

Comprehensive Plan Update Supplement to the Draft EIR

for the City of Palo Alto

Volume 2: Appendices

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Volume 2: Appendices

In Association With:

Hexagon Transportation Consultants, Inc.

MIG | TRA Environmental Sciences, Inc.

A P P E N D I X C

AIR QUALITY AND GREENHOUSE
GAS EMISSIONS MODELING

Criteria Air Pollutant & GHG Emissions Summary

City + SOI

PALO ALTO - COMPREHENSIVE PLAN GHG EMISSIONS INVENTORY (City + SOI)

Notes: Based on emissions generated by land uses in the City. Excludes lifecycle emissions, municipal emissions that are not associated with land uses (e.g., utility operations), and stationary sources that are regulated by BAAQMD.

			CITY MTCO ₂ e/Year											
					Scenario 1 (2030 BAU) - NO PROJECT									
SECTORS	Existing 2014	Percent of Total	AB 32 Year 2020	Percent of Total	PROJECT	Percent of Total	Scenario 2	Percent of Total	Scenario 3	Percent of Total	Scenario 4	Percent of Total		
Transportation	395,436	66%	303,333	58%	265,266	54%	256,299	53%	260,729	53%	258,743	53%		
Residential (Natural Gas and Electricity)	66,342	11%	73,032	14%	74,126	15%	74,126	15%	75,791	16%	77,536	16%		
Nonresidential (Natural Gas and Electricity)	102,319	17%	112,081	21%	118,423	24%	118,423	24%	115,658	24%	118,423	24%		
Waste (fugitive)	7,101	1%	7,782	1%	8,089	2%	7,869	2%	8,054	2%	8,240	2%		
Water/Wastewater	1,012	0%	1,073	0%	1,073	0%	1,073	0%	1,073	0%	1,073	0%		
Other - Offroad Equipment	29,573	5%	27,282	5%	27,658	6%	27,343	6%	27,535	6%	27,721	6%		
Total Community Emissions	601,783	100%	524,582	100%	494,636	100%	485,133	100%	488,841	100%	491,737	100%		
Change from Existing					(107,147)		(116,650)		(112,942)		(110,046)			
Percent Change from Existing					-18%		-19%		-19%		-18%			
Service Population	181,635		199,050		206,910		201,280		206,020		210,765			
MTCO ₂ e/SP	3.31		2.64		2.39		2.41		2.37		2.33			
BAAQMD GHG GP Threshold (PLAN LEVEL)	NA		6.6		4.0		4.0		4.0		4.0			
GHG Target Based on 1990 levels	NA		NA		NA		NA		NA		NA			
BAAQMD Permitted Sources (not included in Total) Permitted Facilities in the City Stanford University Total Permitted	12,956 209,377 222,332													
			Change from 2014 MTCO ₂ e		Scenario 1 (2030 BAU) - NO PROJECT				Scenario 2					
SECTORS			AB 32 Year 2020	Percent Change	PROJECT	Percent Change	Scenario 2	Percent Change	Scenario 3	Percent Change	Scenario 4	Percent Change		
Transportation			-92,103	-23%	-130,170	-33%	-139,137	-35%	-134,707	-34%	-136,692	-35%		
Residential (Natural Gas and Electricity)			6,689	10%	7,784	12%	7,784	12%	9,449	14%	11,194	17%		
Nonresidential* (Natural Gas and Electricity)			9,762	10%	16,104	16%	16,104	16%	13,339	13%	16,104	16%		
Waste			681	10%	988	14%	768	11%	953	13%	1,139	16%		
Water/Wastewater			61	6%	61	6%	61	6%	61	6%	61	6%		
Other - Offroad Equipment			-2,291	-8%	-1,915	-6%	-2,230	-8%	-2,037	-7%	-1,852	-6%		
Total Community Emissions			-77,201	-13%	-107,147	-18%	-116,650	-19%	-112,942	-19%	-110,046	-18%		

Notes:

Emissions forecasts for the non-transportation sectors are based on changes in housing units (residential energy), population (area sources,) employment (nonresidential energy, area sources), or service population (waste, water/wastewater).

Transportation. EMFAC2014 (exhaust) and Hexagon using the VTA regional model.

Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.

Water/Wastewater. Includes fugitive emissions from wastewater processing associated with water/wastewater treatment and conveyance. Water use and wastewater demand is estimated based on data from the Palo Alto Utilities and forecasts from the Palo Alto Utility's 2010 Urban Water Management Plan.

Waste. CARB Landfill Emissions Tool Version 1_2013 and CalRecycle. Forecast waste generation based on three year average (2010-2012) waste commitment for the City of Palo Alto obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.

Other Sources. OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Lifecycle: The GHG emissions inventory for CEQA is not a consumption-based emissions inventory. While the BAAQMD is updating the regional emissions inventory for the Bay Area utilizing a consumption-based emissions methodology, life cycle emissions are not included in the GHG emissions analysis for CEQA purposes in accordance with the Governor's Office of Planning and Research (SB 97 Final Statement of Reasons) and the California Air Pollution Control Officer's Association (GHG Thresholds Whitepaper).

GHG emissions are based on the global warming potentials (GWPs) contained within the Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report. The IPCC has since come out with updated GWPs in their Fourth (2007) and Fifth (2013) Assessment Reports. However, BAAQMD's per capita significance criteria is based on the older GWPs in the SAR. Consequently, to maintain consistency with the modeling and thresholds currently used for CEQA assessments, this inventory utilizes the GWPs in IPCC's Second Assessment Report.

Permitted sources are based on data from BAAQMD for year 2014 emissions. City permitted sources exclude the landfill, the wastewater treatment plant, and other municipal sources to avoid double-counting. Only emissions associated with land uses in the City are included in the community emissions inventory.

a. The 1990 inventory is based on the inventory prepared for the 2015 Earth Day Report for the transportation and energy sectors with the revised transportation-related GHG missions factors and VMT modeled by Fehr & Peers.

PALO ALTO - COMPREHENSIVE PLAN GHG EMISSIONS INVENTORY (City + SOI)

Notes: Based on emissions generated by land uses in the City. Excludes lifecycle emissions, municipal emissions that are not associated with land uses (e.g., utility operations), and stationary sources that are regulated by BAAQMD.

SECTORS	Existing 2014	Percent of Total	Scenario 5	Percent of Total	Scenario 6	Percent of Total	Scenario 7	Percent of Total
Transportation	395,436	66%	239,505	52%	252,347	52%	240,374	54%
Residential (Natural Gas and Electricity)	66,342	11%	75,791	16%	80,716	17%	67,426	15%
Nonresidential (Natural Gas and Electricity)	102,319	17%	111,710	24%	111,710	23%	106,256	24%
Waste (fugitive)	7,101	1%	7,902	2%	8,123	2%	7,301	2%
Water/Wastewater	1,012	0%	1,073	0%	1,073	0%	1,073	0%
Other - Offroad Equipment	29,573	5%	27,317	6%	27,409	6%	26,853	6%
Total Community Emissions	601,783	100%	463,299	100%	481,379	100%	449,283	100%
Change from Existing			(138,483)		(120,404)		(152,500)	
Percent Change from Existing			-23%		-20%		-25%	
Service Population	181,635		207,775		199,050		186,750	
MTCO ₂ e/SP	3.31		2.23		2.42		2.41	
BAAQMD GHG GP Threshold (PLAN LEVEL)	NA		4.0		4.0		4.0	
GHG Target Based on 1990 levels	NA		NA		NA		NA	
BAAQMD Permitted Sources (not included in Total)								
Permitted Facilities in the City	12,956							
Stanford University	209,377							
Total Permitted	222,332							
SECTORS			Scenario 5	Percent Change	Scenario 6	Percent Change	Scenario 7	Percent Change
Transportation			-155,931	-39%	-143,089	-36%	-155,062	-39%
Residential (Natural Gas and Electricity)			9,449	14%	14,374	22%	1,083	2%
Nonresidential* (Natural Gas and Electricity)			9,392	9%	9,392	9%	3,937	4%
Waste			801	11%	1,022	14%	200	3%
Water/Wastewater			61	6%	61	6%	61	6%
Other - Offroad Equipment			-2,255	-8%	-2,163	-7%	-2,720	-9%
Total Community Emissions			-138,483	-23%	-120,404	-20%	-152,500	-25%

Notes:

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- Transportation. EMFAC2014 (exhaust) and Hexagon using the VTA regional model.
- Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.
- Water/Wastewater. Includes fugitive emissions from wastewater processing associated with water/wastewater treatment and conveyance. Water use and wastewater demand is estimated based on data from the Palo Alto Utilities and forecasts from the Palo Alto Utility's 2010 Urban Water Management Plan.
- Waste. CARB Landfill Emissions Tool Version 1_2013 and CalRecycle. Forecast waste generation based on three year average (2010-2012) waste commitment for the City of Palo Alto obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.
- Other Sources. OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.
- Lifecycle: The GHG emissions inventory for CEQA is not a consumption-based emissions inventory. While the BAAQMD is updating the regional emissions inventory for the Bay Area utilizing a consumption-based emissions methodology, life cycle emissions are not included in the GHG emissions analysis for CEQA purposes in accordance with the Governor's Office of Planning and Research (SB 97 Final Statement of Reasons) and the California Air Pollution Control Officer's Association (GHG Thresholds Whitepaper).
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- Permitted sources are based on data from BAAQMD for year 2014 emissions. City permitted sources exclude the landfill, the wastewater treatment plant, and other municipal sources to avoid double-counting. Only emissions associated with land uses in the City are included in the community emissions inventory.
- a. The 1990 inventory is based on the inventory prepared for the 2015 Earth Day Report for the transportation and energy sectors with the revised transportation-related GHG missions factors and VMT modeled by Fehr & Peers.

STATEWIDE TRAJECTORY FOR INTERIM GHG TARGET

CARB 2008 Scoping Plan (MMTCO ₂ e)			CARB 2014 Inventory Update (MMTCO ₂ e)		
Second Assessment Report			Fourth Assessment Report		
	GWP	Reduction to 1990	GWP	Reduction to 1990	
1990	433.29	Not Applicable	431	Not Applicable	
2000	457.29	5%	466.32	8%	
2001	473.49	8%	481.23	10%	
2002	468.54	8%	480.32	10%	
2003	467.42	7%	483.05	11%	
2004	484.40	11%	492.86	13%	
2005	491.40	12%	485.13	11%	
2006	498.40	13%	482.52	11%	
2007	505.40	14%	489.16	12%	
2008	512.40	15%	487.1	12%	
2009	Not Available		458.44	6%	
2010	Not Available		453.06	5%	
2011	Not Available		450.94	4%	
2012	Not Available		458.68	6%	
2013	Not Available		459.28	6%	

Source: CARB 2008

Source: CARB 2015

Note: the 1990 emissions limit was set at 427 MMTCO₂e (426.60) based on the 2007 Inventory. The target includes the net reductions from sinks and rangelands of 6.69 MMTCO₂e for a total of 433.29 MMTCO₂e in 1990. The Fourth Assessment Report GWPs were applied to the sinks and rangelands category is not available in the First Update to the Scoping Plan. Therefore, the percent reduction from 1990 for the 2014 Inventory Update is conservative.

FORECASTING THE POST-2020 GHG REDUCTION TARGETS - EFFICIENCY METRIC

	TARGET SAR		TARGET AR4	
2030	259.97	40%	258.60	40%
2050	86.66	80%	86.20	80%
2035	216.64	50%	215.50	50%
2040	173.32	60%	172.40	60%

Source: Based on CARB's Scoping Plan and Updated GHG Emissions Inventories

Recommended Target from "Existing" in 2008 Scoping Plan = 15%

Adjusted Target from "Existing" based on 2014 Inventory = 6%

2035 CALIFORNIA SERVICE POPULATION (ESTIMATE)

Employment

All Occupations Estimated Employment

1990	15,020,200	
2012	16,281,000	
2022	18,708,600	
2020	18,223,080	Forecast from 2012
2030	20,650,680	Forecast from 2012
2035	21,864,480	Forecast from 2012
2040	23,078,280	Forecast from 2012
2050	25,505,880	Forecast from 2012

California Employment Development Department, Labor Market Information Division. 2014, September 19. California Occupational Employment Projections 2012-2022.
<http://www.labormarketinfo.edd.ca.gov/data/employment-projections.html>

California Department of Finance. 2016, January 11. Monthly Updates. Labor Force Text Data File – Comma-delimited: 1990 to Present - California, Counties, and Metropolitan Areas
<http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html> (December, Adjusted)

Population

2020	40,619,346
2030	44,085,600
2035	45,747,645
2040	47,233,240
2050	49,779,362

California Department of Finance. 2014, December. Report P-1 (County): State and County Total Population Projections, 2010-2060 (5 -year increments).
<http://www.dof.ca.gov/research/demographic/reports/projections/P-1/>

FORECASTING THE POST-2020 GHG REDUCTION TARGETS - EFFICIENCY METRIC

Service Population (SP)		Plan Level Efficiency Target SAR	Plan Level Efficiency Target AR4	Service Population (SP)
2020 SP	58,842,426	7.4	7.3	58,558,252
2030 SP	64,736,280	4.0	4.0	63,081,984
2035 SP	67,612,125	3.2	3.2	65,272,768
2040 SP	70,311,520	2.5	2.5	67,287,102
2050 SP	75,285,242	1.2	1.1	70,890,701

Land Use Sector Inventory 2008				
Scoping Plan		MTCO ₂ e/SP		
2020	295,530,000	5.02		
2030	177,318,000	2.74		
2050	59,106,000	0.79		
2035	147,765,000	2.19		
2040	118,212,000	1.68		
	PLAN LEVEL	PLAN LEVEL	PLAN LEVEL	PLAN LEVEL
	2020 MTCO ₂ e	2030 MTCO ₂ e/SP	2035 MTCO ₂ e/SP	2050 MTCO ₂ e/SP
SAR	7.4	4.0	3.2	1.2
AR4	7.3	4.0	3.2	1.1

