	0.40	LOS A	0.44	LOS A	NO
Southside Pkwy/College Dr(a)	Roundabout	7.1 Sec.	LOS A	8.4 Sec.	LOS A	NO
Southside Pkwy/Bradley Rd(a)	Roundabout	4.8 Sec.	LOS A	5.9 Sec.	LOS A	NO

(a) Stop-Sign or Roundabout control. LOS based on average delay per vehicle in seconds.
(b) Existing + Project LOS assumes realignment of the northern segment of Bradley Road by the Specific Plan.

The level of service data presented in Table 4 show that two intersections are forecast to drop one level of service grade as a result of the Specific Plan. However, all of the study-area intersections would operate at LOS C or better during the A.M. peak hour period with Existing + Project traffic, which meet the City's LOS D standard. The Specific Plan would not generate project-specific level of service impacts at the study-area intersections during the A.M. peak hour.

Table 5
Existing + Project P.M. Peak Hour Levels of Service

Intersection	Control	Existing		Existing + Project		Impact?
		ICU	LOS	ICU	LOS	
Stowell Rd/Broadway	Signal	0.82	LOS D	0.86	LOS D	NO
Stowell Rd/Miller St	Signal	0.72	LOS C	0.74	LOS C	NO
Stowell Rd/College Dr	Signal	0.62	LOS B	0.66	LOS B	NO
Stowell Rd/Bradley Rd	Signal	0.65	LOS B	0.65	LOS B	NO
Stowell Rd/U.S. 101 NB(a)	Stop Sign	12.7 Sec.	LOS B	12.7 Sec.	LOS B	NO
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.69	LOS B	0.78	LOS C	NO
Battles Rd/Broadway	Signal	0.64	LOS B	0.74	LOS C	NO
Battles Rd/Miller St	Signal	0.59	LOS A	0.65	LOS B	NO
Battles Rd/College Dr	Signal	0.56	LOS A	0.70	LOS B	NO
Battles Rd/Shepard Dr(a)	Stop-Sign	9.7 Sec.	LOS A	10.0 Sec.	LOS A	NO
Battles Rd/Bradley Rd(a)	Stop Sign	14.8 Sec.	LOS B	**35.8 Sec.**	**LOS E**	**YES**
Inger Dr/Miller St	Signal	0.42	LOS A	0.42	LOS A	NO
Betteravia Rd/Broadway	Signal	0.77	LOS C	0.83	LOS D	NO
Betteravia Rd/Miller St	Signal	0.68	LOS B	0.72	LOS C	NO
Betteravia Rd/College Dr	Signal	0.60	LOS A	0.70	LOS B	NO
Betteravia Rd/Bradley Rd(S)(b)	Signal	0.63	LOS B	0.77	LOS C	NO
Betteravia Rd/U.S. 101 SB	Signal	0.64	LOS B	0.68	LOS B	NO
Betteravia Rd/U.S. 101 NB	Signal	0.72	LOS C	0.78	LOS C	NO
Southside Pkwy/College Dr(a)	Roundabout	9.1 Sec.	LOS A	11.3 Sec.	LOS B	NO
Southside Pkwy/Bradley Rd(a)	Roundabout	10.5 Sec.	LOS B	14.3 Sec.	LOS B	NO

(a) Stop-Sign or Roundabout control. LOS based on average delay per vehicle in seconds.
(b) Existing + Project LOS assumes realignment of the northern segment of Bradley Road by the Specific Plan.

The level of service data presented Table 5 show nine of the study-area intersections would be reduced by a level of service grade (or more) as a result of the Specific Plan. Most of the intersections are forecast to operate at LOS D or better during the P.M. peak hour with Existing + Project traffic, which meet the City's LOS D standard. The Battles Road/Bradley Road intersection, which is unsignalized, is forecast to degrade to LOS E during the P.M. peak hour with the addition of Specific Plan traffic, a significant impact.

It is noted that the Existing + Project level of service forecasts for the Betteravia Road/Bradley Road intersection assume the realignment of segment of Bradley Road north of Betteravia Road so that it intersects with Betteravia Road at the existing Betteravia Road/Bradley Road intersection that is controlled by traffic signals. The level of service forecasts also assume modification of the lane geometry and traffic signals at the Betteravia Road/Bradley Road intersection, as discussed below in Project-Specific Mitigation Measures.

Project-Specific Mitigation Measures

The following mitigation measures are required to mitigate impacts at the study-area intersections. Some of the mitigation measures include recommendations for new turn lanes or extending existing turn lanes at the intersections to accommodate more vehicle storage due to increased volumes. The storage recommendations outlined below do not include deceleration area within the turn lanes. The City may require longer turn pocket lengths to provide deceleration within the turn lanes.

Battles Road/College Drive. The queue forecasts indicate that the existing 210-foot turn pocket on the northbound College Drive approach will need to be lengthened to 290 feet in order to accommodate the Cumulative + Project peak queue forecasts.

Battles Road/Bradley Road. This "T" intersection is currently controlled by Stop signs on the Battles Road approach and is forecast to operate at LOS E during the P.M. peak hour period with Existing + Project traffic. The intersection will require installation of traffic signals with the lane geometry shown in Table 6. These measures would provide LOS A (ICU 0.52) during the P.M. peak hour period with Existing + Project traffic and therefore mitigate the Specific Plan's impact at this intersection.

Table 6
Battles Road/Bradley Road – Project-Specific Mitigations

Intersection	Mitigated Control	Mitigated Lane Geometry			Mitigated ICU/LOS(a)
		NB	SB	EB	WB
Battles Rd/Bradley Rd	Signalize	L TT	T TR	L R	0.52/LOS A
(a) Existing + Project ICU/LOS for P.M. peak hour.					

In addition to installing traffic signals and modifying the lane geometry, the queue analysis indicates that the northbound left-turn lane should be constructed with 100 feet of storage and the eastbound left-turn lane should be constructed with 175 feet of storage.

Betteravia Road/College Drive. The queue forecasts indicate that the existing 210-foot turn pocket length on the eastbound Betteravia Road approach will need to be lengthened to 260 feet in order to accommodate the Cumulative + Project peak queue forecasts.

Betteravia Road/Bradley Road. As noted, the level of service forecasts for this intersection assume realignment of Bradley Road north of Betteravia Road so that it intersects with Betteravia Road at the existing Betteravia Road/Bradley Road intersection that is controlled by traffic signals. The level of service forecasts also assume modification of the lane geometry and signals at the existing Betteravia Road/Bradley Road intersection. The intersection will require modifying the traffic signal system and providing the lane geometry shown in Table 7.

Table 7
Betteravia Road/Bradley Road – Project-Specific Mitigations

Intersection	Mitigated Control	Mitigated Lane Geometry				Mitigated ICU/LOS(a)
		NB	SB	EB	WB	
Betteravia Rd/Bradley Rd	Modify Signals	L TT R	L TT R	L TT TR	LL TTT R	0.76/LOS C
(a) Existing + Project ICU/LOS for P.M. peak hour.						

The queue analysis found that the that existing turn pockets on the northbound and eastbound approaches will required lengthening in order to accommodate the peak queue forecasts. Most problematic is the storage required for the northbound left turns given this leg of the intersection is already constructed and in use.

Figure 8 illustrates the existing lane geometry for the northbound approach to the intersection. As shown, the approach contains four lanes. The #1 Lane (inside lane) was designed as a left-turn lane but is currently striped off and not used. The #2 Lane and #3 Lane are currently being used as left-turn lanes; and the #4 Lane is being used as a right-turn lane. This configuration was planned so that the approach could be restriped when the northern segment of Bradley Road is realigned opposite the southern segment. When realigned, the northbound approach was planned to be restriped to use the #1 Lane as a dedicated left-turn lane, the #2 Lane and #3 Lane would become thru lanes, and the #4 Lane would be retained as a right-turn lane.

However, the traffic volume and queue forecasts show that the northbound left-turn pocket will require 360 feet of storage in order to accommodate the Cumulative + Project traffic forecasts. The existing turn pocket was constructed with 135 feet of storage, well short of the storage required. In discussions with City staff, the following three options were considered to mitigate this deficiency.

Option 1. This option would retain the existing Bradley Road curb-to-curb width but restripe the northbound approach to include use of the existing #1 Lane as a left-turn lane; use the existing #2 Lane as a shared left+thru lane; use the existing #3 Lane as a thru lane, and retain the #4 lane as a right-turn lane. This options was reviewed and then rejected because it would require that the signals be "split phased" for the northbound and southbound Bradley Road approaches since northbound Bradley Road traffic would include both left and thru movements during a single phase. Split phasing results in longer delays for motorist and longer queues in turn pockets. For these reasons, Option 2 was developed.

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BETTERAVIA ROAD/BRADLEY ROAD INTERSECTION
EXISTING LANE GEOMETRY

FIGURE 8

MMF - #15041.01

Option 2. This option would retain the existing Bradley Road curb-to-curb width but restripe the northbound approach to include use of the existing #1 Lane as a left-turn lane; use the existing #2 Lane as a second left-turn lane; use the existing #3 Lane as a thru lane, and retain the #4 lane as a right-turn lane. This options would provide the storage required for the northbound left turns and also provide an acceptable level of service. The intersection is forecast to operate at LOS A during the A.M. peak hour (ICU 0.60) and LOS C during the P.M. peak hour (ICU 0.74) with Cumulative + Project traffic assuming implementation of this option.

Option 3. This option includes widening Bradley Road to include two left-turn lanes, two thru lanes, and one right-turn lane. This option would require additional right-of-way and encroach into the sidewalk/parkway facilities along the east and west sides of Bradley Road to add the additional through lane. Given an acceptable LOS can be achieved with Option 2, City staff has indicated that they will consider this option as necessary to maintain acceptable LOS at this intersection.

After exploring the various options, City staff have indicated that Option 2 is the preferred mitigation measure since it does not require widening Bradley Road at this time, would provide for acceptable levels of service during the peak hours, and would provide sufficient storage for the northbound left turns.

In addition, the queue forecasts indicate that the existing 215-foot turn pocket length on the eastbound Betteravia Road approach will need to be lengthened to 240 feet in order to accommodate the Cumulative + Project peak queue forecasts.

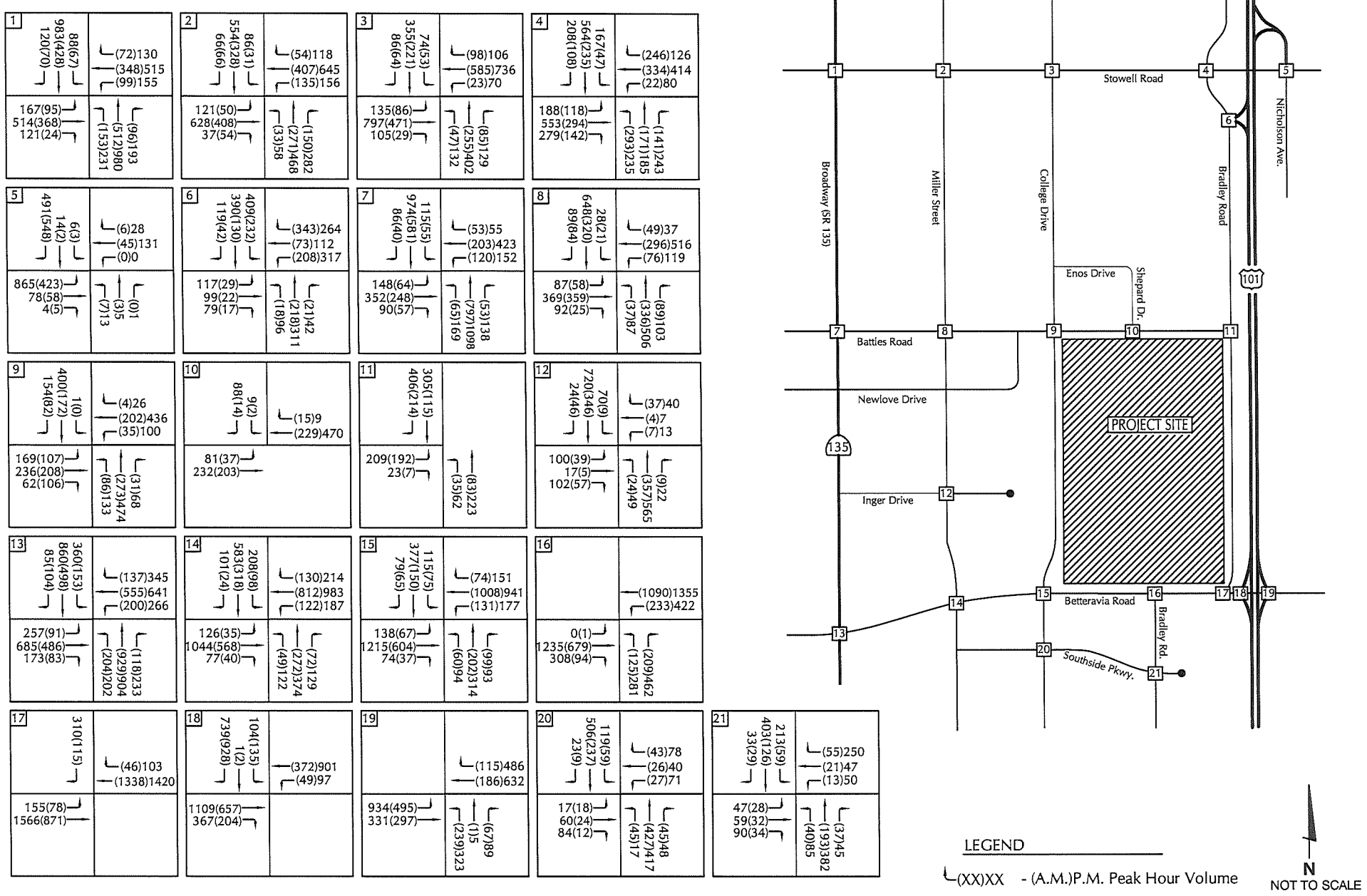
CUMULATIVE ANALYSIS

Traffic Forecasts

Cumulative conditions were forecast assuming the additional traffic that would be generated by development of the approved and pending projects in the area. These land uses were incorporated into the Santa Maria Traffic Model to forecast Cumulative conditions. The Cumulative A.M. and P.M. peak hour forecasts for the study-area intersections are shown in Figure 9 and the Cumulative + Project forecasts are shown in Figure 10. It is noted that the Cumulative forecasts do not assume the realignment of Bradley Road north of Betteravia Road since the road realignment would be required of the proposed Specific Plan. The Cumulative + Project forecasts shown in Figure 10 assume the realignment of Bradley Road as well as the extension of the new East-West Collector between College Drive and Bradley Road, and the extension of Shepard Drive south of Battles Road.

Cumulative Intersection Impacts

Tables 8 and 9 compare the Cumulative and Cumulative + Project A.M. and P.M. peak hour levels of service for the study-area intersections and identify the significance of cumulative impacts.



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CUMULATIVE TRAFFIC VOLUMES

FIGURE 9

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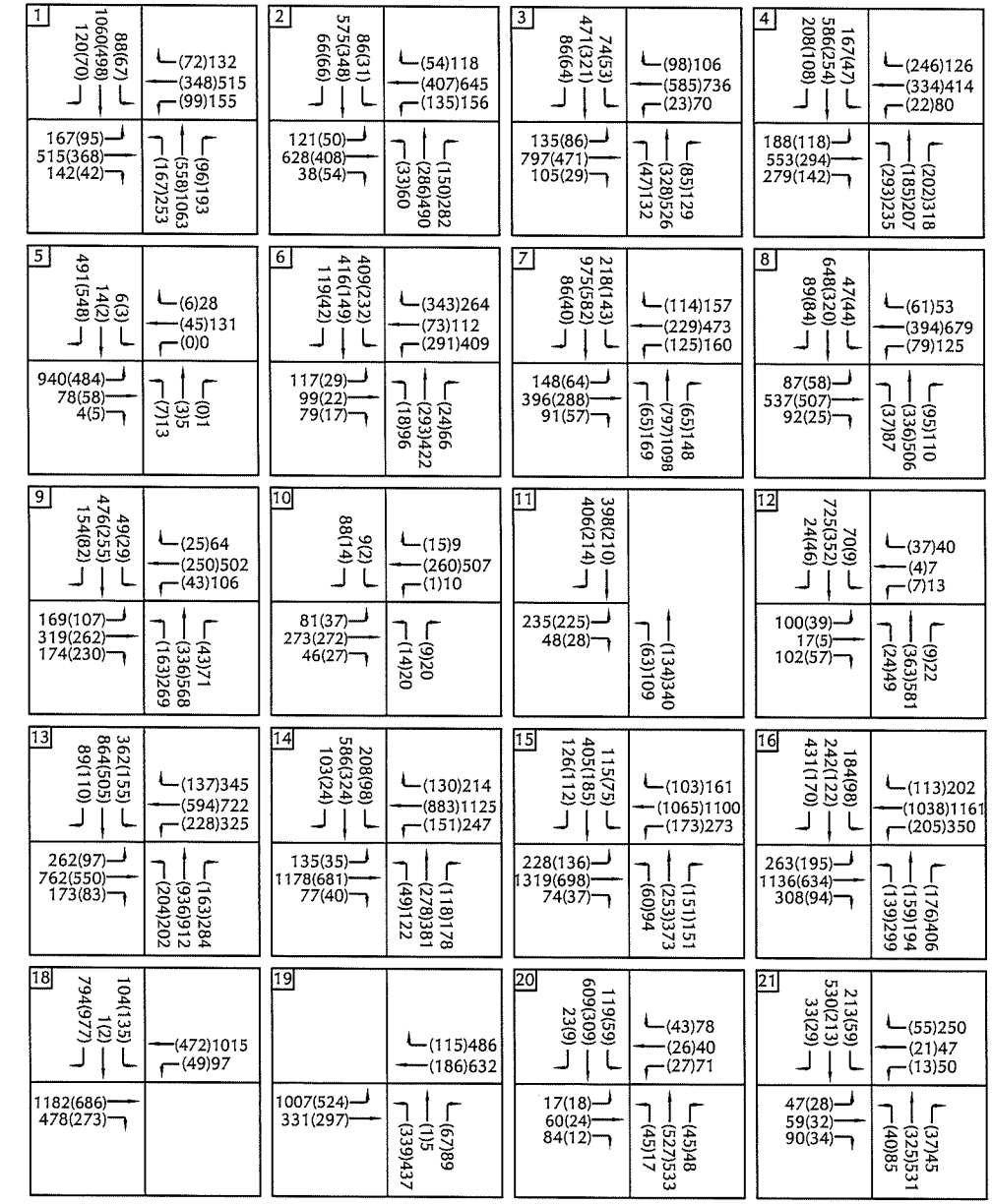

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CUMULATIVE + PROJECT TRAFFIC VOLUMES

FIGURE 10

MMF - #15041.01

Table 8
Cumulative + Project A.M. Peak Hour Levels of Service

Intersection	Control	Cumulative		Cumulative + Project		Impact?
		ICU	LOS	ICU	LOS	
Stowell Rd/Broadway	Signal	0.54	LOS A	0.57	LOS A	NO
Stowell Rd/Miller St	Signal	0.52	LOS A	0.53	LOS A	NO
Stowell Rd/College Dr	Signal	0.50	LOS A	0.52	LOS A	NO
Stowell Rd/Bradley Rd	Signal	0.55	LOS A	0.55	LOS A	NO
Stowell Rd/U.S. 101 NB(a)	Stop Sign	10.4 Sec.	LOS B	10.7 Sec.	LOS B	NO
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.53	LOS A	0.55	LOS A	NO
Battles Rd/Broadway	Signal	0.48	LOS A	0.55	LOS A	NO
Battles Rd/Miller St	Signal	0.41	LOS A	0.48	LOS A	NO
Battles Rd/College Dr	Signal	0.36	LOS A	0.48	LOS A	NO
Battles Rd/Shepard Dr(a)	Stop-Sign	8.3 Sec.	LOS A	9.0 Sec.	LOS A	NO
Battles Rd/Bradley Rd(a)	Stop Sign	11.4 Sec.	LOS B	17.2 Sec.	LOS C	NO
Inger Dr/Miller St	Signal	0.28	LOS A	0.28	LOS A	NO
Betteravia Rd/Broadway	Signal	0.63	LOS B	0.67	LOS B	NO
Betteravia Rd/Miller St	Signal	0.46	LOS A	0.48	LOS A	NO
Betteravia Rd/College Dr	Signal	0.50	LOS A	0.59	LOS A	NO
Betteravia Rd/Bradley Rd(S)(b)	Signal	0.42	LOS A	0.56	LOS A	NO
Betteravia Rd/U.S. 101 SB	Signal	0.54	LOS A	0.56	LOS A	NO
Betteravia Rd/U.S. 101 NB	Signal	0.40	LOS A	0.44	LOS A	NO
Southside Pkwy/College Dr(a)	Roundabout	7.4 Sec.	LOS A	9.3 Sec.	LOS A	NO
Southside Pkwy/Bradley Rd(a)	Roundabout	5.2 Sec.	LOS A	6.3 Sec.	LOS A	NO

(a) Stop-Sign or Roundabout control. LOS based on average delay per vehicle in seconds.
(b) Cumulative + Project LOS assumes realignment of the northern segment of Bradley Road by the Specific Plan.

The level of service data presented in Table 8 indicate that the study-area intersections would operate at LOS C or better during the A.M. peak hour period with Cumulative and Cumulative + Project traffic, which meet the City's LOS D standard. The Project would not contribute to significant cumulative impacts at the study-area intersections during the A.M. peak hour.

Table 9
Cumulative + Project P.M. Peak Hour Levels of Service

Intersection	Control	Cumulative		Cumulative + Project		Impact?
		ICU	LOS	ICU	LOS	
Stowell Rd/Broadway	Signal	0.89	LOS D	**0.93**	**LOS E**	**YES**
Stowell Rd/Miller St	Signal	0.76	LOS C	0.77	LOS C	NO
Stowell Rd/College Dr	Signal	0.67	LOS B	0.70	LOS B	NO
Stowell Rd/Bradley Rd	Signal	0.69	LOS B	0.69	LOS B	NO
Stowell Rd/U.S. 101 NB(a)	Stop Sign	13.0 Sec.	LOS B	13.0 Sec.	LOS B	NO
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.71	LOS B	0.81	LOS D	NO
Battles Rd/Broadway	Signal	0.66	LOS B	0.77	LOS C	NO
Battles Rd/Miller St	Signal	0.61	LOS B	0.67	LOS B	NO
Battles Rd/College Dr	Signal	0.60	LOS A	0.74	LOS C	NO
Battles Rd/Shepard Dr(a)	Stop-Sign	9.9 Sec.	LOS A	10.2 Sec.	LOS B	NO
Battles Rd/Bradley Rd(a)	Stop Sign	19.7 Sec.	LOS C	**>50 Sec.**	**LOS F**	**YES**
Inger Dr/Miller St	Signal	0.45	LOS A	0.45	LOS A	NO
Betteravia Rd/Broadway	Signal	0.80	LOS C	0.86	LOS D	NO
Betteravia Rd/Miller St	Signal	0.72	LOS C	0.75	LOS C	NO
Betteravia Rd/College Dr	Signal	0.65	LOS B	0.76	LOS C	NO
Betteravia Rd/Bradley Rd(S)(b)	Signal	0.67	LOS B	0.77	LOS C	NO
Betteravia Rd/U.S. 101 SB	Signal	0.67	LOS B	0.71	LOS C	NO
Betteravia Rd/U.S. 101 NB	Signal	0.74	LOS C	0.80	LOS C	NO
Southside Pkwy/College Dr(a)	Roundabout	10.4 Sec.	LOS B	13.7 Sec.	LOS B	NO
Southside Pkwy/Bradley Rd(a)	Roundabout	12.9 Sec.	LOS B	19.3 Sec.	LOS C	NO

(a) Stop-Sign or Roundabout control. LOS based on average delay per vehicle in seconds.
(b) Cumulative + Project LOS assumes realignment of the northern segment of Bradley Road by the Specific Plan.

The level of service data presented Table 9 show that most of the study-area intersections are forecast to operate at LOS D or better during the P.M. with Cumulative and Cumulative + Project traffic, which meet the City's LOS D standard. The Stowell Road/Broadway and Battles Road/Bradley Road intersections would be impacted by Cumulative + Project traffic during the P.M. peak hour period.

Cumulative Mitigation Measures

The following mitigation measures would be required at the study-area intersections to mitigate cumulative impacts. The cumulative mitigations address level of service deficiencies as well as turn pocket storage requirements at the major intersections adjacent to the site.

Stowell Road/Broadway. This intersection is forecast to degrade to LOS E during the P.M. peak hour with Cumulative + Project traffic. The traffic forecasts show the need for adding separate right-turn lanes on the eastbound and westbound approaches. These improvements would provide LOS C during the P.M. peak hour period with Cumulative + Project traffic, thus mitigating the cumulative impacts.

Battles Road/Bradley Road. This "T" intersection is currently controlled by Stop signs on the Battles Road approach and is forecast to operate degrade to LOS F during the P.M. peak hour period with Cumulative + Project traffic. The project-specific mitigation measures (install traffic signals and modify lane geometry) would provide LOS A during the P.M. peak hour period with Cumulative + Project traffic and thereby mitigate the cumulative impact at the intersection.

Traffic Mitigation Fees. The developments within the Specific Plan would be required to contribute to the City's traffic mitigation fee program to offset its contribution to traffic impacts within the Santa Maria region beyond the study area analyzed in this report.

GENERAL PLAN BUILDOUT ANALYSIS

Trip Generation Analysis

The City previously approved the Enos Ranchos Specific Plan with a range of potential residential and commercial uses. Table 10 summarizes the zoning and land uses for the "Approved Specific Plan." The table also shows the zoning and land uses for the "Proposed Specific Plan" as well as the net change in land uses that would result by approving the Proposed Specific Plan.

Table 10
Enos Rancho Specific Plan Land Use Comparisons

		Approved Specific Plan(a)		Proposed Specific Plan		
Land Use	Zoning	Acres	Development	Acres	Development	Difference(b)
Residential						
LDR-5	PD/R-1	16.9	84 DU	0.0	0 DU	-84 DU
MDR-12	PD/R-2	21.7	260 DU	0.0	0 DU	-260 DU
HDR-22	PD/R-3	0.0	0 DU	17.2	378 DU	+378 DU
Totals:			344 DU		378 DU	+34 DU
Non-Residential						
ROS	PD/OS	6.7	2,919 SF	6.2	2,701 SF	-218 SF
CF	PD/PF	0.0	0 SF	10.3	39,483 SF	+39,483 SF
CC	PD/C-2	59.9	782,773 SF	48.2	525,000 SF	-257,773 SF
CC	PD/C-	0.0	0 SF	23.7	250,000 SF	+250,000 SF
Totals:	2/Auto		785,692 SF		817,000 SF	+31,492 SF

(a) Approved Specific Plan numbers do not include approved Enos Ranchos Mercado development
(b) Proposed Specific Plan DU/SF minus Approved Specific Plan DU/SF.

As shown in Table 10, the Proposed Specific Plan would result in 34 additional residential dwelling units and 31,492 additional square feet of non-residential uses.

Trip generation estimates were calculated for the Proposed Specific Plan uses and the Approved Specific Plan uses. Table 11 compares the trip generation potentials for the two plans (a worksheet showing the detailed calculation is included in the Technical Appendix for reference.

Table 11
Enos Ranchos Specific Plan - Trip Generation Comparisons

Scenario	Trip Generation(a)		
	ADT	A.M. Peak Trips	P.M. Peak Trips
Proposed Specific Plan	34,156	1,510	2,963
Approved Specific Plan	36,288	991	3,179
Difference(b)	-2,132	+519	-216
(a) Trip generation based on land use quantities presented in Table 10. (b) Proposed Specific Plan minus Approved Specific Plan.			

As shown in Table 11, the Proposed Specific Plan would result in a reduction in average daily traffic (-2,132 ADT) and a reduction in P.M. peak hour trips (-216 P.M. peak trips) when compared to the Approved Specific Plan. The Proposed Specific Plan would result in an increase of 519 A.M. peak hour trips. The higher A.M. peak hour and lower P.M. peak hour trip generation for the Proposed Specific Plan can be attributed to the auto dealer uses and the school, which generated higher volumes during the A.M. peak hour and lower volumes during the P.M. peak hour when compared to the commercial uses for the Approved Specific Plan.

General Plan Buildout Traffic Impacts

General Plan Buildout A.M. and P.M. peak hour traffic forecasts (including the Enos Ranchos Specific Plan) were derived from the City's General Plan Buildout traffic model. It is important to note that the Buildout traffic model includes the approved Area 9 Specific Plan located near the western edge of the City. The traffic study prepared for the Area 9 Specific Plan found that full development of Area 9 would significantly impact most of the study-area intersections under General Plan Buildout conditions. The Area 9 traffic study also found that it would be difficult to maintain LOS D at many of the City's intersections upon buildout of the General Plan with Area 9 included.

The Area 9 Specific Plan was adopted by the City in April 2012 after a lengthy CEQA review and planning process. The primary focus of the Area 9 Specific Plan was to provide sufficient industrial land for expansion of local businesses as well as provide land to draw new businesses to the City. Development of the Area 9 Specific Plan includes the potential for 13,376,000 SF of industrial, manufacturing, office, and commercial uses; as well as 550 mixed-use residential

units. The traffic study prepared for the Area 9 Specific Plan indicated that full development of the plan would generate 12,906 A.M. peak hour trips and 13,807 P.M. peak hour trips.[3]

Table 12 list the General Plan Buildout level of service forecasts for the A.M. and P.M. peak hours. The level of service forecasts reflect the lane geometries and traffic controls that are planned by the City, which are shown on Figure 11. These improvements are identified in the City of Santa Maria General Plan Circulation Element, Capital Improvement Program, and Deficiency Plans; as well as the street network changes, frontage improvement, and mitigations identified in adopted specific plans (e.g. Area 9 SP, Mahoney Ranch SP, Enos Ranchos SP, Santa Maria Airport Business Park SP, etc.). The section presented following the table describes the Enos Ranchos Specific Plan contributions to General Plan Buildout traffic impacts and reviews potential mitigations that would be required to accommodate General Plan Buildout traffic conditions.

[3] Area 9 Specific Plan, Revised Traffic and Circulation Study, Associated Transportation Engineers, September 2010.

FIGURE 11

GENERAL PLAN BUILDOUT PLANNED LANE GEOMETRIES AND TRAFFIC CONTROLS

ASSOCIATED TRANSPORTATION ENGINEERS

MMF - #15041.01

Table 12
General Plan Buildout Levels of Service

Intersection	Control	A.M. Peak Hour(a)		P.M. Peak Hour(a)		Impact?
		ICU	LOS	ICU	LOS	
Stowell Rd/Broadway	Signal	0.73	LOS C	**1.14**	**LOS F**	**YES**
Stowell Rd/Miller St	Signal	0.60	LOS A	**1.01**	**LOS F**	**YES**
Stowell Rd/College Dr	Signal	0.68	LOS B	0.82	LOS D	NO
Stowell Rd/Bradley Rd	Signal	0.75	LOS C	**0.99**	**LOS E**	**YES**
Stowell Rd/U.S. 101 NB	Signal	0.40	LOS A	0.87	LOS D	NO
Bradley Rd/U.S. 101 SB-Columbia	Signal	0.70	LOS B	0.89	LOS D	NO
Battles Rd/Broadway	Signal	0.77	LOS C	**1.00**	**LOS E**	**YES**
Battles Rd/Miller St	Signal	0.71	LOS C	**1.08**	**LOS F**	**YES**
Battles Rd/College Dr	Signal	0.62	LOS B	**0.94**	**LOS E**	**YES**
Battles Rd/Shepard Dr(b)	Stop-Sign	11.9 Sec.	LOS B	20.4 Sec.	LOS C	NO
Battles Rd/Bradley Rd	Signal	0.59	LOS A	0.73	LOS C	NO
Miller St/Inger Dr	Signal	0.33	LOS A	0.46	LOS A	NO
Betteravia Rd/Broadway	Signal	**1.14**	**LOS F**	**0.97**	**LOS E**	**YES**
Betteravia Rd/Miller St	Signal	0.66	LOS B	**0.98**	**LOS E**	**YES**
Betteravia Rd/College Dr	Signal	0.79	LOS C	**0.96**	**LOS E**	**YES**
Betteravia Rd/Bradley Rd(c)	Signal	0.85	LOS D	**0.96**	**LOS E**	**YES**
Betteravia Rd/U.S. 101 SB	Signal	0.54	LOS A	0.76	LOS C	NO
Betteravia Rd/U.S. 101 NB	Signal	0.26	LOS A	0.44	LOS A	NO
Southside Pkwy/College Dr(b)	Roundabout	12.8 Sec.	LOS B	**>50 Sec.**	**LOS F**	**YES**
Southside Pkwy/Bradley Rd(b)	Roundabout	5.6 Sec.	LOS A	**37.9 Sec.**	**LOS E**	**YES**

NOTES:
Bolded items exceed City's LOS D operating standard.
(a) LOS forecasts assume buildout of the City's General Plan (including Enos Ranchos Specific Plan) and planned improvements (e.g. new roads, roadway widenings, new signals, etc.).
(b) Stop-Sign or Roundabout control. LOS based on average delay per vehicle in seconds.
(c) LOS assumes Enos Ranchos mitigated lane geometry.

As shown in Table 12, the majority of the study-area intersections are forecast to exceed the City's LOS D standard during the P.M. peak hour under General Plan Buildout traffic conditions assuming the street network improvements that have been planned by the City.

General Plan Improvement Analysis

The Enos Ranchos Specific Plan would contribute to General Plan Buildout impacts at the majority of the study-area intersections (both the Approved Specific Plan and the Proposed Specific Plan). The following section reviews the additional improvements that would be required to accommodate Buildout traffic beyond what is already planned by the City. As noted, the General Plan Buildout level of service forecasts shown in Table 12 assume the improvements that have been planned by the City in the Circulation Element, Capital Improvement Program, and Deficiency Plans; as well as the street network improvements, frontage improvement, and mitigations identified in adopted specific plans (e.g. Area 9 SP, Mahoney Ranch SP, Enos Ranchos SP, Santa Maria Airport Business Park SP, etc.). In summary, the General Plan Buildout levels of service assume the ultimate street network that is currently planned by the City.

Stowell Road/Broadway. This intersection is forecast to operate at LOS F during the P.M. peak period with Buildout traffic assuming that Broadway is improved to Primary Arterial standards with 3 thru lanes in each direction. Stowell Road is already improved to four-lane arterial standards. Adding dual left-turn lanes on the northbound and eastbound approaches, plus adding separate right-turn lanes on the southbound and eastbound approaches would provide LOS D. Providing the additional turn lanes at the intersection may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. The widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels since all four corners of the intersection are developed.

Stowell Road/Miller Street. This intersection is forecast to operate at LOS F during the P.M. peak period with Buildout traffic assuming the additional lanes planned under the City's Capital Improvement Program (widening Miller Street north of the intersection to provide 4 lanes). The addition of a westbound right-turn lane on Stowell Road would provide LOS D, which meets the City's LOS D standard. Providing the additional turn lane at the intersection may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. All four corners of the intersection are developed, thus the widening required to accommodate the additional turn lane may affect developments on the adjacent parcels.

Stowell Road/Bradley Road. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic. Adding a southbound right-turn lane and a westbound right-turn lane would provide LOS D. Implementing the additional turn lanes may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. All four corners of the intersection are developed, thus the widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels.

Battles Road/Broadway. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic assuming that Battles Road is fully improved to Secondary Arterial standards with 4 travel lanes and that Broadway is fully improved to Primary Arterial standards with 6 travel lanes. The addition of dual left-turn lanes on the eastbound and southbound

approaches would provide LOS D. Implementing the additional turn lanes at the intersection may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. All four corners of the intersection are developed, thus the widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels.

Battles Road/Miller Street. This intersection is forecast to operate at LOS F during the P.M. peak period with Buildout traffic. Both roadways are fully improved to their planned four-lane arterial designations. Adding dual left-turn lanes on the southbound and westbound approaches, plus adding a separate right-turn lane on the northbound approach, would provide LOS D. Implementing the additional turn lanes may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. All four corners of the intersection are developed, thus the widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels. In addition, there is a Class I bike lane that runs along the south side of Battles Road that could be affected by widening the intersection.

Battles Road/College Drive. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic. Both roadways are fully improved to their planned four-lane arterial designations. Adding dual left-turn lanes on the northbound approach would provide LOS D. Implementing the additional turn lane may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. The cemetery occupies the northwest and southwest corners of the intersection; and the First Christian Church occupies the northeast corner of the intersection. The southwest corner of the intersection is open land and part of the Enos Ranchos Specific Plan area. Widening the intersection to provide dual left-turn lanes on the northbound approach may be feasible with minimal impact to the adjacent properties buy may require additional right-of-way from the existing cemetery and church properties.

SR 135/Betteravia Road. This intersection is forecast to operate at LOS F during the A.M. peak period and LOS E during the P.M. peak period with Buildout traffic. These forecasts assume that SR 135 and Betteravia Road are improved to Primary Arterial standards with 6 travel lanes. The forecasts also assume the City's deficiency plan improvement to add dual northbound left-turn lanes. Constructing additional turn lanes, including dual left-turn lanes and separate right-turn lanes on all four intersection approaches, would not achieve LOS D. Since additional through lanes are not programmed in the City's Circulation Element, the City's LOS D standard would be exceeded under General Plan Buildout conditions.

Miller Street/Betteravia Road. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic. Both roadways are fully improved to their planned arterial designations. Adding dual left-turn lanes on the northbound approach plus a separate right-turn lane on the eastbound approach would provide LOS D. Implementing the additional turn lanes may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. All four corners of the intersection are developed, thus the

widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels.

College Drive/Betteravia Road. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic assuming that both roadways are fully improved to their planned arterial designations plus the improvements required of the Enos Ranchos Specific Plan (addition of eastbound left-turn lane and westbound right-turn lane). Providing dual left-turn lanes and separate right-turn lanes on all four approaches would be required to achieve LOS D. The additional turn lanes may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. Two of the four corners of the intersection are developed (north side to be developed as part of the Enos Ranchos Specific Plan), thus the widening required to accommodate the additional turn lanes may affect developments on the adjacent parcels.

Betteravia Road/Bradley Road. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic. The level of service forecast assumes that both roadways are fully improved to their planned arterial designations plus the frontage improvements required of the Enos Ranchos Specific Plan (realignment of the north leg of Bradley Road to connect opposite the south leg and providing the Option 2 lane geometry recommended to mitigate the Enos Ranchos Specific Plan impacts). Adding dual left-turn lanes and a separate right-turn lane on the eastbound approach would provide LOS D with Buildout traffic. Implementing the additional lanes may require additional right-of-way, and/or reduced lane widths, narrowing of sidewalks, elimination of bike lanes, etc. Two of the four corners of the intersection are developed (north side to be developed as part of Enos Ranchos SP). Widening required to accommodate the additional lanes may affect developments on the adjacent parcels on the south side of the intersection.