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

CITY + SOI

	2014 - lbs/day			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	392	1,621	378	162
Energy - Residential (Natural Gas)	37	315	25	25
Energy - Nonresidential (Natural Gas)	57	517	39	39
Area Sources (Consumer Products)	1,216	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	324	332	38	37
Other (Construction Equipment)	169	1,112	68	68
Total	2,195	3,897	549	331
	2014 - tons/year			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	68	281	66	28
Energy - Residential (Natural Gas)	7	58	5	5
Energy - Nonresidential (Natural Gas)	10	94	7	7
Area Sources (Consumer Products)	222	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	59	61	7	7
Other (Construction Equipment)	29	193	12	12
Total	395	687	96	58

	2030 Existing Land Uses - lbs/day			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	125	329	365	149
Energy - Residential (Natural Gas)	37	315	25	25
Energy - Nonresidential (Natural Gas)	57	517	39	39
Area Sources (Consumer Products)	1,216	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	324	332	38	37
Other (Construction Equipment)	169	1,112	68	68
Total	1,927	2,606	536	319
	2030 - tons/year			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	22	57	63	26
Energy - Residential (Natural Gas)	7	58	5	5
Energy - Nonresidential (Natural Gas)	10	94	7	7
Area Sources (Consumer Products)	222	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	59	61	7	7
Other (Construction Equipment)	29	193	12	12
Total	349	463	94	56

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 1 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	139	372	407	167
Energy - Residential (Natural Gas)	41	352	28	28
Energy - Nonresidential (Natural Gas)	66	598	45	45
Area Sources (Consumer Products)	1,422	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	367	382	43	43
Other (Construction Equipment)	169	1,112	68	68
Total	2,205	2,817	593	351
Change from 2014 Land Uses	277	212	57	32
	Scenario 1- tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	24	65	71	29
Energy - Residential (Natural Gas)	8	64	5	5
Energy - Nonresidential (Natural Gas)	12	109	8	8
Area Sources (Consumer Products)	260	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	67	70	8	8
Other (Construction Equipment)	29	193	12	12
Total	400	501	104	62
Change from 2014 Land Uses	50	38	10	6
	Scenario 2 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	135	358	394	161
Energy - Residential (Natural Gas)	41	352	28	28
Energy - Nonresidential (Natural Gas)	63	570	43	43
Area Sources (Consumer Products)	1,422	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	359	366	41	41
Other (Construction Equipment)	169	1,112	68	68
Total	2,189	2,758	576	342
Change from 2014 Land Uses	262	152	40	23
	Scenario 2 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	23	62	68	28
Energy - Residential (Natural Gas)	8	64	5	5
Energy - Nonresidential (Natural Gas)	11	104	8	8
Area Sources (Consumer Products)	260	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	66	67	8	7
Other (Construction Equipment)	29	193	12	12
Total	397	490	101	60
Change from 2014 Land Uses	48	28	7	4

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 3 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	137	365	401	164
Energy - Residential (Natural Gas)	42	360	29	29
Energy - Nonresidential (Natural Gas)	63	570	43	43
Area Sources (Consumer Products)	1,466	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	368	376	43	42
Other (Construction Equipment)	169	1,112	68	68
Total	2,244	2,782	584	346
Change from 2014 Land Uses	317	176	48	27
	Scenario 3 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	24	63	69	28
Energy - Residential (Natural Gas)	8	66	5	5
Energy - Nonresidential (Natural Gas)	11	104	8	8
Area Sources (Consumer Products)	268	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	67	69	8	8
Other (Construction Equipment)	29	193	12	12
Total	407	494	102	61
Change from 2014 Land Uses	58	32	8	5
	Scenario 4 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	136	364	397	162
Energy - Residential (Natural Gas)	43	368	30	30
Energy - Nonresidential (Natural Gas)	66	598	45	45
Area Sources (Consumer Products)	1,512	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	376	384	44	43
Other (Construction Equipment)	169	1,112	68	68
Total	2,302	2,828	584	348
Change from 2014 Land Uses	374	222	48	29
	Scenario 4 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	24	63	69	28
Energy - Residential (Natural Gas)	8	67	5	5
Energy - Nonresidential (Natural Gas)	12	109	8	8
Area Sources (Consumer Products)	276	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	69	70	8	8
Other (Construction Equipment)	29	193	12	12
Total	417	503	102	61
Change from 2014 Land Uses	68	40	8	5

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 5 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	126	338	367	150
Energy - Residential (Natural Gas)	42	360	29	29
Energy - Nonresidential (Natural Gas)	62	564	43	43
Area Sources (Consumer Products)	1,466	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	387	414	47	46
Other (Construction Equipment)	169	1,112	68	68
Total	2,251	2,789	554	336
Change from 2014 Land Uses	324	183	18	17
	Scenario 5 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	22	59	64	26
Energy - Residential (Natural Gas)	8	66	5	5
Energy - Nonresidential (Natural Gas)	11	103	8	8
Area Sources (Consumer Products)	268	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	71	75	9	8
Other (Construction Equipment)	29	193	12	12
Total	408	496	97	59
Change from 2014 Land Uses	59	33	3	3
	Scenario 6 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	133	353	388	159
Energy - Residential (Natural Gas)	45	383	31	31
Energy - Nonresidential (Natural Gas)	62	564	43	43
Area Sources (Consumer Products)	1,597	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	416	406	46	46
Other (Construction Equipment)	169	1,112	68	68
Total	2,421	2,819	576	346
Change from 2014 Land Uses	493	214	40	27
	Scenario 6 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	23	61	67	28
Energy - Residential (Natural Gas)	8	70	6	6
Energy - Nonresidential (Natural Gas)	11	103	8	8
Area Sources (Consumer Products)	291	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	76	74	8	8
Other (Construction Equipment)	29	193	12	12
Total	439	501	101	61
Change from 2014 Land Uses	90	39	7	5

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 7 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	127	336	370	151
Energy - Residential (Natural Gas)	37	320	26	26
Energy - Nonresidential (Natural Gas)	59	537	41	41
Area Sources (Consumer Products)	1,245	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	377	389	44	44
Other (Construction Equipment)	169	1,112	68	68
Total	2,014	2,694	549	329
Change from 2014 Land Uses	86	88	13	10

	Scenario 7 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	22	58	64	26
Energy - Residential (Natural Gas)	7	58	5	5
Energy - Nonresidential (Natural Gas)	11	98	7	7
Area Sources (Consumer Products)	227	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	69	71	8	8
Other (Construction Equipment)	29	193	12	12
Total	365	479	96	58
Change from 2014 Land Uses	16	16	2	2

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

Notes:

Transportation. EMFAC2014 (exhaust+ tire and break wear) and Hexagon using the VTA regional model.

Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.

Area Sources. OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Does not include emissions from wood-burning fireplaces.

Other Sources. OFFROAD2007. Estimated based on construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Non-Transportation Model Inputs for the Palo Alto Comprehensive Plan

	City + SOI										Estimate
	CEQA Baseline			Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	AB 32 Target Year
	City	SOI	2014	2030	2030	2030	2030	2030	2030	2030	2020 (ABAG)
Housing Units	28,545	4,525	33,070	36,950	36,950	37,780	38,650	37,780	40,235	33,610	36,405
Population	65,685	15,120	80,805	90,210	90,210	92,045	94,065	92,045	97,690	82,040	88,600
Employment	95,460	5,370	100,830	116,700	111,070	113,975	116,700	110,085	110,085	104,710	110,450
Service Population	161,145		181,635	206,910	201,280	206,020	210,765	202,130	207,775	186,750	199,050
Jobs-Housing	3.3		3.0	3.2	3.0	3.0	3.0	2.9	2.7	3.1	

Growth Rates from Baseline	City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Housing Growth Rate	1.16	1.12	1.12	1.14	1.17	1.14	1.22	1.02	1.10
Population Growth Rate	1.23	1.12	1.12	1.14	1.16	1.14	1.21	1.02	1.10
Employment Growth Rate	1.06	1.16	1.10	1.13	1.16	1.09	1.09	1.04	1.10
Service Population Growth Rate	1.13	1.14	1.11	1.13	1.16	1.11	1.14	1.03	1.10

Electricity Use	BAU Forecasts										2020 (ABAG)
	City	SOI	City + SOI 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	
Residential Electricity (Kwh) ¹	156,444,763	24,799,879	181,244,642	202,509,510	202,509,510	207,058,439	211,826,592	207,058,439	220,513,401	184,204,185	199,519,865
Commercial + Industrial + City + Other Electricity (Kwh) ²	791,308,655	44,514,220	835,822,875	967,376,074	920,706,602	944,787,386	967,376,074	912,541,517	912,541,517	867,985,850	915,567,158
Total Electricity (Kwh)	947,753,417	69,314,099	1,017,067,516	1,169,885,584	1,123,216,113	1,151,845,825	1,179,202,666	1,119,599,956	1,133,054,918	1,052,190,035	1,115,087,022

Source

- 1 Provided by Palo Alto (2014). Projected based on increase in housing units. Based on a four-year average of 2011 to 2014 data.
- 2 Provided by Palo Alto (2014). Projected based on increase in employment. Based on a four-year average of 2011 to 2014 data.

Natural Gas Use	BAU Forecasts										2020 (ABAG)
	City	SOI	City + SOI 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	
Residential Natural Gas (Therms) ¹	10,772,937	1,707,744	12,480,681	13,945,000	13,945,000	14,258,243	14,586,583	14,258,243	15,184,765	12,684,478	13,739,130
Commercial + Industrial + City + Other Natural Gas (Therms) ²	18,223,591	1,025,149	19,248,740	22,278,369	21,203,586	21,758,159	22,278,369	21,015,546	21,015,546	19,989,443	21,085,226
Total Natural Gas (Therms)	28,996,528	2,732,892	31,729,420	36,223,369	35,148,585	36,016,402	36,864,952	35,273,790	36,200,311	32,673,921	34,824,356

Source

- 1 Provided by Palo Alto (2014). Projected based on increase in housing units. Based on a four-year average of 2011 to 2014 data.
- 2 Provided by Palo Alto (2014). Projected based on increase in employment. Based on a four-year average of 2011 to 2014 data.

Non-Transportation Model Inputs for the Palo Alto Comprehensive Plan

	City + SOI										Estimate
	CEQA Baseline			Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	AB 32 Target Year
	City	SOI	2014	2030	2030	2030	2030	2030	2030	2030	2020 (ABAG)
Housing Units	28,545	4,525	33,070	36,950	36,950	37,780	38,650	37,780	40,235	33,610	36,405
Population	65,685	15,120	80,805	90,210	90,210	92,045	94,065	92,045	97,690	82,040	88,600
Employment	95,460	5,370	100,830	116,700	111,070	113,975	116,700	110,085	110,085	104,710	110,450
Service Population	161,145		181,635	206,910	201,280	206,020	210,765	202,130	207,775	186,750	199,050
Jobs-Housing	3.3		3.0	3.2	3.0	3.0	3.0	2.9	2.7	3.1	

Growth Rates from Baseline

Housing Growth Rate
Population Growth Rate
Employment Growth Rate
Service Population Growth Rate

City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
1.16	1.12	1.12	1.14	1.17	1.14	1.22	1.02	1.10
1.23	1.12	1.12	1.14	1.16	1.14	1.21	1.02	1.10
1.06	1.16	1.10	1.13	1.16	1.09	1.09	1.04	1.10
1.13	1.14	1.11	1.13	1.16	1.11	1.14	1.03	1.10

Water Conveyance

Water (AF/year)
Water (gallons/year)

BAU Forecasts									
City + SOI 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)	
12,983	13,767	13,766	13,767	13,768	13,766	13,767	13,762	13,765	
4,230,635,205	4,485,942,577	4,485,531,107	4,485,877,531	4,486,224,321	4,485,593,230	4,486,005,796	4,484,469,179	4,485,368,127	

Source

1 Total water generation for Palo Alto is provided by the City Utilities. Forecasts are adjusted for increases in population and employment and are based on the Target per capita SBx7-7 in the 2010 Urban Water Management Plan based on residential and non-residential growth.

Wastewater Treatment

Wastewater (gallons/year)
Wastewater (gallons/day)

BAU Forecasts									
City + SOI 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)	
3,815,750,000	4,046,020,174	4,045,649,055	4,045,961,507	4,046,274,287	4,045,705,086	4,046,077,193	4,044,691,267	4,045,502,058	
10,454,110	11,084,987	11,083,970	11,084,826	11,085,683	11,084,124	11,085,143	11,081,346	11,083,567	

Source

1 Indoor water use is 100 percent wastewater.

Solid Waste Generation

Waste Generation (tons/year)
Waste Generation ADC (tons/year)
Total Waste Disposal (tons/year)

		BAU Forecasts									
		City + SOI 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)	
City	SOI										
45,482	5,783	51,265	58,399	56,810	58,148	59,487	57,050	58,643	52,709	56,180	
2,593	330	2,923	3,330	3,239	3,315	3,392	3,253	3,343	3,005	3,203	
48,075	6,113	54,188	61,728	60,049	61,463	62,878	60,302	61,986	55,714	59,383	

Source

CalRecycle. Disposal Reporting System (DRS): Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. Accessed May 19, 2015 . <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>. 2013 is based on an average 2011-2013 disposal rates. Projected based on Service
1 Population.

Comparison of the Change in Service Population and VMT in the Plan Area								
Category	Existing	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Population	80,805	90,210	90,210	92,045	94,065	92,045	97,690	82,040
Percent Change in Population	NA	11.6%	11.6%	13.9%	16.4%	13.9%	20.9%	1.5%
Employment	100,830	116,700	111,070	113,975	116,700	110,085	110,085	104,710
Total Service Population (SP)	181,635	206,910	201,280	206,020	210,765	202,130	207,775	186,750
Percent Change in SP	NA	13.9%	10.8%	13.4%	16.0%	11.3%	14.4%	2.8%
VMT/Day	3,541,480	3,940,470	3,818,350	3,879,140	3,836,620	3,675,160	3,753,750	3,579,830
Percent Change in VMT per day	NA	11.3%	7.8%	9.5%	8.3%	3.8%	6.0%	1.1%
VMT/Person/Day	43.83	43.68	42.33	42.14	40.79	39.93	38.43	43.64
Percent Change in VMT/P/Day	NA	-0.3%	-3.4%	-3.8%	-6.9%	-8.9%	-12.3%	-0.4%
VMT per SP per Day	19.50	19.04	18.97	18.83	18.20	18.18	18.07	19.17
Percent Change in VMT/SP/Day	NA	-2.3%	-2.7%	-3.4%	-6.6%	-6.7%	-7.3%	-1.7%

Notes: Average VMT per trip and total trips is provided by Hexagon. Population and employment numbers do not exactly match the numbers shown in Chapter 3, Project Description, of this Draft EIR due to rounding of households and non-residential square feet, on which population and employment estimates were based.

Criteria Air Pollutant & GHG Emissions Summary

PALO ALTO - COMPREHENSIVE PLAN GHG EMISSIONS INVENTORY (City Only)

Notes: Based on emissions generated by land uses in the City. Excludes lifecycle emissions, municipal emissions that are not associated with land uses (e.g., utility operations), and stationary sources that are regulated by BAAQMD.

		CITY MTCO ₂ e/Year									
SECTORS	1990 ^a	Existing 2014	Percent of Total	AB 32 Year 2020	Percent of Total	Scenario 1 (2030 BAU) - NO PROJECT		Scenario 2		Scenario 3	
						Percent of Total	Percent of Total	Percent of Total	Percent of Total	Percent of Total	Percent of Total
Transportation	331,840	329,963	63%	284,474	59%	209,731	50%	214,954	51%	219,621	51%
Residential (Natural Gas and Electricity)	190,000	57,265	11%	58,398	12%	62,721	15%	62,721	15%	64,376	15%
Nonresidential (Natural Gas and Electricity)	190,000	96,869	19%	106,368	22%	112,578	27%	112,578	27%	109,813	26%
Waste (fugitive)		6,300	1%	6,854	1%	7,163	2%	6,943	2%	7,128	2%
Water/Wastewater		823	0%	810	0%	810	0%	810	0%	810	0%
Other - Offroad Equipment		28,964	6%	26,671	6%	27,043	6%	26,728	6%	26,920	6%
Total Community Emissions	711,840	520,184	100%	483,575	100%	420,046	100%	424,733	100%	428,669	100%
Change from Existing						(100,138)		(95,451)		(91,516)	
Percent Change from Existing						-19%		-18%		-18%	
Service Population	161,145			175,320		183,225		177,595		182,335	
MTCO ₂ e/SP	3.23			2.76		2.29		2.39		2.35	
BAAQMD GHG GP Threshold (PLAN LEVEL)	NA			6.6		4.0		4.0		4.0	
GHG Target Based on 1990 levels	NA			711,840		427,104		427,104		427,104	
Above/Below Target				(228,265)		(7,058)		(2,371)		1,565	
BAAQMD Permitted Sources (not included in Total)											
Permitted Facilities in the City	12,956										
Stanford University	209,377										
Total Permitted	222,332										
				Change from 2014 MTCO ₂ e							
SECTORS				AB 32 Year 2020	Percent Change	Scenario 1 (2030 BAU) - NO PROJECT	Percent Change	Scenario 2	Percent Change	Scenario 3	Percent Change
Transportation				-45,489	-14%	-120,232	-36%	-115,009	-35%	-110,342	-33%
Residential (Natural Gas and Electricity)				1,133	2%	5,457	10%	5,457	10%	7,112	12%
Nonresidential* (Natural Gas and Electricity)				9,498	10%	15,709	16%	15,709	16%	12,943	13%
Waste				554	9%	863	14%	643	10%	828	13%
Water/Wastewater				-13	-2%	-13	-2%	-13	-2%	-13	-2%
Other - Offroad Equipment				-2,293	-8%	-1,921	-7%	-2,237	-8%	-2,044	-7%
Total Community Emissions				-36,609	-7%	-100,138	-19%	-95,451	-18%	-91,516	-18%

Notes:

Emissions forecasts for the non-transportation sectors are based on changes in housing units (residential energy), population (area sources,) employment (nonresidential energy, area sources), or service population (waste, water/wastewater).

Transportation. EMFAC2014 (exhaust) and Hexagon using the VTA regional model.

Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.

Water/Wastewater. Includes fugitive emissions from wastewater processing associated with water/wastewater treatment and conveyance. Water use and wastewater demand is estimated based on data from the Palo Alto Utilities and forecasts from the Palo Alto Utility's 2010 Urban Water Management Plan.

Waste. CARB Landfill Emissions Tool Version 1_2013 and CalRecycle. Forecast waste generation based on three year average (2010-2012) waste commitment for the City of Palo Alto obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.

Other Sources. OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Lifecycle: The GHG emissions inventory for CEQA is not a consumption-based emissions inventory. While the BAAQMD is updating the regional emissions inventory for the Bay Area utilizing a consumption-based emissions methodology, life cycle emissions are not included in the GHG emissions analysis for CEQA purposes in accordance with the Governor's Office of Planning and Research (SB 97 Final Statement of Reasons) and the California Air Pollution Control Officer's Association (GHG Thresholds Whitepaper).

GHG emissions are based on the global warming potentials (GWPs) contained within the Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report. The IPCC has since come out with updated GWPs in their Fourth (2007) and Fifth (2013) Assessment Reports. However, BAAQMD's per capita significance criteria is based on the older GWPs in the SAR. Consequently, to maintain consistency with the modeling and thresholds currently used for CEQA assessments, this inventory utilizes the GWPs in IPCC's Second Assessment Report.

Permitted sources are based on data from BAAQMD for year 2014 emissions. City permitted sources exclude the landfill, the wastewater treatment plant, and other municipal sources to avoid double-counting. Only emissions associated with land uses in the City are included in the community emissions inventory.

a. The 1990 inventory is based on the inventory prepared for the 2015 Earth Day Report for the transportation and energy sectors with the revised transportation-related GHG missions factors and VMT modeled by Fehr & Peers.

PALO ALTO - COMPREHENSIVE PLAN GHG EMISSIONS INVENTORY (City Only)

Notes: Based on emissions generated by land uses in the City. Excludes lifecycle emissions, municipal emissions that are not associated with land uses (e.g., utility operations), and stationary sources that are regulated by BAAQMD.

SECTORS	1990 ^a	Existing 2014	Percent of Total	Scenario 4	Percent of Total	Scenario 5	Percent of Total	Scenario 6	Percent of Total	Scenario 7	Percent of Total
Transportation	331,840	329,963	63%	217,810	50%	199,381	49%	211,985	50%	200,353	51%
Residential (Natural Gas and Electricity)	190,000	57,265	11%	66,132	15%	64,376	16%	69,301	16%	58,348	15%
Nonresidential (Natural Gas and Electricity)	190,000	96,869	19%	112,578	26%	105,865	26%	105,865	25%	100,807	26%
Waste (fugitive)		6,300	1%	7,314	2%	6,976	2%	7,197	2%	6,500	2%
Water/Wastewater		823	0%	810	0%	810	0%	810	0%	810	0%
Other - Offroad Equipment		28,964	6%	27,106	6%	26,702	7%	26,794	6%	26,306	7%
Total Community Emissions	711,840	520,184	100%	431,749	100%	404,111	100%	421,952	100%	393,123	100%
Change from Existing				(88,435)		(116,073)		(98,232)		(127,061)	
Percent Change from Existing				-17%		-22%		-19%		-24%	
Service Population	161,145			187,080		184,090		175,320		166,260	
MTCO ₂ e/SP	3.23			2.31		2.20		2.41		2.36	
BAAQMD GHG GP Threshold (PLAN LEVEL)	NA			4.0		4.0		4.0		4.0	
GHG Target Based on 1990 levels	NA			427,104		427,104		427,104		427,104	
Above/Below Target				4,645		(22,993)		(5,152)		(33,981)	
BAAQMD Permitted Sources (not included in Total)	12,956 209,377 222,332										
Permitted Facilities in the City											
Stanford University											
Total Permitted											
SECTORS				Scenario 4	Percent Change	Scenario 5	Percent Change	Scenario 6	Percent Change	Scenario 7	Percent Change
Transportation				-112,153	-34%	-130,582	-40%	-117,978	-36%	-129,610	-39%
Residential (Natural Gas and Electricity)				8,867	15%	7,112	12%	12,037	21%	1,083	2%
Nonresidential* (Natural Gas and Electricity)				15,709	16%	8,996	9%	8,996	9%	3,937	4%
Waste				1,014	16%	676	11%	897	14%	200	3%
Water/Wastewater				-13	-2%	-13	-2%	-13	-2%	-13	-2%
Other - Offroad Equipment				-1,859	-6%	-2,262	-8%	-2,170	-7%	-2,659	-9%
Total Community Emissions				-88,435	-17%	-116,073	-22%	-98,232	-19%	-127,061	-24%

Notes:

Emissions forecasts for the non-transportation sectors are based on changes in housing units (residential energy), population (area sources,) employment (nonresidential energy, area sources), or service population (waste, water/wastewater).

Transportation. EMFAC2014 (exhaust) and Hexagon using the VTA regional model.

Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.

Water/Wastewater. Includes fugitive emissions from wastewater processing associated with water/wastewater treatment and conveyance. Water use and wastewater demand is estimated based on data from the Palo Alto Utilities and forecasts from the Palo Alto Utility's 2010 Urban Water Management Plan.

Waste. CARB Landfill Emissions Tool Version 1_2013 and CalRecycle. Forecast waste generation based on three year average (2010-2012) waste commitment for the City of Palo Alto obtained from CalRecycle. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.

Other Sources. OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Lifecycle: The GHG emissions inventory for CEQA is not a consumption-based emissions inventory. While the BAAQMD is updating the regional emissions inventory for the Bay Area utilizing a consumption-based emissions methodology, life cycle emissions are not included in the GHG emissions analysis for CEQA purposes in accordance with the Governor's Office of Planning and Research (SB 97 Final Statement of Reasons) and the California Air Pollution Control Officer's Association (GHG Thresholds Whitepaper).

GHG emissions are based on the global warming potentials (GWPs) contained within the Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report. The IPCC has since come out with updated GWPs in their Fourth (2007) and Fifth (2013) Assessment Reports. However, BAAQMD's per capita significance criteria is based on the older GWPs in the SAR. Consequently, to maintain consistency with the modeling and thresholds currently used for CEQA assessments, this inventory utilizes the GWPs in IPCC's Second Assessment Report.

Permitted sources are based on data from BAAQMD for year 2014 emissions. City permitted sources exclude the landfill, the wastewater treatment plant, and other municipal sources to avoid double-counting. Only emissions associated with land uses in the City are included in the community emissions inventory.

a. The 1990 inventory is based on the inventory prepared for the 2015 Earth Day Report for the transportation and energy sectors with the revised transportation-related GHG missions factors and VMT modeled by Fehr & Peers.

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY CITY ONLY

	2014 - lbs/day			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	327	1,396	315	135
Energy - Residential (Natural Gas)	32	272	22	22
Energy - Nonresidential (Natural Gas)	54	489	37	37
Area Sources (Consumer Products)	1,050	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	283	308	35	34
Other (Construction Equipment)	169	1,112	68	68
Total	1,914	3,577	477	296
	2014 - tons/year			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	57	242	55	23
Energy - Residential (Natural Gas)	6	50	4	4
Energy - Nonresidential (Natural Gas)	10	89	7	7
Area Sources (Consumer Products)	192	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	52	56	6	6
Other (Construction Equipment)	29	193	12	12
Total	345	630	84	52

	2030 Existing Land Uses - lbs/day			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	104	281	304	124
Energy - Residential (Natural Gas)	32	272	22	22
Energy - Nonresidential (Natural Gas)	54	489	37	37
Area Sources (Consumer Products)	1,050	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	283	308	35	34
Other (Construction Equipment)	169	1,112	68	68
Total	1,691	2,463	466	286
	2030 - tons/year			
SECTORS	ROG	NO _x	PM ₁₀	PM _{2.5}
Transportation	18	49	53	22
Energy - Residential (Natural Gas)	6	50	4	4
Energy - Nonresidential (Natural Gas)	10	89	7	7
Area Sources (Consumer Products)	192	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	52	56	6	6
Other (Construction Equipment)	29	193	12	12
Total	306	437	82	50

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 1 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	113	276	329	135
Energy - Residential (Natural Gas)	35	298	24	24
Energy - Nonresidential (Natural Gas)	63	569	43	43
Area Sources (Consumer Products)	1,194	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	319	355	40	40
Other (Construction Equipment)	169	1,112	68	68
Total	1,893	2,610	505	309
Change from 2014 Land Uses	202	148	39	24
	Scenario 1- tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	20	48	57	23
Energy - Residential (Natural Gas)	6	54	4	4
Energy - Nonresidential (Natural Gas)	11	104	8	8
Area Sources (Consumer Products)	218	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	58	65	7	7
Other (Construction Equipment)	29	193	12	12
Total	343	464	89	55
Change from 2014 Land Uses	37	27	7	4
	Scenario 2 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	112	306	328	134
Energy - Residential (Natural Gas)	35	298	24	24
Energy - Nonresidential (Natural Gas)	59	540	41	41
Area Sources (Consumer Products)	1,194	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	311	340	38	38
Other (Construction Equipment)	169	1,112	68	68
Total	1,881	2,596	500	305
Change from 2014 Land Uses	190	133	34	19
	Scenario 2 - tons/year			
SECTORS	19	NO_x	PM₁₀	PM_{2.5}
Transportation	19	53	57	23
Energy - Residential (Natural Gas)	6	54	4	4
Energy - Nonresidential (Natural Gas)	11	99	7	7
Area Sources (Consumer Products)	218	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	57	62	7	7
Other (Construction Equipment)	29	193	12	12
Total	341	461	88	54
Change from 2014 Land Uses	35	24	6	3