Southside Parkway/College Drive. This intersection is forecast to operate at LOS F during the P.M. peak period with Buildout traffic assuming the existing roundabout configuration. The northbound and southbound approaches to the roundabout are striped with 1 shared left+thru lane and 1 right-turn lane. The Buildout forecasts indicate the need to restripe the northbound and southbound approaches to provide 1 shared left+thru lane and 1 shared thru+right lane; as well as the need to include an eastbound by-pass right-turn lane. These modifications would provide LOS C. Restriping the northbound and southbound approaches would not require roadway widenings. However, adding the eastbound by-pass right-turn lane would require widening both Southside Parkway and College Drive.

Southside Parkway/Bradley Road. This intersection is forecast to operate at LOS E during the P.M. peak period with Buildout traffic assuming the existing roundabout configuration. The northbound and southbound approaches to the roundabout are striped with 1 shared left+thru lane and 1 right-turn lane. The Buildout forecasts indicate the need to restriping the northbound and southbound approaches to provide 1 shared left+thru lane and 1 shared thru+right lane. These modifications would provide LOS D. Restriping the northbound and southbound approaches would not require roadway widenings.

CONGESTION MANAGEMENT PROGRAM ANALYSIS

SBCAG is the Congestion Management Agency for Santa Barbara County. The Congestion Management Program (CMP) is prepared to address the issue of increasing congestion on regional highways and principal arterials. The CMP requires that impact analyses be prepared for development projects, but does not require impact analyses for long-range plans such as General Plans, Community Plans, Master Plans, and Specific Plans. For the Enos Ranchos Specific Plan, CMP impact analyses will be required for the individual development plans when they occur.

■ ■ ■

REFERENCES AND PERSONS CONTACTED

Associated Transportation Engineers

Scott A. Schell, AICP, PTP Principal Transportation Planner
Dan L. Dawson, PTP, Supervising Transportation Planner
Matthew Farrington, Transportation Planner I

References

Highway Capacity Manual, Transportation Research Board, 2010.

Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012.

Revised Traffic and Circulation Study for the Enos Ranchos Specific Plan, Associated Transportation Engineers, April 2007.

Persons Contacted

Hallie Holden, PE, City of Santa Maria
Peter Gilli, City of Santa Maria
Neda Zayer, City of Santa Maria
Robert Shull, PE, Eco Resource Management Systems

TECHNICAL APPENDIX

CONTENTS:

LEVEL OF SERVICE DEFINITIONS

The ability of a roadway system to carry traffic is most often expressed in terms of "Levels of Service" (LOS). LOS A through F are used, with LOS A indicating very good operations and LOS F indicating poor operations. More complete level of service definitions for intersections are listed Table A.

Table A
Level of Service Definitions

LOS	Definition
A	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	Conditions of stable flow, delays are low to moderate, full use of peak direction signal phases is experienced.
D	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal.

INTERSECTION TURNING MOVEMENTS COUNTS

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Broadway and Stowell Rd , Santa Maria

Date: 5/6/2015

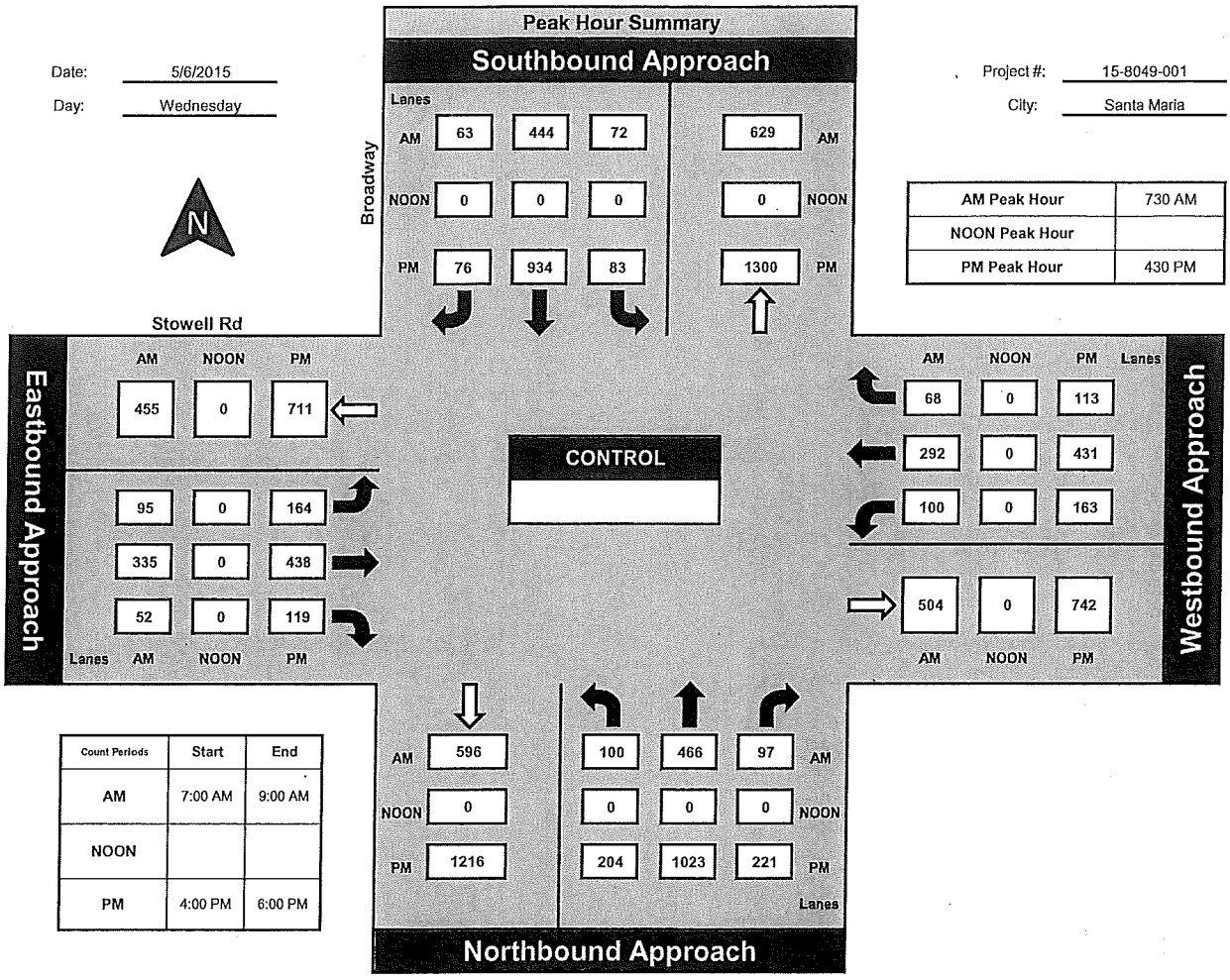
Day: Wednesday

Project #: 15-8049-001

City: Santa Maria

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM



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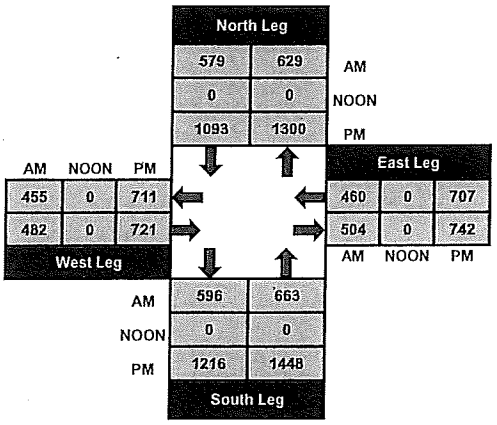
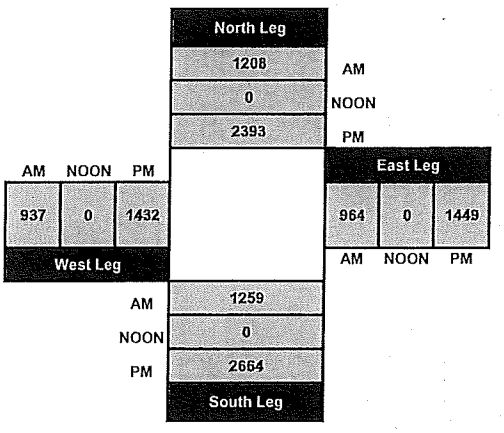


Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

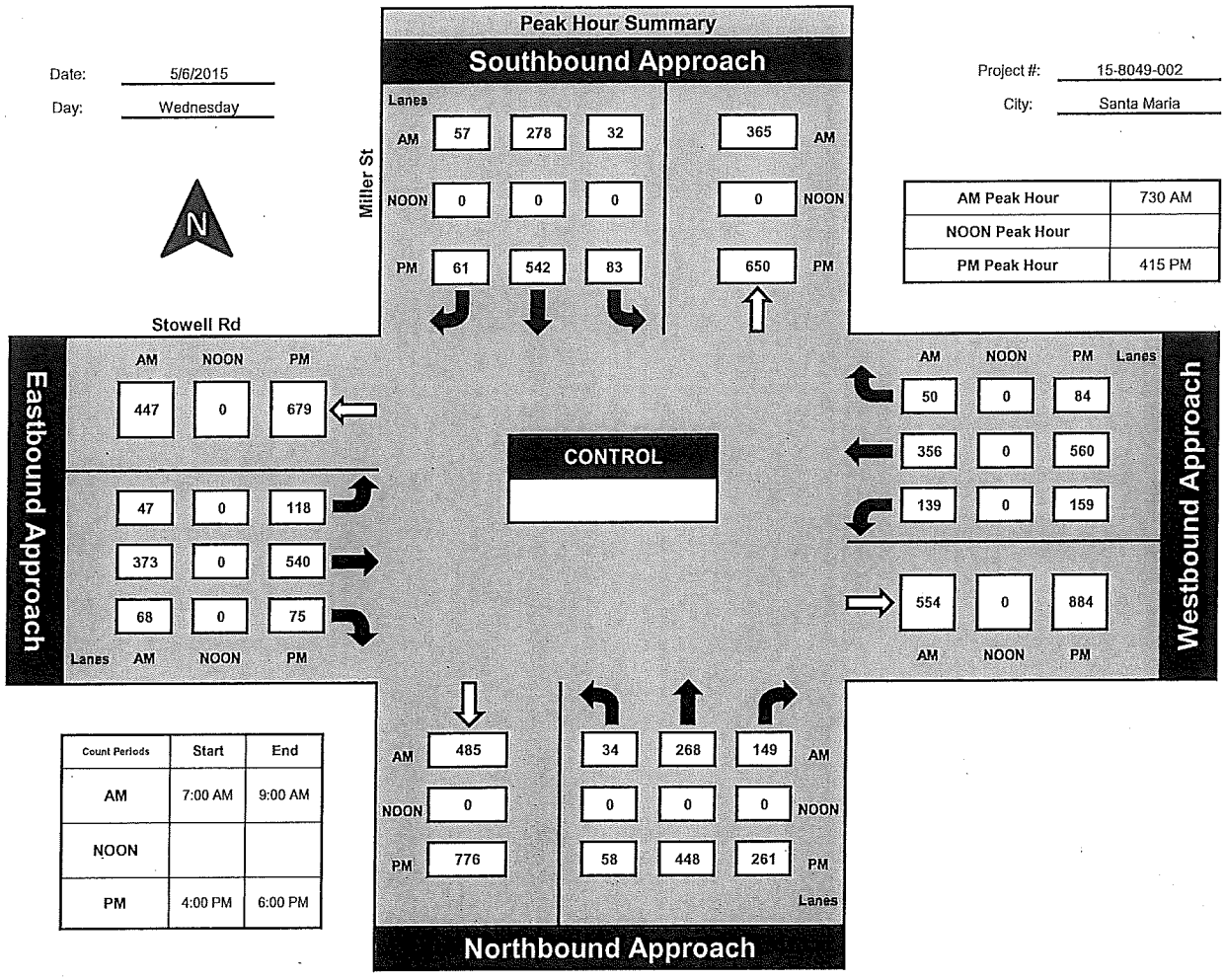
Miller St and Stowell Rd , Santa Maria

Date: 5/6/2015

Day: Wednesday

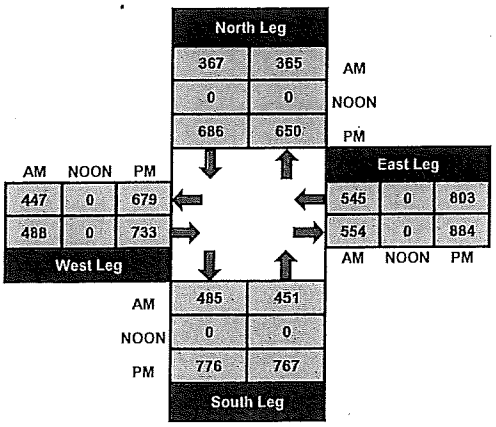
Project #: 15-8049-002

City: Santa Maria



AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Total Ins & Outs



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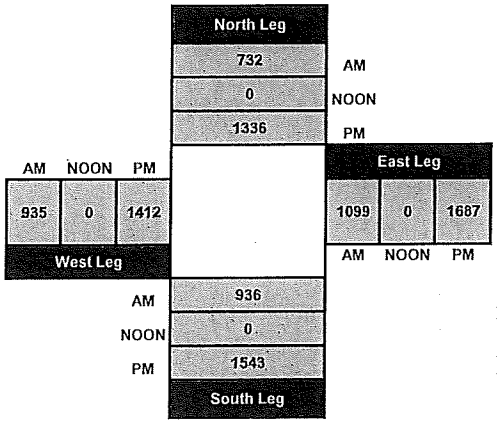


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

College Dr and Stowell Rd , Santa Maria

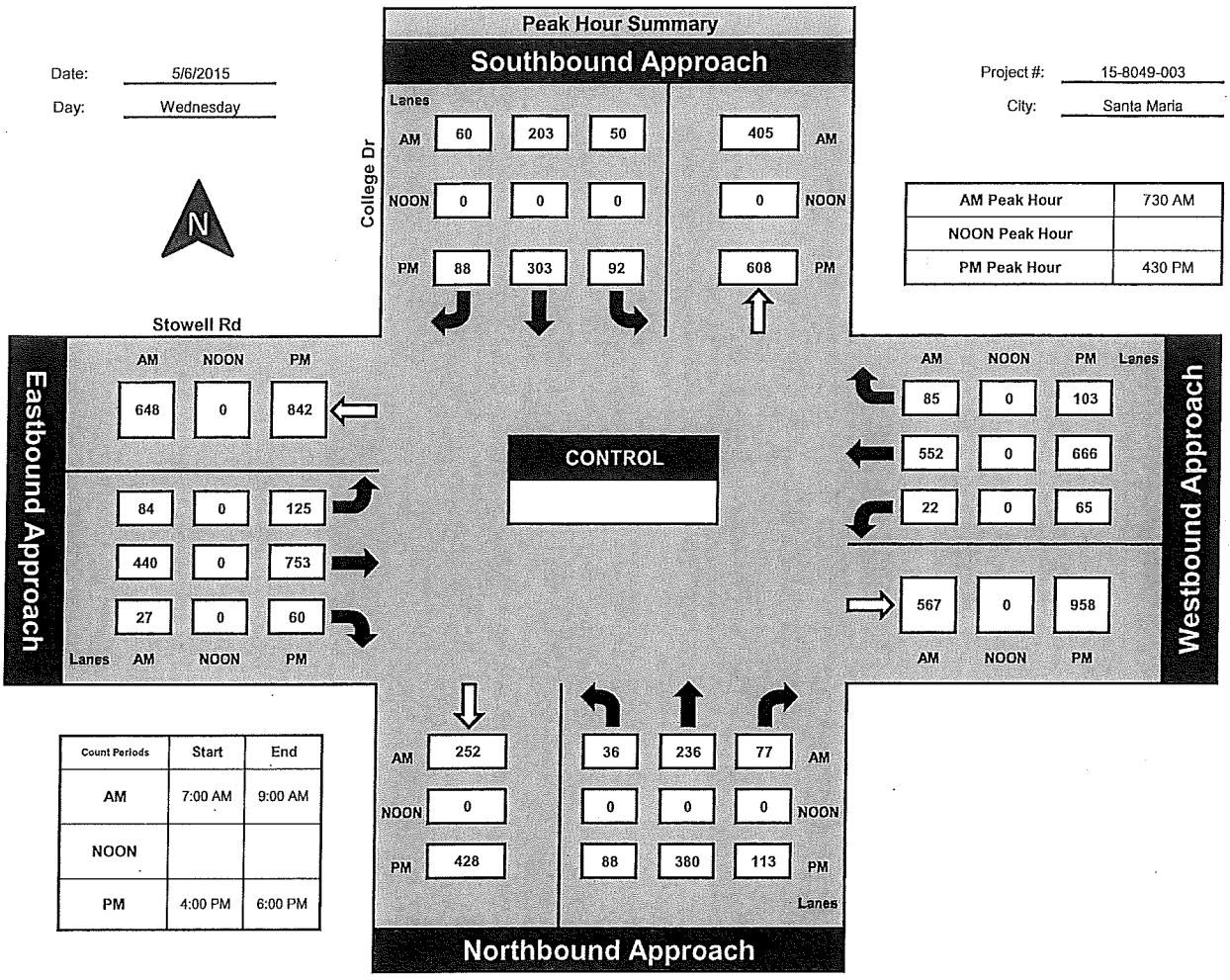
Peak Hour Summary

Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-003

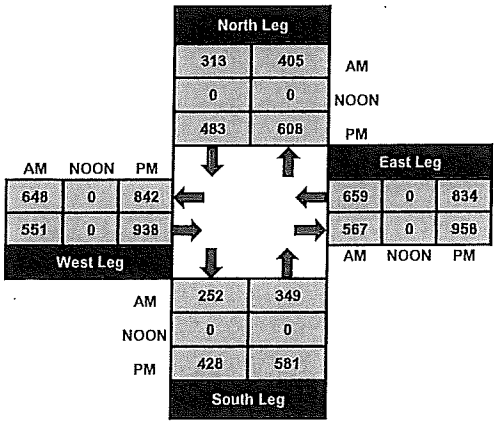
City: Santa Maria



AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



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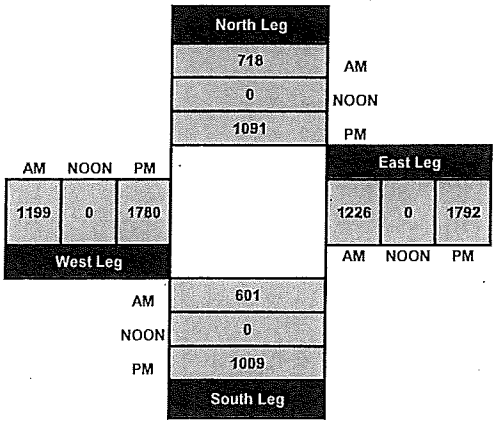


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

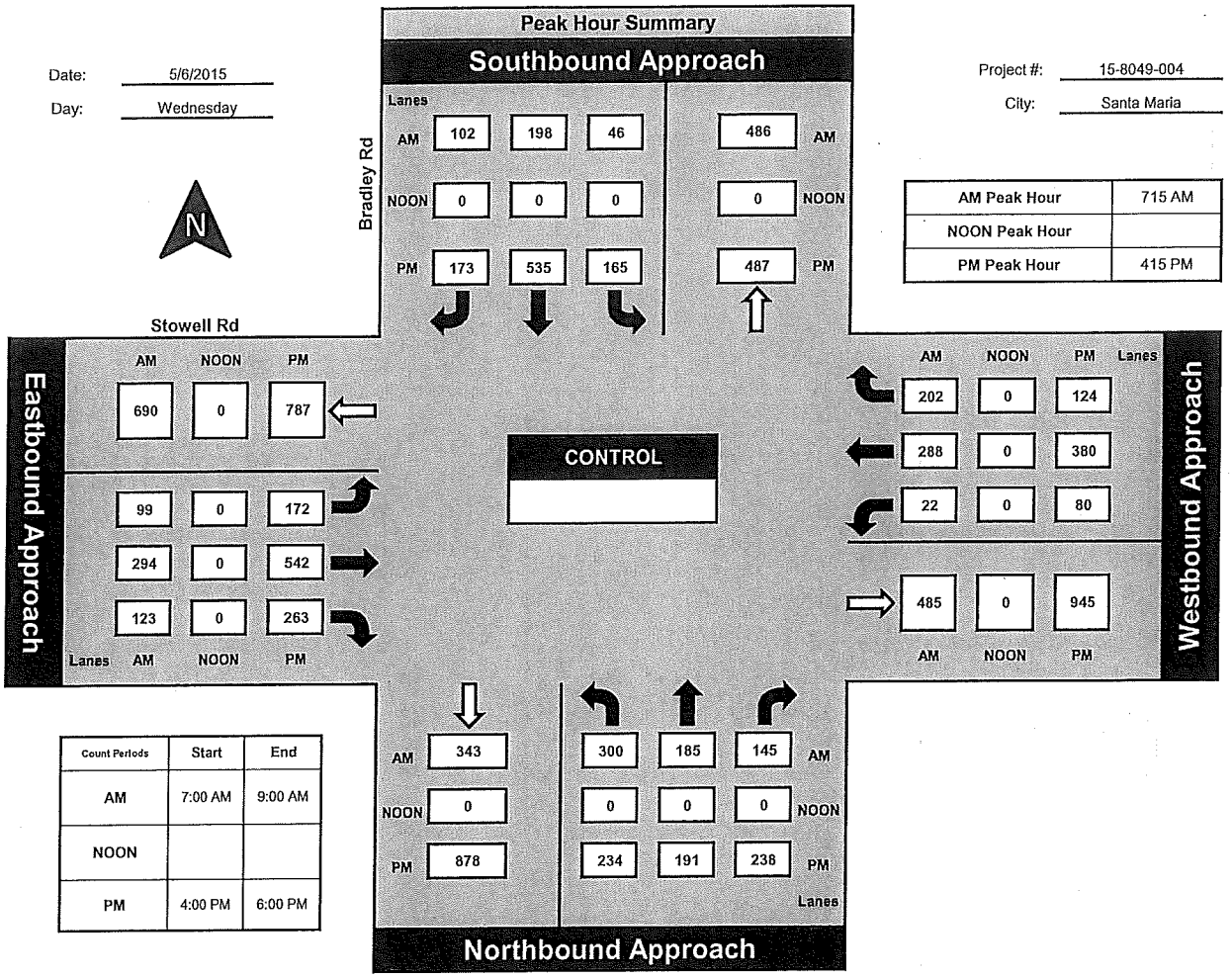
Bradley Rd and Stowell Rd , Santa Maria

Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-004

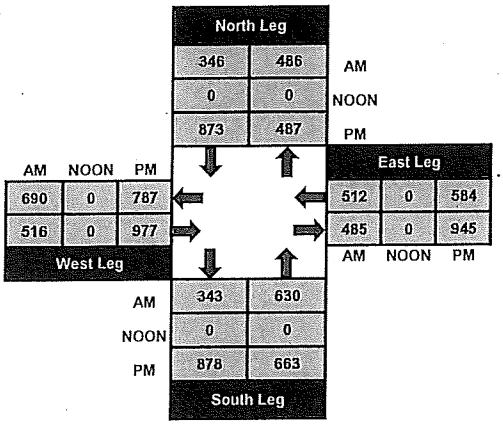
City: Santa Maria



AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



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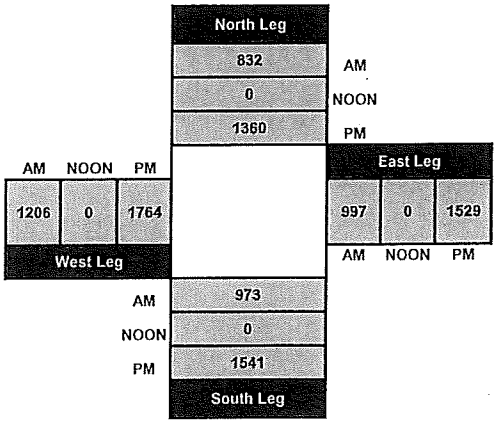


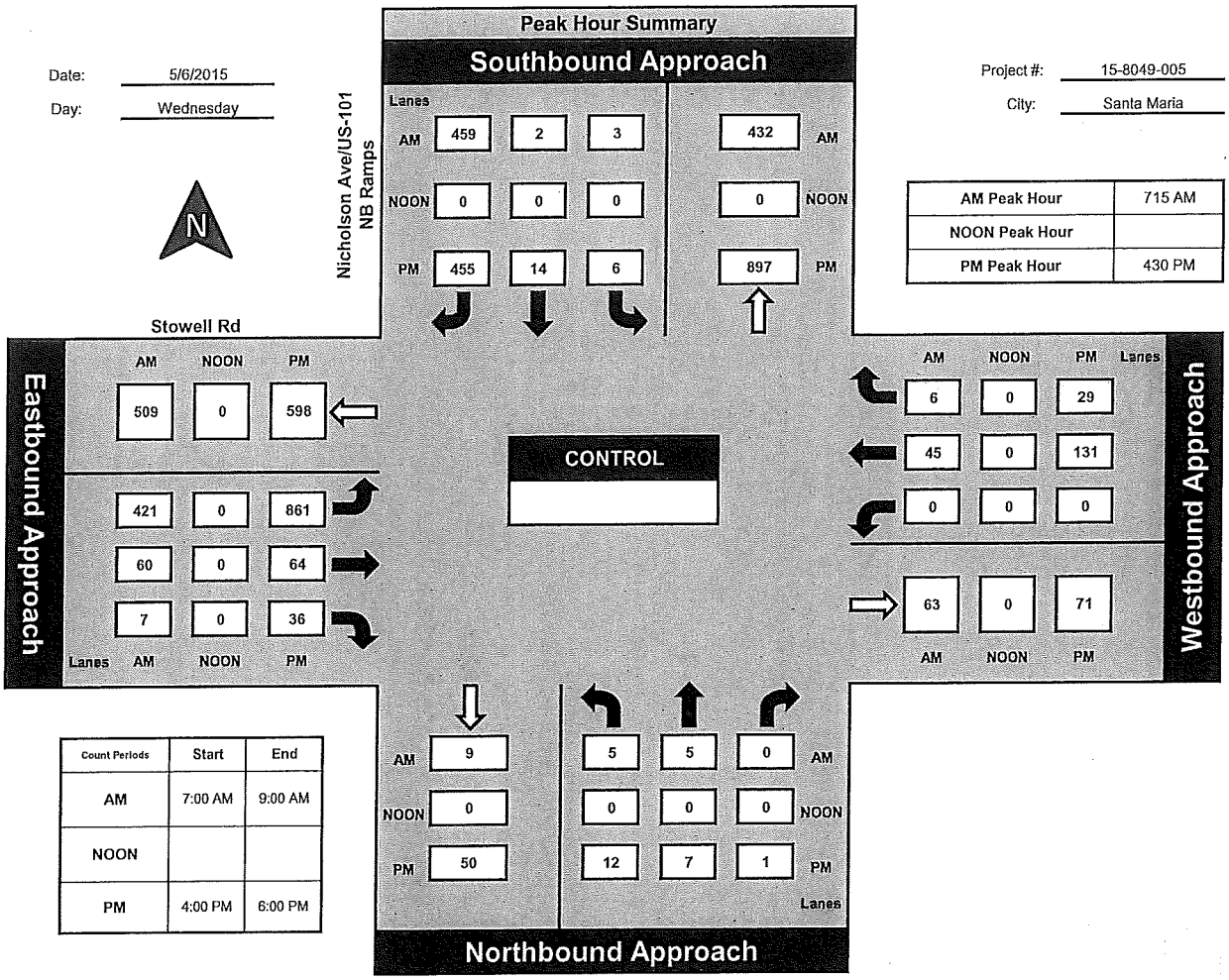
ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

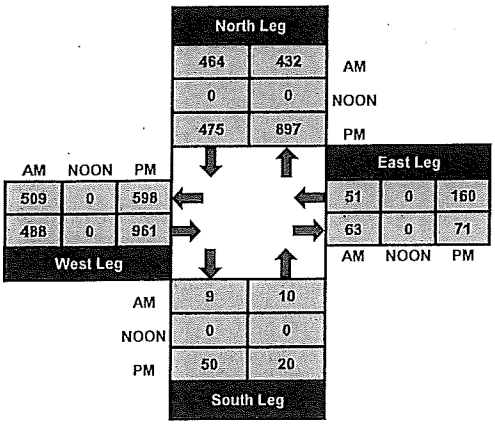
Nicholson Ave/US-101 NB Ramps and Stowell Rd , Santa Maria

Date: 5/6/2015
Day: Wednesday
Project #: 15-8049-005
City: Santa Maria



AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Ins & Outs



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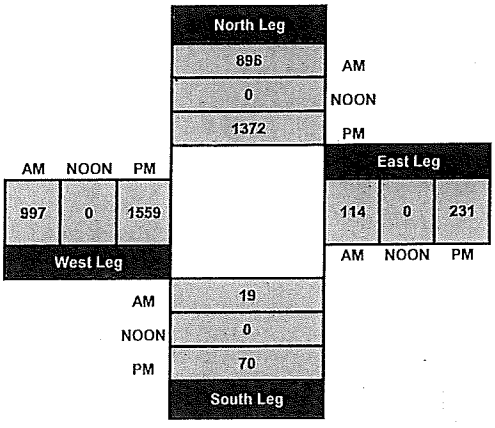


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Bradley Rd and US-101 SB Ramps , Santa Maria

Date: 5/6/2015
Day: Wednesday
Project #: 15-8049-006
City: Santa Maria

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Peak Hour Summary

Southbound Approach (Bradley Rd)

Lanes					
AM	41	98	208	616	AM
NOON	0	0	0	0	NOON
PM	116	357	400	651	PM

Eastbound Approach (US-101 SB Ramps)

Lanes	AM	NOON	PM
	133	0	326
	33	0	117
	19	0	97
	14	0	76

Westbound Approach

Lanes	AM	NOON	PM
	351	0	244
	78	0	114
	201	0	300
	245	0	525

CONTROL

Northbound Approach

Lanes	AM	NOON	PM
	313	0	733
	14	0	96
	232	0	290
	18	0	28

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg	East Leg	South Leg	West Leg
AM	347	630	313	133
NOON	0	0	0	0
PM	873	658	733	326
AM	616	245	264	66
NOON	0	0	0	0
PM	651	525	414	290

Total Volume Per Leg

	North Leg	East Leg	South Leg	West Leg
AM	963	875	577	199
NOON	0	0	0	0
PM	1524	1183	1147	616

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

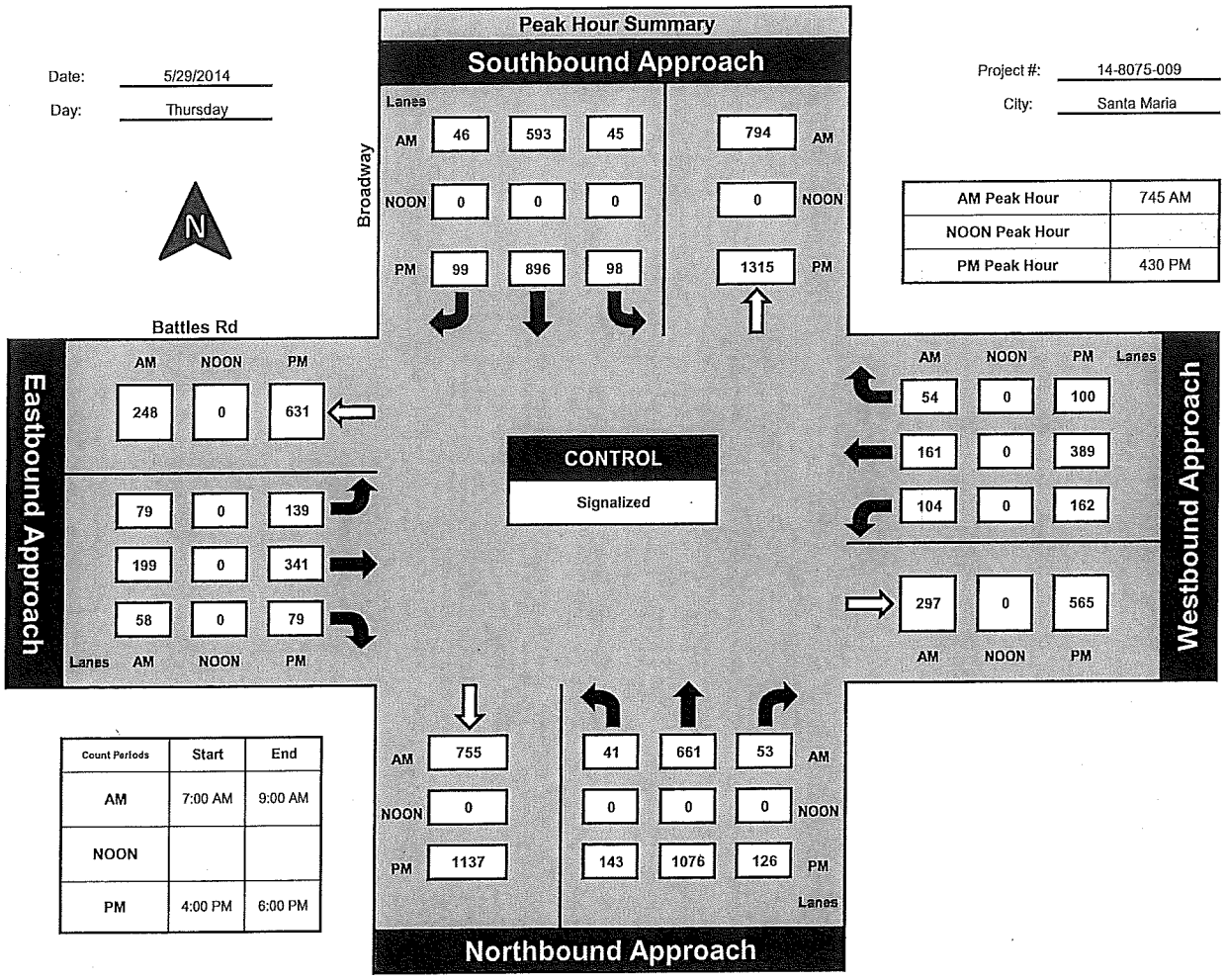
Broadway and Battles Rd , Santa Maria

Date: 5/29/2014

Day: Thursday

Project #: 14-8075-009

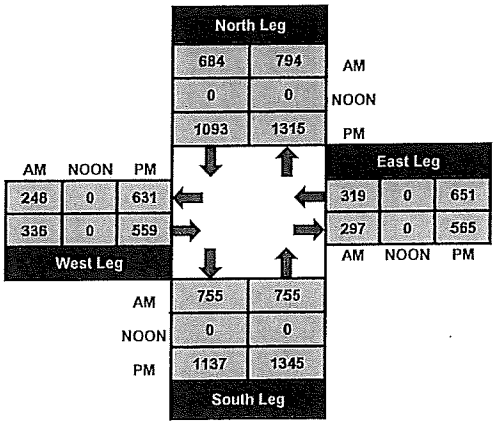
City: Santa Maria



AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



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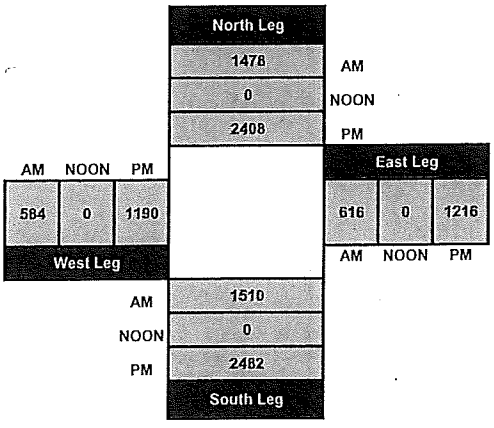


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

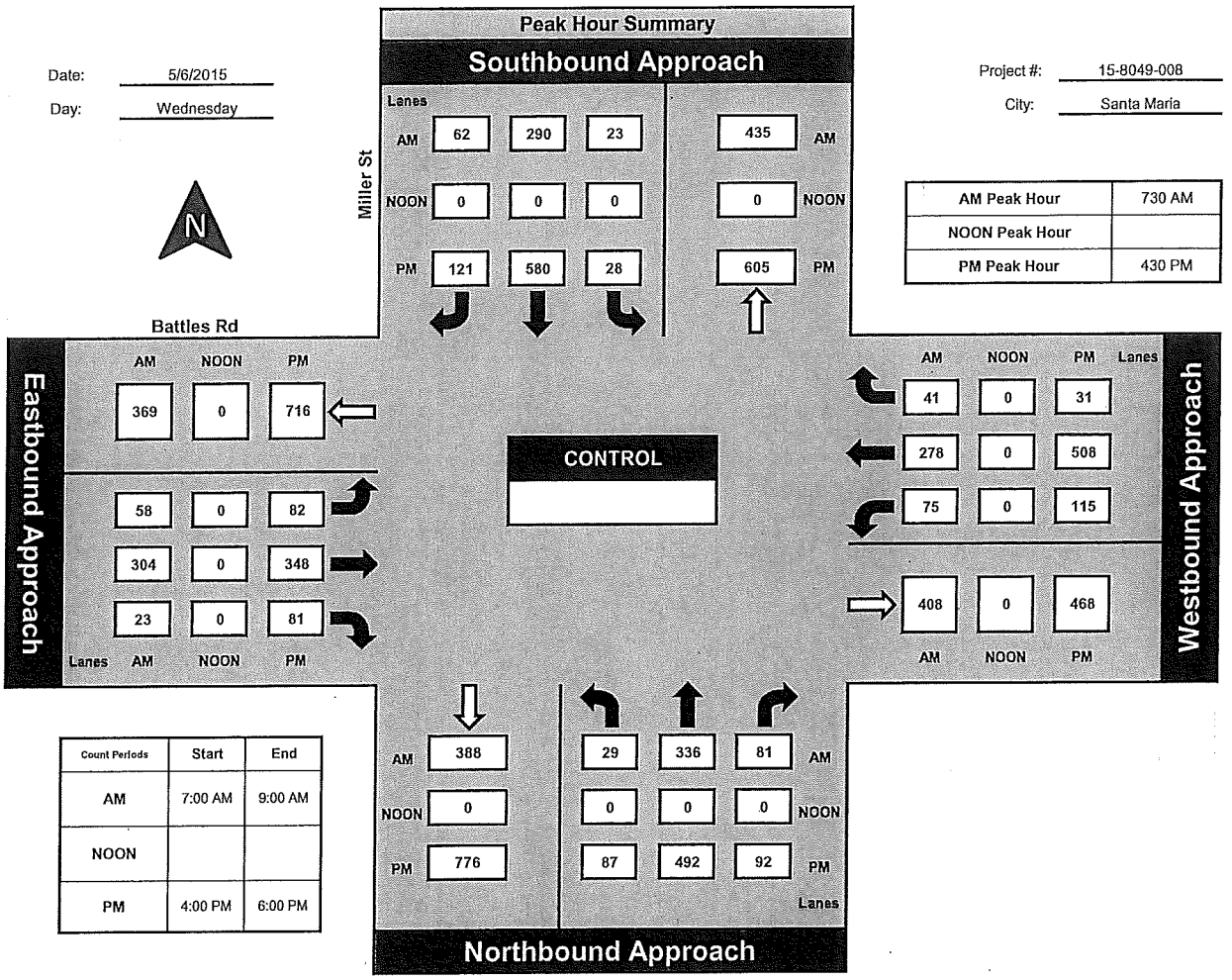
Miller St and Battles Rd , Santa Maria

Date: 5/6/2015

Day: Wednesday

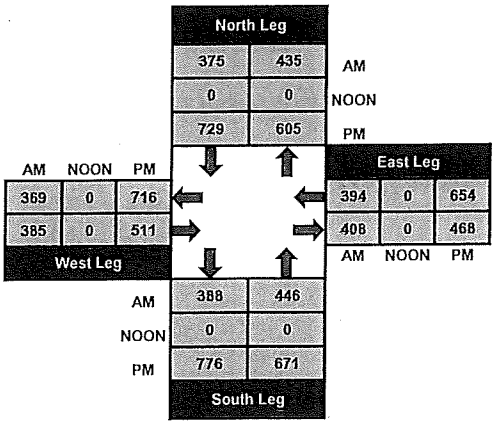
Project #: 15-8049-008

City: Santa Maria



AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Ins & Outs



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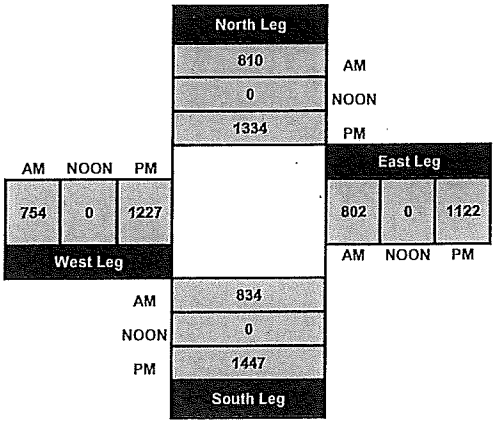