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

	Scenario 3 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	115	313	335	137
Energy - Residential (Natural Gas)	36	306	25	25
Energy - Nonresidential (Natural Gas)	59	540	41	41
Area Sources (Consumer Products)	1,238	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	320	349	39	39
Other (Construction Equipment)	169	1,112	68	68
Total	1,936	2,620	508	309
Change from 2014 Land Uses	245	157	42	24
	Scenario 3 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	20	54	58	24
Energy - Residential (Natural Gas)	7	56	5	5
Energy - Nonresidential (Natural Gas)	11	99	7	7
Area Sources (Consumer Products)	226	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	58	64	7	7
Other (Construction Equipment)	29	193	12	12
Total	351	465	89	55
Change from 2014 Land Uses	45	28	7	4
	Scenario 4 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	113	313	331	136
Energy - Residential (Natural Gas)	37	314	25	25
Energy - Nonresidential (Natural Gas)	63	569	43	43
Area Sources (Consumer Products)	1,284	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	328	358	40	40
Other (Construction Equipment)	169	1,112	68	68
Total	1,994	2,666	509	312
Change from 2014 Land Uses	303	203	42	26
	Scenario 4 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	20	54	57	24
Energy - Residential (Natural Gas)	7	57	5	5
Energy - Nonresidential (Natural Gas)	11	104	8	8
Area Sources (Consumer Products)	234	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	60	65	7	7
Other (Construction Equipment)	29	193	12	12
Total	361	474	89	55
Change from 2014 Land Uses	55	37	8	5
	Scenario 5 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	104	288	303	124
Energy - Residential (Natural Gas)	36	306	25	25
Energy - Nonresidential (Natural Gas)	59	535	41	41
Area Sources (Consumer Products)	1,238	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	338	386	43	43
Other (Construction Equipment)	169	1,112	68	68
Total	1,943	2,627	480	300
Change from 2014 Land Uses	252	164	14	14
	Scenario 5 - tons/year			

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

SECTORS	0	NO_x	PM₁₀	PM_{2.5}
Transportation	18	50	53	21
Energy - Residential (Natural Gas)	7	56	5	5
Energy - Nonresidential (Natural Gas)	11	98	7	7
Area Sources (Consumer Products)	226	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	62	70	8	8
Other (Construction Equipment)	29	193	12	12
Total	352	467	84	53
Change from 2014 Land Uses	46	30	3	3

	Scenario 6 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	111	303	323	132
Energy - Residential (Natural Gas)	39	329	27	27
Energy - Nonresidential (Natural Gas)	59	535	41	41
Area Sources (Consumer Products)	1,368	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	360	376	43	42
Other (Construction Equipment)	169	1,112	68	68
Total	2,105	2,655	501	309
Change from 2014 Land Uses	414	192	35	24

	Scenario 6 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	19	52	56	23
Energy - Residential (Natural Gas)	7	60	5	5
Energy - Nonresidential (Natural Gas)	11	98	7	7
Area Sources (Consumer Products)	250	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	66	69	8	8
Other (Construction Equipment)	29	193	12	12
Total	382	472	88	55
Change from 2014 Land Uses	76	35	6	4

	Scenario 7 - lbs/day			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	105	286	306	125
Energy - Residential (Natural Gas)	32	277	22	22
Energy - Nonresidential (Natural Gas)	56	509	39	39
Area Sources (Consumer Products)	1,078	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	329	362	41	40
Other (Construction Equipment)	169	1,112	68	68
Total	1,769	2,547	476	294
Change from 2014 Land Uses	78	84	10	9

	Scenario 7 - tons/year			
SECTORS	ROG	NO_x	PM₁₀	PM_{2.5}
Transportation	18	50	53	22
Energy - Residential (Natural Gas)	6	51	4	4
Energy - Nonresidential (Natural Gas)	10	93	7	7
Area Sources (Consumer Products)	197	-	-	-
Area Sources (Landscaping, Light Commercial Equipment)	60	66	7	7
Other (Construction Equipment)	29	193	12	12
Total	320	452	83	52
Change from 2014 Land Uses	14	15	2	2

PALO ALTO- CRITERIA AIR POLLUTANT INVENTORY

Notes:

Transportation. EMFAC2014 (exhaust+ tire and break wear) and Hexagon using the VTA regional model.

Energy. Energy use based on a four year (2011-2014) average provided by Palo Alto Utilities.

Area Sources. OFFROAD2007. Estimated based on population (Landscaping) and employment (Light Commercial Equipment) for Palo Alto as a percentage of Santa Clara County. Excludes BAAQMD permitted sources. Does not include emissions from wood-burning fireplaces.

Other Sources. OFFROAD2007. Estimated based on construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays.

Non-Transportation Model Inputs for the Palo Alto Comprehensive Plan

	City Only								Estimate
	CEQA Baseline - City only	Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	AB 32 Target Year
	2014	2030	2030	2030	2030	2030	2030	2030	2020 (ABAG)
Housing Units	28,545	31,265	31,265	32,090	32,965	32,090	34,545	29,085	29,110
Population	65,685	72,285	72,285	74,120	76,140	74,120	79,765	66,920	70,500
Employment	95,460	110,940	105,310	108,215	110,940	104,325	104,325	99,340	104,820
Service Population	161,145	183,225	177,595	182,335	187,080	178,445	184,090	166,260	175,320
Jobs-Housing	3.3	3.5	3.4	3.4	3.4	3.3	3.0	3.4	

Growth Rates from Baseline	City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Housing Growth Rate	1.00	1.10	1.10	1.12	1.15	1.12	1.21	1.02	1.02
Population Growth Rate	1.00	1.10	1.10	1.13	1.16	1.13	1.21	1.02	1.07
Employment Growth Rate	1.00	1.16	1.10	1.13	1.16	1.09	1.09	1.04	1.10
Service Population Growth Rate	1.00	1.14	1.10	1.13	1.16	1.11	1.14	1.03	1.09

BAU Forecasts									
Electricity Use	City 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential Electricity (Kwh) ¹	156,444,763	171,352,093	171,352,093	175,873,618	180,669,175	175,873,618	189,328,580	159,404,306	159,541,322
Commercial + Industrial + City + Other Electricity (Kwh) ²	791,308,655	919,628,977	872,959,506	897,040,290	919,628,977	864,794,420	864,794,420	823,471,629	868,897,687
Total Electricity (Kwh)	947,753,417	1,090,981,070	1,044,311,599	1,072,913,908	1,100,298,152	1,040,668,039	1,054,123,001	982,875,935	1,028,439,009

Source

- 1 Provided by Palo Alto (2014). Projected based on increase in housing units. Based on a four-year average of 2011 to 2014 data.
- 2 Provided by Palo Alto (2014). Projected based on increase in employment. Based on a four-year average of 2011 to 2014 data.

BAU Forecasts									
Natural Gas Use	City 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential Natural Gas (Therms) ¹	10,772,937	11,799,470	11,799,470	12,110,827	12,441,053	12,110,827	13,037,348	10,976,734	10,986,169
Commercial + Industrial + City + Other Natural Gas (Therms) ²	18,223,591	21,178,768	20,103,985	20,658,558	21,178,768	19,915,945	19,915,945	18,964,295	20,010,442
Total Natural Gas (Therms)	28,996,528	32,978,238	31,903,455	32,769,385	33,619,822	32,026,772	32,953,294	29,941,029	30,996,612

Source

- 1 Provided by Palo Alto (2014). Projected based on increase in housing units. Based on a four-year average of 2011 to 2014 data.
- 2 Provided by Palo Alto (2014). Projected based on increase in employment. Based on a four-year average of 2011 to 2014 data.

Non-Transportation Model Inputs for the Palo Alto Comprehensive Plan

	City Only								Estimate
	CEQA Baseline - City only	Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	AB 32 Target Year
	2014	2030	2030	2030	2030	2030	2030	2030	2020 (ABAG)
Housing Units	28,545	31,265	31,265	32,090	32,965	32,090	34,545	29,085	29,110
Population	65,685	72,285	72,285	74,120	76,140	74,120	79,765	66,920	70,500
Employment	95,460	110,940	105,310	108,215	110,940	104,325	104,325	99,340	104,820
Service Population	161,145	183,225	177,595	182,335	187,080	178,445	184,090	166,260	175,320
Jobs-Housing	3.3	3.5	3.4	3.4	3.4	3.3	3.0	3.4	

Growth Rates from Baseline	City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Housing Growth Rate	1.00	1.10	1.10	1.12	1.15	1.12	1.21	1.02	1.02
Population Growth Rate	1.00	1.10	1.10	1.13	1.16	1.13	1.21	1.02	1.07
Employment Growth Rate	1.00	1.16	1.10	1.13	1.16	1.09	1.09	1.04	1.10
Service Population Growth Rate	1.00	1.14	1.10	1.13	1.16	1.11	1.14	1.03	1.09
BAU Forecasts									
Water Conveyance	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Water (AF/year)	11,374	11,194	11,193	11,194	11,195	11,193	11,194	11,190	11,192
Water (gallons/year)	3,706,077,880	3,647,630,936	3,647,219,466	3,647,565,890	3,647,912,680	3,647,281,589	3,647,694,155	3,646,391,045	3,647,053,197

Source

Total water generation for Palo Alto is provided by the City Utilities. Forecasts are adjusted for increases in population and employment and are based on the Target per capita SBx7-7 in the 2010 Urban Water Management Plan based on residential and non-residential growth.

BAU Forecasts									
Wastewater Treatment	City 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Wastewater (gallons/year)	3,101,757,797	3,052,841,322	3,052,496,947	3,052,786,883	3,053,077,124	3,052,548,940	3,052,894,232	3,051,803,610	3,052,357,790
Wastewater (gallons/day)	8,497,967	8,363,949	8,363,005	8,363,800	8,364,595	8,363,148	8,364,094	8,361,106	8,362,624

Source

Indoor water use is 100 percent wastewater.

BAU Forecasts									
Solid Waste Generation	City 2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Waste Generation (tons/year)	45,482	51,714	50,125	51,463	52,802	50,365	51,958	46,926	49,483
Waste Generation ADC (tons/year)	2,593	2,948	2,858	2,934	3,010	2,871	2,962	2,675	2,821
Total Waste Disposal (tons/year)	48,075	54,662	52,983	54,397	55,812	53,236	54,920	49,601	52,304

Source

CalRecycle. Disposal Reporting System (DRS): Jurisdiction Disposal and Alternative Daily Cover (ADC) Tons by Facility. Accessed May 19, 2015 . <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>. 2013 is based on an average 2011-2013 disposal rates. Projected based on Service Population.

Comparison of the Change in Service Population and VMT in the Plan Area

Category	Existing	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Population	65,685	72,285	72,285	74,120	76,140	74,120	79,765	66,920
Percent Change in Population	NA	10.0%	10.0%	12.8%	15.9%	12.8%	21.4%	1.9%
Employment	95,460	110,940	105,310	108,215	110,940	104,325	104,325	99,340
Total Service Population (SP)	161,145	183,225	177,595	182,335	187,080	178,445	184,090	166,260
Percent Change in SP	NA	13.7%	10.2%	13.1%	16.1%	10.7%	14.2%	3.2%
VMT/Day	2,937,470	3,220,310	3,169,290	3,233,930	3,194,250	3,036,420	3,120,280	2,950,860
Percent Change in VMT per day	NA	9.6%	7.9%	10.1%	8.7%	3.4%	6.2%	0.5%
VMT/Person/Day	44.72	44.55	43.84	43.63	41.95	40.97	39.12	44.10
Percent Change in VMT/P/Day	NA	-0.4%	-2.0%	-2.4%	-6.2%	-8.4%	-12.5%	-1.4%
VMT per SP per Day	18.23	17.58	17.85	17.74	17.07	17.02	16.95	17.75
Percent Change in VMT/SP/Day	NA	-3.6%	-2.1%	-2.7%	-6.3%	-6.7%	-7.0%	-2.6%

Notes: Average VMT per trip and total trips is provided by Hexagon. Population and employment numbers do not exactly match the numbers shown in Chapter 3, Project Description, of this Draft EIR due to rounding of households and non-residential square feet, on which population and employment estimates were based.

Stationary Sources – BAAQMD Permitted Sources

BAAQMD 2014 INVENTORY, PALO ALTO STATIONARY SOURCES

Source: BAAQMD. 2016, May 30. Provided by Sukarn Claire,Air Quality Engineer II, and Abby Young, Climate Protection Manager.