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

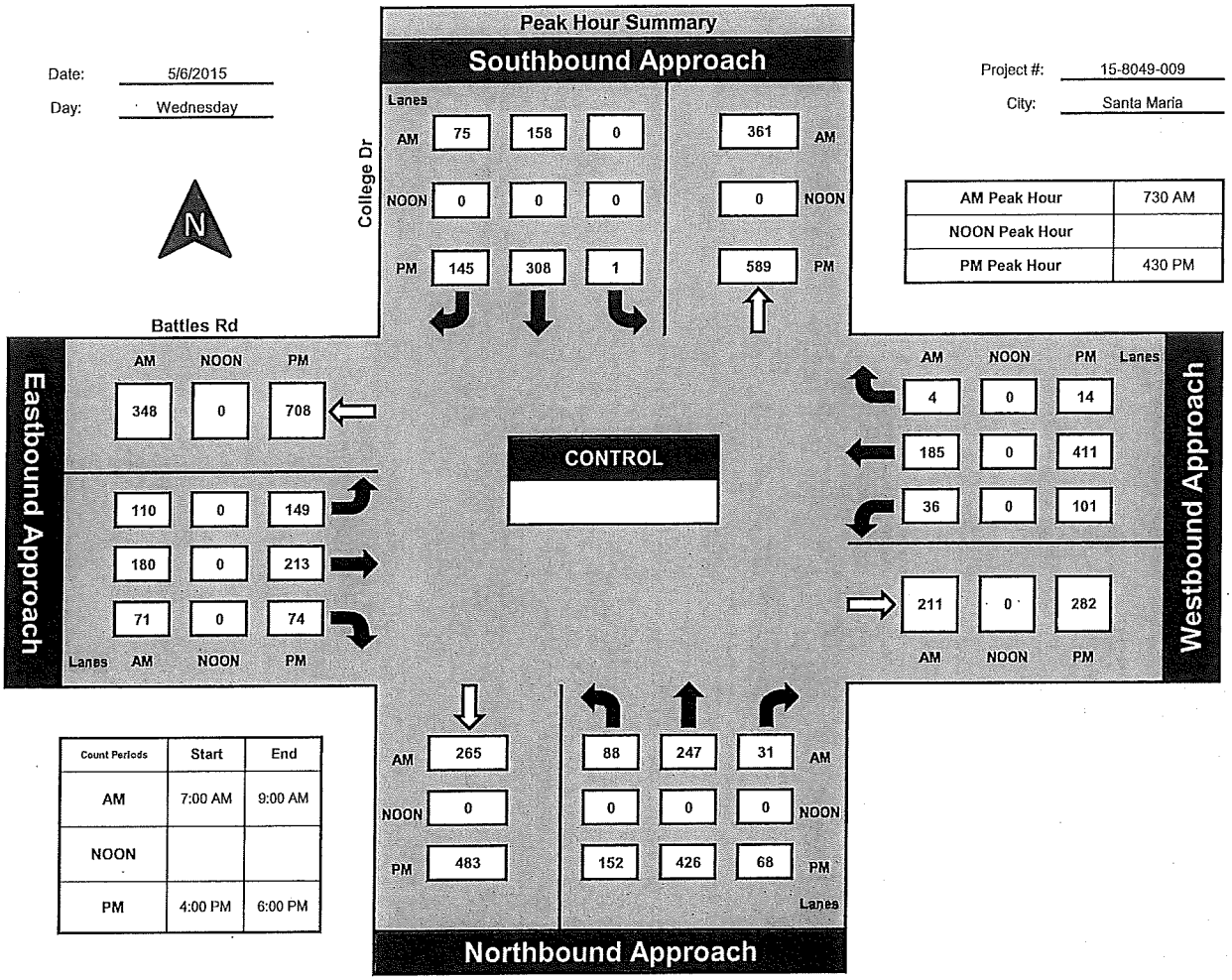
College Dr and Battles Rd , Santa Maria

Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-009

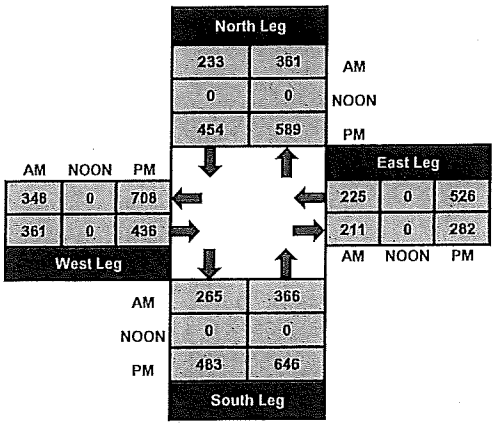
City: Santa Maria



AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



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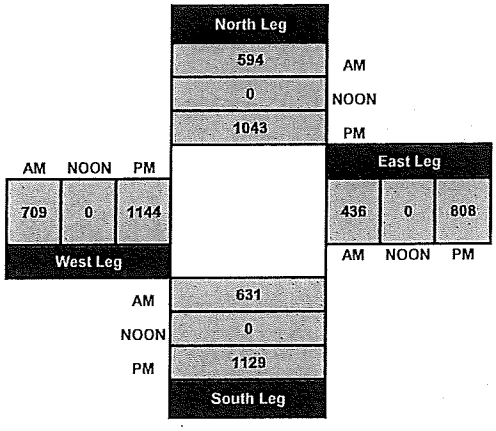


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Sheperd Dr and Battles Rd , Santa Maria

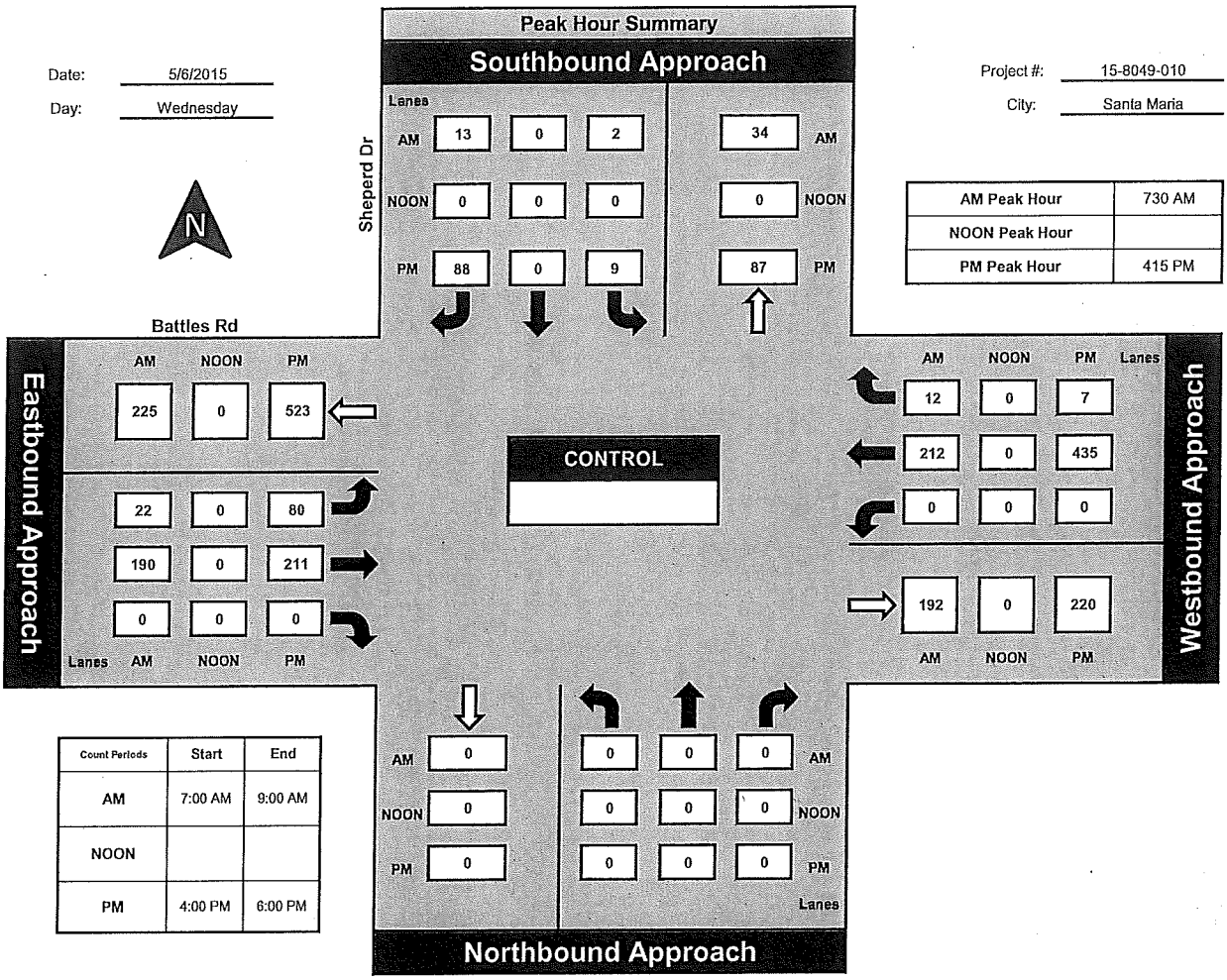
Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-010

City: Santa Maria

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	415 PM



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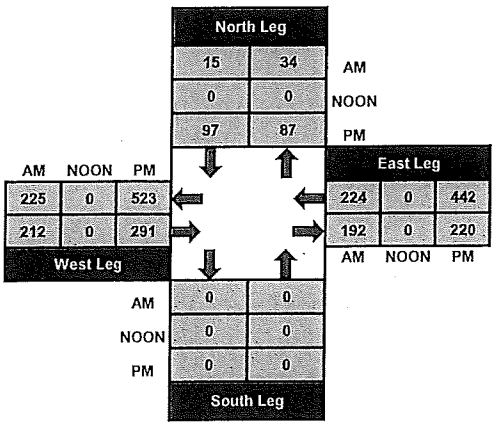

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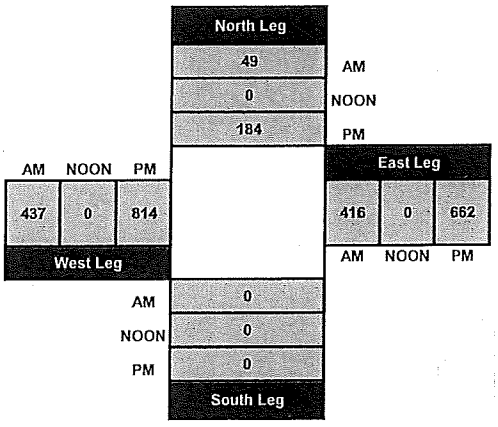


ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

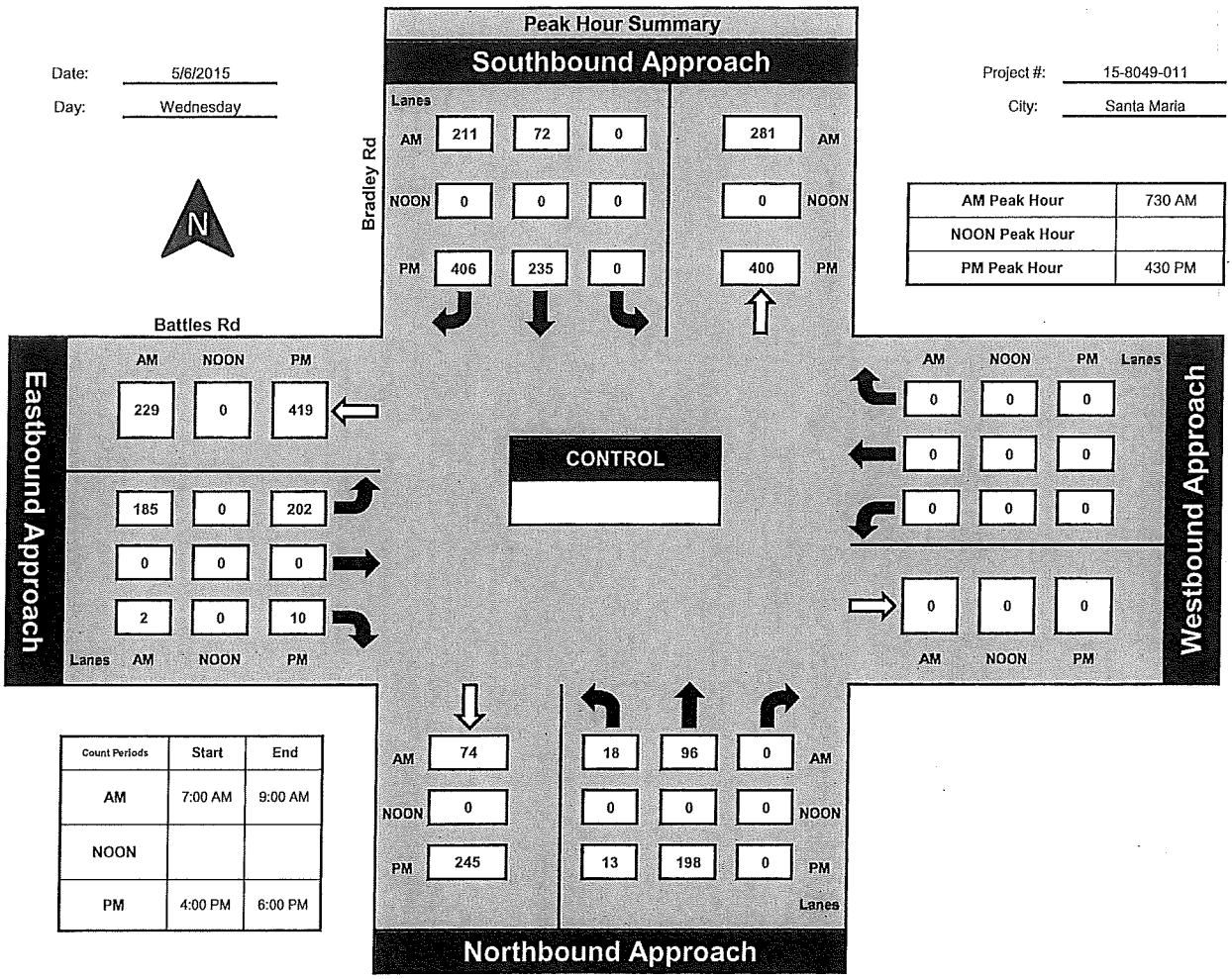
Bradley Rd and Battles Rd , Santa Maria

Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-011

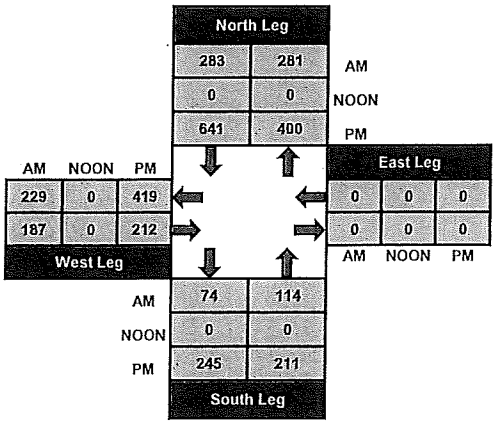
City: Santa Maria



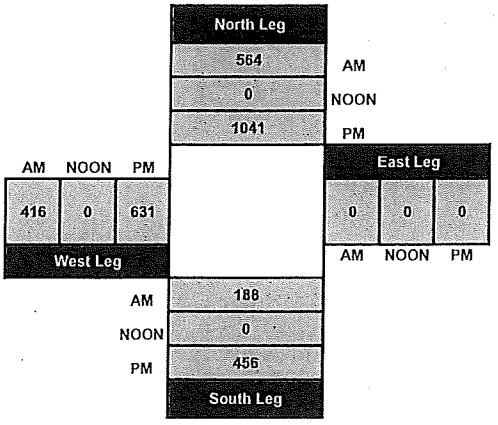
AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Miller St and Inger Dr , Santa Maria

Date: 5/6/2015

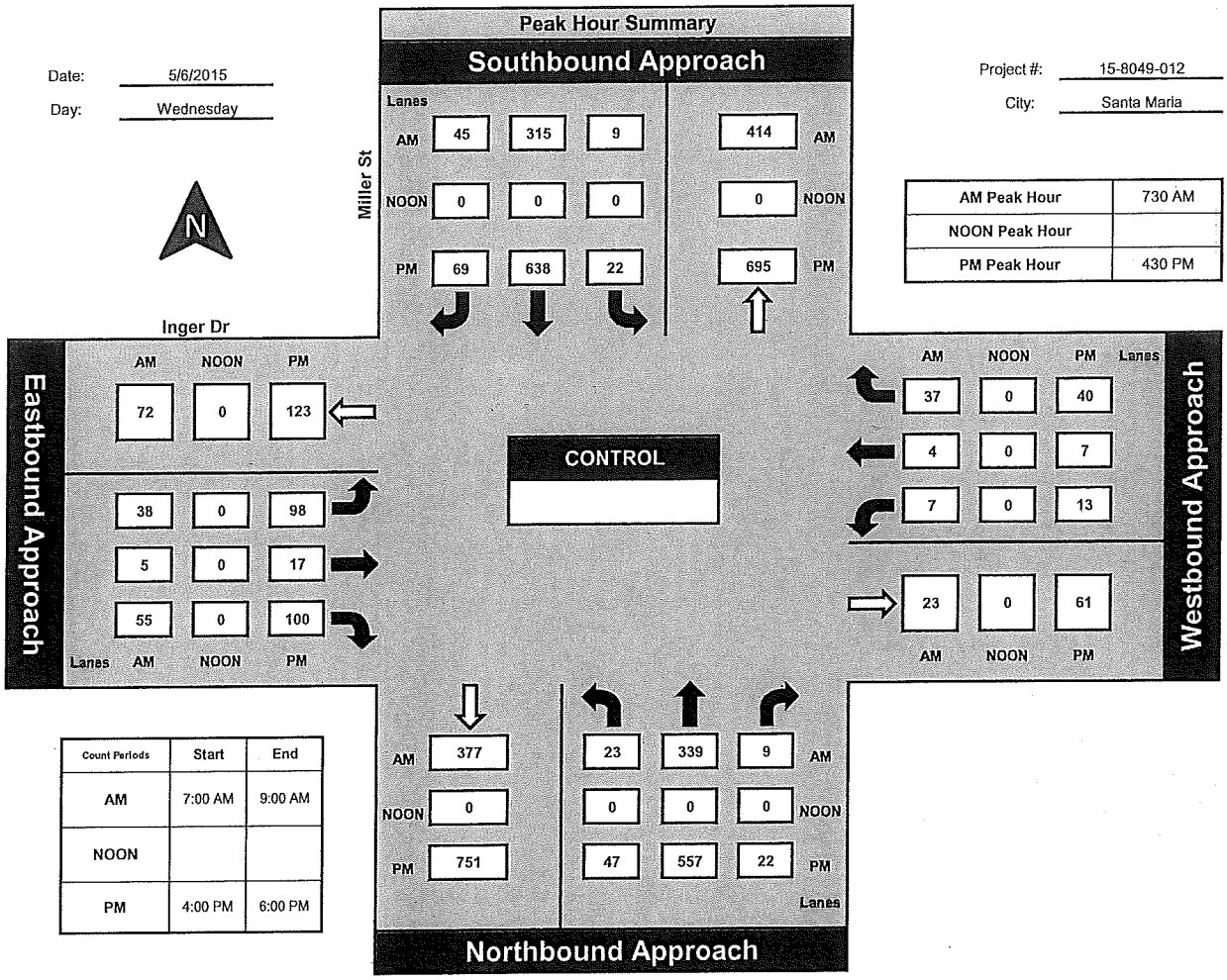
Day: Wednesday

Project #: 15-8049-012

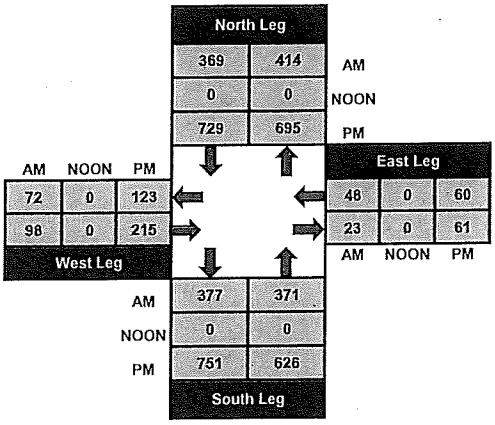
City: Santa Maria

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

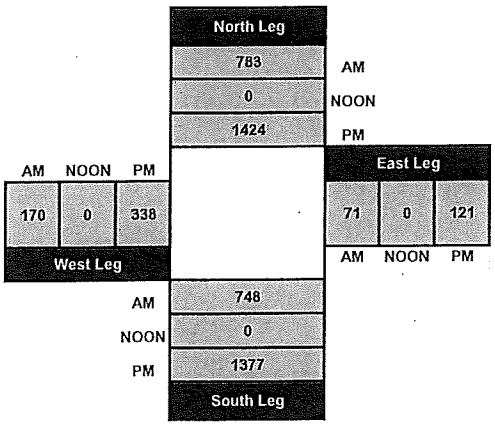
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM



Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

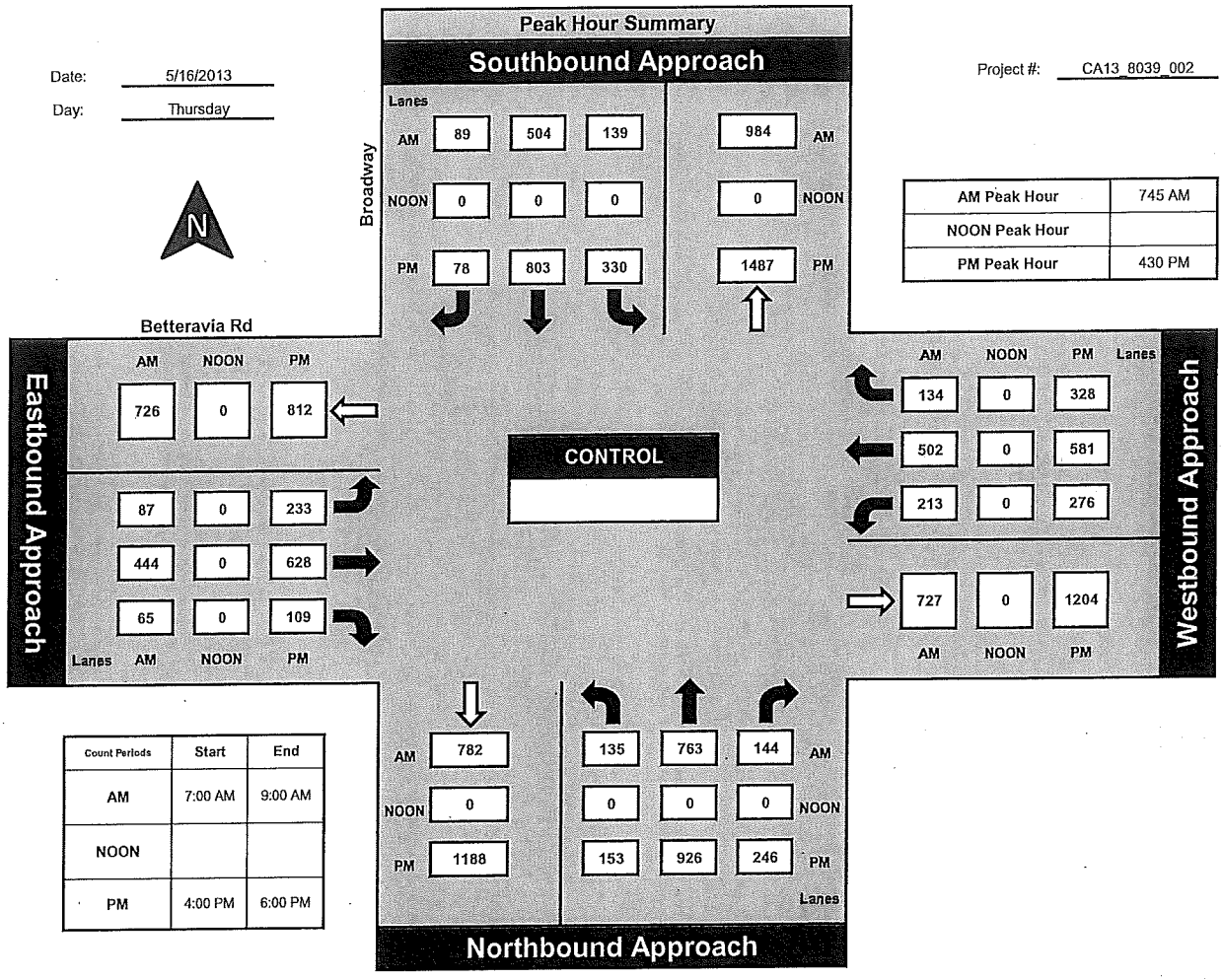
National Data & Surveying Services

Broadway and Betteravia Rd , City of Santa Maria

Date: 5/16/2013

Day: Thursday

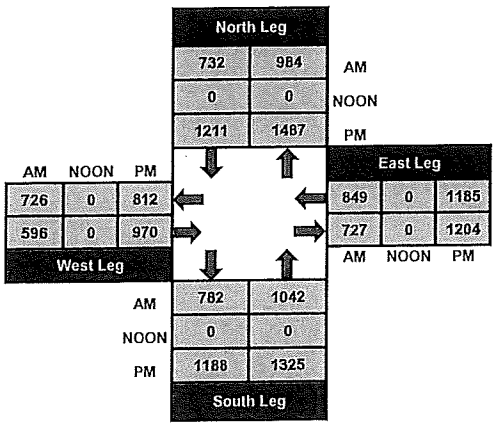
Project #: CA13_8039_002



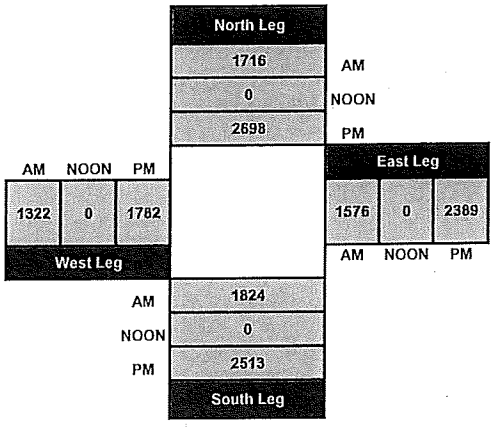
AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

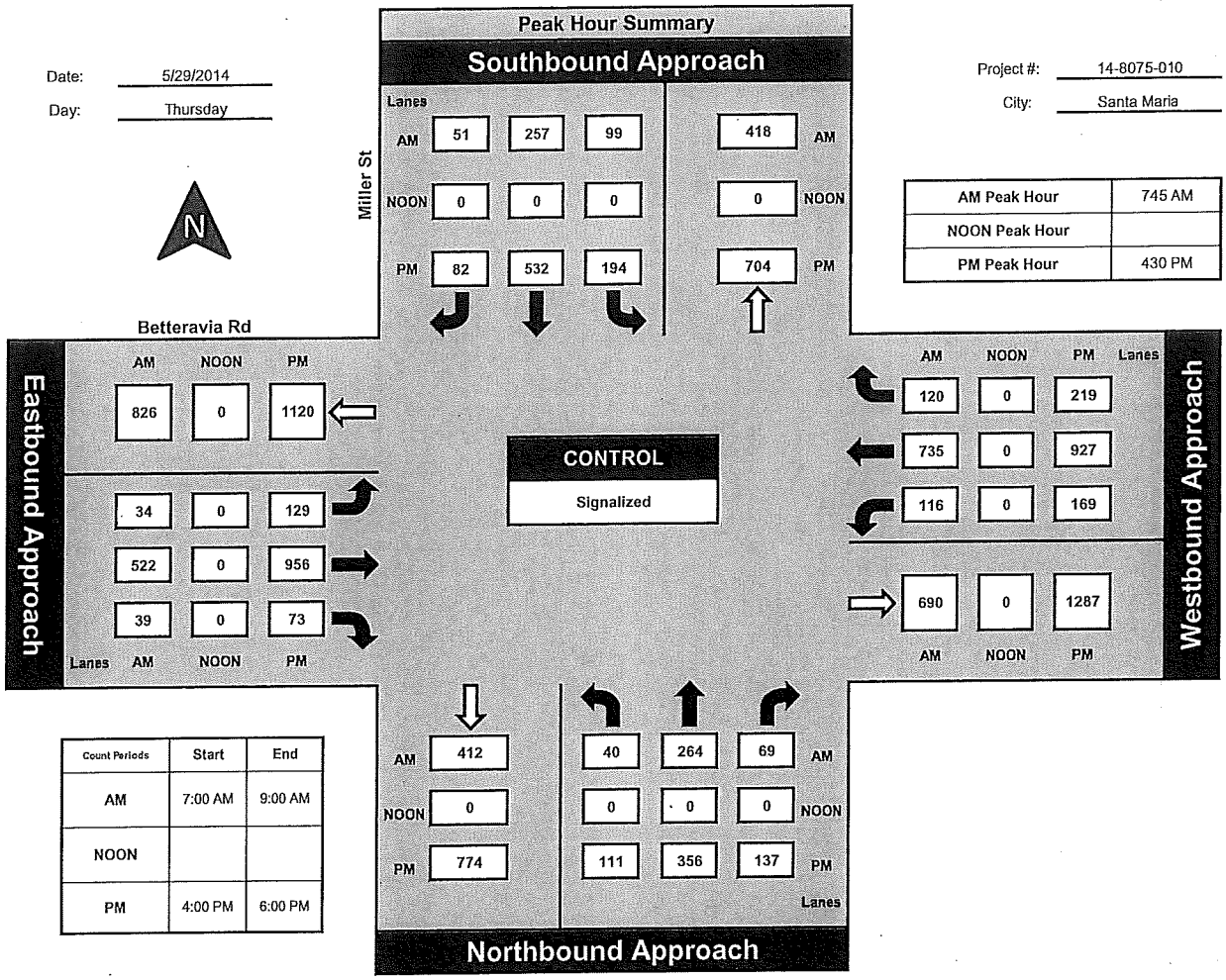
Miller St and Betteravia Rd , Santa Maria

Date: 5/29/2014

Day: Thursday

Project #: 14-8075-010

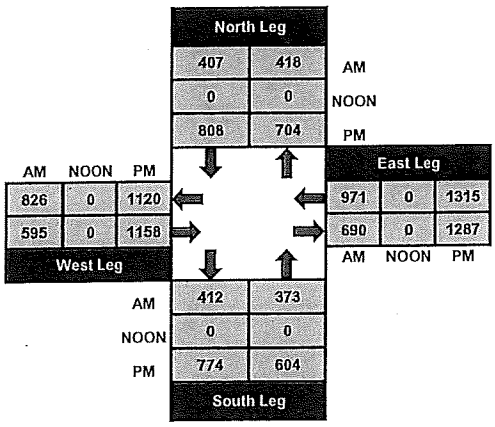
City: Santa Maria



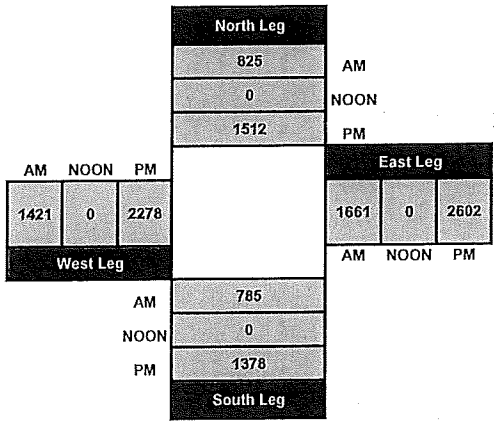
AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

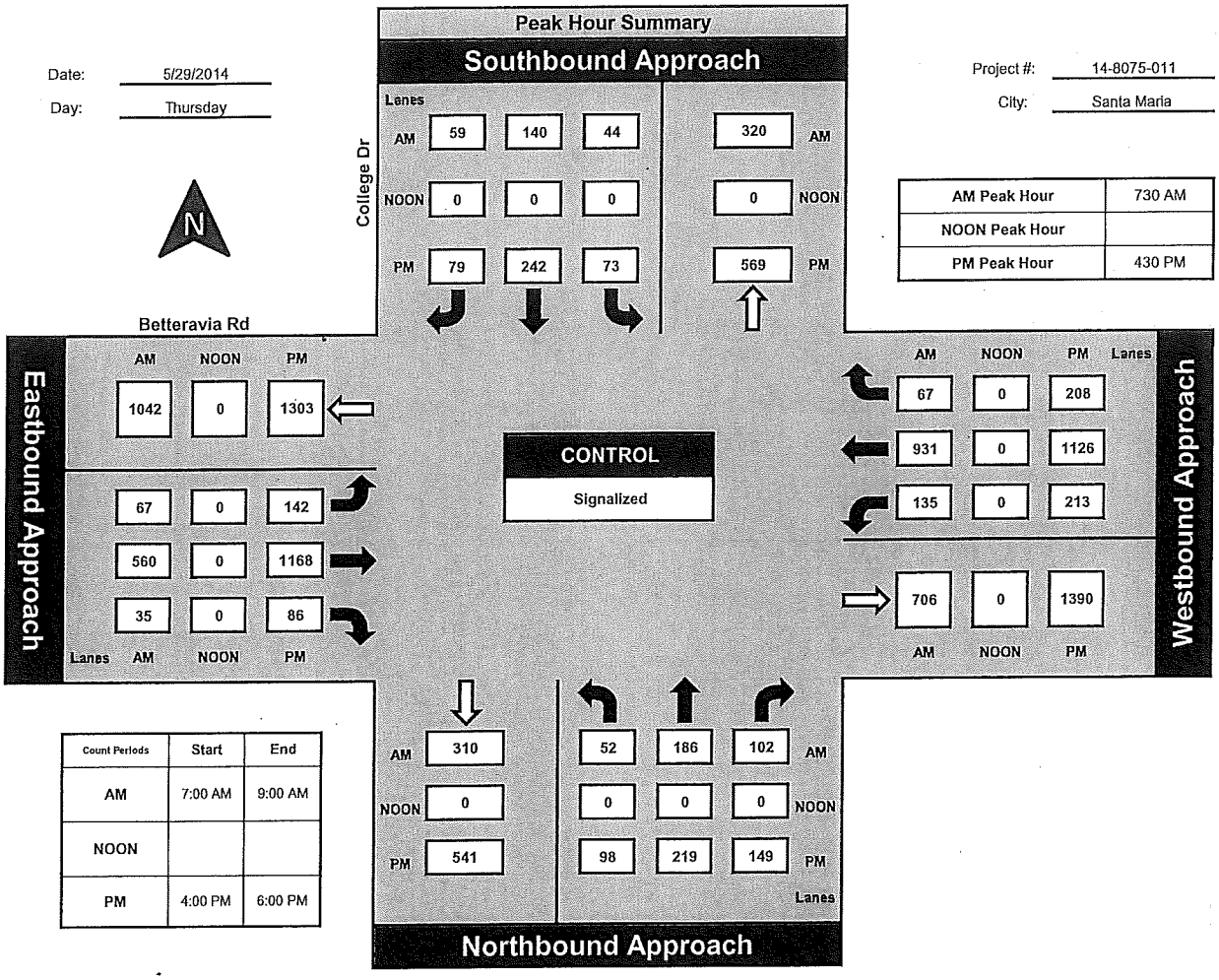
College Dr and Betteravia Rd , Santa Maria

Date: 5/29/2014

Day: Thursday

Project #: 14-8075-011

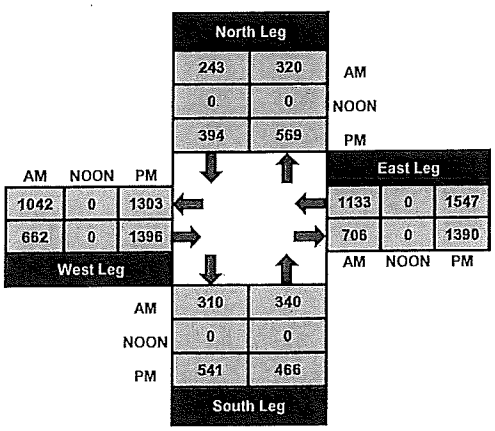
City: Santa Maria



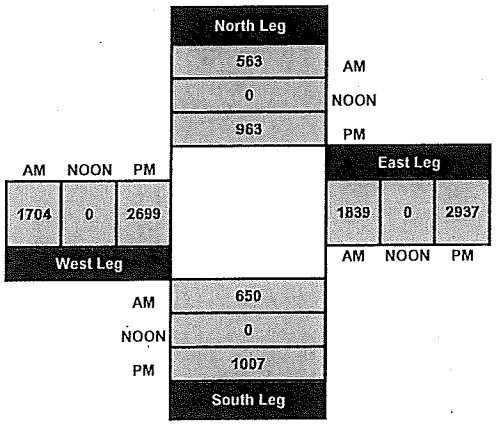
AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