MT														
Year	Plant	Facility_name	Address	City	Zipcode	Unit	CO2	CH4	N2O	HFCs	PFCs	SF6	CO2_bio	CO2equiv
2014	246	Hewlett-Packard Company	1501 Page Mill Road	Palo Alto	94303	Metricktons/year	46	0.002	0.000	0.000	0.000	0.000	0	46
2014	425	Channing House	850 Webster Street	Palo Alto	94301	Metricktons/year	435	0.007	0.001	0.000	0.000	0.000	0	436
2014	450	Veterans Administration Medical Center	3801 Miranda Avenue	Palo Alto	94304	Metricktons/year	9,433	0.154	0.020	0.000	0.000	0.000	0	9,442
2014	585	Varian Oncology Systems	3120 Hansen Way, D 129	Palo Alto	94304	Metricktons/year	22	0.001	0.000	0.000	0.000	0.000	0	22
2014	2628	Yeaman Auto Body	2025 E Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	2951	Cavallino Rampante Ltd	1880 W Bayshore Road	Palo Alto	94303	Metricktons/year	28	0.000	0.000	0.000	0.000	0.000	0	28
2014	3146	Gordon Biersch Brewery Restaurant	640 Emerson Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	7	0
2014	3459	Lockheed Martin Corporation, Missiles & Space	3170 Porter Drive	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	3735	Specific Plating Co	936 Industrial Avenue	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	4034	Lockheed Martin Corporation, Missiles & Space	3251 Hanover Street	Palo Alto	94304	Metricktons/year	13	0.001	0.000	0.000	0.000	0.000	0	13
2014	4421	Roy-Aero Enterprise LLC	1901 Embarcadero Rd, Suite 101	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	5542	Arts Bodycraft Inc	280 Lambert Avenue	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	6050	Space Systems/Loral, LLC (Bldg #25)	1025 E Meadow Circle	Palo Alto	94303	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	6061	Space Systems/Loral, LLC (Bldg 3)	3825 Fabian Way	Palo Alto	94303	Metricktons/year	11	0.000	0.000	0.000	0.000	0.000	0	11
2014	6143	Space Systems/Loral, LLC (Bldg 7 & 8)	3977 Fabian Way	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	6160	Space System/Loral, LLC (Bldg #12)	1036 E Meadow Circle	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	7344	Shell Oil Company	3011 Middlefield Road	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	7678	Philip Roberts Models	815 High Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	10054	Gooch & Housego (Palo Alto) LLC	1040 E Meadow Circle	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	10520	Communications & Power Industries	607 Hansen Way, B 550	Palo Alto	94304	Metricktons/year	3	0.012	0.000	0.000	0.000	0.000	0	3
2014	10704	AT&T	345 Hamilton Avenue	Palo Alto	94309	Metricktons/year	19	0.001	0.000	0.000	0.000	0.000	0	19
2014	11268	Alta Mesa Improvement Company	695 Arastradero Road	Palo Alto	94306	Metricktons/year	66	0.008	0.001	0.000	0.000	0.000	5	66
2014	11634	IDEO Product Development	744 High Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	11835	Omega Printing	441 Waverly Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	13265	Santa Clara County Roads & Airports Dept	Pmp Sttn at Orgn Expy	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	13501	Pacific Bell	3350 Birch Street	Palo Alto	94306	Metricktons/year	8	0.000	0.000	0.000	0.000	0.000	0	8
2014	13710	Palo Alto Research Center	3333 Coyote Hill Road	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	13869	Former Coherent Facility c/o Source Group, Inc	3210 Porter Drive	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	13958	SAP Labs LLC	3475 Deer Creek Road	Palo Alto	94304	Metricktons/year	5	0.000	0.000	0.000	0.000	0.000	0	5
2014	14651	Tolerion Inc	3400 W Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	14666	Ronald McDonald House at Stanford	520 Sand Hill Road	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	15249	Akins Body Shop Inc	2905 El Camino Real	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	15320	Comcast	278 Lambert Avenue	Palo Alto	94306	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	16315	Mathews Carlsen Body Works	2480 Faber Place	Palo Alto	94303	Metricktons/year	29	0.000	0.000	0.000	0.000	0.000	0	29
2014	16345	Vi at Palo Alto	620 Sand Hill Road	Palo Alto	94304	Metricktons/year	5	0.000	0.000	0.000	0.000	0.000	0	5
2014	16473	Macys Department Store	300 Stanford Mall	Palo Alto	94304	Metricktons/year	0	0.004	0.000	0.000	0.000	0.000	0	0
2014	16649	Hudson Pacific Properties, Inc	3000 El Camino Real, Bldg 2 & 5	Palo Alto	94306	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	16761	AT&T Mobility /AT&T Services	12450 Piers Court	Palo Alto	94303	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	17680	Sunrise Assisted Living Center RC#63235	2701 El Camino Real	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	17770	Akins Body Shop, Inc	3045 Park Boulevard	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	17920	Wilson Sonsini Goodrich & Rosati	650 Page Mill Road	Palo Alto	94304	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	18015	VMware	2197 E Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	18078	ARE - San Francisco No 18, LLC	3350 W Bayshore Road	Palo Alto	94303	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	19138	Palo Alto Medical Foundation	795 El Camino Real	Palo Alto	94301	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	19285	Campus for Jewish Life	3921 Fabian Way	Palo Alto	94303	Metricktons/year	3	0.000	0.000	0.000	0.000	0.000	0	3
2014	19334	Genencor, A Danisco Division	925 Page Mill Road	Palo Alto	94304	Metricktons/year	1,898	0.029	0.004	0.000	0.000	0.000	0	1,899
2014	19584	Electric Power Research Institute	3420 Hillview Avenue	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	19621	Southwall Technologies	3961 E Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	19945	The Westin Palo Alto	675 El Camino Real	Palo Alto	94301	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	20026	Tesla Motors, Inc	3500 Deer Creek Road	Palo Alto	94304	Metricktons/year	803	0.012	0.002	0.000	0.000	0.000	0	803
2014	20269	CFO2 Palo Alto, LP c/o Transwestern	1801 Page Mill Road	Palo Alto	94304	Metricktons/year	4	0.041	0.000	0.000	0.000	0.000	0	5
2014	20272	Fabian Way Associates	3895 Fabian Way, FW Senior Ho	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	20286	Palo Alto Unified School District	25 Churchill Avenue	Palo Alto	94306	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	20325	Administrative Office of the Courts (AOC)	270 Grant Avenue	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	20493	AOL Inc	395 Page Mill Road	Palo Alto	94306	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	20529	Palantir Technologies	635 Waverley Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	20611	Switch and Data CA Nine LLC	529 Bryant Street	Palo Alto	94301	Metricktons/year	62	0.002	0.000	0.000	0.000	0.000	0	62
2014	20740	TIBCO Software, Inc	3303 Hillview Avenue	Palo Alto	94304	Metricktons/year	8	0.000	0.000	0.000	0.000	0.000	0	8
2014	20782	Communication & Control Inc	1720 Montebello Rd #5, Black M	Palo Alto	94306	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	20808	VMware	3431 Hillview Avenue	Palo Alto	94304	Metricktons/year	7	0.000	0.000	0.000	0.000	0.000	0	7
2014	20881	Nordstroms	550 standford Shppng Mall	Palo Alto	94304	Metricktons/year	3	0.000	0.000	0.000	0.000	0.000	0	4
2014	20904	Street FX Customs	748 San Antonio Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0

BAAQMD 2014 INVENTORY, PALO ALTO STATIONARY SOURCES

Source: BAAQMD. 2016, May 30. Provided by Sukarn Claire,Air Quality Engineer II, and Abby Young, Climate Protection Manager.

MT														
Year	Plant	Facility_name	Address	City	Zipcode	Unit	CO2	CH4	N2O	HFCs	PFCs	SF6	CO2_bio	CO2equiv
2014	21108	Palo Alto Cafe	2675 Middlefield Rd, Ste A	Palo Alto	94306	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	21128	Xerox International Partners	3172 Porter Drive	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	21287	Merck Sharp & Dohme Corp	901 So California Ave	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	21329	Space Systems/Loral, LLC (Bldg 43)	2850 W Bayshore Road	Palo Alto	94303	Metricktons/year	8	0.000	0.000	0.000	0.000	0.000	0	8
2014	21638	FREY Environmental, Inc	3585 El Camino Real	Palo Alto	94306	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	22008	Nordstrom	550 Stanford Shopping Ctr	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	22023	Board of Trustees of the Leland Stanford Jr Univ	3215 Porter Drive	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	22575	Drawbridge/Faber, LLC	2500 Faber Place	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
							12,941	0	0	0	0	0	11	12,956
Palo Alto Municipal - These Emissions are excluded as they would potentially be double-counted in the community inventory.														
2014	2721	City of Palo Alto Landfill	Byxbee Park	Palo Alto	94301	Metricktons/year	0	19.812	0.041	0.000	0.000	0.000	8,188	429
2014	13119	City of Palo Alto Equipment Management	3201 E Bayshore Road	Palo Alto	94303	Metricktons/year	19	0.207	0.000	0.000	0.000	0.000	0	23
2014	14930	City of Palo Alto	3201 E Bayshore Road	Palo Alto	94303	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	14932	City of Palo Alto	301 Alma Street	Palo Alto	94301	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	14933	City of Palo Alto	2675 Hanover Street	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	14940	City of Palo Alto	1198 E Meadow Avenue	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	14941	City of Palo Alto	3241 E Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	14942	City of Palo Alto	250 Hamilton Avenue	Palo Alto	94301	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	14943	City of Palo Alto	1925 Embarcadero Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	14944	City of Palo Alto	1802 Colorado Avenue	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	18938	City of Palo Alto-San Francisquito Pump Station	2027 E Bayshore Road	Palo Alto	94303	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	21056	City of Palo Alto	100 El Camino Real	Palo Alto	94301	Metricktons/year	5	0.000	0.000	0.000	0.000	0.000	0	5
2014	617	Palo Alto Regional Water Quality Control Plant	2501 Embarcadero Way	Palo Alto	94303	Metricktons/year	4,451	0.077	0.284	0.000	0.000	0.000	11,971	4,540
							4,480	20.1	0.3	0.0	0.0	0.0	20,159	5,002
Stanford University														
2014	639	Stanford University	ESF-480 Oak Road	Palo Alto	94305	Metricktons/year	74	0.002	0.001	0.000	0.000	0.000	0	74
2014	15128	Cardinal Cogen Inc	Campus & Jordan Way	Palo Alto	94305	Metricktons/year	208,858	14.267	0.394	0.000	0.000	0.000	0	209,280
2014	16534	Stanford Hospital & Clinics	3375 Hillview	Palo Alto	94305	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	16873	Stanford University	3373 Hillview Avenue	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	17696	Stanford University	1050 Arastradero Road	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	20225	Stanford University - SOM	1501 California Ave	Palo Alto	94304	Metricktons/year	1	0.000	0.000	0.000	0.000	0.000	0	1
2014	20805	Stanford University	3155 Porter Drive	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
2014	20951	Stanford University	3165 Porter Drive	Palo Alto	94304	Metricktons/year	15	0.000	0.000	0.000	0.000	0.000	0	15
2014	21078	Stanford University Medical Center	2452 Watson Court	Palo Alto	94303	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	21955	Stanford University	3160 Porter Drive	Palo Alto	94304	Metricktons/year	2	0.000	0.000	0.000	0.000	0.000	0	2
2014	21379	Stanford School of Medicine	1651 Page Mill Road	Palo Alto	94304	Metricktons/year	0	0.000	0.000	0.000	0.000	0.000	0	0
							208,955	14.3	0.4	0.0	0.0	0.0	0	209,377
Based on SAR GWP values							226,375	35	1	0	0	0	20,170	227,335

Water Use and Wastewater Generation

City + SOI

Water and Wastewater

Water Wastewater

Water Demand Calculations Derived from the City of Palo Alto Utilities and the 2010 Urban Water Management Plan

Palo Alto Utilities

	Population	City	SOI				
		65,685	15,120				
Annual Water (ccf) ¹		2011 (CCF)	2012 (CCF)	2013 (CCF)	2014 (CCF)	Average (CCF)	Covert to Gallons
Single-Family		2,301,488	2,424,831	2,530,723	2,159,783	2,354,206	1,761,068,571
Multi-Family		73,880	77,972	78,328	69,970	75,038	56,131,948
Commercial		1,062,496	1,168,695	1,150,431	1,171,801	1,138,356	851,549,236
Industrial		332,309	274,945	263,504	238,906	277,416	207,521,579
Public Facilities		165,693	161,598	169,396	174,405	167,773	125,502,919
City Facilities		206,724	230,549	283,943	242,336	240,888	180,196,738
Commercial Multi-Family (master meter)		712,168	723,288	705,324	661,736	700,629	524,106,888
Total		4,854,758	5,061,878	5,181,649	4,718,937	4,954,306	3,706,077,880
							10833
Gallons (City)		3,631,611,179	3,786,547,698	3,876,142,628	3,530,010,015	3,706,077,880	
		2011 (gallons)	2012 (gallons)	2013 (gallons)	2014 (gallons)	Average (gallons)	
Wastewater (City + SOI)		3,821,000,000	3,621,000,000	4,052,000,000	3,769,000,000	3,815,750,000	
Wastewater (City only estimate)		3,106,025,432	2,943,448,858	3,293,801,374	3,063,755,523	3,101,757,797	

Source:

1 Eric Keniston, City of Palo Alto, April 2014 and April 2015

	Per capita	Adjusted for SP*	
Gallons Per Capita Per Day (gpcd) ¹	223.3	91.0	gallons per SP per Day
Gallons Per Capita Per Day 2020 Target (gpcd) ¹	179.30	73.1	gallons per SP per Day

Source:

1 City of Palo Alto. 2011, June. 2010 Urban Water Management Plan.

Notes:

*Service population used in UWMP based on population only. Therefore, per capita water estimates are adjusted for employment demand.

Water and Wastewater

[Water](#) [Wastewater](#)

Water Use Sectors	Average 2011-2014 Volume (mg) ¹	Percent of Total
Single Family	1,761.1	48%
Multi-Family	580.2	16%
Commercial	851.5	23%
Industrial	207.5	6%
Public	125.5	3.4%
City Facilities	180.2	5%
Total	3,706.1	100%
AFY	11,374	

Source:

¹ Eric Keniston, City of Palo Alto, April 2014 and April 2015

Gallons Per Year (City)	Scenario 1 (2030)								
	CEQA Baseline	BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Residential	2,235,501,073	2,242,013,287	2,242,013,287	2,242,147,398	2,242,295,031	2,242,147,398	2,242,559,965	2,241,416,181	2,241,895,620
Non-Residential	1,995,134,133	2,243,929,290	2,243,517,820	2,243,730,133	2,243,929,290	2,243,445,831	2,243,445,831	2,243,052,998	2,243,472,507
Total	4,230,635,205	4,485,942,577	4,485,531,107	4,485,877,531	4,486,224,321	4,485,593,230	4,486,005,796	4,484,469,179	4,485,368,127
AFY	12,983	13,767	13,766	13,767	13,768	13,766	13,767	13,762	13,765
Change from 2014 (AFY)		784	782	783	784	782	784	779	782

Source:

Water use for the City of Palo Alto is estimated based on the SBX7-7 baseline and 2020 water conservation goals, measured in gallons per capita per day. Service population used in UWMP based on population only. Therefore, per capita water estimates are adjusted for employment demand.

Indoor/Outdoor Water Assumptions

	CEQA Baseline ¹	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Treated Wastewater (gallons per year)	3,815,750,000	4,046,020,174	4,045,649,055	4,045,961,507	4,046,274,287	4,045,705,086	4,046,077,193	4,044,691,267	4,045,502,058
Untreated - Outdoor (gallons per year)	414,885,205	439,922,403	439,882,052	439,916,025	439,950,033	439,888,144	439,928,603	439,777,912	439,866,069
Total	4,230,635,205	4,485,942,577	4,485,531,107	4,485,877,531	4,486,224,321	4,485,593,230	4,486,005,796	4,484,469,179	4,485,368,127
AFY	12,983	13,767	13,766	13,767	13,768	13,766	13,767	13,762	13,765
Untreated Water Use Percentage	10%								

Source

¹ Eric Keniston, City of Palo Alto, April 2014 and April 2015

Water and Wastewater

Water Wastewater

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

CH₄ - Microorganisms can biodegrade soluble organic material in wastewater under aerobic (presence of oxygen) or anaerobic (absence of oxygen) conditions. Anaerobic conditions result in the production of CH₄.

N₂O - Treatment of domestic wastewater during both nitrification and denitrification of the nitrogen present leads to the formation of N₂O, usually in the form of urea, ammonia, and proteins. These compounds are converted to nitrate through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into dinitrogen. N₂O can be an intermediate product of both processes, but more often is associated with denitrification.