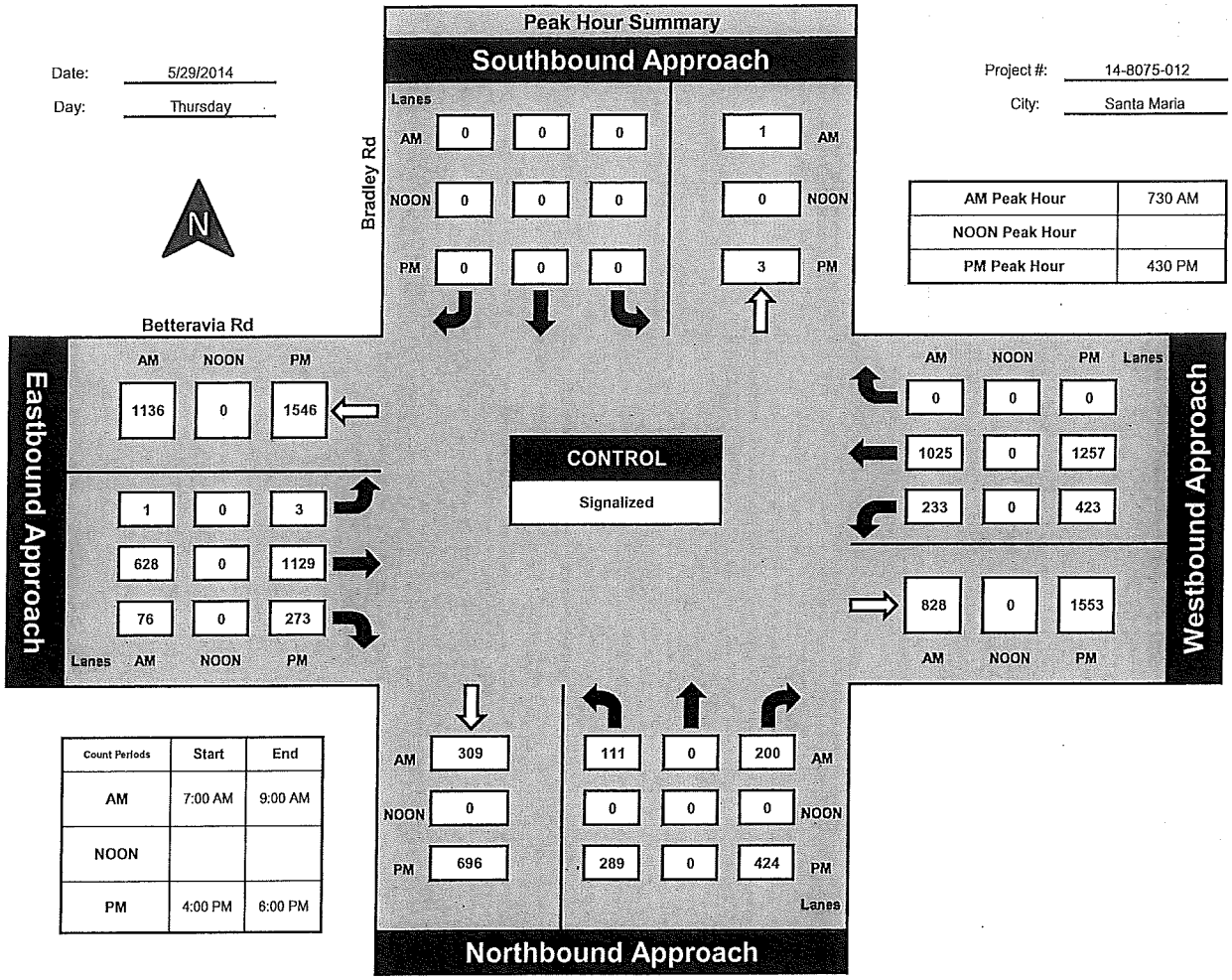
Bradley Rd and Betteravia Rd , Santa Maria

Date: 5/29/2014

Day: Thursday

Project #: 14-8075-012

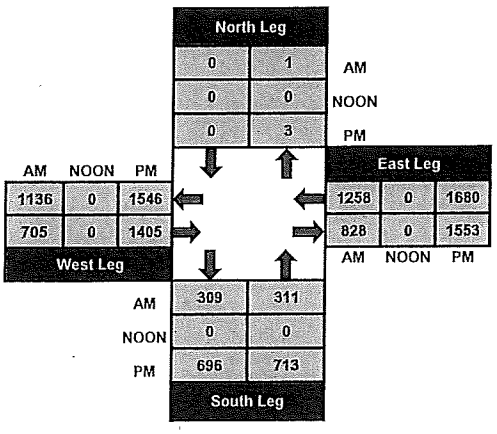
City: Santa Maria



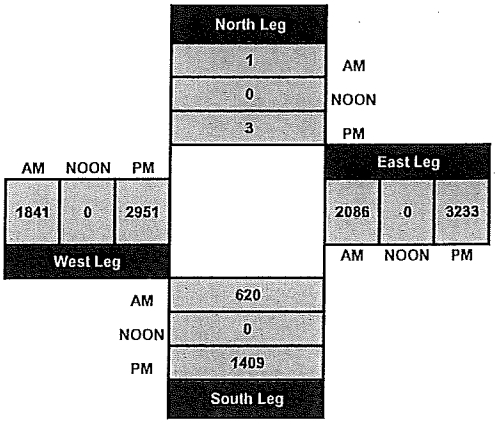
AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Bradley Rd and Betteravia Rd , Santa Maria

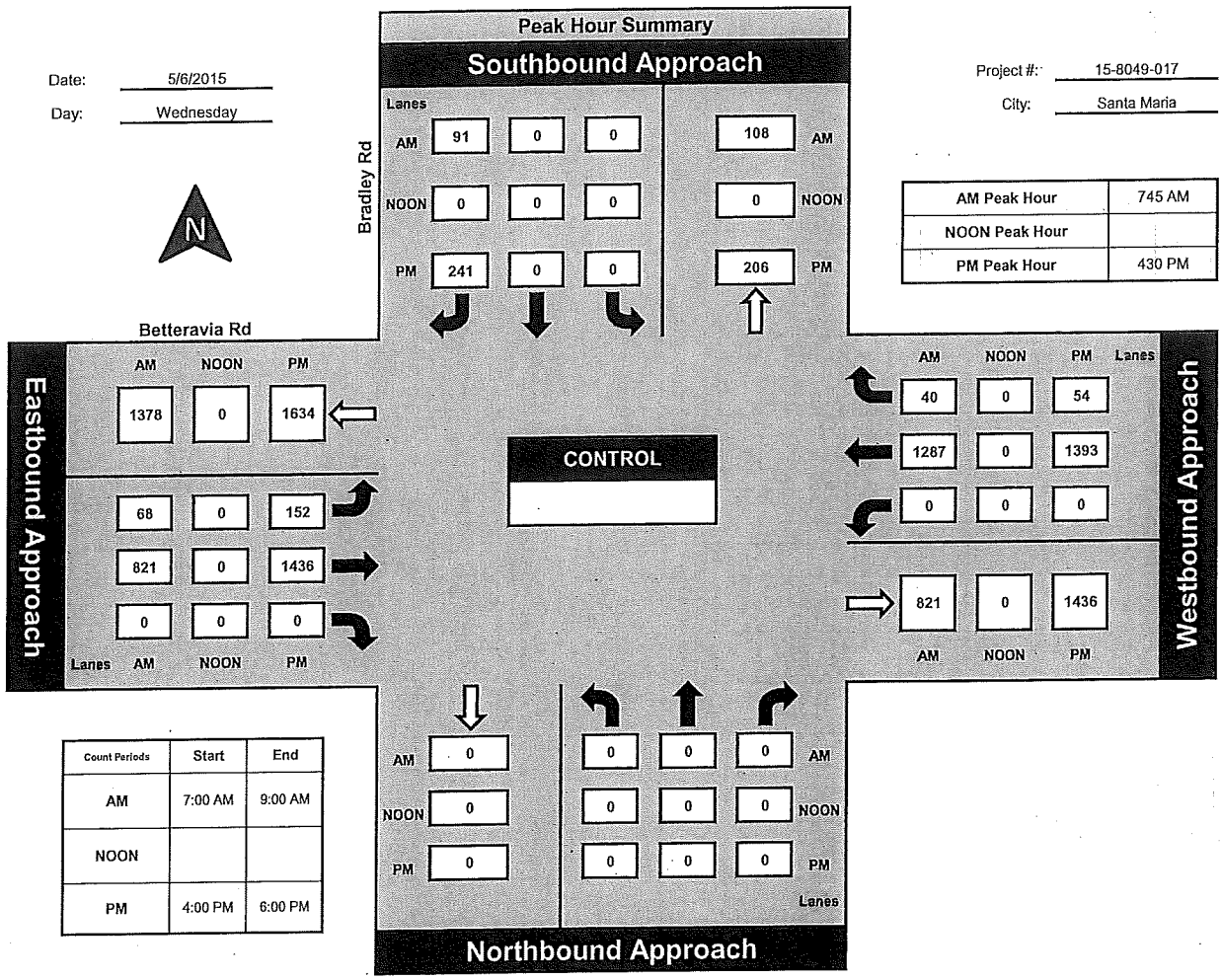
Date: 5/6/2015

Day: Wednesday

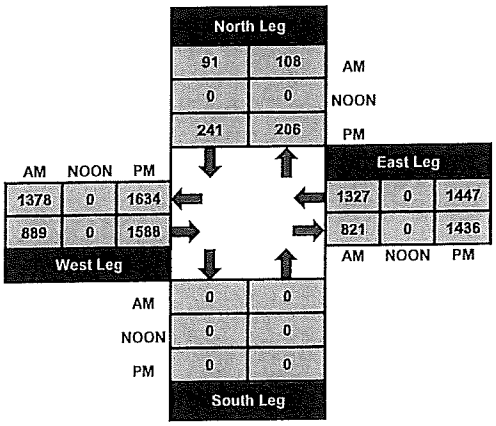
Project #: 15-8049-017

City: Santa Maria

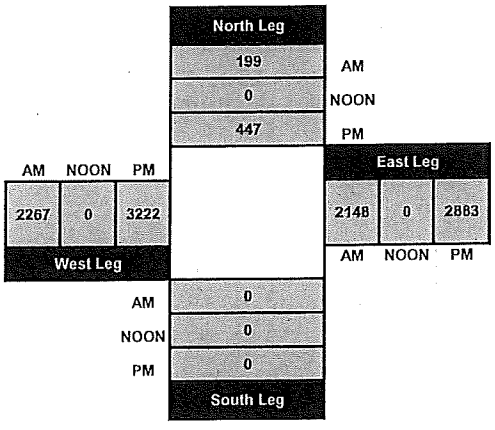
AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM



Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

US Hwy 101 SB Ramps and Betteravia Rd , Santa Maria

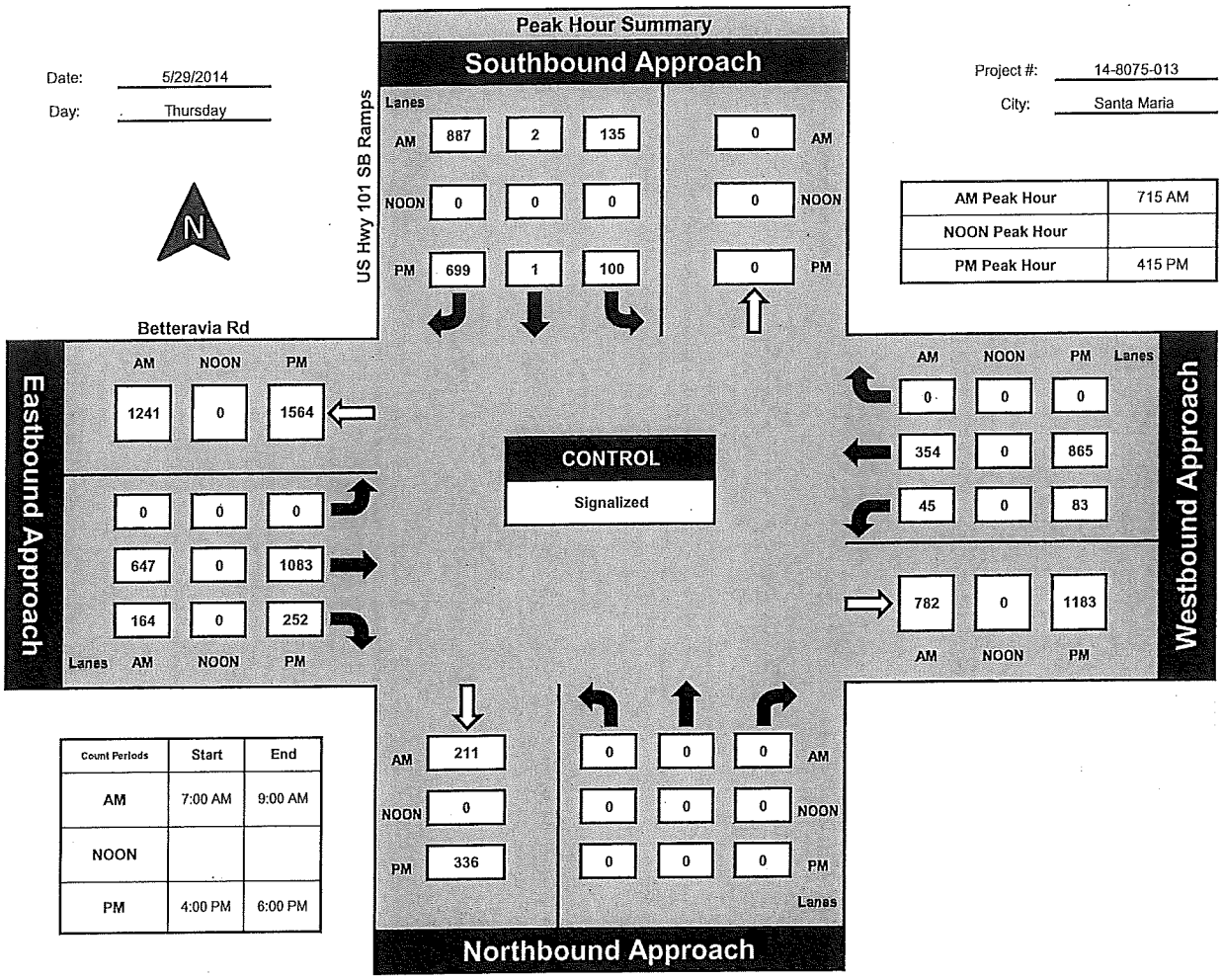
Date: 5/29/2014

Day: Thursday

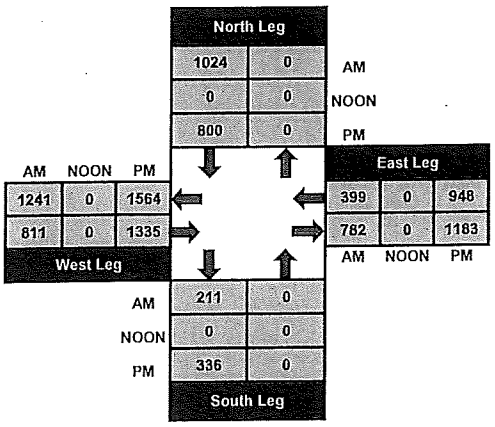
Project #: 14-8075-013

City: Santa Maria

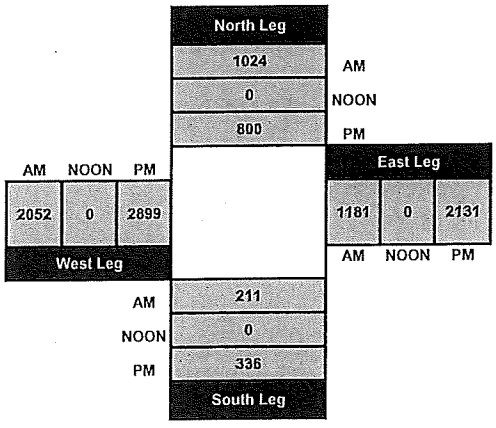
AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	415 PM



Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

US Hwy 101 NB Ramps and Betteravia Rd , Santa Maria

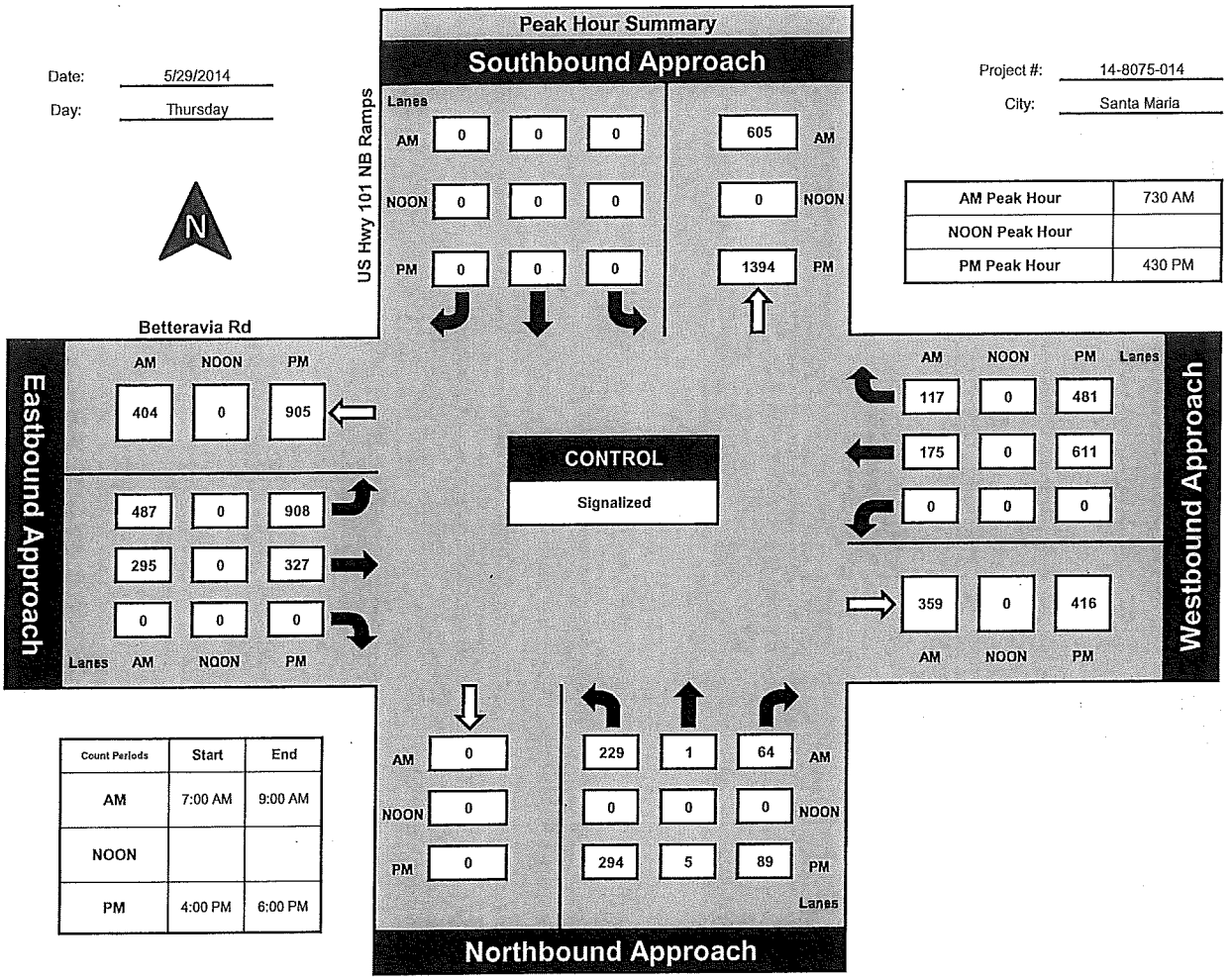
Date: 5/29/2014

Day: Thursday

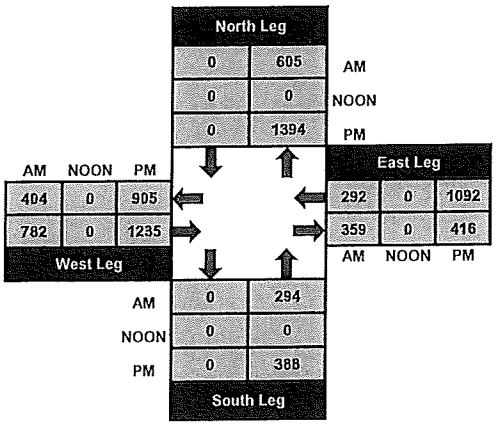
Project #: 14-8075-014

City: Santa Maria

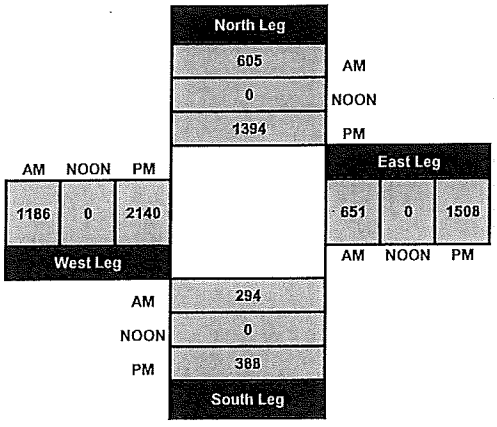
AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM



Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

College Dr and Southside Pkwy , Santa Maria

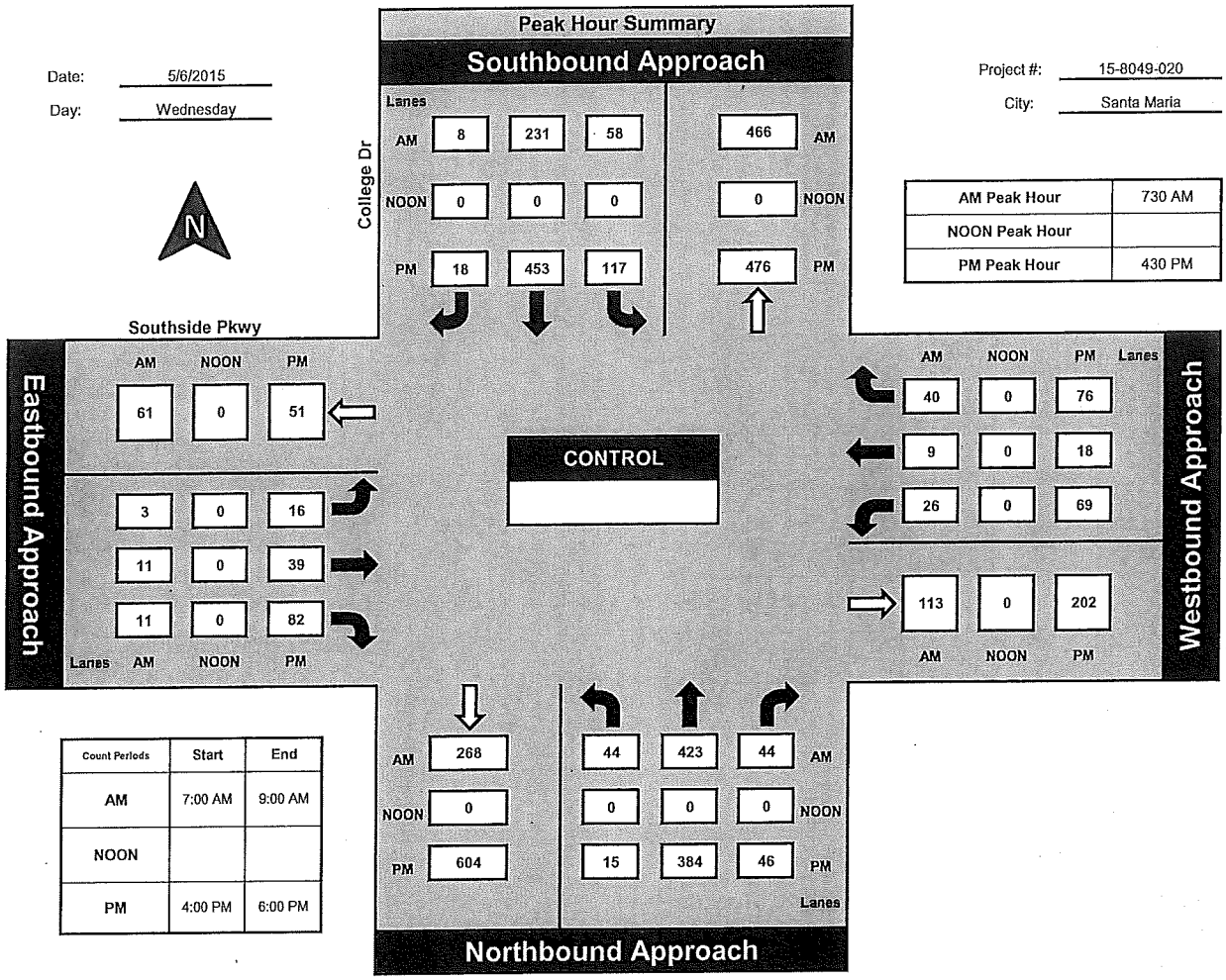
Date: 5/6/2015

Day: Wednesday

Project #: 15-8049-020

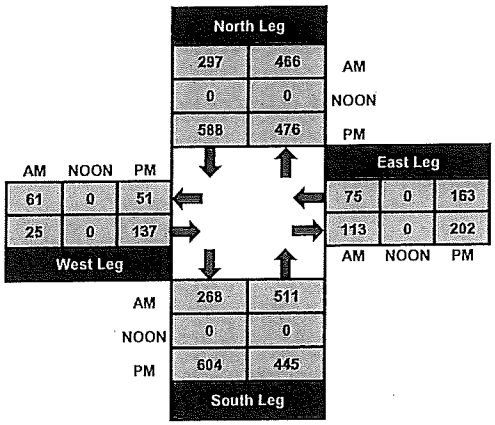
City: Santa Maria

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

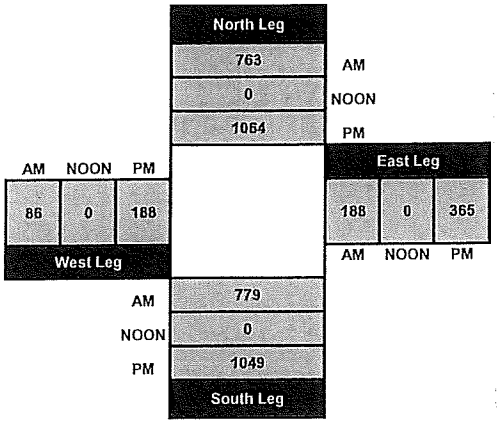


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Bradley Rd and Southside Pkwy , Santa Maria

Date: 5/6/2015

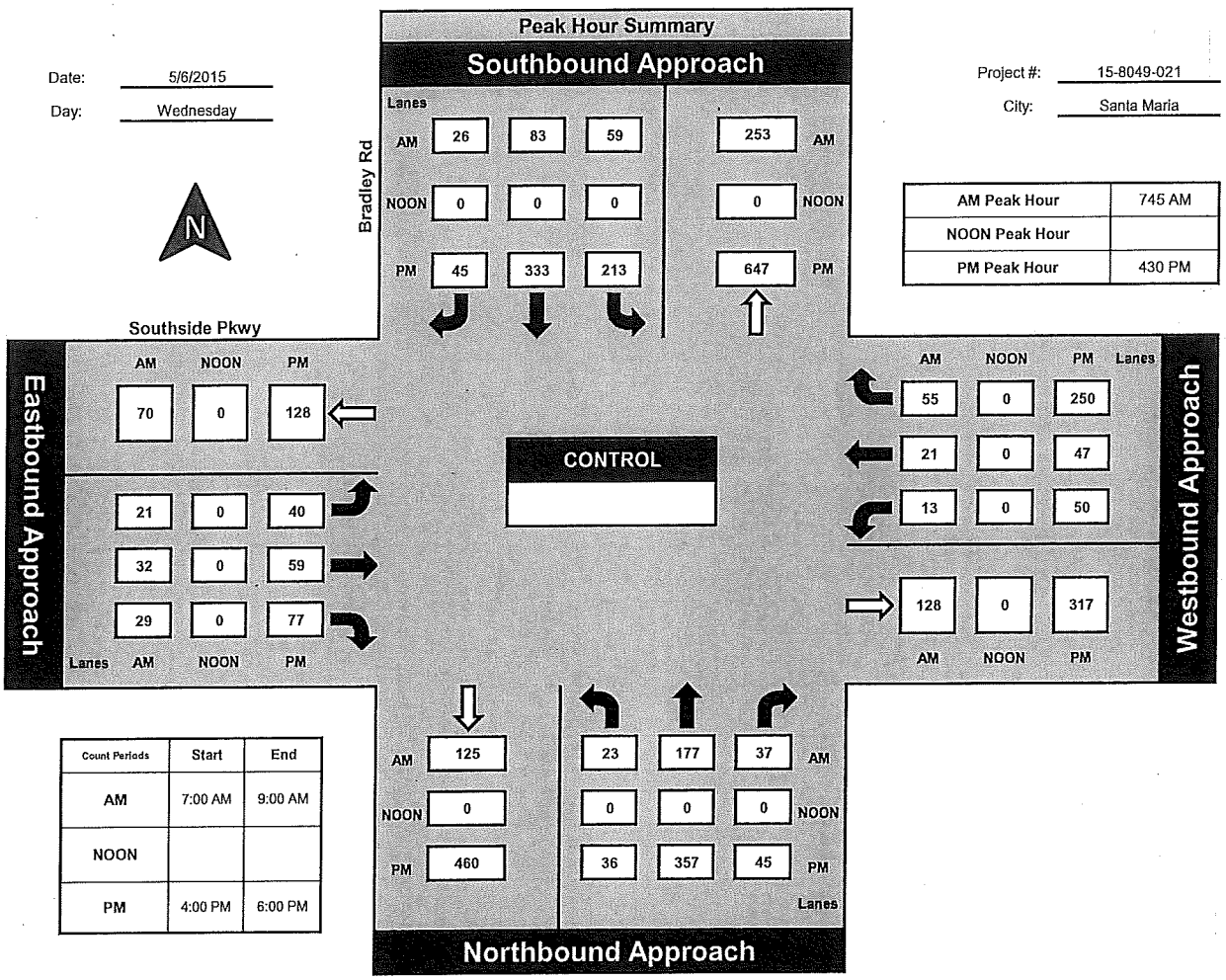
Day: Wednesday

Project #: 15-8049-021

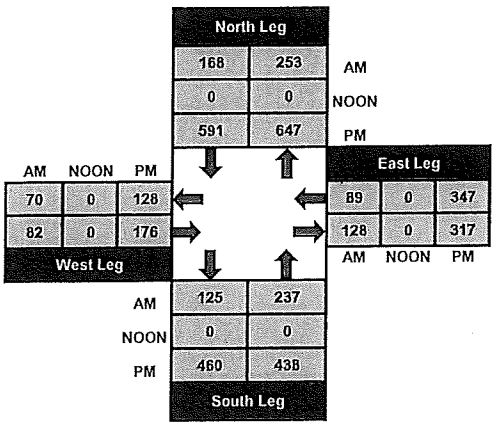
City: Santa Maria

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	430 PM

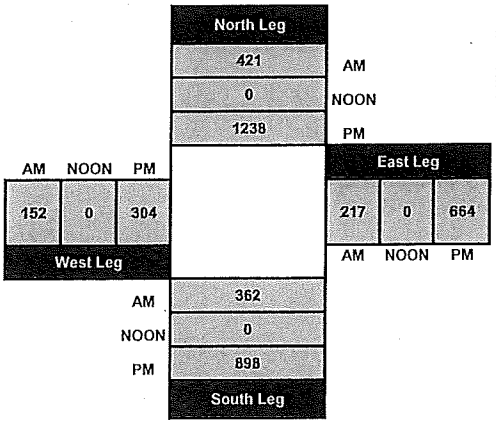
Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON		
PM	4:00 PM	6:00 PM



Total Ins & Outs



Total Volume Per Leg



TRIP GENERATION CALCULATIONS

Associated Transportation Engineers
Trip Generation Worksheet

ENOS RANCHOS SPECIFIC PLAN

Lot	Land Use	Size	ADT		A.M.						P.M.					
			Rate	Trips	Rate	Trips	In %	Trips	Out %	Trips	Rate	Trips	In %	Trips	Out %	Trips
1	Multi-Family Housing(a)	310 DU	6.65	2,062	0.510	158	20%	32	80%	126	0.62	192	65%	125	35%	67
2	Auto Dealer(b)	22,500 SF	32.30	727	1.920	43	75%	32	25%	11	2.62	59	40%	24	60%	35
3	Auto Dealer(b)	35,000 SF	32.30	1,131	1.920	67	75%	50	25%	17	2.62	92	40%	37	60%	55
4	Auto Dealer(b)	67,500 SF	32.30	2,180	1.920	130	75%	98	25%	32	2.62	177	40%	71	60%	106
5	Retail(c)	10,000 SF	44.32	443	1.320	13	60%	8	40%	5	2.71	27	44%	12	56%	15
6	Car Wash(d)	3,600 SF	NA	900	NA	36	50%	18	50%	18	NA	81	50%	41	50%	40
7	Auto Dealer(b)	10,000 SF	32.30	323	1.920	19	75%	14	25%	5	2.62	26	40%	10	60%	16
8	Auto Dealer(b)	10,000 SF	32.30	323	1.920	19	75%	14	25%	5	2.62	26	40%	10	60%	16
9	Auto Dealer(b)	10,000 SF	32.30	323	1.920	19	75%	14	25%	5	2.62	26	40%	10	60%	16
10	Public School(e)	650 Students	1.29	839	0.450	293	55%	161	45%	132	0.15	98	49%	48	51%	50
11	Park(f)	6.5 Acres	50.00	325	6.500	42	50%	21	50%	21	4.50	29	50%	15	50%	14
12	Shopping Center(g)	139,725 SF	42.70	5,966	0.960	134	62%	83	38%	51	3.71	518	48%	249	52%	269
13	Home Improvement(h)	103,000 SF	30.74	3,166	1.490	153	57%	87	43%	66	2.33	240	49%	118	51%	122
13	Restaurant(i)	7,400 SF	127.15	941	10.810	80	55%	44	45%	36	9.85	73	60%	44	40%	29
13	Fast Food Restaurant(j)	2,600 SF	496.12	1,290	45.420	118	51%	60	49%	58	32.65	85	52%	44	48%	41
14	Regional Bank Office(k)	70,000 SF	11.65	816	1.800	126	89%	112	11%	14	1.74	122	15%	18	85%	104
14	Bank w/ Drive Thru(l)	5,000 SF	148.15	741	12.080	60	57%	34	43%	26	24.30	122	50%	61	50%	61
15	Commercial (Costco)(m)	153,000 SF	50.75	7,765	1.850	283	56%	158	44%	125	4.35	666	49%	326	51%	340
15	Service Station (Costco)(n)	24 Positions	168.56	4,045	12.160	292	51%	149	49%	143	13.87	333	50%	167	50%	166
	Project Total:			34,306		2,085		1,189		896		2,992		1,430		1,562

(a) ITE Code 220 rates (Apartment).
(b) ITE Code 841 rates (Automobile Sales).
(c) ITE Code 826 rates (Specialty Retail).
(d) SANDAG rates (Automative Car Wash),
(e) ITE Code 520 rates (Elementary School).
(f) SANDAG rates (City Park).
(g) ITE Code 820 rates (Shopping Center).
(h) ITE Code 862 rates (Home Improvement Superstore).
(i) ITE Code 932 rates (High Turnover Sit-Down Restaurant).
(j) ITE Code 934 rates (Fast Food Restaurant with Drive Thru).
(k) ITE Code 715 rates (Single Tenant Office Building).
(l) ITE Code 912 rates (Drive-In Bank).
(m) ITE Code 813 rates (Free-Standing Discount Superstore).
(n) ITE Code 944 rates (Gasoline/Service Station).

Associated Transportation Engineers
Trip Generation Worksheet

ENOS RANCHOS SPECIFIC PLAN - GENERAL PLAN BUILDOUT TRIP GENERATION ANALYSIS

Zoning	Land Use	Size	ADT		A.M.		P.M.	
			Rate	Trips	Rate	Trips	Rate	Trips
PROPOSED SP								
PD/R-3	Multi-Family Housing(a)	378 DU	6.65	2,514	0.510	193	0.62	234
PD/OS	Park(b)	6.2 Acres	50.00	310	6.500	40	4.50	28
PD/PF	Public School(c)	650 Students	1.29	839	0.450	293	0.15	98
PD/C-2	Shopping Center(d)	525,000 SF	42.70	22,418	0.960	504	3.71	1948
PD/C-2/Auto	Auto Dealer(e)	250,000 SF	32.30	8,075	1.920	480	2.62	655
TOTAL PROPOSED SP				**34,156**		**1,510**		**2,963**
APPROVED SP								
PD/R-1	Single-Family Housing(f)	84 DU	9.52	800	0.750	63	1.00	84
MDR-12	Multi-Family Housing(a)	260 DU	6.65	1,729	0.510	133	0.62	161
PD/OS	Park(f)	6.7 Acres	50.00	335	6.500	44	4.50	30
PD/C-2	Shopping Center(d)	782,773 SF	42.70	33,424	0.960	751	3.71	2904
TOTAL APPROVED SP				**36,288**		**991**		**3,179**
NET DIFFERENCE				**-2,132**		**519**		**-216**

(a) ITE Code 220 rates (Apartment).
(b) SANDAG rates (City Park).
(c) ITE Code 520 rates (Elementary School).
(d) ITE Code 820 rates (Shopping Center).
(e) ITE Code 841 rates (Automobile Sales).
(f) ITE Code 210 rates (Single Family Detached Housing).