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification for combustion of biogas.

Anaerobic digesters produce methane-rich biogas which is typically combusted on-site. In some cases the biogas is combusted simply for the purpose of converting methane to CO₂, which has a lower global warming potential than methane. In many cases, a cogeneration system is used to harvest the heat from combustion and use it to generate electricity for on-site energy needs. In both cases, inherent inefficiencies in the system result in incomplete combustion of the biogas, which results in remaining methane emissions. Excludes biogenic emissions from combustion of biogas.

LGOP Version 1.1. Equation 10.1.

CH ₄ = Wastewater x Digester Gas x FCH ₄ x P _{CH4} x (1-DE) x 0.0283 x 10 ⁻³ x 10 ⁻³										
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
wastewater (gallons)=		3,815,750,000	4,046,020,174	4,045,649,055	4,045,961,507	4,046,274,287	4,045,705,086	4,046,077,193	4,044,691,267	4,045,502,058
Digester gas	0.01	ft ³ biogas/gallon wastewater								
FCH ₄	0.65	fraction of CH4 in biogas								
P _{CH4}	662.00	g/m ³ ; density of CH ₄ at standard conditions								
DE	0.99	CH4 destruction efficiency								
0.0283	= 0.0283	m ³ /ft ³ ; conversion factor								
10 ⁻³	= 1.00E-03	MT/kg conversion factor								
10 ⁻³	= 1.00E-03	kg/g conversion factor								
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
		MTons								
CH ₄ =		4.65	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93
CO ₂ e =		98	103	103	103	103	103	103	103	103

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the digester gas, which is assumed to be 0.1 cubic feet of biogas per gallon of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2013. California Emissions Estimator Model (CalEEMod), Version 2013.2.2. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Water Wastewater

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification from discharge into aquatic environments

Nitrous oxide is produced when treated wastewater is discharged to aquatic environments such as rivers or estuaries. The nitrogen which remains in treated wastewater effluent is converted to nitrous oxide in a multi-step process accomplished by bacteria which is present in soil and aquatic environments.

LGOP Version 1.1. Equation 10.9.

$$N_2O = \text{Wastewater} \times 10^{-6} \times N_{\text{load}} \times 44/28 \times EF_{\text{effluent}} \times 10^{-3}$$

		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
wastewater (Liters)=		14,442,613,750	15,314,186,357	15,312,781,674	15,313,964,302	15,315,148,178	15,312,993,749	15,314,402,174	15,309,156,445	15,312,225,290
10^-6 =	1.00E-06	conversion factor; kg/mg								
N Load	26.00	mg/L of wastewater USEPA 2013								
48/28	1.57	Ratio of molecular weights for N2O and N2								
EF effluent	0.01	kg/N2O/kg N								
10^-3 =	1.00E-03	conversion factor: MTons/kg								
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTons									
N2O		2.95	3.13	3.13	3.13	3.13	3.13	3.13	3.13	3.13
CO2e =		915	970	970	970	970	970	970	970	970

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the Nitrogen Load, which is assumed to be 26 mg of N per Liter of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2013. California Emissions Estimator Model (CalEEMod), Version 2013.2.2. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Water Wastewater

Energy for Water Conveyance, Treatment, Distribution, and Wastewater Treatment (Northern California)

Water Supply and Conveyance (Northern California)	Water Treatment	Water Distribution	Total Water	Wastewater Treatment
	kWhr/million gallons			
2,117	111	1,272	3,500	1,687
2,117	0	0	2,117	0
Without double-couting				
Source 1: California Energy Commission (CEC). 2006, December. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.				
Source 2: Eric Keniston, City of Palo Alto, April 2014 and April 2015. Average 2011 to 2014 kwh/MG energy required to treat wastewater.				

Palo Alto Utilities

Intensity factor		CO ₂ e
	CO ₂ MTons/MWh ¹	MTons/MWh
2014	0.000	0.000
Source 1: Eric Keniston, City of Palo Alto, April 2014.		

ABAU Carbon Intensity for Palo Alto Utilities' Energy

	2014	2020	
Assumed Percent Renewable	33%	202100%	
CO ₂ e MTons/Mwh without Renewable	0.000		

Source 1: Eric Keniston, City of Palo Alto, April 2014.

GHG Emissions from Energy Associated with Water/Wastewater

	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Energy Associated with Water Use	MwH/Year	2030							2020
Water	8,956	9,497	9,496	9,497	9,497	9,496	9,497	9,494	9,496
Wastewater	0	0	0	0	0	0	0	0	0
Total Water/Wastewater	8,956	9,497	9,496	9,497	9,497	9,496	9,497	9,494	9,496

GHG Emissions from Energy Associated with Water Use/Wastewater Generation	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTCO ₂ e/Year	2030							2020
Water	0	0	0	0	0	0	0	0	0
Wastewater	0	0	0	0	0	0	0	0	0
Total Water/Wastewater	0	0	0	0	0	0	0	0	0

Total GHGs

GHG Emissions from Water/Wastewater Use	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTCO ₂ e/Year	2030							2020
Water	0	0	0	0	0	0	0	0	0
Wastewater	1,012	1,073	1,073	1,073	1,073	1,073	1,073	1,073	1,073
Total Water/Wastewater	1,012	1,073	1,073	1,073	1,073	1,073	1,073	1,073	1,073

Water and Wastewater

[Water](#) [Wastewater](#)

General Conversion Factors		
	Global Warming Potentials (GWP)	
CO ₂	1	
CH ₄	21	
N ₂ O	310	
Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.		
gallons to Liters	3.785	
killowatt hrs to megawatt hrs	0.001	
gallons to AF	325851.4290	3.06888E-06
Centum Cubic Feet (CCF) to US Gallons	748.0519	
Tons to MTon	0.9071847	

Water Use and Wastewater Generation

Water and Wastewater

Water Wastewater

Water Demand Calculations Derived from the City of Palo Alto Utilities and the 2010 Urban Water Management Plan

Palo Alto Utilities

	Population	City	SOI				
		65,685	15,120				
Annual Water (ccf) ¹		2011 (CCF)	2012 (CCF)	2013 (CCF)	2014 (CCF)	Average (CCF)	Covert to Gallons
Single-Family		2,301,488	2,424,831	2,530,723	2,159,783	2,354,206	1,761,068,571
Multi-Family		73,880	77,972	78,328	69,970	75,038	56,131,948
Commercial		1,062,496	1,168,695	1,150,431	1,171,801	1,138,356	851,549,236
Industrial		332,309	274,945	263,504	238,906	277,416	207,521,579
Public Facilities		165,693	161,598	169,396	174,405	167,773	125,502,919
City Facilities		206,724	230,549	283,943	242,336	240,888	180,196,738
Commercial Multi-Family (master meter)		712,168	723,288	705,324	661,736	700,629	524,106,888
Total		4,854,758	5,061,878	5,181,649	4,718,937	4,954,306	3,706,077,880
							10833
Gallons (City)		3,631,611,179	3,786,547,698	3,876,142,628	3,530,010,015	3,706,077,880	
		2011 (gallons)	2012 (gallons)	2013 (gallons)	2014 (gallons)	Average (gallons)	
Wastewater (City + SOI)		3,821,000,000	3,621,000,000	4,052,000,000	3,769,000,000	3,815,750,000	
Wastewater (City only estimate)		3,106,025,432	2,943,448,858	3,293,801,374	3,063,755,523	3,101,757,797	

Source:

1 Eric Keniston, City of Palo Alto, April 2014 and April 2015

	Per capita	Adjusted for SP*	
Gallons Per Capita Per Day (gpcd) ¹	223.3	91.0	gallons per SP per Day
Gallons Per Capita Per Day 2020 Target (gpcd) ¹	179.30	73.1	gallons per SP per Day

Source:

1 City of Palo Alto. 2011, June. 2010 Urban Water Management Plan.

Notes:

*Service population used in UWMP based on population only. Therefore, per capita water estimates are adjusted for employment demand.

Water and Wastewater

[Water](#) [Wastewater](#)

Water Use Sectors	Average 2011-2014 Volume (mg) ¹	Percent of Total
Single Family	1,761.1	48%
Multi-Family	580.2	16%
Commercial	851.5	23%
Industrial	207.5	6%
Public	125.5	3.4%
City Facilities	180.2	5%
Total	3,706.1	100%
AFY	11,374	

Source:

¹ Eric Keniston, City of Palo Alto, April 2014 and April 2015

Gallons Per Year (City)	Scenario 1 (2030)								
	CEQA Baseline	BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Residential	1,817,200,519	1,822,417,801	1,822,417,801	1,822,551,912	1,822,699,544	1,822,551,912	1,822,964,478	1,822,025,698	1,822,287,344
Non-Residential	1,888,877,361	1,825,213,136	1,824,801,666	1,825,013,978	1,825,213,136	1,824,729,677	1,824,729,677	1,824,365,347	1,824,765,854
Total	3,706,077,880	3,647,630,936	3,647,219,466	3,647,565,890	3,647,912,680	3,647,281,589	3,647,694,155	3,646,391,045	3,647,053,197
AFY	11,374	11,194	11,193	11,194	11,195	11,193	11,194	11,190	11,192
Change from 2014 (AFY)		-179	-181	-180	-179	-180	-179	-183	-181

Source:

Water use for the City of Palo Alto is estimated based on the SBX7-7 baseline and 2020 water conservation goals, measured in gallons per capita per day. Service population used in UWMP based on population only. Therefore, per capita water estimates are adjusted for employment demand.

Indoor/Outdoor Water Assumptions

	CEQA Baseline ¹	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Treated Wastewater (gallons per year)	3,101,757,797	3,052,841,322	3,052,496,947	3,052,786,883	3,053,077,124	3,052,548,940	3,052,894,232	3,051,803,610	3,052,357,790
Untreated - Outdoor (gallons per year)	604,320,084	594,789,614	594,722,519	594,779,008	594,835,556	594,732,649	594,799,923	594,587,435	594,695,407
Total	3,706,077,880	3,647,630,936	3,647,219,466	3,647,565,890	3,647,912,680	3,647,281,589	3,647,694,155	3,646,391,045	3,647,053,197
AFY	11,374	11,194	11,193	11,194	11,195	11,193	11,194	11,190	11,192
Untreated Water Use Percentage	16%								

Source

¹ Eric Keniston, City of Palo Alto, April 2014 and April 2015

Water and Wastewater

Water Wastewater

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification

CH₄ - Microorganisms can biodegrade soluble organic material in wastewater under aerobic (presence of oxygen) or anaerobic (absence of oxygen) conditions. Anaerobic conditions result in the production of CH₄.

N₂O - Treatment of domestic wastewater during both nitrification and denitrification of the nitrogen present leads to the formation of N₂O, usually in the form of urea, ammonia, and proteins. These compounds are converted to nitrate through the aerobic process of nitrification. Denitrification occurs under anoxic conditions (without free oxygen), and involves the biological conversion of nitrate into dinitrogen. N₂O can be an intermediate product of both processes, but more often is associated with denitrification.

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification for combustion of biogas.

Anaerobic digesters produce methane-rich biogas which is typically combusted on-site. In some cases the biogas is combusted simply for the purpose of converting methane to CO₂, which has a lower global warming potential than methane. In many cases, a cogeneration system is used to harvest the heat from combustion and use it to generate electricity for on-site energy needs. In both cases, inherent inefficiencies in the system result in incomplete combustion of the biogas, which results in remaining methane emissions. Excludes biogenic emissions from combustion of biogas.

LGOP Version 1.1. Equation 10.1.

CH ₄ = Wastewater x Digester Gas x FCH ₄ x P _{CH4} x (1-DE) x 0.0283 x 10 ⁻³ x 10 ⁻³										
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
wastewater (gallons)=		3,101,757,797	3,052,841,322	3,052,496,947	3,052,786,883	3,053,077,124	3,052,548,940	3,052,894,232	3,051,803,610	3,052,357,790
Digester gas	0.01	ft ³ biogas/gallon wastewater								
FCH ₄	0.65	fraction of CH4 in biogas								
P _{CH4}	662.00	g/m ³ ; density of CH ₄ at standard conditions								
DE	0.99	CH4 destruction efficiency								
0.0283	= 0.0283	m ³ /ft ³ ; conversion factor								
10 ⁻³	= 1.00E-03	MT/kg conversion factor								
10 ⁻³	= 1.00E-03	kg/g conversion factor								
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
		MTons								
CH ₄ =		3.78	3.72	3.72	3.72	3.72	3.72	3.72	3.72	3.72
CO ₂ e =		79	78	78	78	78	78	78	78	78

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the digester gas, which is assumed to be 0.1 cubic feet of biogas per gallon of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2013. California Emissions Estimator Model (CalEEMod), Version 2013.2.2. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Water Wastewater

Fugitive Emissions - Process Emissions from WWTP with Nitrification/Denitrification from discharge into aquatic environments

Nitrous oxide is produced when treated wastewater is discharged to aquatic environments such as rivers or estuaries. The nitrogen which remains in treated wastewater effluent is converted to nitrous oxide in a multi-step process accomplished by bacteria which is present in soil and aquatic environments.

LGOP Version 1.1. Equation 10.9.

$$N_2O = \text{Wastewater} \times 10^{-6} \times \text{Nload} \times 44/28 \times \text{EF effluent} \times 10^{-3}$$

		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
wastewater (Liters)=		11,740,153,260	11,555,004,404	11,553,700,945	11,554,798,351	11,555,896,914	11,553,897,737	11,555,204,669	11,551,076,664	11,553,174,237
10^-6 =	1.00E-06	conversion factor; kg/mg								
N Load	26.00	mg/L of wastewater USEPA 2013								
48/28	1.57	Ratio of molecular weights for N ₂ O and N ₂								
EF effluent	0.01	kg/N ₂ O/kg N								
10^-3 =	1.00E-03	conversion factor: MTons/kg								
		CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTons									
N ₂ O		2.40	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
CO ₂ e =		743	732	732	732	732	732	732	732	732

Source: California Air Resources Board (CARB). 2010, May. Local Government Operations Protocol (LGOP), Version 1.1. The LGOP protocol provides default values for all the terms except the Nitrogen Load, which is assumed to be 26 mg of N per Liter of wastewater effluent based on USEPA methodology outlined in the CalEEMod program manual. South Coast Air Quality Management District (SCAQMD). 2013. California Emissions Estimator Model (CalEEMod), Version 2013.2.2. User's Manual. USEPA. 2008. Page 8-12. USEPA cites Metcalf & Eddy, Inc., 1991, "Wastewater Engineering: Treatment Disposal, and Reuse," 3rd Ed. McGraw Hill Publishing.

Water and Wastewater

Water Wastewater

Energy for Water Conveyance, Treatment, Distribution, and Wastewater Treatment (Northern California)

Water Supply and Conveyance (Northern California)	Water Treatment	Water Distribution	Total Water	Wastewater Treatment
	kWhr/million gallons			
2,117	111	1,272	3,500	1,687
2,117	0	0	2,117	0
Without double-couting				
Source 1: California Energy Commission (CEC). 2006, December. Refining Estimates of Water-Related Energy Use in California. CEC-500-2006-118. Prepared by Navigant Consulting, Inc. Based on the electricity use for Northern California.				
Source 2: Eric Keniston, City of Palo Alto, April 2014 and April 2015. Average 2011 to 2014 kwh/MG energy required to treat wastewater.				

Palo Alto Utilities

Intensity factor		CO ₂ e
	CO ₂ MTons/MWh ¹	MTons/MWh
2014	0.000	0.000
Source 1: Eric Keniston, City of Palo Alto, April 2014.		

ABAU Carbon Intensity for Palo Alto Utilities' Energy

	2014	2020	
Assumed Percent Renewable	33%	202100%	
CO ₂ e MTons/Mwh without Renewable	0.000		

Source 1: Eric Keniston, City of Palo Alto, April 2014.

GHG Emissions from Energy Associated with Water/Wastewater

	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
Energy Associated with Water Use	MwH/Year	2030							2020
Water	7,846	7,722	7,721	7,722	7,723	7,721	7,722	7,719	7,721
Wastewater	0	0	0	0	0	0	0	0	0
Total Water/Wastewater	7,846	7,722	7,721	7,722	7,723	7,721	7,722	7,719	7,721

GHG Emissions from Energy Associated with Water Use/Wastewater Generation	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTCO ₂ e/Year	2030							2020
Water	0	0	0	0	0	0	0	0	0
Wastewater	0	0	0	0	0	0	0	0	0
Total Water/Wastewater	0	0	0	0	0	0	0	0	0

Total GHGs

GHG Emissions from Water/Wastewater Use	CEQA Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 Target Year
	MTCO ₂ e/Year	2030							2020
Water	0	0	0	0	0	0	0	0	0
Wastewater	823	810	810	810	810	810	810	810	810
Total Water/Wastewater	823	810	810	810	810	810	810	810	810

Water and Wastewater

General Conversion Factors

	Global Warming Potentials (GWP)	
CO ₂	1	
CH ₄	21	
N ₂ O	310	

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.

gallons to Liters	3.785	
killowatt hrs to megawatt hrs	0.001	
gallons to AF	325851.4290	3.06888E-06
Centum Cubic Feet (CCF) to US Gallons	748.0519	
Tons to MTon	0.9071847	

[Water](#) [Wastewater](#)

Solid Waste Disposal

City + SOI

Solid Waste Disposal

Source: CalRecycle Disposal By Facility - City of Palo Alto (Disposal Reporting System)

Waste Generated Within City Limits

Waste in Place Method						
Years	historic population		Interstate			
	estimates		Year	Tons +	ADC+AIC	
4	64,166		2011	43,947	2,786	46,733
3	64,673		2012	45,411	1,961	47,373
2	65,179		2013	47,088	3,031	50,119
1	65,685	2014 (Average 2013-2011)		45,482	2,593	48,075
		Disposal Rate / SP		0.282	0.016	0.298

Average 3-year disposal used to forecast waste disposal in 2030

Source: CalRecycle, 2014, Disposal Reporting System, Jurisdiction Reporting by Facility, Palo Alto. <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>

Landfill Emission Tool (version 1.3) Model Results forecasted for ~30-50 years of decomposition											
Year	MT CH ₄ in CO ₂ e	MTCO ₂ e w/ 75% LFG Capture			MTCO ₂ e w/LFG Capture	MTCO ₂ e w/LFG Capture					AB 32 Target Year
	2014 Disposal	2014 Disposal	City + SOI	Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	
1	770	192	217	247	240	246	252	241	248	223	238
2	1,501	375	423	482	469	480	491	471	484	435	464
3	1,445	361	407	464	451	462	473	453	466	419	446
4	1,392	348	392	447	435	445	455	436	449	403	430
5	1,340	335	377	430	418	428	438	420	432	388	414
6	1,290	322	363	414	403	412	422	404	416	374	398
7	1,242	310	350	399	388	397	406	389	400	360	383
8	1,195	299	337	384	373	382	391	375	385	346	369
9	1,151	288	324	369	359	368	376	361	371	333	355
10	1,108	277	312	356	346	354	362	347	357	321	342
11	1,067	267	301	342	333	341	349	334	344	309	329
12	1,027	257	289	330	321	328	336	322	331	297	317
13	988	247	279	317	309	316	323	310	319	286	305
14	926	232	261	297	289	296	303	290	299	268	286
15	880	220	248	282	275	281	288	276	284	255	272
16	833	208	235	267	260	266	272	261	269	241	257
17	787	197	222	253	246	251	257	247	254	228	243
18	740	185	209	238	231	237	242	232	239	214	229
19	694	173	195	223	217	222	227	218	224	201	214
20	647	162	182	208	202	207	212	203	209	187	200
21	601	150	169	193	188	192	196	188	194	174	185
22	554	139	156	178	173	177	181	174	179	161	171
23	508	127	143	163	158	162	166	159	164	147	157
24	461	115	130	148	144	147	151	145	149	134	142
25	414	104	117	133	129	132	136	130	134	120	128
26	368	92	104	118	115	118	120	115	119	107	114
27	321	80	91	103	100	103	105	101	104	93	99
28	275	69	77	88	86	88	90	86	89	80	85
29	228	57	64	73	71	73	75	72	74	66	71
30	182	45	51	58	57	58	59	57	59	53	56
31	135	34	38	43	42	43	44	42	44	39	42
32	89	22	25	28	28	28	29	28	29	26	27
33	42	11	12	14	13	13	14	13	14	12	13
TOTAL	25,200	6,300	7,101	8,089	7,869	8,054	8,240	7,902	8,123	7,301	7,782

Waste. Landfill Emissions Tool Version 1.3 and CalRecycle. Biogenic CO₂ emissions are not included.

Notes

LFG capture

Efficiency 0.75

Waste generation based on three year average (2011-2013) waste commitment for the City of Palo Alto obtained from CalRecycle. This sector captures only the waste that is generated by the City of Palo Alto residents and businesses in the inventory year. This sector does not include historically generated waste disposal.

This method assumes that the degradable organic component (degradable organic carbon, DOC) in waste decays slowly throughout a few decades, during which CH₄ and biogenic CO₂ are formed. If conditions are constant, the rate of CH₄ production depends solely on the amount of carbon remaining in the waste. As a result emissions of CH₄ from waste deposited in a disposal site are highest in the first few years after deposition, then gradually decline as the degradable carbon in the waste is consumed by the bacteria responsible for the decay. Significant CH₄ production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer.

Decomposition based on an average annual rainfall of 21.68 inches per year average in Morgan Hill near the Kirby Canyon Landfill (anaerobic decomposition factor (k) of 0.038) (WRCC 2014).

The Landfill Gas Estimator only includes the landfill gas (LFG) capture in the landfill gas heat output and therefore the reduction and emissions from landfill gas capture are calculated separately. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.

Solid Waste Disposal

Solid Waste Disposal

Source: CalRecycle Disposal By Facility - City of Palo Alto (Disposal Reporting System)

Waste Generated Within City Limits						
Waste in Place Method						
Years	historic population		Interstate Tons +			
	estimates		Year	Transform Tons	ADC+AIC	
4	64,166		2011	43,947	2,786	46,733
3	64,673		2012	45,411	1,961	47,373
2	65,179		2013	47,088	3,031	50,119
1	65,685		2014 (Average 2013-2011)	45,482	2,593	48,075
			Disposal Rate / SP	0.282	0.016	0.298

Average 3-year disposal used to forecast waste disposal in 2030

Source: CalRecycle, 2014, Disposal Reporting System, Jurisdiction Reporting by Facility, Palo Alto. <http://www.calrecycle.ca.gov/LGCentral/Reports/DRS/Destination/JurDspFa.aspx>

Landfill Emission Tool (version 1.3) Model Results forecasted for ~30-50 years of decomposition											
	MT CH ₄ in CO ₂ e	MTCO ₂ e w/ 75% LFG Capture		MTCO ₂ e w/LFG Capture	MTCO ₂ e w/LFG Capture						
				Scenario 1 (Existing CP - 2030 BAU)	Scenario 2	Scenario 3	Scenario 4 (ABAG Housing)	Scenario 5	Scenario 6	Scenario 7 (baseline)	AB 32 Target Year
Year	2014 Disposal	2014 Disposal	City + SOI								
1	770	192	192	219	212	218	223	213	220	199	209
2	1,501	375	375	427	414	425	436	416	429	387	408
3	1,445	361	361	411	398	409	420	400	413	373	393
4	1,392	348	348	396	383	394	404	385	397	359	378
5	1,340	335	335	381	369	379	389	371	383	346	364
6	1,290	322	322	367	355	365	374	357	368	333	351
7	1,242	310	310	353	342	351	360	344	355	320	338
8	1,195	299	299	340	329	338	347	331	341	308	325
9	1,151	288	288	327	317	326	334	319	329	297	313
10	1,108	277	277	315	305	313	322	307	316	286	301
11	1,067	267	267	303	294	302	310	295	305	275	290
12	1,027	257	257	292	283	290	298	284	293	265	279
13	988	247	247	281	272	280	287	274	282	255	269
14	926	232	232	263	255	262	269	256	265	239	252
15	880	220	220	250	242	249	255	244	251	227	239
16	833	208	208	237	230	236	242	231	238	215	227
17	787	197	197	224	217	223	228	218	225	203	214
18	740	185	185	210	204	209	215	205	211	191	201
19	694	173	173	197	191	196	201	192	198	179	189
20	647	162	162	184	178	183	188	179	185	167	176
21	601	150	150	171	165	170	174	166	172	155	163
22	554	139	139	157	153	157	161	153	158	143	151
23	508	127	127	144	140	144	147	141	145	131	138
24	461	115	115	131	127	130	134	128	132	119	125
25	414	104	104	118	114	117	120	115	118	107	113
26	368	92	92	105	101	104	107	102	105	95	100
27	321	80	80	91	89	91	93	89	92	83	87
28	275	69	69	78	76	78	80	76	79	71	75
29	228	57	57	65	63	65	66	63	65	59	62
30	182	45	45	52	50	51	53	50	52	47	49
31	135	34	34	38	37	38	39	37	39	35	37
32	89	22	22	25	24	25	26	25	25	23	24
33	42	11	11	12	12	12	12	12	12	11	11
TOTAL	25,200	6,300	6,300	7,163	6,943	7,128	7,314	6,976	7,197	6,500	6,854

Waste. Landfill Emissions Tool Version 1.3 and CalRecycle. Biogenic CO₂ emissions are not included.

Notes

LFG capture

Efficiency 0.75

Waste generation based on three year average (2011-2013) waste commitment for the City of Palo Alto obtained from CalRecycle. This sector captures only the waste that is generated by the City of Palo Alto residents and businesses in the inventory year. This sector does not include historically generated waste disposal.

This method assumes that the degradable organic component (degradable organic carbon, DOC) in waste decays slowly throughout a few decades, during which CH₄ and biogenic CO₂ are formed. If conditions are constant, the rate of CH₄ production depends solely on the amount of carbon remaining in the waste. As a result emissions of CH₄ from waste deposited in a disposal site are highest in the first few years after deposition, then gradually decline as the degradable carbon in the waste is consumed by the bacteria responsible for the decay. Significant CH₄ production typically begins one or two years after waste disposal in a landfill and continues for 10 to 60 years or longer.

Decomposition based on an average annual rainfall of 21.68 inches per year average in Morgan Hill near the Kirby Canyon Landfill (anaerobic decomposition factor (k) of 0.038) (WRCC 2014).

The Landfill Gas Estimator only includes the landfill gas (LFG) capture in the landfill gas heat output and therefore the reduction and emissions from landfill gas capture are calculated separately. Assumes 75 percent of fugitive GHG emissions are captured within the landfill's Landfill Gas Capture System with a landfill gas capture efficiency of 75%. The Landfill gas capture efficiency is based on the California Air Resources Board's (CARB) Local Government Operations Protocol (LGOP), Version 1.1.