LEVEL OF SERVICE WORKSHEETS

Reference 1 - Stowell Rd/Broadway
Reference 2 - Stowell Rd/Miller St
Reference 3 - Stowell Rd/U.S. 101 NB
Reference 4 - Stowell Rd/College Dr
Reference 5 - Stowell Rd/Bradley Rd
Reference 6 - Bradley Rd/U.S. 101 SB-Columbia
Reference 7 - Battles Rd/Broadway
Reference 8 - Battles Rd/Miller St
Reference 9 - Battles Rd/College Dr
Reference 10 - Battles Rd/Shepard Dr
Reference 11 - Battles Rd/Bradley Rd
Reference 12 - Miller St/Inger Dr
Reference 13 - Betteravia Rd/Broadway
Reference 14 - Betteravia Rd/Miller St
Reference 15 - Betteravia Rd/College Dr
Reference 16 - Betteravia Rd/Bradley Rd(S)
Reference 17 - Betteravia Rd/Bradley Rd(N)
Reference 18 - Betteravia Rd/U.S. 101 SB
Reference 19 - Betteravia Rd/U.S. 101 NB
Reference 20 - Southside Pkwy/College Dr
Reference 21 - Southside Pkwy/Bradley Rd
Reference 22 - College Dr/East-West Collector
Reference 23 - Bradley Rd/East-West Collector
Reference 24 - Bradley Rd/Enos Ranchos Shopping Center

#15041 - ENOS RANCHOS PROJECT REF: 01_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR 135)*

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	100	466	97	72	444	63	95	335	52	100	292	68
(B)	PROJECT-ADDED:	14	46	0	0	70	0	0	0	18	0	0	0
(C)	CUMULATIVE:	153	512	96	67	428	70	95	368	24	99	348	72

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L T TR	L T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	100	114	153	167	0.063 *	0.071 *	0.096 *	0.104 *
NBT	2	3200	466	512	512	558	0.146	0.160	0.160	0.174
NBR (a)	1	1600	73	73	72	72	0.046	0.046	0.045	0.045
SBL	1	1600	72	72	67	67	0.045	0.045	0.042	0.042
SBT	2	3200	444	514	428	498	0.158 *	0.180 *	0.155 *	0.177 *
SBR (b)	0	0	62	62	69	69	-	-	-	-
EBL	1	1600	95	95	95	95	0.059	0.059	0.059 *	0.059 *
EBT	2	3200	335	335	368	368	0.118 *	0.123 *	0.121	0.126
EBR (c)	0	0	42	57	19	34	-	-	-	-
WBL	1	1600	100	100	99	99	0.063 *	0.063 *	0.062	0.062
WBT	2	3200	292	292	348	348	0.109	0.109	0.127 *	0.127 *
WBR (d)	0	0	56	56	59	59	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.502**	**0.537**	**0.537**	**0.567**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 25%*
(b) 2%
(c) 19%
(d) 18%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 01 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* WITH CIRCULATION ELEMENT IMPROVEMENTS (6-LANE BROADWAY)

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**241**	**980**	**81**	**166**	**1079**	**107**	**105**	**407**	**51**	**156**	**417**	**20**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	241				0.151 *			
NBT	3	4800	980				0.216			
NBR *(a)*	0	0	59				-			
SBL	1	1600	166				0.104			
SBT	3	4800	1079				0.245 *			
SBR *(b)*	0	0	98				-			
EBL	1	1600	105				0.066			
EBT	2	3200	407				0.139 *			
EBR *(c)*	0	0	39				-			
WBL	1	1600	156				0.098 *			
WBT	2	3200	417				0.135			
WBR *(d)*	0	0	16				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.733**			
						SCENARIO LEVEL OF SERVICE:	C			

NOTES:

RTOR: *(a) 27%*
(b) 8%
(c) 23%
(d) 21%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 01_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BROADWAY (SR 135)***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	EXISTING:	204	1023	221	83	934	76	164	438	119	163	431	113
(B)	PROJECT-ADDED:	22	83	0	0	77	0	0	1	21	0	0	2
(C)	CUMULATIVE:	231	980	193	88	983	120	167	514	121	155	515	130

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT R	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A + B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B + C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	204	226	231	253	0.128 *	0.141 *	0.144 *	0.158 *
NBT	2	3200	1023	1106	980	1063	0.320	0.346	0.306	0.332
NBR (a)	1	1600	197	197	172	172	0.123	0.123	0.108	0.108
SBL	1	1600	83	83	88	88	0.052	0.052	0.055	0.055
SBT	2	3200	934	1011	983	1060	0.315 *	0.339 *	0.343 *	0.368 *
SBR (b)	0	0	74	74	116	116	-	-	-	-
EBL	1	1600	164	164	167	167	0.103	0.103	0.104 *	0.104 *
EBT	2	3200	438	439	514	515	0.171 *	0.178 *	0.195	0.202
EBR (c)	0	0	109	129	111	131	-	-	-	-
WBL	1	1600	163	163	155	155	0.102 *	0.102 *	0.097	0.097
WBT	2	3200	431	431	515	515	0.166	0.166	0.197 *	0.197 *
WBR (d)	0	0	99	101	114	116	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.816**	**0.860**	**0.888**	**0.927**
					SCENARIO LEVEL OF SERVICE:		**D**	**D**	**D**	**E**

NOTES:

RTOR: *(a) 11%*
(b) 3%
(c) 8%
(d) 12%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 01 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* WITH CIRCULATION ELEMENT IMPROVEMENTS (6-LANE BROADWAY)

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**301**	**1507**	**160**	**174**	**1730**	**66**	**387**	**736**	**144**	**118**	**731**	**25**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	301				0.188 *			
NBT	3	4800	1507				0.338			
NBR *(a)*	0	0	114				-			
SBL	1	1600	174				0.109			
SBT	3	4800	1730				0.373 *			
SBR *(b)*	0	0	61				-			
EBL	1	1600	387				0.242 *			
EBT	2	3200	736				0.266			
EBR *(c)*	0	0	114				-			
WBL	1	1600	118				0.074			
WBT	2	3200	731				0.234 *			
WBR *(d)*	0	0	18				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**1.137**			
						SCENARIO LEVEL OF SERVICE:	**F**			

NOTES:

RTOR: *(a) 29%*
(b) 8%
(c) 21%
(d) 29%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 01 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* MITIGATED WITH NB & EB DUAL LEFTS + SB AND EB RT LANES

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**301**	**1507**	**160**	**174**	**1730**	**66**	**387**	**736**	**144**	**118**	**731**	**25**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TT TR	SOUTH BOUND L TTT R	EAST BOUND LL TT R	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	301				0.094 *			
NBT	3	4800	1507				0.338			
NBR *(a)*	0	0	114				-			
SBL	1	1600	174				0.109			
SBT	3	4800	1730				0.360 *			
SBR *(b)*	1	1600	61				0.038			
EBL	2	3200	387				0.121 *			
EBT	2	3200	736				0.230			
EBR *(c)*	1	1600	114				0.071			
WBL	1	1600	118				0.074			
WBT	2	3200	731				0.228 *			
WBR *(d)*	1	1600	18				0.011			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.903**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 29%*
(b) 8%
(c) 21%
(d) 29%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 02_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	34	268	149	32	278	57	47	373	68	139	356	50
(B)	PROJECT-ADDED:	0	15	0	0	20	0	0	0	0	0	0	0
(C)	CUMULATIVE:	33	271	150	31	328	66	50	408	54	135	407	54

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T R	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	34	34	33	33	0.021	0.021	0.021	0.021
NBT	1	1600	268	283	271	286	0.168 *	0.177 *	0.169 *	0.179 *
NBR (a)	1	1600	140	140	141	141	0.088	0.088	0.088	0.088
SBL	1	1600	32	32	31	31	0.020 *	0.020 *	0.019 *	0.019 *
SBT	2	3200	278	298	328	348	0.104	0.110	0.122	0.128
SBR (b)	0	0	55	55	63	63	-	-	-	-
EBL	1	1600	47	47	50	50	0.029	0.029	0.031	0.031
EBT	2	3200	373	373	408	408	0.137 *	0.137 *	0.144 *	0.144 *
EBR (c)	0	0	65	65	52	52	-	-	-	-
WBL	1	1600	139	139	135	135	0.087 *	0.087 *	0.084 *	0.084 *
WBT	2	3200	356	356	407	407	0.126	0.126	0.143	0.143
WBR (d)	0	0	47	47	51	51	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		0.512	0.521	0.516	0.526
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 6%*
(b) 4%
(c) 4%
(d) 6%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 02 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *MILLER STREET* WITH CIRCULATION ELEMENT IMPROVEMENTS (WIDEN MILLER TO 4 LANES)

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	41	484	94	73	444	86	85	524	10	181	394	372

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	41				0.026			
NBT	2	3200	484				0.168 *			
NBR *(a)*	0	0	52				-			
SBL	1	1600	73				0.046 *			
SBT	2	3200	444				0.163			
SBR *(b)*	0	0	76				-			
EBL	1	1600	85				0.053 *			
EBT	2	3200	524				0.166			
EBR *(c)*	0	0	8				-			
WBL	1	1600	181				0.113			
WBT	2	3200	394				0.230 *			
WBR *(d)*	0	0	342				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.597**			
						SCENARIO LEVEL OF SERVICE:	A			

NOTES:

RTOR: *(a) 45%*
(b) 12%
(c) 18%
(d) 8%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 02_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	58	448	261	83	542	61	118	540	75	159	560	84
(B)	PROJECT-ADDED:	2	22	0	0	21	0	0	0	1	0	0	0
(C)	CUMULATIVE:	58	468	282	86	554	66	121	628	37	156	645	118

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T R	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	58	60	58	60	0.036	0.038	0.036	0.038
NBT	1	1600	448	470	468	490	0.280 *	0.294 *	0.293 *	0.306 *
NBR (a)	1	1600	253	253	274	274	0.158	0.158	0.171	0.171
SBL	1	1600	83	83	86	86	0.052 *	0.052 *	0.054 *	0.054 *
SBT	2	3200	542	563	554	575	0.188	0.195	0.193	0.200
SBR (b)	0	0	60	60	65	65	-	-	-	-
EBL	1	1600	118	118	121	121	0.074	0.074	0.076 *	0.076 *
EBT	2	3200	540	540	628	628	0.192 *	0.193 *	0.208	0.208
EBR (c)	0	0	75	76	37	38	-	-	-	-
WBL	1	1600	159	159	156	156	0.099 *	0.099 *	0.098	0.098
WBT	2	3200	560	560	645	645	0.201	0.201	0.238 *	0.238 *
WBR (d)	0	0	84	84	118	118	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		0.723	0.738	0.761	0.774
					SCENARIO LEVEL OF SERVICE:		C	C	C	C

NOTES:

RTOR: *(a) 3%*
(b) 2%
(c) 0%
(d) 0%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 02 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET* WITH CIRCULATION ELEMENT IMPROVEMENTS (WIDEN MILLER TO 4 LANES)

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**59**	**805**	**302**	**167**	**865**	**54**	**237**	**732**	**60**	**199**	**654**	**451**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	59				0.037			
NBT	2	3200	805				0.325 *			
NBR *(a)*	0	0	236				-			
SBL	1	1600	167				0.104 *			
SBT	2	3200	865				0.286			
SBR *(b)*	0	0	50				-			
EBL	1	1600	237				0.148 *			
EBT	2	3200	732				0.246			
EBR *(c)*	0	0	55				-			
WBL	1	1600	199				0.124			
WBT	2	3200	654				0.333 *			
WBR *(d)*	0	0	410				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**1.010**			
						SCENARIO LEVEL OF SERVICE:	F			

NOTES:

RTOR: *(a) 22%*
(b) 7%
(c) 9%
(d) 9%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 02 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *2/2/2010*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***MILLER STREET*** MITIGATED WITH WB RIGHT TURN LANE

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	59	805	302	167	865	54	237	732	60	199	654	451

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)
SCENARIO 2 = BUILDOUT+PROJECT VOLUMES (B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	59				0.037			
NBT	2	3200	805				0.325 *			
NBR *(a)*	0	0	236				-			
SBL	1	1600	167				0.104 *			
SBT	2	3200	865				0.286			
SBR *(b)*	0	0	50				-			
EBL	1	1600	237				0.148 *			
EBT	2	3200	732				0.246			
EBR *(c)*	0	0	55				-			
WBL	1	1600	199				0.124			
WBT	2	3200	654				0.204 *			
WBR *(d)*	1	1600	410				0.256			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.881**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 22%*
(b) 7%
(c) 9%
(d) 9%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 03_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	36	236	77	50	203	60	84	440	27	22	552	85
(B)	PROJECT-ADDED:	0	73	0	0	100	0	0	0	0	0	0	0
(C)	CUMULATIVE:	47	255	85	53	221	64	86	471	29	23	585	98

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	36	36	47	47	0.023	0.023	0.029	0.029
NBT	2	3200	236	309	255	328	0.089 *	0.112 *	0.097 *	0.119 *
NBR *(a)*	0	0	49	49	54	54	-	-	-	-
SBL	1	1600	50	50	53	53	0.031 *	0.031 *	0.033 *	0.033 *
SBT	2	3200	203	303	221	321	0.081	0.112	0.088	0.119
SBR *(b)*	0	0	56	56	60	60	-	-	-	-
EBL	1	1600	84	84	86	86	0.053 *	0.053 *	0.054 *	0.054 *
EBT	2	3200	440	440	471	471	0.146	0.146	0.156	0.156
EBR *(c)*	0	0	26	26	28	28	-	-	-	-
WBL	1	1600	22	22	23	23	0.014	0.014	0.014	0.014
WBT	2	3200	552	552	585	585	0.198 *	0.198 *	0.212 *	0.212 *
WBR *(d)*	0	0	80	80	92	92	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.471**	**0.494**	**0.496**	**0.518**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 36%*
(b) 7%
(c) 4%
(d) 6%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 03 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE*

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**152**	**340**	**160**	**95**	**286**	**76**	**63**	**523**	**89**	**104**	**975**	**111**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	152				0.095 *			
NBT	2	3200	340				0.106			
NBR *(a)*	1	1600	75				0.047			
SBL	1	1600	95				0.059			
SBT	2	3200	286				0.108 *			
SBR *(b)*	0	0	59				-			
EBL	1	1600	63				0.039 *			
EBT	2	3200	523				0.187			
EBR *(c)*	0	0	75				-			
WBL	1	1600	104				0.065			
WBT	2	3200	975				0.335 *			
WBR *(d)*	0	0	98				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.677**			
						SCENARIO LEVEL OF SERVICE:	**B**			

NOTES:

RTOR: *(a) 53%*
(b) 22%
(c) 16%
(d) 12%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 03_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	88	380	113	92	303	88	125	753	60	65	666	103
(B)	PROJECT-ADDED:	0	124	0	0	116	0	0	0	0	0	0	0
(C)	CUMULATIVE:	132	402	129	74	355	86	135	797	105	70	736	106

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	88	88	132	132	0.055	0.055	0.083 *	0.083 *
NBT	2	3200	380	504	402	526	0.147 *	0.186 *	0.158	0.197
NBR (a)	0	0	90	90	103	103	-	-	-	-
SBL	1	1600	92	92	74	74	0.058 *	0.058 *	0.046	0.046
SBT	2	3200	303	419	355	471	0.121	0.157	0.137 *	0.173 *
SBR (b)	0	0	84	84	82	82	-	-	-	-
EBL	1	1600	125	125	135	135	0.078 *	0.078 *	0.084 *	0.084 *
EBT	2	3200	753	753	797	797	0.254	0.254	0.281	0.281
EBR (c)	0	0	59	59	103	103	-	-	-	-
WBL	1	1600	65	65	70	70	0.041	0.041	0.044	0.044
WBT	2	3200	666	666	736	736	0.238 *	0.238 *	0.261 *	0.261 *
WBR (d)	0	0	96	96	99	99	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.621**	**0.660**	**0.665**	**0.701**
					SCENARIO LEVEL OF SERVICE:		**B**	**B**	**B**	**B**

NOTES:

RTOR: *(a) 20%*
(b) 5%
(c) 2%
(d) 7%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 03 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE*

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**174**	**351**	**158**	**130**	**430**	**63**	**119**	**1025**	**144**	**120**	**1105**	**138**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	174				0.109 *			
NBT	2	3200	351				0.110			
NBR *(a)*	1	1600	87				0.054			
SBL	1	1600	130				0.081			
SBT	2	3200	430				0.151 *			
SBR *(b)*	0	0	52				-			
EBL	1	1600	119				0.074 *			
EBT	2	3200	1025				0.362			
EBR *(c)*	0	0	134				-			
WBL	1	1600	120				0.075			
WBT	2	3200	1105				0.384 *			
WBR *(d)*	0	0	123				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.818**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 45%*
(b) 18%
(c) 7%
(d) 11%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 04_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	300	185	145	46	198	102	99	294	123	22	288	202
(B)	PROJECT-ADDED:	0	14	61	0	19	0	0	0	0	0	0	0
(C)	CUMULATIVE:	293	171	141	47	235	108	118	294	142	22	334	246

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL T R	L T TR	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	300	300	293	293	0.094 *	0.094 *	0.092 *	0.092 *
NBT	1	1600	185	199	171	185	0.116	0.124	0.107	0.116
NBR (a)	1	1600	128	181	124	178	0.080	0.113	0.078	0.111
SBL	1	1600	46	46	47	47	0.029	0.029	0.029	0.029
SBT	2	3200	198	217	235	254	0.092 *	0.098 *	0.105 *	0.111 *
SBR (b)	0	0	96	96	102	102	-	-	-	-
EBL	1	1600	99	99	118	118	0.062 *	0.062 *	0.074 *	0.074 *
EBT	2	3200	294	294	294	294	0.092	0.092	0.092	0.092
EBR (c)	1	1600	116	116	133	133	0.073	0.073	0.083	0.083
WBL	1	1600	22	22	22	22	0.014	0.014	0.014	0.014
WBT	2	3200	288	288	334	334	0.148 *	0.148 *	0.175 *	0.175 *
WBR (d)	0	0	186	186	226	226	-	-	-	-
						LOST TIME:	0.100 *	0.100 *	0.100 *	0.100 *
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.496**	**0.502**	**0.546**	**0.552**
						SCENARIO LEVEL OF SERVICE:	A	A	A	A

NOTES:

RTOR: *(a) 12%*
(b) 6%
(c) 6%
(d) 8%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 04 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD*

E/W STREET: *STOWELL ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	458	279	268	55	345	277	111	301	225	89	520	500

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL T R	L T TR	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	458				0.143 *			
NBT	1	1600	279				0.174			
NBR *(a)*	1	1600	193				0.121			
SBL	1	1600	55				0.034			
SBT	2	3200	345				0.165 *			
SBR *(b)*	0	0	183				-			
EBL	1	1600	111				0.069 *			
EBT	2	3200	301				0.094			
EBR *(c)*	1	1600	137				0.086			
WBL	1	1600	89				0.056			
WBT	2	3200	520				0.273 *			
WBR *(d)*	0	0	355				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.750			
						SCENARIO LEVEL OF SERVICE:	C			

NOTES:

RTOR: *(a) 28%*
(b) 34%
(c) 39%
(d) 29%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 04_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	234	191	238	165	535	173	172	542	263	80	380	124
(B)	PROJECT-ADDED:	0	22	75	0	22	0	0	0	0	0	0	0
(C)	CUMULATIVE:	235	185	243	167	564	208	188	553	279	80	414	126

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL T R	L T TR	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	234	234	235	235	0.073 *	0.073 *	0.073 *	0.073 *
NBT	1	1600	191	213	185	207	0.119	0.133	0.116	0.129
NBR *(a)*	1	1600	195	257	199	261	0.122	0.161	0.124	0.163
SBL	1	1600	165	165	167	167	0.103	0.103	0.104	0.104
SBT	2	3200	535	557	564	586	0.213 *	0.220 *	0.232 *	0.238 *
SBR *(b)*	0	0	147	147	177	177	-	-	-	-
EBL	1	1600	172	172	188	188	0.108 *	0.108 *	0.118 *	0.118 *
EBT	2	3200	542	542	553	553	0.169	0.169	0.173	0.173
EBR *(c)*	1	1600	239	239	254	254	0.149	0.149	0.159	0.159
WBL	1	1600	80	80	80	80	0.050	0.050	0.050	0.050
WBT	2	3200	380	380	414	414	0.151 *	0.151 *	0.162 *	0.162 *
WBR *(d)*	0	0	102	102	103	103	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.645**	**0.652**	**0.685**	**0.691**
					SCENARIO LEVEL OF SERVICE:		**B**	**B**	**B**	**B**

NOTES:

RTOR: *(a) 18%*
(b) 15%
(c) 9%
(d) 18%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 04 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**404**	**245**	**419**	**54**	**851**	**258**	**225**	**996**	**256**	**156**	**834**	**149**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL T R	L T TR	L TT R	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	404				0.126 *			
NBT	1	1600	245				0.153			
NBR *(a)*	1	1600	297				0.186			
SBL	1	1600	54				0.034			
SBT	2	3200	851				0.325 *			
SBR *(b)*	0	0	188				-			
EBL	1	1600	225				0.141 *			
EBT	2	3200	996				0.311			
EBR *(c)*	1	1600	131				0.082			
WBL	1	1600	156				0.098			
WBT	2	3200	834				0.298 *			
WBR *(d)*	0	0	121				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.990**			
						SCENARIO LEVEL OF SERVICE:	**E**			

NOTES:

RTOR: *(a) 29%*
(b) 27%
(c) 49%
(d) 19%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN **REF:** 04 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD*** MITGATED WITH SB RT LANE + WB RT LANE

E/W STREET: ***STOWELL ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**404**	**245**	**419**	**54**	**851**	**258**	**225**	**996**	**256**	**156**	**834**	**149**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L T TR	EAST BOUND L TT R	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	404				0.126 *			
NBT	1	1600	245				0.153			
NBR *(a)*	1	1600	297				0.186			
SBL	1	1600	54				0.034			
SBT	2	3200	851				0.266 *			
SBR *(b)*	1	1600	188				0.118			
EBL	1	1600	225				0.141 *			
EBT	2	3200	996				0.311			
EBR *(c)*	1	1600	131				0.082			
WBL	1	1600	156				0.098			
WBT	2	3200	834				0.261 *			
WBR *(d)*	1	1600	121				0.076			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.894**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 29%*
(b) 27%
(c) 49%
(d) 19%

Printed: 09/21/15

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*DLD*	Intersection	*U.S. 101 NB/STOWELL*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*AM PEAK HOUR*		

Project ID

East/West Street: *STOWELL ROAD* | North/South Street: *U.S. 101 NB-NICHOLSON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*421*	*60*	*7*	*0*	*45*	*6*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*5*	*5*	*0*	*3*	*2*	*459*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*
Flow Rate (veh/h)	*421*	*67*	*0*	*51*	*10*		*5*	*459*
% Heavy Vehicles	*4*	*4*	*4*	*4*	*4*		*4*	*4*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.0*	*0.0*	*0.5*		*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.6*	*-0.0*	*0.1*	*-0.0*	*0.2*		*0.4*	*-0.6*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.37*	*0.06*	*0.00*	*0.05*	*0.01*		*0.00*	*0.41*
hd, final value (s)	*6.55*	*5.97*	*6.80*	*6.72*	*7.05*		*6.51*	*5.52*
x, final value	*0.77*	*0.11*	*0.00*	*0.10*	*0.02*		*0.01*	*0.70*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.3*	*3.7*	*4.5*	*4.4*	*4.8*		*4.2*	*3.2*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*541*	*317*	*0*	*301*	*260*		*255*	*637*
Delay (s/veh)	*27.54*	*9.42*	*9.50*	*10.12*	*9.89*		*9.27*	*20.23*
LOS	*D*	*A*	*A*	*B*	*A*		*A*	*C*
Approach: Delay (s/veh)	*25.05*		*10.12*		*9.89*		*20.11*	
LOS	*D*		*B*		*A*		*C*	
Intersection Delay (s/veh)	*21.89*							
Intersection LOS	*C*							

AWD = 10.02 SL = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*DLD*	Intersection	*U.S. 101 NB/STOWELL*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*EXISTING+PROJECT*
Analysis Time Period	*AM PEAK HOUR*		

Project ID

East/West Street: *STOWELL ROAD* | North/South Street: *U.S. 101 NB-NICHOLSON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*482*	*60*	*7*	*0*	*45*	*6*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*5*	*5*	*0*	*3*	*2*	*459*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*
Flow Rate (veh/h)	*482*	*67*	*0*	*51*	*10*		*5*	*459*
% Heavy Vehicles	*4*	*4*	*4*	*4*	*4*		*4*	*4*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.0*	*0.0*	*0.5*		*0.6*	*0.0*
Prop. Right-Turns	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.6*	*-0.0*	*0.1*	*-0.0*	*0.2*		*0.4*	*-0.6*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.43*	*0.06*	*0.00*	*0.05*	*0.01*		*0.00*	*0.41*
hd, final value (s)	*6.61*	*6.03*	*6.98*	*6.89*	*7.30*		*6.71*	*5.72*
x, final value	*0.88*	*0.11*	*0.00*	*0.10*	*0.02*		*0.01*	*0.73*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.3*	*3.7*	*4.7*	*4.6*	*5.0*		*4.4*	*3.4*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*541*	*317*	*0*	*301*	*260*		*255*	*615*
Delay (s/veh)	*40.79*	*9.49*	*9.68*	*10.34*	*10.15*		*9.48*	*22.24*
LOS	*E*	*A*	*A*	*B*	*B*		*A*	*C*
Approach: Delay (s/veh)	*36.97*		*10.34*		*10.15*		*22.11*	
LOS	*E*		*B*		*B*		*C*	
Intersection Delay (s/veh)	*29.04*							
Intersection LOS	*D*							

AVG = 10.3 SEC = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	DLD	Intersection	U.S. 101 NB/STOWELL
Agency/Co.	ATE	Jurisdiction	SANTA MARIA
Date Performed	8/19/2015	Analysis Year	CUMULATIVE
Analysis Time Period	AM PEAK HOUR		

Project ID

East/West Street: STOWELL ROAD | North/South Street: U.S. 101 NB-NICHOLSON

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	423	58	5	0	45	6
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	7	3	0	3	2	548
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	TR	L	TR	LTR		LT	R
PHF	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flow Rate (veh/h)	423	63	0	51	10		5	548
% Heavy Vehicles	4	4	4	4	4		4	4
No. Lanes	2		2		1		2	
Geometry Group	5		5		4b		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0	0.7		0.6	0.0
Prop. Right-Turns	0.0	0.1	0.0	0.1	0.0		0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0	0.0		0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5	0.2	0.2	0.5	0.5
hRT-adj	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.6	0.0	0.1	-0.0	0.2		0.4	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20	3.20		3.20	3.20
x, initial	0.38	0.06	0.00	0.05	0.01		0.00	0.49
hd, final value (s)	6.85	6.29	7.19	7.10	7.34		6.58	5.59
x, final value	0.80	0.11	0.00	0.10	0.02		0.01	0.85
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	4.5	4.0	4.9	4.8	5.0		4.3	3.3

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	518	313	0	301	260		255	636
Delay (s/veh)	32.00	9.76	9.89	10.60	10.19		9.35	31.86
LOS	D	A	A	B	B		A	D
Approach: Delay (s/veh)	29.12		10.60		10.19		31.66	
LOS	D		B		B		D	
Intersection Delay (s/veh)	29.36							
Intersection LOS	D							

AWD = 10.4 Sec = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	DLD	Intersection	U.S. 101 NB/STOWELL
Agency/Co.	ATE	Jurisdiction	SANTA MARIA
Date Performed	8/31/2015	Analysis Year	CUMULATIVE+PROJECT
Analysis Time Period	AM PEAK HOUR		

Project ID

East/West Street: STOWELL ROAD | North/South Street: U.S. 101 NB-NICHOLSON

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	484	58	5	0	45	6
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	7	3	0	3	2	548
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	TR	L	TR	LTR		LT	R
PHF	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flow Rate (veh/h)	484	63	0	51	10		5	548
% Heavy Vehicles	4	4	4	4	4		4	4
No. Lanes	2		2		1		2	
Geometry Group	5		5		4b		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0	0.7		0.6	0.0
Prop. Right-Turns	0.0	0.1	0.0	0.1	0.0		0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0	0.0		0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5	0.2	0.2	0.5	0.5
hRT-adj	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.6	0.0	0.1	-0.0	0.2		0.4	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20	3.20		3.20	3.20
x, initial	0.43	0.06	0.00	0.05	0.01		0.00	0.49
hd, final value (s)	6.92	6.35	7.40	7.32	7.62		6.80	5.80
x, final value	0.93	0.11	0.00	0.10	0.02		0.01	0.88
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	4.6	4.1	5.1	5.0	5.3		4.5	3.5

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	518	313	0	301	260		255	614
Delay (s/veh)	49.87	9.85	10.10	10.86	10.48		9.56	136.93
LOS	E	A	B	B	B		A	E
Approach: Delay (s/veh)	45.26		10.86		10.48		36.69	
LOS	E		B		B		E	
Intersection Delay (s/veh)	39.37							
Intersection LOS	E							

AWD = 10.7 sec = LOS B

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 05 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *US 101 NB-NICHOLSON* WITH PLANNED IMPROVEMENTS (SIGNAL PER CIP)

E/W STREET: *STOWELL*

CONTROL TYPE: *SIGNAL (EAST-WEST SPLIT PHASED)*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	12	5	0	30	9	1016	583	49	10	1	79	15

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LTR	SOUTH BOUND LT R	EAST BOUND L TR	WEST BOUND L TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	12				-			
NBT	1	1600	5				0.011 *			
NBR *(a)*	0	0	0				-			
SBL	0	0	30				-			
SBT	1	1600	9				0.024 *			
SBR *(b)*	1	1600	1016				0.635			
EBL	0	0	583				-			
EBT	2	3200	49				0.201 *			
EBR *(c)*	0	0	10				-			
WBL	1	1600	1				0.001			
WBT	1	1600	79				0.059 *			
WBR *(d)*	0	0	15				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.395**			
						SCENARIO LEVEL OF SERVICE:	A			

NOTES:

RTOR: *(a)*

(b) FREE RT LANE

(c)

(d)

Printed: 09/21/15

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*DLD*	Intersection	*U.S. 101 NB/STOWELL*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*PM PEAK HOUR*		

Project ID

East/West Street: *STOWELL ROAD* | North/South Street: *U.S. 101 NB-NICHOLSON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*861*	*64*	*3*	*0*	*131*	*29*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*12*	*7*	*1*	*6*	*14*	*455*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*
Flow Rate (veh/h)	*861*	*67*	*0*	*160*	*20*		*20*	*455*
% Heavy Vehicles	*4*	*4*	*4*	*4*	*4*		*4*	*4*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.0*	*0.0*	*0.6*		*0.3*	*0.0*
Prop. Right-Turns	*0.0*	*0.0*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.6*	*0.0*	*0.1*	*-0.1*	*0.2*		*0.2*	*-0.6*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.77*	*0.06*	*0.00*	*0.14*	*0.02*		*0.02*	*0.40*
hd, final value (s)	*7.03*	*6.49*	*7.31*	*7.18*	*8.03*		*7.07*	*6.22*
x, final value	*1.68*	*0.12*	*0.00*	*0.32*	*0.04*		*0.04*	*0.79*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.7*	*4.2*	*5.0*	*4.9*	*5.7*		*4.8*	*3.9*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*861*	*317*	*0*	*410*	*270*		*270*	*516*
Delay (s/veh)	*332.38*	*10.08*	*10.01*	*13.22*	*11.10*		*10.06*	*28.00*
LOS	*F*	*B*	*B*	*B*	*B*		*B*	*D*
Approach: Delay (s/veh)	*309.11*		*13.22*		*11.10*		*27.25*	
LOS	*F*		*B*		*B*		*D*	
Intersection Delay (s/veh)	*190.86*							
Intersection LOS	*F*							

AWD = 12.7 sec = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	DLD	Intersection	U.S. 101 NB/STOWELL
Agency/Co.	ATE	Jurisdiction	SANTA MARIA
Date Performed	8/31/2015	Analysis Year	EXISTING+PROJECT
Analysis Time Period	PM PEAK HOUR		

Project ID

East/West Street: STOWELL ROAD | North/South Street: U.S. 101 NB-NICHOLSON

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	936	64	3	0	131	29
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	12	7	1	6	14	455
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	TR	L	TR	LTR		LT	R
PHF	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flow Rate (veh/h)	936	67	0	160	20		20	455
% Heavy Vehicles	4	4	4	4	4		4	4
No. Lanes	2		2		1		2	
Geometry Group	5		5		4b		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0	0.6		0.3	0.0
Prop. Right-Turns	0.0	0.0	0.0	0.2	0.1		0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0	0.0		0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5	0.2	0.2	0.5	0.5
hRT-adj	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.6	0.0	0.1	-0.1	0.2		0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20	3.20		3.20	3.20
x, initial	0.83	0.06	0.00	0.14	0.02		0.02	0.40
hd, final value (s)	7.03	6.49	7.31	7.18	8.03		7.07	6.22
x, final value	1.83	0.12	0.00	0.32	0.04		0.04	0.79
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	4.7	4.2	5.0	4.9	5.7		4.8	3.9

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	936	317	0	410	270		270	576
Delay (s/veh)	396.72	10.08	10.01	13.22	11.10		10.06	28.00
LOS	F	B	B	B	B		B	D
Approach: Delay (s/veh)	370.89		13.22		11.10		27.25	
LOS	F		B		B		D	
Intersection Delay (s/veh)	233.59							
Intersection LOS	F							

AWD = 12.7 SEC = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	DLD	Intersection	U.S. 101 NB/STOWELL
Agency/Co.	ATE	Jurisdiction	SANTA MARIA
Date Performed	8/19/2015	Analysis Year	CUMULATIVE
Analysis Time Period	PM PEAK HOUR		

Project ID

East/West Street: STOWELL ROAD | North/South Street: U.S. 101 NB-NICHOLSON

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	865	78	4	0	131	28
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	13	5	1	6	14	491
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	L	TR	L	TR	LTR		LT	R
PHF	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flow Rate (veh/h)	865	82	0	159	19		20	491
% Heavy Vehicles	4	4	4	4	4		4	4
No. Lanes	2		2		1		2	
Geometry Group	5		5		4b		5	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	1.0	0.0	0.0	0.0	0.7		0.3	0.0
Prop. Right-Turns	0.0	0.0	0.0	0.2	0.1		0.0	1.0
Prop. Heavy Vehicle	0.0	0.0	0.0	0.0	0.0		0.0	0.0
hLT-adj	0.5	0.5	0.5	0.5	0.2	0.2	0.5	0.5
hRT-adj	-0.7	-0.7	-0.7	-0.7	-0.6	-0.6	-0.7	-0.7
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	0.6	0.0	0.1	-0.1	0.2		0.2	-0.6

Departure Headway and Service Time

hd, initial value (s)	3.20	3.20	3.20	3.20	3.20		3.20	3.20
x, initial	0.77	0.07	0.00	0.14	0.02		0.02	0.44
hd, final value (s)	7.16	6.62	7.48	7.35	8.15		7.09	6.24
x, final value	1.72	0.15	0.00	0.32	0.04		0.04	0.85
Move-up time, m (s)	2.3		2.3		2.3		2.3	
Service Time, t_s (s)	4.9	4.3	5.2	5.1	5.8		4.8	3.9

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	865	332	0	409	269		270	575
Delay (s/veh)	350.77	10.50	10.18	13.55	11.21		10.08	34.74
LOS	F	B	B	B	B		B	D
Approach: Delay (s/veh)	321.31		13.55		11.21		33.77	
LOS	F		B		B		D	
Intersection Delay (s/veh)	197.99							
Intersection LOS	F							

HCS+™ Version 5.6 Generated: 8/19/2015 11:26 AM

AWD = 13.0 SEC = LOS B

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	*DLD*	Intersection	*U.S. 101 NB/STOWELL*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*CUMULATIVE+PROJECT*
Analysis Time Period	*PM PEAK HOUR*		

Project ID

East/West Street: *STOWELL ROAD* | North/South Street: *U.S. 101 NB-NICHOLSON*

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*940*	*78*	*4*	*0*	*131*	*28*
%Thrus Left Lane						

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	*13*	*5*	*1*	*6*	*14*	*491*
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	*L*	*TR*	*L*	*TR*	*LTR*		*LT*	*R*
PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*		*1.00*	*1.00*
Flow Rate (veh/h)	*940*	*82*	*0*	*159*	*19*		*20*	*491*
% Heavy Vehicles	*4*	*4*	*4*	*4*	*4*		*4*	*4*
No. Lanes	*2*		*2*		*1*		*2*	
Geometry Group	*5*		*5*		*4b*		*5*	
Duration, T	*0.25*							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	*1.0*	*0.0*	*0.0*	*0.0*	*0.7*		*0.3*	*0.0*
Prop. Right-Turns	*0.0*	*0.0*	*0.0*	*0.2*	*0.1*		*0.0*	*1.0*
Prop. Heavy Vehicle	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*		*0.0*	*0.0*
hLT-adj	*0.5*	*0.5*	*0.5*	*0.5*	*0.2*	*0.2*	*0.5*	*0.5*
hRT-adj	*-0.7*	*-0.7*	*-0.7*	*-0.7*	*-0.6*	*-0.6*	*-0.7*	*-0.7*
hHV-adj	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*	*1.7*
hadj, computed	*0.6*	*0.0*	*0.1*	*-0.1*	*0.2*		*0.2*	*-0.6*

Departure Headway and Service Time

hd, initial value (s)	*3.20*	*3.20*	*3.20*	*3.20*	*3.20*		*3.20*	*3.20*
x, initial	*0.84*	*0.07*	*0.00*	*0.14*	*0.02*		*0.02*	*0.44*
hd, final value (s)	*7.16*	*6.62*	*7.48*	*7.35*	*8.15*		*7.09*	*6.24*
x, final value	*1.87*	*0.15*	*0.00*	*0.32*	*0.04*		*0.04*	*0.85*
Move-up time, m (s)	*2.3*		*2.3*		*2.3*		*2.3*	
Service Time, t_s (s)	*4.9*	*4.3*	*5.2*	*5.1*	*5.8*		*4.8*	*3.9*

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	*940*	*332*	*0*	*409*	*269*		*270*	*575*
Delay (s/veh)	*416.50*	*10.50*	*10.18*	*13.55*	*11.21*		*10.08*	*34.74*
LOS	*F*	*B*	*B*	*B*	*B*		*B*	*D*
Approach: Delay (s/veh)	*383.93*		*13.55*		*11.21*		*33.77*	
LOS	*F*		*B*		*B*		*D*	
Intersection Delay (s/veh)	*240.79*							
Intersection LOS	*F*							

AWD = 13.0 sec = LOS B

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 05 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *US 101 NB-NICHOLSON* WITH PLANNED IMPROVEMENTS (SIGNAL PER CIP)

E/W STREET: *STOWELL*

CONTROL TYPE: *SIGNAL (EAST-WEST SPLIT PHASED)*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**10**	**3**	**6**	**3**	**7**	**832**	**1069**	**359**	**18**	**2**	**310**	**169**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LTR	LT R	L TR	L TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	10				-			
NBT	1	1600	3				0.012 *			
NBR *(a)*	0	0	6				-			
SBL	0	0	3				-			
SBT	1	1600	7				0.006 *			
SBR *(b)*	1	1600	832				0.520			
EBL	0	0	1069				-			
EBT	2	3200	359				0.452 *			
EBR *(c)*	0	0	18				-			
WBL	1	1600	2				0.001			
WBT	1	1600	310				0.299 *			
WBR *(d)*	0	0	169				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.869**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a)*

(b) FREE RT LANE

(c)

(d)

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 06_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***U.S. 101 SB RAMPS - COLUMBIA DRIVE***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	**14**	**232**	**18**	**208**	**98**	**41**	**33**	**19**	**14**	**201**	**78**	**351**
(B)	PROJECT-ADDED:	**0**	**75**	**3**	**0**	**19**	**0**	**0**	**0**	**0**	**83**	**0**	**0**
(C)	CUMULATIVE:	**18**	**218**	**21**	**232**	**130**	**42**	**29**	**22**	**17**	**208**	**73**	**343**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L TT R	EAST BOUND L T TR	WEST BOUND L T R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	14	14	18	18	0.009	0.009	0.011	0.011
NBT	2	3200	232	307	218	293	0.077 *	0.101 *	0.073 *	0.098 *
NBR (a)	0	0	15	17	17	20	-	-	-	-
SBL	1	1600	208	208	232	232	0.130 *	0.130 *	0.145 *	0.145 *
SBT	2	3200	98	117	130	149	0.031	0.037	0.041	0.047
SBR (b)	1	1600	38	38	39	39	0.024	0.024	0.024	0.024
EBL	1	1600	33	33	29	29	0.021 *	0.021 *	0.018 *	0.018 *
EBT	2	3200	19	19	22	22	0.009	0.009	0.011	0.011
EBR (c)	0	0	11	11	13	13	-	-	-	-
WBL	1	1600	201	284	208	291	0.126	0.178	0.130	0.182
WBT	1	1600	78	78	73	73	0.049	0.049	0.046	0.046
WBR (d)	1	1600	312	312	305	305	0.195 *	0.195 *	0.191 *	0.191 *
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.523**	**0.547**	**0.527**	**0.552**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 17%*
(b) 7%
(c) 21%
(d) 11%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 06 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD*

E/W STREET: *US 101 SB RAMPS-COLUMBIA DRIVE*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**90**	**379**	**35**	**330**	**205**	**136**	**54**	**55**	**30**	**398**	**167**	**562**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T R	SOUTH BOUND L TT R	EAST BOUND L T TR	WEST BOUND L T R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	90				0.056			
NBT	2	3200	379				0.123 *			
NBR *(a)*	0	0	15				-			
SBL	1	1600	330				0.206 *			
SBT	2	3200	205				0.064			
SBR *(b)*	1	1600	71				0.044			
EBL	1	1600	54				0.034			
EBT	2	3200	55				0.017 *			
EBR *(c)*	0	0	0				-			
WBL	1	1600	398				0.249 *			
WBT	1	1600	167				0.104			
WBR *(d)*	1	1600	354				0.221			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.695**			
						SCENARIO LEVEL OF SERVICE:	**B**			

NOTES:

RTOR: *(a) 58%*
(b) 48%
(c) 100%
(d) 37%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 06_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***U.S. 101 SB RAMPS - COLUMBIA DRIVE***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	96	290	28	400	357	116	117	97	76	300	114	244
(B)	PROJECT-ADDED:	0	111	24	0	26	0	0	0	0	92	0	0
(C)	CUMULATIVE:	96	311	42	409	390	119	117	99	79	317	112	264

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L TT R	L T TR	L T R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	96	96	96	96	0.060	0.060	0.060	0.060
NBT	2	3200	290	401	311	422	0.097 *	0.137 *	0.107 *	0.147 *
NBR (a)	0	0	20	37	30	47	-	-	-	-
SBL	1	1600	400	400	409	409	0.250 *	0.250 *	0.256 *	0.256 *
SBT	2	3200	357	383	390	416	0.112	0.120	0.122	0.130
SBR (b)	1	1600	90	90	93	93	0.056	0.056	0.058	0.058
EBL	1	1600	117	117	117	117	0.073	0.073	0.073	0.073
EBT	2	3200	97	97	99	99	0.050 *	0.050 *	0.051 *	0.051 *
EBR (c)	0	0	62	62	65	65	-	-	-	-
WBL	1	1600	300	392	317	409	0.188 *	0.245 *	0.198 *	0.256 *
WBT	1	1600	114	114	112	112	0.071	0.071	0.070	0.070
WBR (d)	1	1600	220	220	238	238	0.138	0.138	0.149	0.149
						LOST TIME:	0.100 *	0.100 *	0.100 *	0.100 *
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.685**	**0.782**	**0.712**	**0.810**
						SCENARIO LEVEL OF SERVICE:	**B**	**C**	**C**	**D**

NOTES:

RTOR: *(a) 29%*
(b) 22%
(c) 18%
(d) 10%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 06 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***US 101 SB RAMPS-COLUMBIA DRIVE***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**191**	**540**	**150**	**455**	**607**	**156**	**199**	**219**	**156**	**337**	**156**	**372**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T R	SOUTH BOUND L TT R	EAST BOUND L T TR	WEST BOUND L T R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	191				0.119			
NBT	2	3200	540				0.203 *			
NBR *(a)*	0	0	110				-			
SBL	1	1600	455				0.284 *			
SBT	2	3200	607				0.190			
SBR *(b)*	1	1600	83				0.052			
EBL	1	1600	199				0.124			
EBT	2	3200	219				0.088 *			
EBR *(c)*	0	0	64				-			
WBL	1	1600	337				0.211 *			
WBT	1	1600	156				0.098			
WBR *(d)*	1	1600	223				0.139			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.886**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 27%*
(b) 47%
(c) 59%
(d) 40%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 07_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR 135)*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	41	661	53	45	593	46	79	199	58	104	161	54
(B)	PROJECT-ADDED:	0	0	12	88	1	0	0	40	0	5	26	61
(C)	CUMULATIVE:	65	797	53	55	581	40	64	248	57	120	203	53

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	41	41	65	65	0.026	0.026	0.041	0.041
NBT	3	4800	661	661	797	797	0.148 *	0.150 *	0.176 *	0.179 *
NBR (a)	0	0	49	60	49	60	-	-	-	-
SBL	1	1600	45	133	55	143	0.028 *	0.083 *	0.034 *	0.089 *
SBT	3	4800	593	594	581	582	0.132	0.133	0.129	0.129
SBR (b)	0	0	42	42	37	37	-	-	-	-
EBL	1	1600	79	79	64	64	0.049	0.049	0.040	0.040
EBT	2	3200	199	239	248	288	0.078 *	0.090 *	0.093 *	0.105 *
EBR (c)	0	0	50	50	49	49	-	-	-	-
WBL	1	1600	104	109	120	125	0.065 *	0.068 *	0.075 *	0.078 *
WBT	2	3200	161	187	203	229	0.064	0.088	0.077	0.101
WBR (d)	0	0	45	95	44	95	-	-	-	-
			LOST TIME:				0.100 *	0.100 *	0.100 *	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.419**	**0.491**	**0.478**	**0.551**
			SCENARIO LEVEL OF SERVICE:				A	A	A	A

NOTES:

RTOR: *(a) 8%*
(b) 8%
(c) 14%
(d) 17%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 07 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	124	1272	76	66	824	74	125	442	17	50	745	187

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	124				0.078			
NBT	3	4800	1272				0.278 *			
NBR *(a)*	0	0	62				-			
SBL	1	1600	66				0.041 *			
SBT	3	4800	824				0.185			
SBR *(b)*	0	0	64				-			
EBL	1	1600	125				0.078 *			
EBT	2	3200	442				0.143			
EBR *(c)*	0	0	16				-			
WBL	1	1600	50				0.031			
WBT	2	3200	745				0.275 *			
WBR *(d)*	0	0	135				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.772			
						SCENARIO LEVEL OF SERVICE:	C			

NOTES:

RTOR: *(a) 18%*
(b) 13%
(c) 5%
(d) 28%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 07_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BROADWAY (SR 135)***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	143	1076	126	98	896	99	139	341	79	162	389	100
(B)	PROJECT-ADDED:	0	0	10	103	1	0	0	44	1	8	50	102
(C)	CUMULATIVE:	169	1098	138	115	974	86	148	352	90	152	423	55

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	143	143	169	169	0.089	0.089	0.106	0.106
NBT	3	4800	1076	1076	1098	1098	0.244 *	0.246 *	0.251 *	0.253 *
NBR (a)	0	0	97	105	106	114	-	-	-	-
SBL	1	1600	98	201	115	218	0.061 *	0.126 *	0.072 *	0.136 *
SBT	3	4800	896	897	974	975	0.203	0.203	0.217	0.217
SBR (b)	0	0	78	78	68	68	-	-	-	-
EBL	1	1600	139	139	148	148	0.087 *	0.087 *	0.093 *	0.093 *
EBT	2	3200	341	385	352	396	0.124	0.138	0.130	0.144
EBR (c)	0	0	56	57	64	65	-	-	-	-
WBL	1	1600	162	170	152	160	0.101	0.106	0.095	0.100
WBT	2	3200	389	439	423	473	0.145 *	0.184 *	0.145 *	0.184 *
WBR (d)	0	0	74	149	41	116	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.637**	**0.743**	**0.661**	**0.766**
						SCENARIO LEVEL OF SERVICE:	**B**	**C**	**B**	**C**

NOTES:

RTOR: *(a) 13%*
(b) 21%
(c) 29%
(d) 26%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 07 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	159	1709	142	266	1463	66	314	970	36	25	227	307

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT TR	SOUTH BOUND L TT TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	159				0.099			
NBT	3	4800	1709				0.381 *			
NBR *(a)*	0	0	121				-			
SBL	1	1600	266				0.166 *			
SBT	3	4800	1463				0.319			
SBR *(b)*	0	0	66				-			
EBL	1	1600	314				0.196 *			
EBT	2	3200	970				0.313			
EBR *(c)*	0	0	30				-			
WBL	1	1600	25				0.016			
WBT	2	3200	227				0.158 *			
WBR *(d)*	0	0	279				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**1.001**			
						SCENARIO LEVEL OF SERVICE:	**E**			

NOTES:

RTOR: *(a) 15%*
(b) 0%
(c) 16%
(d) 9%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 07 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* MITIATED WITH SB DUAL LEFTS + EB DUAL LEFTS

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	**159**	**1709**	**142**	**266**	**1463**	**66**	**314**	**970**	**36**	**25**	**227**	**307**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT TR	LL TT TR	LL T TR	L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	159				0.099			
NBT	3	4800	1709				0.381 *			
NBR *(a)*	0	0	121				-			
SBL	2	3200	266				0.083 *			
SBT	3	4800	1463				0.319			
SBR *(b)*	0	0	66				-			
EBL	2	3200	314				0.098			
EBT	2	3200	970				0.313 *			
EBR *(c)*	0	0	30				-			
WBL	1	1600	25				0.016 *			
WBT	2	3200	227				0.158			
WBR *(d)*	0	0	279				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.893**			
						SCENARIO LEVEL OF SERVICE:	D			

NOTES:

RTOR: *(a) 15%*
(b) 0%
(c) 16%
(d) 9%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 08_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	29	336	81	23	290	62	58	304	23	75	278	41
(B)	PROJECT-ADDED:	0	0	6	23	0	0	0	148	0	3	98	12
(C)	CUMULATIVE:	37	336	89	21	320	84	58	359	25	76	296	49

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	29	29	37	37	0.018	0.018	0.023 *	0.023
NBT	2	3200	336	336	336	336	0.128 *	0.129 *	0.130	0.132 *
NBR (a)	0	0	72	77	79	85	-	-	-	-
SBL	1	1600	23	46	21	44	0.014 *	0.029 *	0.013	0.028 *
SBT	2	3200	290	290	320	320	0.106	0.106	0.121 *	0.121
SBR (b)	0	0	49	49	66	66	-	-	-	-
EBL	1	1600	58	58	58	58	0.036	0.036	0.036	0.036
EBT	2	3200	304	452	359	507	0.102 *	0.148 *	0.120 *	0.166 *
EBR (c)	0	0	22	22	24	24	-	-	-	-
WBL	1	1600	75	78	76	79	0.047 *	0.049 *	0.048 *	0.049 *
WBT	2	3200	278	376	296	394	0.097	0.131	0.105	0.138
WBR (d)	0	0	33	42	39	49	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.391**	**0.455**	**0.412**	**0.475**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 11%*
(b) 21%
(c) 4%
(d) 20%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN **REF:** 08 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**45**	**472**	**216**	**180**	**526**	**129**	**44**	**672**	**40**	**109**	**681**	**128**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	45				0.028			
NBT	2	3200	472				0.208 *			
NBR *(a)*	0	0	192				-			
SBL	1	1600	180				0.113 *			
SBT	2	3200	526				0.196			
SBR *(b)*	0	0	102				-			
EBL	1	1600	44				0.028			
EBT	2	3200	672				0.222 *			
EBR *(c)*	0	0	38				-			
WBL	1	1600	109				0.068 *			
WBT	2	3200	681				0.245			
WBR *(d)*	0	0	102				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.711**			
						SCENARIO LEVEL OF SERVICE:	C			

NOTES:

RTOR: *(a) 11%*
(b) 21%
(c) 4%
(d) 20%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 08_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	87	492	92	28	580	121	82	348	81	115	508	31
(B)	PROJECT-ADDED:	0	0	7	19	0	0	0	168	0	6	163	16
(C)	CUMULATIVE:	87	506	103	28	648	89	87	369	92	119	516	37

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	87	87	87	87	0.054 *	0.054 *	0.054 *	0.054 *
NBT	2	3200	492	492	506	506	0.179	0.181	0.187	0.188
NBR (a)	0	0	81	87	91	97	-	-	-	-
SBL	1	1600	28	47	28	47	0.018	0.029	0.018	0.029
SBT	2	3200	580	580	648	648	0.216 *	0.216 *	0.228 *	0.228 *
SBR (b)	0	0	110	110	81	81	-	-	-	-
EBL	1	1600	82	82	87	87	0.051 *	0.051 *	0.054 *	0.054 *
EBT	2	3200	348	516	369	537	0.130	0.183	0.139	0.192
EBR (c)	0	0	68	68	77	77	-	-	-	-
WBL	1	1600	115	121	119	125	0.072	0.076	0.074	0.078
WBT	2	3200	508	671	516	679	0.168 *	0.224 *	0.173 *	0.229 *
WBR (d)	0	0	31	47	37	53	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.589**	**0.645**	**0.609**	**0.665**
					SCENARIO LEVEL OF SERVICE:		A	B	B	B

NOTES:

RTOR: *(a) 12%*
(b) 9%
(c) 16%
(d) 0%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 08 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	102	627	190	260	678	27	251	1176	102	283	582	228

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	102				0.064			
NBT	2	3200	627				0.248 *			
NBR (a)	0	0	167				-			
SBL	1	1600	260				0.163 *			
SBT	2	3200	678				0.220			
SBR (b)	0	0	25				-			
EBL	1	1600	251				0.157			
EBT	2	3200	1176				0.394 *			
EBR (c)	0	0	86				-			
WBL	1	1600	283				0.177 *			
WBT	2	3200	582				0.253			
WBR (d)	0	0	228				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**1.082**			
						SCENARIO LEVEL OF SERVICE:	**F**			

NOTES:

RTOR: *(a) 12%*
(b) 9%
(c) 16%
(d) 0%

Printed: 09/22/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 08 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

MITIGATED WITH NB RT LANE + SB DUAL LT LANES + WB DUAL LT LANES.

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**102**	**627**	**190**	**260**	**678**	**27**	**251**	**1176**	**102**	**283**	**582**	**228**

GEOMETRICS

	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
LANE GEOMETRICS	L TT R	LL T TR	L T TR	LL T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	102				0.064			
NBT	2	3200	627				0.196 *			
NBR *(a)*	1	1600	167				0.104			
SBL	2	3200	260				0.081 *			
SBT	2	3200	678				0.220			
SBR *(b)*	0	0	25				-			
EBL	1	1600	251				0.157			
EBT	2	3200	1176				0.394 *			
EBR *(c)*	0	0	86				-			
WBL	2	3200	283				0.088 *			
WBT	2	3200	582				0.253			
WBR *(d)*	0	0	228				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.859**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 12%*
(b) 9%
(c) 16%
(d) 0%

Printed: 09/23/15

#15041 - ENOS RANCHOS PROJECT REF: 09_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	88	247	31	0	158	75	110	180	71	36	185	4
(B)	PROJECT-ADDED:	77	63	12	29	83	0	0	54	124	8	48	21
(C)	CUMULATIVE:	86	273	31	0	172	82	107	208	106	35	202	4

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	88	165	86	163	0.055 *	0.103 *	0.054 *	0.102 *
NBT	2	3200	247	310	273	336	0.087	0.110	0.095	0.118
NBR (a)	0	0	31	43	31	43	-	-	-	-
SBL	1	1600	0	29	0	29	0.000	0.018	0.000	0.018
SBT	2	3200	158	241	172	255	0.068 *	0.094 *	0.074 *	0.100 *
SBR (b)	0	0	59	59	65	65	-	-	-	-
EBL	1	1600	110	110	107	107	0.069 *	0.069 *	0.067 *	0.067
EBT	2	3200	180	234	208	262	0.077	0.130	0.096	0.149 *
EBR (c)	0	0	67	183	100	216	-	-	-	-
WBL	1	1600	36	44	35	43	0.023	0.028	0.022	0.027 *
WBT	2	3200	185	233	202	250	0.059 *	0.079 *	0.064 *	0.084
WBR (d)	0	0	3	19	3	19	-	-	-	-
			LOST TIME:				0.100 *	0.100 *	0.100 *	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.351**	**0.445**	**0.359**	**0.478**
			SCENARIO LEVEL OF SERVICE:				A	A	A	A

NOTES:

RTOR: *(a) 0%*
(b) 21%
(c) 6%
(d) 25%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 09 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE*

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	280	494	31	35	138	164	217	413	310	38	403	7

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	280				0.175 *			
NBT	2	3200	494				0.164			
NBR (a)	0	0	31				-			
SBL	1	1600	35				0.022			
SBT	2	3200	138				0.084 *			
SBR (b)	0	0	130				-			
EBL	1	1600	217				0.136 *			
EBT	2	3200	413				0.220			
EBR (c)	0	0	291				-			
WBL	1	1600	38				0.024			
WBT	2	3200	403				0.128 *			
WBR (d)	0	0	5				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.623**			
						SCENARIO LEVEL OF SERVICE:	**B**			

NOTES:

RTOR: *(a) 0%*
(b) 21%
(c) 6%
(d) 25%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 09_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	152	426	68	1	308	145	149	213	74	101	411	14
(B)	PROJECT-ADDED:	136	94	3	48	76	0	0	83	112	6	66	38
(C)	CUMULATIVE:	133	474	68	1	400	154	169	236	62	100	436	26

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	152	288	133	269	0.095 *	0.180 *	0.083 *	0.168 *
NBT	2	3200	426	520	474	568	0.152	0.182	0.167	0.197
NBR (a)	0	0	59	62	59	62	-	-	-	-
SBL	1	1600	1	49	1	49	0.001	0.031	0.001	0.031
SBT	2	3200	308	384	400	476	0.135 *	0.159 *	0.166 *	0.190 *
SBR (b)	0	0	125	125	132	132	-	-	-	-
EBL	1	1600	149	149	169	169	0.093 *	0.093 *	0.106 *	0.106 *
EBT	2	3200	213	296	236	319	0.088	0.146	0.092	0.150
EBR (c)	0	0	68	171	57	160	-	-	-	-
WBL	1	1600	101	107	100	106	0.063	0.067	0.063	0.066
WBT	2	3200	411	477	436	502	0.133 *	0.165 *	0.144 *	0.177 *
WBR (d)	0	0	14	52	26	64	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.556**	**0.697**	**0.599**	**0.741**
					SCENARIO LEVEL OF SERVICE:		A	B	A	C

NOTES:

RTOR: *(a) 13%*
(b) 14%
(c) 8%
(d) 0%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 09 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***BATTLES ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	**321**	**457**	**68**	**55**	**476**	**232**	**329**	**460**	**650**	**157**	**589**	**14**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	321				0.201 *			
NBT	2	3200	457				0.161			
NBR *(a)*	0	0	59				-			
SBL	1	1600	55				0.034			
SBT	2	3200	476				0.211 *			
SBR *(b)*	0	0	200				-			
EBL	1	1600	329				0.206			
EBT	2	3200	460				0.331 *			
EBR *(c)*	0	0	598				-			
WBL	1	1600	157				0.098 *			
WBT	2	3200	589				0.188			
WBR *(d)*	0	0	14				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.941**			
						SCENARIO LEVEL OF SERVICE:	**E**			

NOTES:

RTOR: *(a) 13%*
(b) 14%
(c) 8%
(d) 0%

Printed: 09/22/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 09 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE* MITIGATED WITH NB DUAL LT LANES

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	321	457	68	55	476	232	329	460	650	157	589	14

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T TR	SOUTH BOUND L T TR	EAST BOUND L T TR	WEST BOUND L T TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	321				0.100 *			
NBT	2	3200	457				0.161			
NBR (a)	0	0	59				-			
SBL	1	1600	55				0.034			
SBT	2	3200	476				0.211 *			
SBR (b)	0	0	200				-			
EBL	1	1600	329				0.206			
EBT	2	3200	460				0.331 *			
EBR (c)	0	0	598				-			
WBL	1	1600	157				0.098 *			
WBT	2	3200	589				0.188			
WBR (d)	0	0	14				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.840**			
						SCENARIO LEVEL OF SERVICE:	D			

NOTES:

RTOR: *(a) 13%*
(b) 14%
(c) 8%
(d) 0%

Printed: 09/23/15

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*22*	*190*			*212*	*12*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*22*	*190*	*0*	*0*	*212*	*12*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*2*		*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*2*	*0*	*13*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*22*						*15*	
C (m) (veh/h)	*1327*						*879*	
v/c	*0.02*						*0.02*	
95% queue length	*0.05*						*0.05*	
Control Delay (s/veh)	*7.8*						*9.2*	
LOS	*A*						*A*	
Approach Delay (s/veh)	--	--					*9.2*	
Approach LOS	--	--					*A*	

AWD = 8.4 SEC = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING+PROJECT*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*22*	*259*	*27*	*1*	*243*	*12*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*22*	*259*	*27*	*1*	*243*	*12*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*14*	*0*	*20*	*2*	*0*	*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*14*	*0*	*20*	*2*	*0*	*13*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*22*	*1*		*34*			*15*	
C (m) (veh/h)	*1293*	*1288*		*755*			*871*	
v/c	*0.02*	*0.00*		*0.05*			*0.02*	
95% queue length	*0.05*	*0.00*		*0.14*			*0.05*	
Control Delay (s/veh)	*7.8*	*7.8*		*10.0*			*9.2*	
LOS	*A*	*A*		*A*			*A*	
Approach Delay (s/veh)	--	--	*10.0*			*9.2*		
Approach LOS	--	--	*A*			*A*		

AWD = 9.3 sec = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*37*	*203*			*229*	*15*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*37*	*203*	*0*	*0*	*229*	*15*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*2*		*14*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*2*	*0*	*14*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*37*						*16*	
C (m) (veh/h)	*1305*						*859*	
v/c	*0.03*						*0.02*	
95% queue length	*0.09*						*0.06*	
Control Delay (s/veh)	*7.8*						*9.3*	
LOS	*A*						*A*	
Approach Delay (s/veh)	--	--					*9.3*	
Approach LOS	--	--					*A*	

AWD = 8.3 SEC = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*CUMULATIVE+PROJECT*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*37*	*272*	*27*	*1*	*260*	*15*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*37*	*272*	*27*	*1*	*260*	*15*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*14*	*0*	*20*	*2*	*0*	*14*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*14*	*0*	*20*	*2*	*0*	*14*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*37*	*1*		*34*			*16*	
C (m) (veh/h)	*1271*	*1274*		*724*			*858*	
v/c	*0.03*	*0.00*		*0.05*			*0.02*	
95% queue length	*0.09*	*0.00*		*0.15*			*0.06*	
Control Delay (s/veh)	*7.9*	*7.8*		*10.2*			*9.3*	
LOS	*A*	*A*		*B*			*A*	
Approach Delay (s/veh)	--	--	*10.2*			*9.3*		
Approach LOS	--	--	*B*			*A*		

AWD = 9.0 sec = LOS A

TWO-WAY STOP CONTROL SUMMARY

REF #10

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*9/22/2015*	Analysis Year	*BUILDOUT*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*50*	*399*	*30*	*20*	*430*	*20*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*50*	*399*	*30*	*20*	*430*	*20*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*45*	*5*	*10*	*5*	*10*	*20*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*45*	*5*	*10*	*5*	*10*	*20*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*50*	*20*		*60*			*35*	
C (m) (veh/h)	*1093*	*1141*		*430*			*438*	
v/c	*0.05*	*0.02*		*0.14*			*0.08*	
95% queue length	*0.14*	*0.05*		*0.49*			*0.26*	
Control Delay (s/veh)	*8.5*	*8.2*		*14.7*			*13.9*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*14.7*			*13.9*		
Approach LOS	--	--	*B*			*B*		

AWD = 11.9 SEC = LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*80*	*211*			*435*	*7*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*80*	*211*	*0*	*0*	*435*	*7*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*9*		*88*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*9*	*0*	*88*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*80*						*97*	
C (m) (veh/h)	*1100*						*728*	
v/c	*0.07*						*0.13*	
95% queue length	*0.24*						*0.46*	
Control Delay (s/veh)	*8.5*						*10.7*	
LOS	*A*						*B*	
Approach Delay (s/veh)	--	--					*10.7*	
Approach LOS	--	--					*B*	

AWD = 9.7 sec = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*EXISTING+PROJECT*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*80*	*252*	*46*	*10*	*472*	*7*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*80*	*252*	*46*	*10*	*472*	*7*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*20*	*0*	*9*	*9*	*0*	*88*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*20*	*0*	*9*	*9*	*0*	*88*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*80*	*10*		*29*			*97*	
C (m) (veh/h)	*1066*	*1275*		*518*			*745*	
v/c	*0.08*	*0.01*		*0.06*			*0.13*	
95% queue length	*0.24*	*0.02*		*0.18*			*0.45*	
Control Delay (s/veh)	*8.7*	*7.8*		*12.4*			*10.6*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*12.4*			*10.6*		
Approach LOS	--	--	*B*			*B*		

AWD = 10.0 SEC = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*81*	*232*			*470*	*9*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*81*	*232*	*0*	*0*	*470*	*9*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*9*		*88*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*9*	*0*	*88*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*						*LR*	
v (veh/h)	*81*						*97*	
C (m) (veh/h)	*1066*						*703*	
v/c	*0.08*						*0.14*	
95% queue length	*0.25*						*0.48*	
Control Delay (s/veh)	*8.7*						*10.9*	
LOS	*A*						*B*	
Approach Delay (s/veh)	--	--					*10.9*	
Approach LOS	--	--					*B*	

AWD = 9.9 SEC = LOS A

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*CUMULATIVE+PROJECT*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*81*	*273*	*46*	*10*	*507*	*9*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*81*	*273*	*46*	*10*	*507*	*9*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*20*	*0*	*9*	*9*	*0*	*88*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*20*	*0*	*9*	*9*	*0*	*88*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*81*	*10*		*29*			*97*	
C (m) (veh/h)	*1032*	*1252*		*499*			*726*	
v/c	*0.08*	*0.01*		*0.06*			*0.13*	
95% queue length	*0.26*	*0.02*		*0.18*			*0.46*	
Control Delay (s/veh)	*8.8*	*7.9*		*12.7*			*10.7*	
LOS	*A*	*A*		*B*			*B*	
Approach Delay (s/veh)	--	--	*12.7*			*10.7*		
Approach LOS	--	--	*B*			*B*		

AWD = 10.2 sec = LOS B

TWO-WAY STOP CONTROL SUMMARY

Ref # 10

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/SHEPARD*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*9/22/2015*	Analysis Year	*BUILDOUT*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description *ENOS RANCHOS PROJECT (#150041)*

East/West Street: *BATTLES ROAD*	North/South Street: *SHEPARD DRIVE*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*96*	*447*	*50*	*57*	*579*	*15*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*96*	*447*	*50*	*57*	*579*	*15*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*1*	*2*	*0*
Configuration	*L*	*T*	*TR*	*L*	*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*85*	*15*	*25*	*65*	*15*	*115*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*85*	*15*	*25*	*65*	*15*	*115*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration		*LTR*			*LTR*	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*	*L*		*LTR*			*LTR*	
v (veh/h)	*96*	*57*		*125*			*195*	
C (m) (veh/h)	*965*	*1077*		*270*			*389*	
v/c	*0.10*	*0.05*		*0.46*			*0.50*	
95% queue length	*0.33*	*0.17*		*2.50*			*2.93*	
Control Delay (s/veh)	*9.1*	*8.5*		*29.7*			*23.5*	
LOS	*A*	*A*		*D*			*C*	
Approach Delay (s/veh)	--	--	*29.7*			*23.5*		
Approach LOS	--	--	*D*			*C*		

AWD = 20.4 sec = LOS C

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*18*	*96*			*72*	*211*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*18*	*96*	*0*	*0*	*72*	*211*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LT*				*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*185*		*2*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*185*	*0*	*2*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*					*L*		*R*
v (veh/h)	*18*					*185*		*2*
C (m) (veh/h)	*1268*					*769*		*985*
v/c	*0.01*					*0.24*		*0.00*
95% queue length	*0.04*					*0.95*		*0.01*
Control Delay (s/veh)	*7.9*					*11.2*		*8.7*
LOS	*A*					*B*		*A*
Approach Delay (s/veh)	--	--				*11.1*		
Approach LOS	--	--				*B*		

AWD = 10.9 SEC = LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*EXISTING+PROJECT*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description *ENOS RANCHOS PROJECT (#150041)*

East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*46*	*147*			*167*	*227*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*46*	*147*	*0*	*0*	*167*	*227*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*218*		*23*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*218*	*0*	*23*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*46*					*218*		*23*
C (m) (veh/h)	*1147*					*515*		*836*
v/c	*0.04*					*0.42*		*0.03*
95% queue length	*0.13*					*2.17*		*0.08*
Control Delay (s/veh)	*8.3*					*17.1*		*9.4*
LOS	*A*					*C*		*A*
Approach Delay (s/veh)	--	--				*16.4*		
Approach LOS	--	--				*C*		

AWD = 15.1 SEC = LOS C

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*35*	*83*			*115*	*214*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*35*	*83*	*0*	*0*	*115*	*214*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LT*				*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*192*		*7*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*192*	*0*	*7*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*					*L*		*R*
v (veh/h)	*35*					*192*		*7*
C (m) (veh/h)	*1219*					*696*		*932*
v/c	*0.03*					*0.28*		*0.01*
95% queue length	*0.09*					*1.14*		*0.02*
Control Delay (s/veh)	*8.0*					*12.1*		*8.9*
LOS	*A*					*B*		*A*
Approach Delay (s/veh)	--	--				*12.0*		
Approach LOS	--	--				*B*		

AWD = 11.4 Sec = LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*CUMULATIVE+PROJECT*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*63*	*134*			*210*	*230*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*63*	*134*	*0*	*0*	*210*	*230*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*225*		*28*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*225*	*0*	*28*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*63*					*225*		*28*
C (m) (veh/h)	*1102*					*454*		*812*
v/c	*0.06*					*0.50*		*0.03*
95% queue length	*0.18*					*2.88*		*0.11*
Control Delay (s/veh)	*8.5*					*20.7*		*9.6*
LOS	*A*					*C*		*A*
Approach Delay (s/veh)	--	--				*19.4*		
Approach LOS	--	--				*C*		

AWD = 17.2 sec = LOS C

#15041 - ENOS RANCHOS PROJECT REF: 11 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD* WITH ENOS RANCHOS MITIGATIONS (WIDEN AND SIGNALIZE)

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	76	160	0	0	246	408	379	0	38	0	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	T TR	L R	

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	76				0.048 *			
NBT	2	3200	160				0.050			
NBR (a)	0	0	0				-			
SBL	0	0	0				-			
SBT	2	3200	246				0.204 *			
SBR (b)	0	0	408				-			
EBL	1	1600	379				0.237 *			
EBT	0	0	0				-			
EBR (c)	1	1600	38				0.024			
WBL	0	0	0				-			
WBT	0	0	0				-			
WBR (d)	0	0	0				-			
			LOST TIME:				0.100 *			
			TOTAL INTERSECTION CAPACITY UTILIZATION:				0.589			
			SCENARIO LEVEL OF SERVICE:				A			

NOTES:

RTOR: *(a) 0%*
(b) 0%
(c) 0%
(d) 0%

Printed: 09/22/15

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*13*	*198*			*235*	*406*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*13*	*198*	*0*	*0*	*235*	*406*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LT*				*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*202*		*10*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*202*	*0*	*10*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*					*L*		*R*
v (veh/h)	*13*					*202*		*10*
C (m) (veh/h)	*934*					*548*		*799*
v/c	*0.01*					*0.37*		*0.01*
95% queue length	*0.04*					*1.73*		*0.04*
Control Delay (s/veh)	*8.9*					*15.4*		*9.6*
LOS	*A*					*C*		*A*
Approach Delay (s/veh)	--	--				*15.1*		
Approach LOS	--	--				*C*		

AWD = 14.8 sec = LOS B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*EXISTING+PROJECT*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*60*	*312*			*328*	*435*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*60*	*312*	*0*	*0*	*328*	*435*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*228*		*35*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*228*	*0*	*35*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*60*					*228*		*35*
C (m) (veh/h)	*832*					*286*		*657*
v/c	*0.07*					*0.80*		*0.05*
95% queue length	*0.23*					*9.00*		*0.17*
Control Delay (s/veh)	*9.7*					*61.7*		*10.8*
LOS	*A*					*F*		*B*
Approach Delay (s/veh)	--	--				*55.0*		
Approach LOS	--	--				*F*		

Ave 2 35.8 sec LOS E

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BATTLES ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *North-South*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*62*	*223*			*305*	*406*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*62*	*223*	*0*	*0*	*305*	*406*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*1*
Configuration	*LT*				*T*	*R*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*209*		*23*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*209*	*0*	*23*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*					*L*		*R*
v (veh/h)	*62*					*209*		*23*
C (m) (veh/h)	*879*					*399*		*730*
v/c	*0.07*					*0.52*		*0.03*
95% queue length	*0.23*					*3.19*		*0.10*
Control Delay (s/veh)	*9.4*					*23.8*		*10.1*
LOS	*A*					*C*		*B*
Approach Delay (s/veh)	--	--				*22.5*		
Approach LOS	--	--				*C*		

AWD = 19.7 Sec = LOS C

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*MMF*	Intersection	*BATTLES/BRADLEY*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/31/2015*	Analysis Year	*CUMULATIVE+PROJECT*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description *ENOS RANCHOS PROJECT (#150041)*

East/West Street: *BATTLES ROAD* | North/South Street: *BRADLEY ROAD*

Intersection Orientation: *North-South* | Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*109*	*340*			*398*	*435*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*109*	*340*	*0*	*0*	*398*	*435*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*235*		*48*			
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*235*	*0*	*48*	*0*	*0*	*0*
Percent Heavy Vehicles	*4*	*0*	*4*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*1*	*0*	*1*	*0*	*0*	*0*
Configuration	*L*		*R*			

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*					*L*		*R*
v (veh/h)	*109*					*235*		*48*
C (m) (veh/h)	*783*					*202*		*629*
v/c	*0.14*					*1.16*		*0.08*
95% queue length	*0.48*					*28.76*		*0.25*
Control Delay (s/veh)	*10.3*					*412.6*		*11.2*
LOS	*B*					*F*		*B*
Approach Delay (s/veh)	--	--				*344.5*		
Approach LOS	--	--				*F*		

AWD = 7 50 sec = LOS F

#15041 - ENOS RANCHOS PROJECT REF: 11_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***BATTLES ROAD*** *MITIGATED WITH SIGNAL AND LANE RESTRIPING*

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	EXISTING:	13	198	0	0	235	406	202	0	10	0	0	0
(B)	PROJECT-ADDED:	47	117	0	0	93	29	26	0	25	0	0	0
(C)	CUMULATIVE:	62	223	0	0	305	394	209	0	23	0	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	T TR	L R	

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS		# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL		1	1600	13	60	62	109	0.008 *	0.038 *	0.039 *	0.068 *
NBT		2	3200	198	315	223	340	0.062	0.098	0.070	0.106
NBR	*(a)*	0	0	0	0	0	0	-	-	-	-
SBL		0	0	0	0	0	0	-	-	-	-
SBT		2	3200	235	328	305	398	0.200 *	0.238 *	0.218 *	0.257 *
SBR	*(b)*	0	0	406	435	394	423	-	-	-	-
EBL		1	1600	202	228	209	235	0.126 *	0.143 *	0.131 *	0.147 *
EBT		0	0	0	0	0	0	-	-	-	-
EBR	*(c)*	1	1600	10	35	23	48	0.006	0.022	0.014	0.030
WBL		0	0	0	0	0	0	-	-	-	-
WBT		0	0	0	0	0	0	-	-	-	-
WBR	*(d)*	0	0	0	0	0	0	-	-	-	-
				LOST TIME:				0.100 *	0.100 *	0.100 *	0.100 *
				TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.434**	**0.519**	**0.488**	**0.572**
				SCENARIO LEVEL OF SERVICE:				A	A	A	A

NOTES:

RTOR: *(a) 0%*
(b) 0%
(c) 0%
(d) 0%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 11 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD* WITH ENOS RANCHOS MITIGATIONS (WIDEN AND SIGNALIZE)

E/W STREET: *BATTLES ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT	130	405	0	0	416	524	415	0	65	0	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	T TR	L R	

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	130				0.081 *			
NBT	2	3200	405				0.127			
NBR (a)	0	0	0				-			
SBL	0	0	0				-			
SBT	2	3200	416				0.294 *			
SBR (b)	0	0	524				-			
EBL	1	1600	415				0.259 *			
EBT	0	0	0				-			
EBR (c)	1	1600	65				0.041			
WBL	0	0	0				-			
WBT	0	0	0				-			
WBR (d)	0	0	0				-			
			LOST TIME:				0.100 *			
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.734**			
			SCENARIO LEVEL OF SERVICE:				C			

NOTES:

RTOR: *(a) 0%*
(b) 0%
(c) 0%
(d) 0%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 12_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***INGER DRIVE***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	EXISTING:	23	339	9	9	315	45	38	5	55	7	4	37
(B)	PROJECT-ADDED:	0	6	0	0	6	0	0	0	0	0	0	0
(C)	CUMULATIVE:	24	357	9	9	346	46	39	5	57	7	4	37

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T R	WEST BOUND L TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	23	23	24	24	0.014 *	0.014 *	0.015 *	0.015 *
NBT	2	3200	339	345	357	363	0.109	0.111	0.114	0.116
NBR *(a)*	0	0	9	9	9	9	-	-	-	-
SBL	1	1600	9	9	9	9	0.006	0.006	0.006	0.006
SBT	2	3200	315	321	346	352	0.111 *	0.113 *	0.121 *	0.123 *
SBR *(b)*	0	0	41	41	42	42	-	-	-	-
EBL	1	1600	38	38	39	39	0.024 *	0.024 *	0.024 *	0.024 *
EBT	1	1600	5	5	5	5	0.003	0.003	0.003	0.003
EBR *(c)*	1	1600	34	34	35	35	0.021	0.021	0.022	0.022
WBL	1	1600	7	7	7	7	0.004	0.004	0.004	0.004
WBT	1	1600	4	4	4	4	0.015 *	0.015 *	0.015 *	0.015 *
WBR *(d)*	0	0	20	20	20	20	-	-	-	-
		LOST TIME:					0.100 *	0.100 *	0.100 *	0.100 *
		TOTAL INTERSECTION CAPACITY UTILIZATION:					**0.264**	**0.266**	**0.275**	**0.277**
		SCENARIO LEVEL OF SERVICE:					A	A	A	A

NOTES:

RTOR: *(a) 0%*
(b) 9%
(c) 38%
(d) 46%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 12 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *INGER DRIVE*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	23	570	9	9	315	45	38	5	55	7	4	37

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T R	WEST BOUND L TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	23				0.014			
NBT	2	3200	570				0.181 *			
NBR *(a)*	0	0	9				-			
SBL	1	1600	9				0.006 *			
SBT	2	3200	315				0.111			
SBR *(b)*	0	0	41				-			
EBL	1	1600	38				0.024 *			
EBT	1	1600	5				0.003			
EBR *(c)*	1	1600	34				0.021			
WBL	1	1600	7				0.004			
WBT	1	1600	4				0.015 *			
WBR *(d)*	0	0	20				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.326**			
						SCENARIO LEVEL OF SERVICE:	A			

NOTES:

RTOR: *(a) 0%*
(b) 9%
(c) 38%
(d) 46%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 12_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/6/2015*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***INGER DRIVE***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	47	557	22	69	638	22	98	17	100	13	7	40
(B)	PROJECT-ADDED:	0	16	0	0	5	0	0	0	0	0	0	0
(C)	CUMULATIVE:	49	565	22	70	720	24	100	17	102	13	7	40

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	L T R	L TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	47	47	49	49	0.029 *	0.029 *	0.031 *	0.031 *
NBT	2	3200	557	573	565	581	0.181	0.186	0.183	0.188
NBR (a)	0	0	22	22	22	22	-	-	-	-
SBL	1	1600	69	69	70	70	0.043	0.043	0.044	0.044
SBT	2	3200	638	643	720	725	0.206 *	0.208 *	0.233 *	0.234 *
SBR (b)	0	0	22	22	24	24	-	-	-	-
EBL	1	1600	98	98	100	100	0.061 *	0.061 *	0.063 *	0.063 *
EBT	1	1600	17	17	17	17	0.011	0.011	0.011	0.011
EBR (c)	1	1600	59	59	60	60	0.037	0.037	0.038	0.038
WBL	1	1600	13	13	13	13	0.008	0.008	0.008	0.008
WBT	1	1600	7	7	7	7	0.024 *	0.024 *	0.024 *	0.024 *
WBR (d)	0	0	31	31	31	31	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.420**	**0.422**	**0.451**	**0.452**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 0%*
(b) 1%
(c) 41%
(d) 23%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 12 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *INGER DRIVE*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	**47**	**802**	**22**	**22**	**638**	**69**	**98**	**17**	**100**	**13**	**7**	**40**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND L T R	WEST BOUND L TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	47				0.029			
NBT	2	3200	802				0.258 *			
NBR *(a)*	0	0	22				-			
SBL	1	1600	22				0.014 *			
SBT	2	3200	638				0.221			
SBR *(b)*	0	0	68				-			
EBL	1	1600	98				0.061 *			
EBT	1	1600	17				0.011			
EBR *(c)*	1	1600	59				0.037			
WBL	1	1600	13				0.008			
WBT	1	1600	7				0.024 *			
WBR *(d)*	0	0	31				-			
					LOST TIME:		0.100 *			
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.457**			
					SCENARIO LEVEL OF SERVICE:		A			

NOTES:

RTOR: *(a) 0%*
(b) 1%
(c) 41%
(d) 23%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 13_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/16/2013*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) EXISTING:	135	763	144	139	504	89	87	444	65	213	502	134
(B) PROJECT-ADDED:	0	7	45	2	7	6	6	64	0	28	39	0
(C) CUMULATIVE:	204	929	118	153	498	104	91	486	83	200	555	137

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TTT R	SOUTH BOUND LL TT TR	EAST BOUND L TT R	WEST BOUND L TT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	135	135	204	204	0.084 *	0.084 *	0.128 *	0.128 *
NBT	3	4800	763	770	929	936	0.159	0.160	0.194	0.195
NBR *(a)*	1	1600	73	96	60	83	0.046	0.060	0.038	0.052
SBL	2	3200	139	141	153	155	0.043	0.044	0.048	0.048
SBT	3	4800	504	511	498	505	0.119 *	0.121 *	0.120 *	0.123 *
SBR *(b)*	0	0	67	71	78	83	-	-	-	-
EBL	1	1600	87	93	91	97	0.054	0.058	0.057	0.061
EBT	2	3200	444	508	486	550	0.139 *	0.159 *	0.152 *	0.172 *
EBR *(c)*	1	1600	25	25	32	32	0.016	0.016	0.020	0.020
WBL	1	1600	213	241	200	228	0.133 *	0.151 *	0.125 *	0.143 *
WBT	2	3200	502	541	555	594	0.157	0.169	0.173	0.186
WBR *(d)*	1	1600	51	51	52	52	0.032	0.032	0.033	0.033
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.575**	**0.615**	**0.625**	**0.666**
					SCENARIO LEVEL OF SERVICE:		**A**	**B**	**B**	**B**

NOTES:

RTOR: *(a) 49%*
(b) 25%
(c) 62%
(d) 62%

Printed 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 13 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* WITH CIRCULATION ELEMENT + CIP IMPROVEMENTS

E/W STREET: *BETTERAVIA ROAD* (6 LANE BETTERAVIA + NB DUAL LT LANES)

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	386	2129	24	159	1135	400	311	515	84	97	1587	193

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TTT R	SOUTH BOUND LL TT TR	EAST BOUND L TT TR	WEST BOUND L TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	386				0.121			
NBT	3	4800	2129				0.444 *			
NBR *(a)*	1	1600	13				0.008			
SBL	2	3200	159				0.050 *			
SBT	3	4800	1135				0.311			
SBR *(b)*	0	0	356				-			
EBL	1	1600	311				0.194 *			
EBT	3	4800	515				0.116			
EBR *(c)*	0	0	40				-			
WBL	1	1600	97				0.061			
WBT	3	4800	1587				0.353 *			
WBR *(d)*	0	0	108				-			
			LOST TIME:				0.100 *			
			TOTAL INTERSECTION CAPACITY UTILIZATION:				1.141			
			SCENARIO LEVEL OF SERVICE:				F			

NOTES:

RTOR: *(a) 44%*

(b) 11%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 13 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* MITIGATED WITH EB DUAL LEFTS + EB RT LANE + WB DUAL LEFTS + WB RT LANE

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	386	2129	24	159	1135	400	311	515	84	97	1587	193

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TTT R	SOUTH BOUND LL TT TR	EAST BOUND L TT TR	WEST BOUND L TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1		2		3		4	
NBL	2	3200	386				0.121							
NBT	3	4800	2129				0.444	*						
NBR *(a)*	1	1600	13				0.008							
SBL	2	3200	159				0.050	*						
SBT	3	4800	1135				0.236							
SBR *(b)*	1	1600	356				0.223							
EBL	2	3200	311				0.097	*						
EBT	3	4800	515				0.107							
EBR *(c)*	1	1600	40				0.025							
WBL	2	3200	97				0.030							
WBT	3	4800	1587				0.331	*						
WBR *(d)*	1	1600	108				0.068							
						LOST TIME:	0.100	*						
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**1.022**							
						SCENARIO LEVEL OF SERVICE:	**F**							

NOTES:

RTOR: (a) 44%

(b) 11%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 13_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/16/2013*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BROADWAY (SR135)***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	**153**	**926**	**246**	**330**	**803**	**78**	**233**	**628**	**109**	**276**	**581**	**328**
(B)	PROJECT-ADDED:	**0**	**8**	**51**	**2**	**4**	**4**	**5**	**77**	**0**	**59**	**81**	**0**
(C)	CUMULATIVE:	**202**	**904**	**233**	**360**	**860**	**85**	**257**	**685**	**173**	**266**	**641**	**345**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TTT R	LL TT TR	L TT R	L TT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	153	153	202	202	0.096	0.096	0.126 *	0.126 *
NBT	3	4800	926	934	904	912	0.193 *	0.195 *	0.188	0.190
NBR *(a)*	1	1600	101	122	96	116	0.063	0.076	0.060	0.073
SBL	2	3200	330	332	360	362	0.103 *	0.104 *	0.113	0.113
SBT	3	4800	803	807	860	864	0.181	0.183	0.194 *	0.196 *
SBR *(b)*	0	0	66	70	72	76	-	-	-	-
EBL	1	1600	233	238	257	262	0.146	0.149	0.161	0.164
EBT	2	3200	628	705	685	762	0.196 *	0.220 *	0.214 *	0.238 *
EBR *(c)*	1	1600	47	47	74	74	0.029	0.029	0.046	0.046
WBL	1	1600	276	335	266	325	0.173 *	0.209 *	0.166 *	0.203 *
WBT	2	3200	581	662	641	722	0.182	0.207	0.200	0.226
WBR *(d)*	1	1600	197	197	207	207	0.123	0.123	0.129	0.129
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.765**	**0.828**	**0.800**	**0.863**
					SCENARIO LEVEL OF SERVICE:		**C**	**D**	**C**	**D**

NOTES:

RTOR: *(a) 59%*
(b) 15%
(c) 57%
(d) 40%

Printed 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 13 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* WITH CIRCULATION ELEMENT + CIP IMPROVEMENTS

E/W STREET: *BETTERAVIA ROAD* (6 LANE BETTERAVIA + NB DUAL LT LANES)

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	**372**	**1160**	**183**	**204**	**1231**	**75**	**343**	**1597**	**124**	**230**	**945**	**328**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TTT R	SOUTH BOUND LL TT TR	EAST BOUND L TT TR	WEST BOUND L TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	372				0.116 *			
NBT	3	4800	1160				0.242			
NBR *(a)*	1	1600	97				0.061			
SBL	2	3200	204				0.064			
SBT	3	4800	1231				0.270 *			
SBR *(b)*	0	0	63				-			
EBL	1	1600	343				0.214 *			
EBT	3	4800	1597				0.359			
EBR *(c)*	0	0	124				-			
WBL	1	1600	230				0.144			
WBT	3	4800	945				0.265 *			
WBR *(d)*	0	0	328				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.965**			
						SCENARIO LEVEL OF SERVICE:	E			

NOTES:

RTOR: (a) 47%

(b) 16%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 13 PM M

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BROADWAY (SR135)* MITIGATED WITH EB DUAL LEFTS + EB RT LANE + WB DUAL LEFTS + WB RT LANE

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	372	1160	183	204	1231	75	343	1597	124	230	945	328

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TTT R	SOUTH BOUND LL TT TR	EAST BOUND LL TTR R	WEST BOUND LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	372				0.116 *			
NBT	3	4800	1160				0.242			
NBR (a)	1	1600	97				0.061			
SBL	2	3200	204				0.064			
SBT	3	4800	1231				0.256 *			
SBR (b)	1	1600	63				0.039			
EBL	2	3200	343				0.107			
EBT	3	4800	1597				0.333 *			
EBR (c)	1	1600	124				0.078			
WBL	2	3200	230				0.072 *			
WBT	3	4800	945				0.197			
WBR (d)	1	1600	328				0.205			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.877**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: (a) 47%

(b) 16%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 14_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	40	264	69	99	257	51	34	522	39	116	735	120
(B)	PROJECT-ADDED:	0	6	46	0	6	0	0	113	0	29	71	0
(C)	CUMULATIVE:	49	272	72	98	318	24	35	568	40	122	812	130

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L T TR	L TT TR	LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	40	40	49	49	0.025	0.025	0.031	0.031
NBT	2	3200	264	270	272	278	0.083 *	0.084 *	0.085 *	0.087 *
NBR (a)	1	1600	50	83	52	85	0.031	0.052	0.033	0.053
SBL	1	1600	99	99	98	98	0.062 *	0.062 *	0.061 *	0.061 *
SBT	2	3200	257	263	318	324	0.094	0.096	0.106	0.108
SBR (b)	0	0	45	45	21	21	-	-	-	-
EBL	1	1600	34	34	35	35	0.021 *	0.021 *	0.022 *	0.022 *
EBT	3	4800	522	635	568	681	0.116	0.139	0.125	0.149
EBR (c)	0	0	33	33	34	34	-	-	-	-
WBL	2	3200	116	145	122	151	0.036	0.045	0.038	0.047
WBT	3	4800	735	806	812	883	0.178 *	0.193 *	0.196 *	0.211 *
WBR (d)	0	0	119	119	129	129	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.444**	**0.460**	**0.464**	**0.481**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 28%*
(b) 12%
(c) 15%
(d) 1%

Printed 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 14 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	91	467	84	19	292	216	38	553	43	117	1548	118

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L T TR	L TT TR	LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	91				0.057 *			
NBT	2	3200	467				0.146			
NBR (a)	1	1600	33				0.021			
SBL	1	1600	19				0.012			
SBT	2	3200	292				0.133 *			
SBR (b)	0	0	132				-			
EBL	1	1600	38				0.024 *			
EBT	3	4800	553				0.122			
EBR (c)	0	0	31				-			
WBL	2	3200	117				0.037			
WBT	3	4800	1548				0.342 *			
WBR (d)	0	0	94				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.656**			
						SCENARIO LEVEL OF SERVICE:	**B**			

NOTES:

RTOR: *(a) 61%*
(b) 39%
(c) 27%
(d) 20%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 14_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***MILLER STREET***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	111	356	137	194	532	82	129	956	73	169	927	219
(B)	PROJECT-ADDED:	0	7	49	0	3	2	9	134	0	60	142	0
(C)	CUMULATIVE:	122	374	129	208	583	101	126	1044	77	187	983	214

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L T TR	L TT TR	LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	111	111	122	122	0.069 *	0.069 *	0.076 *	0.076 *
NBT	2	3200	356	363	374	381	0.111	0.113	0.117	0.119
NBR (a)	1	1600	105	143	99	137	0.066	0.089	0.062	0.086
SBL	1	1600	194	194	208	208	0.121	0.121	0.130	0.130
SBT	2	3200	532	535	583	586	0.190 *	0.192 *	0.212 *	0.213 *
SBR (b)	0	0	77	79	95	97	-	-	-	-
EBL	1	1600	129	138	126	135	0.081 *	0.086 *	0.079 *	0.084 *
EBT	3	4800	956	1090	1044	1178	0.214	0.242	0.233	0.261
EBR (c)	0	0	71	71	75	75	-	-	-	-
WBL	2	3200	169	229	187	247	0.053	0.072	0.058	0.077
WBT	3	4800	927	1069	983	1125	0.238 *	0.268 *	0.249 *	0.278 *
WBR (d)	0	0	215	215	210	210	-	-	-	-
			LOST TIME:				0.100 *	0.100 *	0.100 *	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.678**	**0.715**	**0.716**	**0.751**
			SCENARIO LEVEL OF SERVICE:				**B**	**C**	**C**	**C**

NOTES:

RTOR: *(a) 23%*
(b) 6%
(c) 3%
(d) 2%

Printed 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 14 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	199	633	231	227	845	96	65	1790	193	227	980	305

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L T TR	L TT TR	LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	199				0.124 *			
NBT	2	3200	633				0.198			
NBR (a)	1	1600	76				0.048			
SBL	1	1600	227				0.142			
SBT	2	3200	845				0.285 *			
SBR (b)	0	0	68				-			
EBL	1	1600	65				0.041			
EBT	3	4800	1790				0.397 *			
EBR (c)	0	0	116				-			
WBL	2	3200	227				0.071 *			
WBT	3	4800	980				0.259			
WBR (d)	0	0	262				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.977**			
						SCENARIO LEVEL OF SERVICE:	E			

NOTES:

RTOR: *(a) 67%*
(b) 29%
(c) 40%
(d) 14%

Printed: 09/22/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 14 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *MILLER STREET*

MITIGATED WITH NB DUAL LEFTS + EB RT LANE

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	199	633	231	227	845	96	65	1790	193	227	980	305

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	LL TT R	L T TR	L TTT R	LL TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	199				0.062 *			
NBT	2	3200	633				0.198			
NBR (a)	1	1600	76				0.048			
SBL	1	1600	227				0.142			
SBT	2	3200	845				0.285 *			
SBR (b)	0	0	68				-			
EBL	1	1600	65				0.041			
EBT	3	4800	1790				0.373 *			
EBR (c)	1	1600	116				0.073			
WBL	2	3200	227				0.071 *			
WBT	3	4800	980				0.259			
WBR (d)	0	0	262				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.891			
						SCENARIO LEVEL OF SERVICE:	D			

NOTES:

RTOR: *(a) 67%*
(b) 29%
(c) 40%
(d) 14%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 15_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	**52**	**186**	**102**	**44**	**140**	**59**	**67**	**560**	**35**	**135**	**931**	**67**
(B)	PROJECT-ADDED:	**0**	**51**	**52**	**0**	**35**	**47**	**69**	**94**	**0**	**42**	**57**	**29**
(C)	CUMULATIVE:	**60**	**202**	**99**	**75**	**150**	**65**	**67**	**604**	**37**	**131**	**1008**	**74**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	L TTT R	L TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	52	52	60	60	0.033	0.033	0.038	0.038
NBT	2	3200	186	237	202	253	0.085 *	0.114 *	0.089 *	0.119 *
NBR *(a)*	0	0	86	129	83	127	-	-	-	-
SBL	1	1600	44	44	75	75	0.028 *	0.028 *	0.047 *	0.047 *
SBT	2	3200	140	175	150	185	0.059	0.083	0.064	0.088
SBR *(b)*	0	0	50	90	55	95	-	-	-	-
EBL	1	1600	67	136	67	136	0.042 *	0.085 *	0.042 *	0.085 *
EBT	3	4800	560	654	604	698	0.117	0.136	0.126	0.145
EBR *(c)*	1	1600	35	35	37	37	0.022	0.022	0.023	0.023
WBL	1	1600	135	177	131	173	0.084	0.111	0.082	0.108
WBT	3	4800	931	988	1008	1065	0.205 *	0.222 *	0.223 *	0.239 *
WBR *(d)*	0	0	54	78	60	83	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.460**	**0.549**	**0.501**	**0.590**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 16%*
(b) 15%
(c) 0%
(d) 19%

Printed 08/31/15

#09077 - AREA 9 SPECIFIC PLAN REF: 15 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE* WITH PLANNED IMPROVEMENTS

E/W STREET: *BETTERAVIA ROAD* (BUILDOUT LANE GEOMETRY IDENTIFIED FOR ENOS RANCHOS)

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	**44**	**516**	**6**	**175**	**171**	**120**	**211**	**399**	**10**	**176**	**1683**	**239**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND LL TTT R	WEST BOUND L TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	44				0.028			
NBT	2	3200	516				0.162 *			
NBR *(a)*	0	0	2				-			
SBL	1	1600	175				0.109 *			
SBT	2	3200	171				0.058			
SBR *(b)*	0	0	14				-			
EBL	2	3200	211				0.066 *			
EBT	3	4800	399				0.083			
EBR *(c)*	1	1600	9				0.006			
WBL	1	1600	176				0.110			
WBT	3	4800	1683				0.351 *			
WBR *(d)*	1	1600	234				0.146			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.788**			
						SCENARIO LEVEL OF SERVICE:	C			

NOTES:

RTOR: *(a) 66%*
(b) 82%
(c) 6%
(d) 2%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 15_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***COLLEGE DRIVE***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	97	272	96	75	340	78	132	1111	77	151	869	145
(B)	PROJECT-ADDED:	0	59	58	0	28	47	90	104	0	96	159	10
(C)	CUMULATIVE:	94	314	93	115	377	79	138	1215	74	177	941	151

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	L TTT R	L TT TR

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	97	97	94	94	0.061 *	0.061 *	0.059	0.059
NBT	2	3200	272	331	314	373	0.104	0.133	0.116 *	0.146 *
NBR (a)	0	0	60	95	58	94	-	-	-	-
SBL	1	1600	75	75	115	115	0.047	0.047	0.072 *	0.072 *
SBT	2	3200	340	368	377	405	0.118 *	0.133 *	0.129	0.145
SBR (b)	0	0	36	58	36	58	-	-	-	-
EBL	1	1600	132	222	138	228	0.083	0.139	0.086	0.143
EBT	3	4800	1111	1215	1215	1319	0.231 *	0.253 *	0.253 *	0.275 *
EBR (c)	1	1600	74	74	71	71	0.046	0.046	0.044	0.044
WBL	1	1600	151	247	177	273	0.094 *	0.154 *	0.111 *	0.171 *
WBT	3	4800	869	1028	941	1100	0.211	0.246	0.227	0.262
WBR (d)	0	0	144	153	149	159	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
							0.604	**0.701**	**0.652**	**0.764**
							A	**B**	**B**	**C**

NOTES:

RTOR: *(a) 38%*
(b) 54%
(c) 4%
(d) 1%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 15 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE* WITH PLANNED IMPROVEMENTS

E/W STREET: *BETTERAVIA ROAD* (BUILDOUT LANE GEOMETRY IDENTIFIED FOR ENOS RANCHOS)

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	160	649	22	215	845	279	321	1947	79	181	1082	417

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L T TR	L T TR	LL TTT R	L TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	160				0.100			
NBT	2	3200	649				0.205 *			
NBR (a)	0	0	7				-			
SBL	1	1600	215				0.134 *			
SBT	2	3200	845				0.274			
SBR (b)	0	0	33				-			
EBL	2	3200	321				0.100			
EBT	3	4800	1947				0.406 *			
EBR (c)	1	1600	74				0.046			
WBL	1	1600	181				0.113 *			
WBT	3	4800	1082				0.225			
WBR (d)	1	1600	409				0.256			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.958**			
						SCENARIO LEVEL OF SERVICE:	E			

NOTES:

RTOR: *(a) 66%*
(b) 82%
(c) 6%
(d) 2%

Printed: 09/21/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 15 PM MIT

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *COLLEGE DRIVE* MITIGATED WITH DUAL LEFTS + SEPARATE RIGHTS ON ALL APPROACHES

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	160	649	22	215	845	279	321	1947	79	181	1082	417

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL TT R	SOUTH BOUND LL TT R	EAST BOUND LL TTT R	WEST BOUND L TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	160				0.050			
NBT	2	3200	649				0.203 *			
NBR (a)	1	1600	7				0.004			
SBL	2	3200	215				0.067 *			
SBT	2	3200	845				0.264			
SBR (b)	1	1600	33				0.021			
EBL	2	3200	321				0.100			
EBT	3	4800	1947				0.406 *			
EBR (c)	1	1600	74				0.046			
WBL	2	3200	181				0.057 *			
WBT	3	4800	1082				0.225			
WBR (d)	1	1600	409				0.256			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.833**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 66%*
(b) 82%
(c) 6%
(d) 2%

Printed: 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 16_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* EXISTING CONDITIONS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) EXISTING:	**111**	**0**	**200**	**0**	**0**	**0**	**1**	**628**	**76**	**233**	**1025**	**0**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL R	SOUTH BOUND	EAST BOUND L TT TR	WEST BOUND LL TTT

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	2	3200	111	0.035
NBT	0	0	0	-
NBR (a)	1	1600	130	0.081 *
SBL	0	0	0	-
SBT	0	0	0	-
SBR	0	0	0	-
EBL	1	1600	1	0.001
EBT	3	4800	628	0.147 *
EBR (b)	0	0	76	-
WBL	2	3200	233	0.073 *
WBT	3	4800	1025	0.214
WBR	0	0	0	-
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.401**
			SCENARIO LEVEL OF SERVICE:	A

NOTES:

RTOR: (a) 35%

(b) 0%

Printed: 08/31/15

#15041 - ENOS RANCHOS PROJECT REF: 16_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* PROJECT SPECIFIC ANALYSIS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	111	0	200	0	0	0	1	628	76	233	1025	0
(B)	PROJECT-ADDED:	14	155	-29	98	116	152	188	-39	0	-22	-34	107

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 2	
NBL	1	1600	125	0.078	*
NBT	2	3200	155	0.048	
NBR (a)	1	1600	111	0.069	
SBL	1	1600	98	0.061	
SBT	2	3200	116	0.036	*
SBR	1	1600	152	0.095	
EBL	1	1600	189	0.118	*
EBT	3	4800	589	0.139	
EBR (b)	0	0	76	-	
WBL	2	3200	211	0.066	
WBT	3	4800	991	0.206	*
WBR	1	1600	107	0.067	
			LOST TIME:	0.100	*
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.538**	
			SCENARIO LEVEL OF SERVICE:	A	

NOTES:

RTOR: (a) 35%

(b) 0%

Printed: 09/02/15

#15041 - ENOS RANCHOS PROJECT REF: 16_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* CUMULATIVE CONDITIONS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUMULATIVE	**125**	**0**	**209**	**0**	**0**	**0**	**1**	**679**	**94**	**233**	**1090**	**0**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL R	SOUTH BOUND	EAST BOUND L TT TR	WEST BOUND LL TTT

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	2	3200	125	0.039
NBT	0	0	0	-
NBR (a)	1	1600	136	0.085 *
SBL	0	0	0	-
SBT	0	0	0	-
SBR	0	0	0	-
EBL	1	1600	1	0.001
EBT	3	4800	679	0.161 *
EBR (b)	0	0	94	-
WBL	2	3200	233	0.073 *
WBT	3	4800	1090	0.227
WBR	0	0	0	-
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.419**
			SCENARIO LEVEL OF SERVICE:	A

NOTES:

RTOR: (a) 35%

(b) 0%

Printed: 09/04/15

#15041 - ENOS RANCHOS PROJECT REF: 16_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* CUMULATIVE + PROJECT ANALYSIS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	CUMULATIVE:	125	0	209	0	0	0	1	679	94	233	1090	0
(B)	PROJECT-ADDED:	14	159	-33	98	122	170	194	-45	0	-28	-52	113

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L TT R	L TT TR	LL TTT R

TRAFFIC SCENARIOS

SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 4					
NBL	1	1600	139	0.087	*				
NBT	2	3200	159	0.050					
NBR (a)	1	1600	114	0.071					
SBL	1	1600	98	0.061					
SBT	2	3200	122	0.038	*				
SBR	1	1600	170	0.106					
EBL	1	1600	195	0.122	*				
EBT	3	4800	634	0.152					
EBR (b)	0	0	94	-					
WBL	2	3200	205	0.064					
WBT	3	4800	1038	0.216	*				
WBR	1	1600	113	0.071					
			LOST TIME:	0.100	*				
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.563**					
			SCENARIO LEVEL OF SERVICE:	A					

NOTES:

RTOR: (a) 35%

(b) 0%

Printed: 09/02/15

#15041 - ENOS RANCHOS PROJECT REF: 16_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* CUMULATIVE + PROJECT ANALYSIS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL* *MITIGATED WITH OPTION ~~3~~ 2*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	CUMULATIVE:	**125**	**0**	**209**	**0**	**0**	**0**	**1**	**679**	**94**	**233**	**1090**	**0**
(B)	PROJECT-ADDED:	**14**	**159**	**-33**	**98**	**122**	**170**	**194**	**-45**	**0**	**-28**	**-52**	**113**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 4	
NBL	2	3200	139	0.043	
NBT	1	1600	159	0.099	*
NBR (a)	1	1600	114	0.071	
SBL	1	1600	98	0.061	*
SBT	2	3200	122	0.038	
SBR	1	1600	170	0.106	
EBL	1	1600	195	0.122	*
EBT	3	4800	634	0.152	
EBR (b)	0	0	94	-	
WBL	2	3200	205	0.064	
WBT	3	4800	1038	0.216	*
WBR	1	1600	113	0.071	
			LOST TIME:	0.100	*
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.598**	
			SCENARIO LEVEL OF SERVICE:	A	

NOTES:

RTOR: *(a) 35%*

(b) 0%

Printed: 09/08/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 16 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD* WITH ENOS RANCHO MITIGATION LANE GEOMETRY

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	212	216	32	48	130	165	311	246	170	236	1895	163

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	212				0.066			
NBT	1	1600	216				0.135 *			
NBR (a)	1	1600	6				0.004			
SBL	1	1600	48				0.030 *			
SBT	2	3200	130				0.041			
SBR (b)	1	1600	124				0.078			
EBL	1	1600	311				0.194 *			
EBT	3	4800	246				0.076			
EBR (c)	0	0	119				-			
WBL	2	3200	236				0.074			
WBT	3	4800	1895				0.395 *			
WBR (d)	1	1600	49				0.031			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.854**			
						SCENARIO LEVEL OF SERVICE:	D			

NOTES:

RTOR: *(a) 80%*
(b) 25%
(c) 30%
(d) 30%

Printed: 09/22/15

#15041 - ENOS RANCHOS PROJECT REF: 16_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD (WEST)*** EXISTING CONDITIONS

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) EXISTING:	289	0	424	0	0	0	0	1129	273	423	1257	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL R	SOUTH BOUND	EAST BOUND L TT TR	WEST BOUND LL TTT

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	2	3200	289	0.090
NBT	0	0	0	-
NBR (a)	1	1600	187	0.117 *
SBL	0	0	0	-
SBT	0	0	0	-
SBR	0	0	0	-
EBL	1	1600	0	0.000
EBT	3	4800	1129	0.284 *
EBR (b)	0	0	232	-
WBL	2	3200	423	0.132 *
WBT	3	4800	1257	0.262
WBR	0	0	0	-
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.633**
			SCENARIO LEVEL OF SERVICE:	**B**

NOTES:

RTOR: (a) 56%

(b) 15%

Printed: 08/31/15

#15041 - ENOS RANCHOS PROJECT REF: 16_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* PROJECT SPECIFIC ANALYSIS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	289	0	424	0	0	0	0	1129	273	423	1257	0
(B) PROJECT-ADDED:	18	193	-55	184	226	378	261	-97	0	-56	-141	153

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT R	L TT R	L TT TR	LL TTT R

TRAFFIC SCENARIOS

SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 2	SCENARIO V/C RATIOS 2				
NBL	1	1600	307	0.192 *				
NBT	2	3200	193	0.060				
NBR (a)	1	1600	162	0.101				
SBL	1	1600	184	0.115				
SBT	2	3200	226	0.071 *				
SBR	1	1600	378	0.236				
EBL	1	1600	261	0.163 *				
EBT	3	4800	1032	0.263				
EBR (b)	0	0	232	-				
WBL	2	3200	367	0.115				
WBT	3	4800	1116	0.233 *				
WBR	1	1600	153	0.096				
			LOST TIME:	0.100 *				
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.759**				
			SCENARIO LEVEL OF SERVICE:	C				

NOTES:

RTOR: (a) 56%

(b) 15%

Printed: 09/02/15

#15041 - ENOS RANCHOS PROJECT REF: 16_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* CUMULATIVE CONDITIONS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUMULATIVE	281	0	462	0	0	0	0	1235	308	422	1355	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL R	SOUTH BOUND	EAST BOUND L TT TR	WEST BOUND LL TTT

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	2	3200	281	0.088
NBT	0	0	0	-
NBR (a)	1	1600	203	0.127 *
SBL	0	0	0	-
SBT	0	0	0	-
SBR	0	0	0	-
EBL	1	1600	0	0.000
EBT	3	4800	1235	0.312 *
EBR (b)	0	0	262	-
WBL	2	3200	422	0.132 *
WBT	3	4800	1355	0.282
WBR	0	0	0	-
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.671**
			SCENARIO LEVEL OF SERVICE:	**B**

NOTES:

RTOR: (a) 56%

(b) 15%

Printed: 08/31/15

#15041 - ENOS RANCHOS PROJECT REF: 16_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD (WEST)*** CUMULATIVE + PROJECT ANALYSIS

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	CUMULATIVE:	281	0	462	0	0	0	0	1235	308	422	1355	0
(B)	PROJECT-ADDED:	18	194	-56	184	242	431	263	-99	0	-72	-194	202

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L TT R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 4				
NBL	1	1600	299	0.187	*			
NBT	2	3200	194	0.061				
NBR (a)	1	1600	179	0.112				
SBL	1	1600	184	0.115				
SBT	2	3200	242	0.076	*			
SBR	1	1600	431	0.269				
EBL	1	1600	263	0.164	*			
EBT	3	4800	1136	0.291				
EBR (b)	0	0	262	-				
WBL	2	3200	350	0.109				
WBT	3	4800	1161	0.242	*			
WBR	1	1600	202	0.126				
			LOST TIME:	0.100	*			
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.769**				
			SCENARIO LEVEL OF SERVICE:	C				

NOTES:

RTOR: (a) 56%

(b) 15%

Printed: 09/02/15

#15041 - ENOS RANCHOS PROJECT REF: 16_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD (WEST)* CUMULATIVE + PROJECT ANALYSIS

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL* *MITIGATED WITH OPTION 2*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	CUMULATIVE:	281	0	462	0	0	0	0	1235	308	422	1355	0
(B)	PROJECT-ADDED:	18	194	-56	184	242	431	263	-99	0	-72	-194	202

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 4		SCENARIO V/C RATIOS 4				
NBL	2	3200	299		0.093				
NBT	1	1600	194		0.121 *				
NBR (a)	1	1600	179		0.112				
SBL	1	1600	184		0.115 *				
SBT	2	3200	242		0.076				
SBR	1	1600	431		0.269				
EBL	1	1600	263		0.164 *				
EBT	3	4800	1136		0.291				
EBR (b)	0	0	262		-				
WBL	2	3200	350		0.109				
WBT	3	4800	1161		0.242 *				
WBR	1	1600	202		0.126				
			LOST TIME:		0.100 *				
			TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.742**				
			SCENARIO LEVEL OF SERVICE:		C				

NOTES:

RTOR: *(a) 56%*

(b) 15%

Printed: 09/08/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 16 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD* WITH ENOS RANCHOS MITIGATED LANE GEOMETRY

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	169	348	192	271	166	378	379	1413	259	373	1143	396

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	169				0.053			
NBT	1	1600	348				0.218 *			
NBR (a)	1	1600	84				0.053			
SBL	1	1600	271				0.169 *			
SBT	2	3200	166				0.052			
SBR (b)	1	1600	321				0.201			
EBL	1	1600	379				0.237 *			
EBT	3	4800	1413				0.332			
EBR (c)	0	0	181				-			
WBL	2	3200	373				0.117			
WBT	3	4800	1143				0.238 *			
WBR (d)	1	1600	277				0.173			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.962			
						SCENARIO LEVEL OF SERVICE:	E			

NOTES:

RTOR: *(a) 56%*
(b) 15%
(c) 30%
(d) 30%

Printed: 09/22/15

#15041 - ENOS RANCHOS SPECIFIC PLAN

REF: 16 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

MITIGATED WITH ENOS RANCHOS MITIGATED LANE GEOMETRY AND EB DUAL LEFTS + EB RT LANE

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	169	348	192	271	166	378	379	1413	259	373	1143	396

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND LL T R	SOUTH BOUND L TT R	EAST BOUND L TT TR	WEST BOUND LL TTT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	169				0.053			
NBT	1	1600	348				0.218 *			
NBR (a)	1	1600	84				0.053			
SBL	1	1600	271				0.169 *			
SBT	2	3200	166				0.052			
SBR (b)	1	1600	321				0.201			
EBL	2	3200	379				0.118			
EBT	3	4800	1413				0.294 *			
EBR (c)	1	1600	181				0.113			
WBL	2	3200	373				0.117 *			
WBT	3	4800	1143				0.238			
WBR (d)	1	1600	277				0.173			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.898**			
						SCENARIO LEVEL OF SERVICE:	**D**			

NOTES:

RTOR: *(a) 56%*
(b) 15%
(c) 30%
(d) 30%

Printed: 09/22/15

TWO-WAY STOP CONTROL SUMMARY

Ref #17

General Information		Site Information	
Analyst	*MMF*	Intersection	*BETTERAVIA/BRADLEY(E)*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*A.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BETTERAVIA ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*68*	*821*			*1287*	*40*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*68*	*821*	*0*	*0*	*1287*	*40*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*91*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*91*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*1*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (veh/h)	*68*							*91*
C (m) (veh/h)	*506*							*453*
v/c	*0.13*							*0.20*
95% queue length	*0.46*							*0.75*
Control Delay (s/veh)	*13.2*							*14.9*
LOS	*B*							*B*
Approach Delay (s/veh)	--	--				*14.9*		
Approach LOS	--	--				*B*		

AWD = 13.2 SEC = LOS B

TWO-WAY STOP CONTROL SUMMARY

REF #17

General Information		Site Information	
Analyst	*MMF*	Intersection	*BETTERAVIA/BRADLEY(E)*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*A.M. PEAK HOUR*		
Project Description	*ENOS RANCHOS PROJECT (#150041)*		
East/West Street:	*BETTERAVIA ROAD*	North/South Street:	*BRADLEY ROAD*
Intersection Orientation:	*East-West*	Study Period (hrs):	*1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*78*	*871*			*1338*	*46*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*78*	*871*	*0*	*0*	*1338*	*46*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*115*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*115*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*1*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (veh/h)	*78*							*115*
C (m) (veh/h)	*481*							*437*
v/c	*0.16*							*0.26*
95% queue length	*0.58*							*1.06*
Control Delay (s/veh)	*13.9*							*16.2*
LOS	*B*							*C*
Approach Delay (s/veh)	--	--				*16.2*		
Approach LOS	--	--				*C*		

RAZE

AWD = 13.9 SEC = LOS B

TWO-WAY STOP CONTROL SUMMARY

Ref #17

General Information		Site Information	
Analyst	*MMF*	Intersection	*BETTERAVIA/BRADLEY(E)*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/7/2015*	Analysis Year	*EXISTING*
Analysis Time Period	*P.M. PEAK HOUR*		

Project Description	*ENOS RANCHOS PROJECT (#150041)*
East/West Street: *BETTERAVIA ROAD*	North/South Street: *BRADLEY ROAD*
Intersection Orientation: *East-West*	Study Period (hrs): *1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*152*	*1436*			*1393*	*54*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*152*	*1436*	*0*	*0*	*1393*	*54*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*241*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*241*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*1*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (veh/h)	*152*							*241*
C (m) (veh/h)	*454*							*419*
v/c	*0.33*							*0.58*
95% queue length	*1.50*							*3.89*
Control Delay (s/veh)	*16.9*							*25.1*
LOS	*C*							*D*
Approach Delay (s/veh)	--	--				*25.1*		
Approach LOS	--	--				*D*		

TWO-WAY STOP CONTROL SUMMARY

RTR #17

General Information		Site Information	
Analyst	*MMF*	Intersection	*BETTERAVIA/BRADLEY(E)*
Agency/Co.	*ATE*	Jurisdiction	*CITY OF SANTA MARIA*
Date Performed	*8/19/2015*	Analysis Year	*CUMULATIVE*
Analysis Time Period	*P.M. PEAK HOUR*		
Project Description	*ENOS RANCHOS PROJECT (#150041)*		
East/West Street:	*BETTERAVIA ROAD*	North/South Street:	*BRADLEY ROAD*
Intersection Orientation:	*East-West*	Study Period (hrs):	*1.00*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*155*	*1566*			*1420*	*103*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*155*	*1566*	*0*	*0*	*1420*	*103*
Percent Heavy Vehicles	*4*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*1*	*2*	*0*	*0*	*2*	*0*
Configuration	*L*	*T*			*T*	*TR*
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						*310*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*0*	*0*	*310*
Percent Heavy Vehicles	*0*	*0*	*0*	*4*	*0*	*4*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*1*
Lanes	*0*	*0*	*0*	*0*	*0*	*1*
Configuration						*R*

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*L*							*R*
v (veh/h)	*155*							*310*
C (m) (veh/h)	*424*							*398*
v/c	*0.37*							*0.78*
95% queue length	*1.71*							*8.81*
Control Delay (s/veh)	*18.4*							*43.7*
LOS	*C*							*E*
Approach Delay (s/veh)	--	--				*43.7*		
Approach LOS	--	--				*E*		

#15041 - ENOS RANCHOS PROJECT REF: 18_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *US 101 SB RAMPS*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) EXISTING:	0	0	0	135	2	887	0	647	164	45	354	0
(B) PROJECT-ADDED:	0	0	0	0	0	49	0	29	69	0	100	0
(C) CUMULATIVE:	0	0	0	135	2	928	0	657	204	49	372	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
		L LTR R	TT R	L TT

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0	0	0	0	-	-	-	-
NBT	0	0	0	0	0	0	-	-	-	-
NBR	0	0	0	0	0	0	-	-	-	-
SBL	0	0	135	135	135	135	-	-	-	-
SBT	3	4800	2	2	2	2	0.193 *	0.202 *	0.201 *	0.210 *
SBR *(a)*	0	0	789	833	826	870	-	-	-	-
EBL	0	0	0	0	0	0	-	-	-	-
EBT	2	3200	647	676	657	686	0.202 *	0.211 *	0.205 *	0.214 *
EBR *(b)*	1	1600	97	137	120	161	0.061	0.086	0.075	0.101
WBL	1	1600	45	45	49	49	0.028 *	0.028 *	0.031 *	0.031 *
WBT	2	3200	354	454	372	472	0.111	0.142	0.116	0.148
WBR	0	0	0	0	0	0	-	-	-	-
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.523**	**0.541**	**0.537**	**0.555**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: (a) 11%
(b) 20%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 18 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *US 101 SB RAMPS*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	0	0	0	89	0	1675	0	220	233	76	446	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND LT RR	EAST BOUND TT R	WEST BOUND L TT

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0				-			
NBT	0	0	0				-			
NBR (a)	0	0	0				-			
SBL	1	1600	89				0.056			
SBT	0	0	0				-			
SBR (b)	2	3200	1039				0.325 *			
EBL	0	0	0				-			
EBT	2	3200	220				0.069 *			
EBR (c)	1	1600	137				0.086			
WBL	1	1600	76				0.048 *			
WBT	2	3200	446				0.139			
WBR (d)	0	0	0				-			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.542**			
						SCENARIO LEVEL OF SERVICE:	A			

NOTES:

RTOR: (b) 38%

(c) 41%

Printed 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 18_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***US 101 SB RAMPS***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A)	EXISTING:	0	0	0	100	1	699	0	1083	252	83	865	0
(B)	PROJECT-ADDED:	0	0	0	0	0	55	0	73	111	0	114	0
(C)	CUMULATIVE:	0	0	0	104	1	739	0	1109	367	97	901	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND L LTR R	EAST BOUND TT R	WEST BOUND L TT

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0	0	0	0	-	-	-	-
NBT	0	0	0	0	0	0	-	-	-	-
NBR	0	0	0	0	0	0	-	-	-	-
SBL	0	0	100	100	104	104	-	-	-	-
SBT	3	4800	1	1	1	1	0.156 *	0.167 *	0.165 *	0.176 *
SBR (a)	0	0	650	701	687	738	-	-	-	-
EBL	0	0	0	0	0	0	-	-	-	-
EBT	2	3200	1083	1156	1109	1182	0.338 *	0.361 *	0.347 *	0.369 *
EBR (b)	1	1600	214	309	312	406	0.134	0.193	0.195	0.254
WBL	1	1600	83	83	97	97	0.052 *	0.052 *	0.061 *	0.061 *
WBT	2	3200	865	979	901	1015	0.270	0.306	0.282	0.317
WBR	0	0	0	0	0	0	-	-	-	-
			LOST TIME:				0.100 *	0.100 *	0.100 *	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.646**	**0.680**	**0.673**	**0.706**
			SCENARIO LEVEL OF SERVICE:				**B**	**B**	**B**	**C**

NOTES:

RTOR: (a) 7%
(b) 15%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 18 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***US 101 SB RAMPS***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	0	0	0	99	0	1126	0	1116	648	93	729	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
		LT RR	TT R	L TT

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0				-			
NBT	0	0	0				-			
NBR *(a)*	0	0	0				-			
SBL	1	1600	99				0.062			
SBT	0	0	0				-			
SBR *(b)*	2	3200	811				0.253 *			
EBL	0	0	0				-			
EBT	2	3200	1116				0.349 *			
EBR *(c)*	1	1600	337				0.211			
WBL	1	1600	93				0.058 *			
WBT	2	3200	729				0.228			
WBR *(d)*	0	0	0				-			
			LOST TIME:				0.100 *			
			TOTAL INTERSECTION CAPACITY UTILIZATION:				**0.760**			
			SCENARIO LEVEL OF SERVICE:				C			

NOTES:

RTOR: *(a) 28%*

(b) 48%

Printed 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 19_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *US 101 NB RAMPS*

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	229	1	64	0	0	0	487	295	0	0	175	117
(B)	PROJECT-ADDED:	100	0	0	0	0	0	29	0	0	0	0	0
(C)	CUMULATIVE:	239	1	67	0	0	0	495	297	0	0	186	115

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L LT R		LL TT	TT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVEMENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	229	329	239	339	0.072 *	0.103 *	0.075 *	0.106 *
NBT	0	0	1	1	1	1	-	-	-	-
NBR (a)	1	1600	57	57	60	60	0.036	0.036	0.038	0.038
SBL	0	0	0	0	0	0	-	-	-	-
SBT	0	0	0	0	0	0	-	-	-	-
SBR	0	0	0	0	0	0	-	-	-	-
EBL	2	3200	487	516	495	524	0.152 *	0.161 *	0.155 *	0.164 *
EBT	2	3200	295	295	297	297	0.092	0.092	0.093	0.093
EBR	0	0	0	0	0	0	-	-	-	-
WBL	0	0	0	0	0	0	-	-	-	-
WBT	2	3200	175	175	186	186	0.055	0.055	0.058	0.058
WBR (b)	1	1600	117	117	115	115	0.073 *	0.073 *	0.072 *	0.072 *
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.397**	**0.437**	**0.402**	**0.442**
					SCENARIO LEVEL OF SERVICE:		A	A	A	A

NOTES:

RTOR: *(a) 11%*
(b) 22%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 19 AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *US 101 NB RAMPS* WITH CIP IMPROVEMENTS (CONSTRUCT HOOK RAMPS IN SE QUADRANT)

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	0	0	0	0	0	0	0	311	0	0	522	79

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
			TT	TT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0				- *			
NBT	0	0	0				-			
NBR *(a)*	0	0	0				-			
SBL	0	0	0				-			
SBT	0	0	0				-			
SBR *(b)*	0	0	0				-			
EBL	0	0	0				-			
EBT	2	3200	311				0.097			
EBR *(c)*	0	0	0				-			
WBL	0	0	0				-			
WBT	2	3200	522				0.163 *			
WBR *(d)*	1	1600	79				0.049			
					LOST TIME:		0.100 *			
					TOTAL INTERSECTION CAPACITY UTILIZATION:		0.263			
					SCENARIO LEVEL OF SERVICE:		A			

NOTES:

Printed 09/21/15

#15041 - ENOS RANCHOS PROJECT REF: 19_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *5/29/2014*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***US 101 NB RAMPS***

E/W STREET: ***BETTERAVIA ROAD***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES		NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A)	EXISTING:	**294**	**5**	**89**	**0**	**0**	**0**	**908**	**327**	**0**	**0**	**611**	**481**
(B)	PROJECT-ADDED:	**114**	**0**	**0**	**0**	**0**	**0**	**73**	**0**	**0**	**0**	**0**	**0**
(C)	CUMULATIVE:	**323**	**5**	**89**	**0**	**0**	**0**	**934**	**331**	**0**	**0**	**632**	**486**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L LT R	SOUTH BOUND	EAST BOUND LL TT	WEST BOUND TT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)
SCENARIO 2 = EXISTING + PROJECT VOLUMES(A+B)
SCENARIO 3 = SHORT-TERM CUMULATIVE (C)
SCENARIO 4 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	2	3200	294	408	323	437	0.092 *	0.128 *	0.101 *	0.137 *
NBT	0	0	5	5	5	5	-	-	-	-
NBR (a)	1	1600	82	82	82	82	0.051	0.051	0.051	0.051
SBL	0	0	0	0	0	0	-	-	-	-
SBT	0	0	0	0	0	0	-	-	-	-
SBR	0	0	0	0	0	0	-	-	-	-
EBL	2	3200	908	981	934	1007	0.284 *	0.307 *	0.292 *	0.315 *
EBT	2	3200	327	327	331	331	0.102	0.102	0.103	0.103
EBR	0	0	0	0	0	0	-	-	-	-
WBL	0	0	0	0	0	0	-	-	-	-
WBT	2	3200	611	611	632	632	0.191	0.191	0.198	0.198
WBR (b)	1	1600	385	385	389	389	0.241 *	0.241 *	0.243 *	0.243 *
					LOST TIME:		0.100 *	0.100 *	0.100 *	0.100 *
					TOTAL INTERSECTION CAPACITY UTILIZATION:		**0.717**	**0.776**	**0.736**	**0.795**
					SCENARIO LEVEL OF SERVICE:		C	C	C	C

NOTES:

RTOR: (a) 8%
(b) 20%

Printed: 08/31/15

#15041 - ENOS RANCHOS SPECIFIC PLAN REF: 19 PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *US 101 NB RAMPS* WITH CIP IMPROVEMENTS (CONSTRUCT HOOK RAMPS IN SE QUADRANT)

E/W STREET: *BETTERAVIA ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) BUILDOUT:	0	0	0	0	0	0	0	1089	0	0	782	634

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
			TT	TT R

TRAFFIC SCENARIOS

SCENARIO 1 = BUILDOUT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0				-			
NBT	0	0	0				-			
NBR *(a)*	0	0	0				-			
SBL	0	0	0				-			
SBT	0	0	0				-			
SBR *(b)*	0	0	0				-			
EBL	0	0	0				-			
EBT	2	3200	1089				0.340 *			
EBR *(c)*	0	0	0				-			
WBL	0	0	0				-			
WBT	2	3200	782				0.244			
WBR *(d)*	1	1600	634				0.396			
						LOST TIME:	0.100 *			
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.440**			
						SCENARIO LEVEL OF SERVICE:	A			

NOTES:

Printed 09/21/15

ROUNDABOUT REPORT

Ref # 20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	COLLEGE DRIVE
Time Period	AM PEAK	Analysis Year	EXISTING
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	3	11	11	0	26	9	40	0	44	423	44	0	58	231	8	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	315			470			72			79		
Exiting Flow (V_{ex}), pc/h	113			61			466			268		
Entry Flow (V_e), pc/h		25			75		467	44		289	8	
Entry Volume veh/h		25			75		467	44		289	8	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		825			706		1052	1052		1044	1044	
Capacity (c), veh/h		825			706		1052	1052		1044	1044	
v/c Ratio (X)		0.03			0.11		0.44	0.04		0.28	0.01	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.7			6.2		8.4	3.8		6.2	3.5	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.1			0.4		2.4	0.1		1.1	0.0	
Approach Delay, s/veh	4.65			6.24			7.97			6.08		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	7.12											
Intersection LOS	A											

ROUNDABOUT REPORT

REF #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	COLLEGE DRIVE
Time Period	AM PEAK	Analysis Year	EXISTING+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	3	11	11	0	26	9	40	0	44	523	44	0	58	303	8	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	387			570			72			79		
Exiting Flow (V_{ex}), pc/h	113			61			566			340		
Entry Flow (V_e), pc/h		25			75		567	44		361	8	
Entry Volume veh/h		25			75		567	44		361	8	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		767			639		1052	1052		1044	1044	
Capacity (c), veh/h		767			639		1052	1052		1044	1044	
v/c Ratio (X)		0.03			0.12		0.54	0.04		0.35	0.01	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.0			7.0		10.1	3.8		7.0	3.5	
Lane LOS		A			A		B	A		A	A	
Lane 95% Queue		0.1			0.4		3.5	0.1		1.6	0.0	
Approach Delay, s/veh	5.01			6.97			9.64			6.92		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	8.42											
Intersection LOS	A											

ROUNDABOUT REPORT

PER # 20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	
Time Period	AM PEAK	Analysis Year	CUMULATIVE
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	18	24	12	0	27	26	43	0	45	427	45	0	59	237	9	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	323			490			101			98		
Exiting Flow (V_{ex}), pc/h	128			80			488			276		
Entry Flow (V_e), pc/h		54			96		472	45		296	9	
Entry Volume veh/h		54			96		472	45		296	9	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		818			692		1021	1021		1025	1025	
Capacity (c), veh/h		818			692		1021	1021		1025	1025	
v/c Ratio (X)		0.07			0.14		0.46	0.04		0.29	0.01	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.0			6.7		8.9	3.9		6.4	3.6	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.2			0.5		2.6	0.1		1.2	0.0	
Approach Delay, s/veh	5.04			6.73			8.43			6.30		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	7.40											
Intersection LOS	A											

ROUNDABOUT REPORT

REF #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	COLLEGE DRIVE
Time Period	AM PEAK	Analysis Year	CUMULATIVE+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	18	24	12	0	27	26	43	0	45	559	45	0	59	324	9	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	410			622			101			98		
Exiting Flow (V_{ex}), pc/h	128			80			620			363		
Entry Flow (V_e), pc/h		54			96		604	45		383	9	
Entry Volume veh/h		54			96		604	45		383	9	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		750			607		1021	1021		1025	1025	
Capacity (c), veh/h		750			607		1021	1021		1025	1025	
v/c Ratio (X)		0.07			0.16		0.59	0.04		0.37	0.01	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.5			7.8		11.6	3.9		7.5	3.6	
Lane LOS		A			A		B	A		A	A	
Lane 95% Queue		0.2			0.6		4.3	0.1		1.8	0.0	
Approach Delay, s/veh	5.53			7.83			11.03			7.38		
Approach LOS, s/veh	A			A			B			A		
Intersection Delay, s/veh	9.32											
Intersection LOS	A											

ROUNDABOUT REPORT

Ref # 20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	COLLEGE DRIVE
Time Period	AM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	2	39	43	0	42	52	40	0	117	644	68	0	58	288	36	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	388			763			99			211		
Exiting Flow (V_{ex}), pc/h	165			205			686			373		
Entry Flow (V_e), pc/h		84			134		761	68		346	36	
Entry Volume veh/h		84			134		761	68		346	36	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		767			527		1024	1024		915	915	
Capacity (c), veh/h		767			527		1024	1024		915	915	
v/c Ratio (X)		0.11			0.25		0.74	0.07		0.38	0.04	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.8			10.4		17.2	4.1		8.2	4.3	
Lane LOS		A			B		C	A		A	A	
Lane 95% Queue		0.4			1.0		8.2	0.2		1.8	0.1	
Approach Delay, s/veh	5.82			10.43			16.12			7.84		
Approach LOS, s/veh	A			B			C			A		
Intersection Delay, s/veh	12.77											
Intersection LOS	B											

ROUNDABOUT REPORT

Ref # 20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	COLLEGE DRIVE
Time Period	PM PEAK	Analysis Year	EXISTING
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	16	39	82	0	69	8	76	0	15	384	46	0	117	453	18	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	639			415			172			92		
Exiting Flow (V_{ex}), pc/h	202			41			476			604		
Entry Flow (V_e), pc/h		137			153		399	46		570	18	
Entry Volume veh/h		137			153		399	46		570	18	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		596			746		951	951		1031	1031	
Capacity (c), veh/h		596			746		951	951		1031	1031	
v/c Ratio (X)		0.23			0.21		0.42	0.05		0.55	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.0			7.1		8.6	4.2		10.6	3.6	
Lane LOS		A			A		A	A		B	A	
Lane 95% Queue		0.9			0.8		2.2	0.2		3.7	0.1	
Approach Delay, s/veh	8.99			7.10			8.16			10.34		
Approach LOS, s/veh	A			A			A			B		
Intersection Delay, s/veh	9.09											
Intersection LOS	A											

ROUNDABOUT REPORT

Ref #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	COLLEGE DRIVE
Time Period	PM PEAK	Analysis Year	EXISTING+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	16	39	82	0	69	8	76	0	15	500	46	0	117	556	18	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	742			531			172			92		
Exiting Flow (V_{ex}), pc/h	202			41			592			707		
Entry Flow (V_e), pc/h		137			153		515	46		673	18	
Entry Volume veh/h		137			153		515	46		673	18	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		538			664		951	951		1031	1031	
Capacity (c), veh/h		538			664		951	951		1031	1031	
v/c Ratio (X)		0.25			0.23		0.54	0.05		0.65	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		10.2			8.2		10.9	4.2		13.3	3.6	
Lane LOS		B			A		B	A		B	A	
Lane 95% Queue		1.0			0.9		3.5	0.2		5.5	0.1	
Approach Delay, s/veh	10.25			8.20			10.39			13.00		
Approach LOS, s/veh	B			A			B			B		
Intersection Delay, s/veh	11.33											
Intersection LOS	B											

ROUNDABOUT REPORT

REF #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	
Time Period	PM PEAK	Analysis Year	CUMULATIVE
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	1		0	1	1		0	1	1	
Lane Assignment			LTR		LTR		R		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	17	60	84	0	71	40	78	0	17	417	48	0	119	506	23	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	696			451			196			128		
Exiting Flow (V_{ex}), pc/h	227			80			512			661		
Entry Flow (V_e), pc/h		161		111	78		434	48		625	23	
Entry Volume veh/h		161		111	78		434	48		625	23	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		563		720	720		929	929		994	994	
Capacity (c), veh/h		563		720	720		929	929		994	994	
v/c Ratio (X)		0.29		0.15	0.11		0.47	0.05		0.63	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		10.4		6.7	6.1		9.6	4.3		12.8	3.8	
Lane LOS		B		A	A		A	A		B	A	
Lane 95% Queue		1.2		0.5	0.4		2.6	0.2		4.9	0.1	
Approach Delay, s/veh	10.38			6.46			9.07			12.52		
Approach LOS, s/veh	B			A			A			B		
Intersection Delay, s/veh	10.39											
Intersection LOS	B											

ROUNDABOUT REPORT

Ref #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	COLLEGE DRIVE
Time Period	PM PEAK	Analysis Year	CUMULATIVE+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	17	60	84	0	71	40	78	0	17	533	48	0	119	609	23	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	799			567			196			128		
Exiting Flow (V_{ex}), pc/h	227			80			628			764		
Entry Flow (V_e), pc/h		161			189		550	48		728	23	
Entry Volume veh/h		161			189		550	48		728	23	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		508			641		929	929		994	994	
Capacity (c), veh/h		508			641		929	929		994	994	
v/c Ratio (X)		0.32			0.29		0.59	0.05		0.73	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		12.0			9.4		12.4	4.3		17.0	3.8	
Lane LOS		B			A		B	A		C	A	
Lane 95% Queue		1.4			1.2		4.3	0.2		7.8	0.1	
Approach Delay, s/veh	11.95			9.43			11.77			16.60		
Approach LOS, s/veh	B			A			B			C		
Intersection Delay, s/veh	13.66											
Intersection LOS	B											

ROUNDABOUT REPORT

Ref #20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	COLLEGE DRIVE
Time Period	PM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	13	206	174	0	262	156	5	0	67	589	3	0	168	716	38	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	1146			669			387			485		
Exiting Flow (V_{ex}), pc/h	377			261			607			1152		
Entry Flow (V_e), pc/h		393			423		656	3		884	38	
Entry Volume veh/h		393			423		656	3		884	38	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		359			579		767	767		696	696	
Capacity (c), veh/h		359			579		767	767		696	696	
v/c Ratio (X)		1.09			0.73		0.86	0.00		1.27	0.05	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		264.7			26.2		34.3	4.7		519.6	5.7	
Lane LOS		F			D		D	A		F	A	
Lane 95% Queue		34.2			7.4		14.1	0.0		106.5	0.2	
Approach Delay, s/veh	264.66			26.18			34.12			498.41		
Approach LOS, s/veh	F			D			D			F		
Intersection Delay, s/veh	249.11											
Intersection LOS	F											

ROUNDABOUT REPORT

2 of 20

General Information		Site Information	
Analyst	DLD	Intersection	COLLEGE/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	COLLEGE DRIVE
Time Period	PM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	MITIGATED WITH NB/SB RESTRIPE + EB RT LANE

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	1		0	1	0		0	2	0		0	2	0	
Lane Assignment	LT		R				LTR		LT		TR		LT		TR	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	13	206	174	0	262	156	5	0	67	589	3	0	168	716	38	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	1146			669			387			485		
Exiting Flow (V_{ex}), pc/h	377			261			607			1152		
Entry Flow (V_e), pc/h	219	174			423		310	349		433	489	
Entry Volume veh/h	219	174			423		310	349		433	489	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h	359	359			579		767	767		696	696	
Capacity (c), veh/h	359	359			579		767	767		696	696	
v/c Ratio (X)	0.61	0.48			0.73		0.40	0.46		0.62	0.70	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	28.4	21.8			26.2		9.9	10.9		16.7	20.6	
Lane LOS	D	C			D		A	B		C	C	
Lane 95% Queue	4.4	2.7			7.4		2.0	2.5		4.8	6.7	
Approach Delay, s/veh	25.49			26.18			10.41			18.79		
Approach LOS, s/veh	D			D			B			C		
Intersection Delay, s/veh	18.89											
Intersection LOS	C											

ROUNDABOUT REPORT

REP #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	BRADLEY ROAD
Time Period	AM PEAK	Analysis Year	EXISTING
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	21	32	29	0	13	21	55	0	23	177	37	0	59	83	26	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	155			221			112			57		
Exiting Flow (V_{ex}), pc/h	128			70			253			125		
Entry Flow (V_e), pc/h		82			89		200	37		142	26	
Entry Volume veh/h		82			89		200	37		142	26	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		968			906		1010	1010		1067	1067	
Capacity (c), veh/h		968			906		1010	1010		1067	1067	
v/c Ratio (X)		0.08			0.10		0.20	0.04		0.13	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.5			4.9		5.4	3.9		4.6	3.6	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.3			0.3		0.7	0.1		0.5	0.1	
Approach Delay, s/veh	4.49			4.90			5.19			4.41		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	4.82											
Intersection LOS	A											

ROUNDABOUT REPORT

Ref # 21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	BRADLEY ROAD
Time Period	AM PEAK	Analysis Year	EXISTING+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	21	32	29	0	13	21	55	0	23	309	37	0	59	170	26	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	242			353			112			57		
Exiting Flow (V_{ex}), pc/h	128			70			385			212		
Entry Flow (V_e), pc/h		82			89		332	37		229	26	
Entry Volume veh/h		82			89		332	37		229	26	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		887			794		1010	1010		1067	1067	
Capacity (c), veh/h		887			794		1010	1010		1067	1067	
v/c Ratio (X)		0.09			0.11		0.33	0.04		0.21	0.02	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.9			5.7		7.0	3.9		5.4	3.6	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.3			0.4		1.5	0.1		0.8	0.1	
Approach Delay, s/veh	4.93			5.67			6.64			5.19		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	5.89											
Intersection LOS	A											

ROUNDABOUT REPORT

RCE #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	
Time Period	AM PEAK	Analysis Year	CUMULATIVE
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	28	32	34	0	13	21	55	0	40	193	37	0	59	126	29	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	198			261			119			74		
Exiting Flow (V_{ex}), pc/h	128			90			276			173		
Entry Flow (V_e), pc/h		94			89		233	37		185	29	
Entry Volume veh/h		94			89		233	37		185	29	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		927			870		1003	1003		1049	1049	
Capacity (c), veh/h		927			870		1003	1003		1049	1049	
v/c Ratio (X)		0.10			0.10		0.23	0.04		0.18	0.03	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.8			5.1		5.8	3.9		5.0	3.7	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.3			0.3		0.9	0.1		0.6	0.1	
Approach Delay, s/veh	4.83			5.12			5.57			4.86		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	5.18											
Intersection LOS	A											

ROUNDABOUT REPORT

Rep #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	BRADLEY ROAD
Time Period	AM PEAK	Analysis Year	CUMULATIVE+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	28	32	34	0	13	21	55	0	40	325	37	0	59	213	29	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	285			393			119			74		
Exiting Flow (V_{ex}), pc/h	128			90			408			260		
Entry Flow (V_e), pc/h		94			89		365	37		272	29	
Entry Volume veh/h		94			89		365	37		272	29	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		850			763		1003	1003		1049	1049	
Capacity (c), veh/h		850			763		1003	1003		1049	1049	
v/c Ratio (X)		0.11			0.12		0.36	0.04		0.26	0.03	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.3			5.9		7.5	3.9		5.9	3.7	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.4			0.4		1.7	0.1		1.0	0.1	
Approach Delay, s/veh	5.31			5.92			7.13			5.71		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	6.34											
Intersection LOS	A											

ROUNDABOUT REPORT

REP #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	BRADLEY ROAD
Time Period	AM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	44	61	30	0	34	52	90	0	40	146	63	0	113	91	37	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	238			230			218			126		
Exiting Flow (V_{ex}), pc/h	237			129			280			155		
Entry Flow (V_e), pc/h		135			176		186	63		204	37	
Entry Volume veh/h		135			176		186	63		204	37	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		891			898		909	909		996	996	
Capacity (c), veh/h		891			898		909	909		996	996	
v/c Ratio (X)		0.15			0.20		0.20	0.07		0.20	0.04	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.5			6.0		6.0	4.6		5.6	3.9	
Lane LOS		A			A		A	A		A	A	
Lane 95% Queue		0.5			0.7		0.8	0.2		0.8	0.1	
Approach Delay, s/veh	5.52			5.97			5.65			5.32		
Approach LOS, s/veh	A			A			A			A		
Intersection Delay, s/veh	5.60											
Intersection LOS	A											

ROUNDABOUT REPORT

Ref #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/19/2015	N/S Street Name	BRADLEY ROAD
Time Period	PM PEAK	Analysis Year	EXISTING
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	40	59	77	0	50	47	250	0	36	357	45	0	213	333	45	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	596			433			312			133		
Exiting Flow (V_{ex}), pc/h	317			128			647			460		
Entry Flow (V_e), pc/h		176			347		393	45		546	45	
Entry Volume veh/h		176			347		393	45		546	45	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		623			733		827	827		989	989	
Capacity (c), veh/h		623			733		827	827		989	989	
v/c Ratio (X)		0.28			0.47		0.48	0.05		0.55	0.05	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.5			11.7		10.7	4.9		10.9	4.0	
Lane LOS		A			B		B	A		B	A	
Lane 95% Queue		1.2			2.7		2.7	0.2		3.6	0.1	
Approach Delay, s/veh	9.46			11.67			10.06			10.34		
Approach LOS, s/veh	A			B			B			B		
Intersection Delay, s/veh	10.46											
Intersection LOS	B											

ROUNDABOUT REPORT

Rep # 21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	BRADLEY ROAD
Time Period	PM PEAK	Analysis Year	EXISTING+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	40	59	77	0	50	47	250	0	36	506	45	0	213	460	45	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	723			582			312			133		
Exiting Flow (V_{ex}), pc/h	317			128			796			587		
Entry Flow (V_e), pc/h		176			347		542	45		673	45	
Entry Volume veh/h		176			347		542	45		673	45	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		548			631		827	827		989	989	
Capacity (c), veh/h		548			631		827	827		989	989	
v/c Ratio (X)		0.32			0.55		0.66	0.05		0.68	0.05	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		11.3			15.4		15.8	4.9		14.7	4.0	
Lane LOS		B			C		C	A		B	A	
Lane 95% Queue		1.4			3.6		5.5	0.2		6.1	0.1	
Approach Delay, s/veh	11.28			15.37			14.96			14.03		
Approach LOS, s/veh	B			C			B			B		
Intersection Delay, s/veh	14.32											
Intersection LOS	B											

ROUNDABOUT REPORT

Ref #21

General Information		Site Information	
Analyst	*DLD*	Intersection	*BRADLEY/SOUTHSIDE*
Agency or Co.	*ATE*	E/W Street Name	*SOUTHSIDE PARKWAY*
Date Performed	*8/19/2015*	N/S Street Name	
Time Period	*PM PEAK*	Analysis Year	*CUMULATIVE*
Peak Hour Factor	*1.00*	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	*0*	*1*	*0*		*0*	*1*	*0*		*0*	*1*	*1*		*0*	*1*	*1*	
Lane Assignment			*LTR*				*LTR*		*LT*		*R*		*LT*		*R*	
Right-Turn Bypass	*None*				None				None				None			
Conflicting Lanes	*1*				1				1				1			
Volume (V), veh/h	*47*	*59*	*90*	*0*	*50*	*47*	*250*	*0*	*85*	*382*	*45*	*0*	*213*	*403*	*33*	*0*
Heavy Veh. Adj. (f_{HV}), %	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Pedestrians Crossing	*0*				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*	*5.1929*
Follow-Up Headway (sec)	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*	*3.1858*

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	*666*			*514*			*319*			*182*		
Exiting Flow (V_{ex}), pc/h	*317*			*165*			*679*			*543*		
Entry Flow (V_e), pc/h		*196*			*347*		*467*	*45*		*616*	*33*	
Entry Volume veh/h		*196*			*347*		*467*	*45*		*616*	*33*	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		*581*			*676*		*821*	*821*		*942*	*942*	
Capacity (c), veh/h		*581*			*676*		*821*	*821*		*942*	*942*	
v/c Ratio (X)		*0.34*			*0.51*		*0.57*	*0.05*		*0.65*	*0.04*	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		*11.0*			*13.5*		*13.0*	*4.9*		*14.2*	*4.1*	
Lane LOS		*B*			*B*		*B*	*A*		*B*	*A*	
Lane 95% Queue		*1.5*			*3.1*		*3.9*	*0.2*		*5.5*	*0.1*	
Approach Delay, s/veh	*11.03*			*13.47*			*12.26*			*13.72*		
Approach LOS, s/veh	*B*			*B*			*B*			*B*		
Intersection Delay, s/veh	*12.92*											
Intersection LOS	*B*											

ROUNDABOUT REPORT

REP # 21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	8/31/2015	N/S Street Name	BRADLEY ROAD
Time Period	PM PEAK	Analysis Year	CUMULATIVE+PROJECT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	47	59	90	0	50	47	250	0	85	531	45	0	213	530	33	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	793			663			319			182		
Exiting Flow (V_{ex}), pc/h	317			165			828			670		
Entry Flow (V_e), pc/h		196			347		616	45		743	33	
Entry Volume veh/h		196			347		616	45		743	33	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		511			582		821	821		942	942	
Capacity (c), veh/h		511			582		821	821		942	942	
v/c Ratio (X)		0.38			0.60		0.75	0.05		0.79	0.04	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		13.3			18.2		20.9	4.9		21.5	4.1	
Lane LOS		B			C		C	A		C	A	
Lane 95% Queue		1.8			4.3		8.3	0.2		10.2	0.1	
Approach Delay, s/veh	13.33			18.19			19.86			20.80		
Approach LOS, s/veh	B			C			C			C		
Intersection Delay, s/veh	19.29											
Intersection LOS	C											

ROUNDABOUT REPORT

REF #21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	BRADLEY ROAD
Time Period	PM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	1	1		0	1	1	
Lane Assignment			LTR				LTR		LT		R		LT		R	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	33	190	121	0	45	199	312	0	39	604	110	0	198	345	148	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	588			676			421			283		
Exiting Flow (V_{ex}), pc/h	498			386			949			511		
Entry Flow (V_e), pc/h		344			556		643	110		543	148	
Entry Volume veh/h		344			556		643	110		543	148	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		628			575		742	742		851	851	
Capacity (c), veh/h		628			575		742	742		851	851	
v/c Ratio (X)		0.55			0.97		0.87	0.15		0.64	0.17	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		15.4			89.9		37.4	6.4		14.8	6.0	
Lane LOS		C			F		E	A		B	A	
Lane 95% Queue		3.5			24.5		15.0	0.5		5.1	0.6	
Approach Delay, s/veh	15.36			89.90			32.86			12.91		
Approach LOS, s/veh	C			F			D			B		
Intersection Delay, s/veh	37.94											
Intersection LOS	E											

ROUNDABOUT REPORT

REF # 21

General Information		Site Information	
Analyst	DLD	Intersection	BRADLEY/SOUTHSIDE
Agency or Co.	ATE	E/W Street Name	SOUTHSIDE PARKWAY
Date Performed	9/22/2015	N/S Street Name	BRADLEY ROAD
Time Period	PM PEAK	Analysis Year	BUILDOUT
Peak Hour Factor	1.00	Project ID	MITIGATED WITH NB AND SB RESTRIPE

Project Description:

Volume Adjustment and Site Characteristics

	EB				WB				NB				SB			
	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	U
Number of Lanes (N)	0	1	0		0	1	0		0	2	0		0	2	0	
Lane Assignment			LTR				LTR		LT		TR		LT		TR	
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Volume (V), veh/h	33	190	121	0	45	199	312	0	39	604	110	0	198	345	148	0
Heavy Veh. Adj. (f_{HV}), %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians Crossing	0				0				0				0			

Critical and Follow-Up Headway Adjustment

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (sec)	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929	5.1929
Follow-Up Headway (sec)	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858	3.1858

Flow Computations

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Circulating Flow (V_c), pc/h	588			676			421			283		
Exiting Flow (V_{ex}), pc/h	498			386			949			511		
Entry Flow (V_e), pc/h		344			556		354	399		325	366	
Entry Volume veh/h		344			556		354	399		325	366	

Capacity and v/c Ratios

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Capacity (c_{PCE}), pc/h		628			575		742	742		851	851	
Capacity (c), veh/h		628			575		742	742		851	851	
v/c Ratio (X)		0.55			0.97		0.48	0.54		0.38	0.43	

Delay and Level of Service

	EB			WB			NB			SB		
	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		15.4			89.9		11.6	13.1		8.7	9.6	
Lane LOS		C			F		B	B		A	A	
Lane 95% Queue		3.5			24.5		2.7	3.4		1.8	2.2	
Approach Delay, s/veh	15.36			89.90			12.44			9.18		
Approach LOS, s/veh	C			F			B			A		
Intersection Delay, s/veh	30.28											
Intersection LOS	D											

TWO-WAY STOP CONTROL SUMMARY REF #22

General Information		Site Information	
Analyst	*DLD*	Intersection	*COLLEGE/EAST-WEST COLLECTOR*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*9/9/2015*	Analysis Year	*CUMULATIVE + PROJECT*
Analysis Time Period	*AM PEAK HOUR*		

Project Description	
East/West Street: *EAST-WEST COLLECTOR*	North/South Street: *COLLEGE DRIVE*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*441*	*88*	*204*	*324*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*441*	*88*	*204*	*324*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*81*		*101*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*81*	*0*	*101*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (veh/h)		*204*	*81*		*101*			
C (m) (veh/h)		*1048*	*307*		*780*			
v/c		*0.19*	*0.26*		*0.13*			
95% queue length		*0.72*	*1.04*		*0.44*			
Control Delay (s/veh)		*9.3*	*20.9*		*10.3*			
LOS		*A*	*C*		*B*			
Approach Delay (s/veh)	--	--	*15.0*					
Approach LOS	--	--	*C*					

TWO-WAY STOP CONTROL SUMMARY

REF #22

General Information		Site Information	
Analyst	*DLD*	Intersection	*COLLEGE/EAST-WEST COLLECTOR*
Agency/Co.	*ATE*	Jurisdiction	*SANTA MARIA*
Date Performed	*9/9/2015*	Analysis Year	*CUMULATIVE + PROJECT*
Analysis Time Period	*PM PEAK HOUR*		

Project Description	
East/West Street: *EAST-WEST COLLECTOR*	North/South Street: *COLLEGE DRIVE*
Intersection Orientation: *North-South*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*810*	*68*	*192*	*564*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*810*	*68*	*192*	*564*	*0*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Two Way Left Turn Lane*					
RT Channelized			*0*			*0*
Lanes	*0*	*2*	*0*	*1*	*2*	*0*
Configuration		*T*	*TR*	*L*	*T*	
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*77*		*98*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*77*	*0*	*98*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*L*	*L*		*R*			
v (veh/h)		*192*	*77*		*98*			
C (m) (veh/h)		*778*	*209*		*622*			
v/c		*0.25*	*0.37*		*0.16*			
95% queue length		*0.97*	*1.60*		*0.56*			
Control Delay (s/veh)		*11.1*	*31.9*		*11.9*			
LOS		*B*	*D*		*B*			
Approach Delay (s/veh)	--	--	*20.7*					
Approach LOS	--	--	*C*					

AWD = 15.7 SEC = LOS C

#15041 - ENOS RANCHOS PROJECT REF: 23

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *NA*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *BRADLEY ROAD*

E/W STREET: *EAST-WEST COLLECTOR-COSTCO MAIN ACCESS*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUM + PROJECT	**80**	**161**	**33**	**65**	**135**	**25**	**17**	**45**	**181**	**87**	**31**	**39**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND LT R	WEST BOUND LT R

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	1	1600	80	0.050
NBT	2	3200	161	0.061 *
NBR	0	0	33	-
SBL	1	1600	65	0.041 *
SBT	2	3200	135	0.050
SBR	0	0	25	-
EBL	0	0	17	-
EBT	1	1600	45	0.039
EBR	1	1600	181	0.113 *
WBL	0	0	87	-
WBT	1	1600	31	0.074 *
WBR	1	1600	39	0.024
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.389**
			SCENARIO LEVEL OF SERVICE:	A

NOTES:

Printed: 09/09/15

#15041 - ENOS RANCHOS PROJECT REF: 23

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *NA*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***EAST-WEST COLLECTOR-COSTCO MAIN ACCESS***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUM + PROJECT	**146**	**325**	**76**	**93**	**371**	**7**	**6**	**90**	**171**	**165**	**37**	**98**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND LT R	WEST BOUND LT R

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1
NBL	1	1600	146	0.091 *
NBT	2	3200	325	0.125
NBR	0	0	76	-
SBL	1	1600	93	0.058
SBT	2	3200	371	0.118 *
SBR	0	0	7	-
EBL	0	0	6	-
EBT	1	1600	90	0.060
EBR	1	1600	171	0.107 *
WBL	0	0	165	-
WBT	1	1600	37	0.126 *
WBR	1	1600	98	0.061
			LOST TIME:	0.100 *
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.542**
			SCENARIO LEVEL OF SERVICE:	A

NOTES:

Printed: 09/09/15

#15041 - ENOS RANCHOS PROJECT REF: 24

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *NA*

TIME PERIOD: ***A.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***ENOS RANCHO SHOPPING CENTERS***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUM + PROJECT	**13**	**304**	**150**	**112**	**268**	**24**	**2**	**6**	**15**	**107**	**3**	**67**

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND LT R	WEST BOUND LT R

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1					
NBL	1	1600	13	0.008					
NBT	2	3200	304	0.142 *					
NBR	0	0	150	-					
SBL	1	1600	112	0.070 *					
SBT	2	3200	268	0.091					
SBR	0	0	24	-					
EBL	0	0	2	-					
EBT	1	1600	6	0.005					
EBR	1	1600	15	0.009 *					
WBL	0	0	107	-					
WBT	1	1600	3	0.069 *					
WBR	1	1600	67	0.042					
			LOST TIME:	0.100 *					
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.390**					
			SCENARIO LEVEL OF SERVICE:	A					

NOTES:

Printed: 09/17/15

#15041 - ENOS RANCHOS PROJECT REF: 24

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *NA*

TIME PERIOD: ***P.M. PEAK HOUR***

N/S STREET: ***BRADLEY ROAD***

E/W STREET: ***ENOS RANCHO SHOPPING CENTERS***

CONTROL TYPE: ***SIGNAL***

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	T	R	SOUTH BOUND L	T	R	EAST BOUND L	T	R	WEST BOUND L	T	R
(A) CUM + PROJECT	41	493	125	96	563	66	16	5	93	201	9	113

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND L T TR	SOUTH BOUND L T TR	EAST BOUND LT R	WEST BOUND LT R

TRAFFIC SCENARIOS

SCENARIO 1 = SHORT-TERM CUMULATIVE + PROJECT VOLUMES (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO V/C RATIOS 1					
NBL	1	1600	41	0.026					
NBT	2	3200	493	0.193 *					
NBR	0	0	125	-					
SBL	1	1600	96	0.060 *					
SBT	2	3200	563	0.197					
SBR	0	0	66	-					
EBL	0	0	16	-					
EBT	1	1600	5	0.013					
EBR	1	1600	93	0.058 *					
WBL	0	0	201	-					
WBT	1	1600	9	0.131 *					
WBR	1	1600	113	0.071					
			LOST TIME:	0.100 *					
			TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.542**					
			SCENARIO LEVEL OF SERVICE:	A					

NOTES:

Printed: 09/17/15