Energy Use – Purchased Electricity & Natural Gas City + SOI

Energy Use Report for Palo Alto- Purchased Electricity

Provided by Eric Keniston, City of Palo Alto, April 2014 and April 2015

2011-2013 average	2011 Annual KWH	2012 Annual KWH	2013 Annual KWH	2014 Annual KWH	Kwh 4-yr Avg
Single-Family	121,844,350	118,517,756	118,439,000	113,219,501	118,005,152
Multi-Family	38,667,524	39,386,048	39,396,692	36,308,179	38,439,611
Commercial	420,155,466	435,616,568	461,915,179	479,054,844	449,185,514
Industrial	251,541,035	227,281,310	219,218,161	210,241,296	227,070,451
Public Facilities	55,923,659	54,657,391	55,182,913	56,218,434	55,495,599
City Facilities	29,331,131	29,040,538	28,809,795	29,713,565	29,223,757
Commercial Multi-Family (master meter)	32,025,863	30,420,776	30,257,401	28,629,293	30,333,333
Total	949,489,028	934,920,387	953,219,141	953,385,112	947,753,417

Energy Use Report for Palo Alto - Natural Gas

Provided by Eric Keniston, City of Palo Alto, April 2014 and April 2015

2011-2013 average	2011 Annual Therms	2012 Annual Therms	2013 Annual Therms	2014 Annual Therms	Therms 4-yr Avg
Single-Family	10,287,368	9,510,992	9,815,382	7,916,548	9,382,573
Multi-Family	1,450,423	1,431,732	1,471,949	1,207,354	1,390,365
Commercial	7,988,655	8,040,302	8,580,855	8,504,190	8,278,501
Industrial	5,079,522	4,453,603	3,995,267	3,606,115	4,283,627
Public Facilities	2,402,418	2,243,997	2,258,653	2,047,591	2,238,165
City Facilities	996,273	827,300	852,108	881,204	889,221
Commercial Multi-Family (master meter)	2,691,001	2,635,593	2,550,396	2,259,322	2,534,078
Total	30,895,660	29,143,519	29,524,610	26,422,324	28,996,528

Energy

Energy Emission Factors

Natural Gas	Intensity factor				CO ₂ e
	lbs CO ₂ /Therm	MTons CO ₂ /Therm	CH ₄ MTons/Therm	N ₂ O MTons/Therm	MTons/Therm
All Years	11.7	0.00530	5.E-07	1.E-08	0.00532
Source: CO ₂ , CH ₄ and N ₂ O intensity based on Table G.3 of the LGOP for residential and non-residential (CO ₂ , 53.02 kg/Mmbtu; CH ₄ : 0.005 kg/MMBtu; N ₂ O: 0.0001 kg/MMBtu)					

Palo Alto Utilities		Palo Alto Intensity factor	CO ₂ e	
		CO ₂ MTons/MWH ¹	MTons/MWh	CH ₄ MTons/MWH ²
	2012	0.113	0.113	0.000013
	2013	0.000	0.000	0.000013
	2014	0.000	0.000	0.000013
Source 1: Eric Keniston, City of Palo Alto, April 2014 and April 2015.				

ABAU Carbon Intensity for Palo Alto Utilities Energy

	2014	2020	
Assumed Percent Renewable	33.0%	56.5%	
CO ₂ e MTons/Mwh without Renewable	0.000		

Based on the Palo Alto Utilities 2014 Renewable Portfolio estimate and the Utilities' expected 2020 RPS.

Source: Eric Keniston, City of Palo Alto, April 2015.

GHG Emissions from Energy Use

Electricity	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential	0	0	0	0	0	0	0	0	0
Commercial + Industrial	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0

Natural Gas	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential	66,342	74,126	74,126	75,791	77,536	75,791	80,716	67,426	73,032
Commercial + Industrial	102,319	118,423	112,710	115,658	118,423	111,710	111,710	106,256	112,081
Total	168,661	192,549	186,836	191,449	195,959	187,501	192,426	173,681	185,112

Summary	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential Total	66,342	74,126	74,126	75,791	77,536	75,791	80,716	67,426	73,032
Commercial + Industrial Total	102,319	118,423	112,710	115,658	118,423	111,710	111,710	106,256	112,081
Total	168,661	192,549	186,836	191,449	195,959	187,501	192,426	173,681	185,112

General Conversion Factors

lbs to kg	0.4536
kg to MTons	0.001
Mmbtu to Therm	0.1
kilowatt hrs to megawatt hrs	0.001
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

Global Warming Potentials (GWP)	
CO ₂	1
CH ₄	21
N ₂ O	310

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.

Therms to kwh	29.30711111

Criteria Air Pollutants from Natural Gas

Rate	lbs/MBTU					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Natural Gas						
Residential	0.01078431	0.09215686	0.03921569	0.00058824	0.00745098	0.00745098
Non-Residential	0.01078431	0.09803922	0.08235294	0.00058824	0.00745098	0.00745098

Source: CalEEMod Version 2013.2.2.

Natural Gas	2014 lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	37	315	134	2	25	25
Commercial + Industrial	57	517	434	3	39	39
Total	94	832	568	5	65	65

Natural Gas	Scenario 1 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	41	352	150	2	28	28
Commercial + Industrial	66	598	503	4	45	45
Total	107	950	652	6	74	74
Increase from Baseline	13	118	84	1	9	9

Natural Gas	Scenario 2 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	41	352	150	2	28	28
Commercial + Industrial	63	570	478	3	43	43
Total	104	922	628	6	72	72
Increase from Baseline	10	89	60	1	7	7

Natural Gas	Scenario 3 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	42	360	153	2	29	29
Commercial + Industrial	63	570	478	3	43	43
Total	105	930	632	6	72	72
Increase from Baseline	11	97	63	1	8	8

Natural Gas	Scenario 4 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	43	368	157	2	30	30
Commercial + Industrial	66	598	503	4	45	45
Total	109	967	659	6	75	75
Increase from Baseline	15	135	91	1	10	10

Natural Gas	Scenario 5 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	42	360	153	2	29	29
Commercial + Industrial	62	564	474	3	43	43
Total	104	924	627	6	72	72
Increase from Baseline	10	92	59	1	7	7

Natural Gas	Scenario 6 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	45	383	163	2	31	31
Commercial + Industrial	62	564	474	3	43	43
Total	107	948	637	6	74	74
Increase from Baseline	13	116	69	1	9	9

Natural Gas	Scenario 7 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	37	320	136	2	26	26
Commercial + Industrial	59	537	451	3	41	41
Total	97	857	587	5	67	67
Increase from Baseline	3	25	19	0	2	2

General Conversion Factors

Mmbtu to Therm	0.1
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

Energy Use – Purchased Electricity & Natural Gas

Energy

Energy Emission Factors

Natural Gas	Intensity factor				CO ₂ e
	lbs CO ₂ /Therm	MTons CO ₂ /Therm	CH ₄ MTons/Therm	N ₂ O MTons/Therm	MTons/Therm
All Years	11.7	0.00530	5.E-07	1.E-08	0.00532
Source: CO ₂ , CH ₄ and N ₂ O intensity based on Table G.3 of the LGOP for residential and non-residential (CO ₂ , 53.02 kg/Mmbtu; CH ₄ : 0.005 kg/MMBtu; N ₂ O: 0.0001 kg/MMBtu)					

Palo Alto Utilities		Palo Alto Intensity factor	CO ₂ e	
		CO ₂ MTons/MWH ¹	MTons/MWh	CH ₄ MTons/MWH ²
	2012	0.113	0.113	0.000013
	2013	0.000	0.000	0.000013
	2014	0.000	0.000	0.000013
Source 1: Eric Keniston, City of Palo Alto, April 2014 and April 2015.				

ABAU Carbon Intensity for Palo Alto Utilities Energy

	2014	2020	
Assumed Percent Renewable	33.0%	56.5%	
CO ₂ e MTons/Mwh without Renewable	0.000		

Based on the Palo Alto Utilities 2014 Renewable Portfolio estimate and the Utilities' expected 2020 RPS.

Source: Eric Keniston, City of Palo Alto, April 2015.

GHG Emissions from Energy Use

Electricity	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential	0	0	0	0	0	0	0	0	0
Commercial + Industrial	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0

Natural Gas	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential	57,265	62,721	62,721	64,376	66,132	64,376	69,301	58,348	58,398
Commercial + Industrial	96,869	112,578	106,865	109,813	112,578	105,865	105,865	100,807	106,368
Total	154,134	175,299	169,586	174,189	178,710	170,242	175,167	159,155	164,766

Summary	MTCO ₂ e/Year								
	City 2014	Scenario 1 (2030 BAU)	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Residential Total	57,265	62,721	62,721	64,376	66,132	64,376	69,301	58,348	58,398
Commercial + Industrial Total	96,869	112,578	106,865	109,813	112,578	105,865	105,865	100,807	106,368
Total	154,134	175,299	169,586	174,189	178,710	170,242	175,167	159,155	164,766

General Conversion Factors

lbs to kg	0.4536
kg to MTons	0.001
Mmbtu to Therm	0.1
kilowatt hrs to megawatt hrs	0.001
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

Global Warming Potentials (GWP)	
CO ₂	1
CH ₄	21
N ₂ O	310

Source: Intergovernmental Panel on Climate Change (IPCC). 1995. Second Assessment Report: Climate Change 1995.

Therms to kwh	29.30711111

Criteria Air Pollutants from Natural Gas

Rate	lbs/MBTU					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Natural Gas						
Residential	0.01078431	0.09215686	0.03921569	0.00058824	0.00745098	0.00745098
Non-Residential	0.01078431	0.09803922	0.08235294	0.00058824	0.00745098	0.00745098

Source: CalEEMod Version 2013.2.2.

Natural Gas	2014 lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	32	272	116	2	22	22
Commercial + Industrial	54	489	411	3	37	37
Total	86	761	527	5	59	59

Natural Gas	Scenario 1 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	35	298	127	2	24	24
Commercial + Industrial	63	569	478	3	43	43
Total	97	867	605	5	67	67
Increase from Baseline	12	105	78	1	8	8

Natural Gas	Scenario 2 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	35	298	127	2	24	24
Commercial + Industrial	59	540	454	3	41	41
Total	94	838	580	5	65	65
Increase from Baseline	9	76	53	0	6	6

Natural Gas	Scenario 3 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	36	306	130	2	25	25
Commercial + Industrial	59	540	454	3	41	41
Total	95	846	584	5	66	66
Increase from Baseline	10	84	57	1	7	7

Natural Gas	Scenario 4 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	37	314	134	2	25	25
Commercial + Industrial	63	569	478	3	43	43
Total	99	883	612	5	69	69
Increase from Baseline	14	121	85	1	9	9

Natural Gas	Scenario 5 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	36	306	130	2	25	25
Commercial + Industrial	59	535	449	3	41	41
Total	95	841	579	5	65	65
Increase from Baseline	9	79	53	0	6	6

Natural Gas	Scenario 6 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	39	329	140	2	27	27
Commercial + Industrial	59	535	449	3	41	41
Total	97	864	589	5	67	67
Increase from Baseline	12	103	63	1	8	8

Natural Gas	Scenario 7 Project lbs/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Residential	32	277	118	2	22	22
Commercial + Industrial	56	509	428	3	39	39
Total	88	787	546	5	61	61
Increase from Baseline	3	25	19	0	2	2

General Conversion Factors

Mmbtu to Therm	0.1
lbs to Tons	2000
Tons to MTon	0.9071847

Source: California Air Resources Board (CARB). 2010. Local Government Operations Protocol. Version 1.1. Appendix F, Standard Conversion Factors

On-Road Transportation

City + SOI

CITY OF PALO ALTO (City Only) — TRANSPORTATION SECTOR

EMFAC2014 v1.0.7

Based on SAR GWPs

Black - VMT with SB 375 RTAC method applied (I-I*100%, I-X*50%)

VMT	City of Palo Alto +SOI						
	Population	Employment	Service Population (SP)	Daily VMT ¹	Rate (VMT / SP) ¹	Adjusted Daily VMT	Annual VMT ²
EXISTING 2014							
Internal VMT (passenger vehicles)				429,707		381,230	132,286,810
Internal-External VMT (passenger vehicles)				5,961,586		5,289,070	1,835,307,290
Internal VMT (trucks)				3,670		3,260	1,131,220
Internal-External VMT (trucks)				254,624		225,900	78,387,300
Total Adjusted (City)						5,899,460	2,047,112,620
VTA Model Total (not adjusted)	80,805	100,830	181,635	6,649,587	36.6	6,649,590	2,307,407,730
without Trucks (adjusted)				6,391,293	35.2	5,670,300	
VTA Model w/RTAC	80,805	100,830	181,635	3,541,482	19.5	3,541,480	1,228,893,560
without Trucks (adjusted)				3,410,500	18.8	3,025,765	
Year 2014 - Existing City	80,805	100,830	181,635	3,541,482	19.5	3,541,480	1,228,893,560
SCENARIO 1							
Internal VMT (passenger vehicles)				459,608		407,760	141,492,720
Internal-External VMT (passenger vehicles)				6,650,829		5,900,560	2,047,494,320
Internal VMT (trucks)				4,007		3,550	1,231,850
Internal-External VMT (trucks)				302,889		268,720	93,245,840
Total Adjusted (City)						6,580,590	2,283,464,730
VTA Model Total (not adjusted)	90,210	116,700	206,910	7,417,333	35.8	7,417,330	2,573,813,510
without Trucks (adjusted)				7,110,437	34.4	6,308,320	
VTA Model w/RTAC	90,210	116,700	206,910	3,940,474	19.0	3,940,470	1,367,343,090
without Trucks (adjusted)				3,785,023	18.3	3,358,040	
Scenario 1	90,210	116,700	206,910	3,940,474	19.0	3,940,470	1,367,343,090
SCENARIO 2							
Internal VMT (passenger vehicles)				448,088		397,540	137,946,380
Internal-External VMT (passenger vehicles)				6,449,421		5,721,870	1,985,488,890
Internal VMT (trucks)				3,623		3,210	1,113,870
Internal-External VMT (trucks)				283,847		251,830	87,385,010
Total Adjusted (City)						6,374,450	2,211,934,150
VTA Model Total (not adjusted)	90,210	111,070	201,280	7,184,979	35.7	7,184,980	2,493,188,060
without Trucks (adjusted)				6,897,509	34.3	6,119,410	
VTA Model w/RTAC	90,210	111,070	201,280	3,818,345	19.0	3,818,350	1,324,967,450
without Trucks (adjusted)				3,672,799	18.2	3,258,475	
Scenario 2	90,210	111,070	201,280	3,818,345	19.0	3,818,350	1,324,967,450
SCENARIO 3							
Internal VMT (passenger vehicles)				456,903		405,360	140,659,920
Internal-External VMT (passenger vehicles)				6,543,983		5,805,770	2,014,602,190
Internal VMT (trucks)				3,834		3,400	1,179,800
Internal-External VMT (trucks)				292,831		259,800	90,150,600
Total Adjusted (City)						6,474,330	2,246,592,510
VTA Model Total (not adjusted)	92,045	113,975	206,020	7,297,551	35.4	7,297,550	2,532,249,850
without Trucks (adjusted)				7,000,886	34.0	6,211,130	
VTA Model w/RTAC	92,045	113,975	206,020	3,879,144	18.8	3,879,140	1,346,061,580
without Trucks (adjusted)				3,728,895	18.1	3,308,245	
Scenario 3	92,045	113,975	206,020	3,879,144	18.8	3,879,140	1,346,061,580
SCENARIO 4							
Internal VMT (passenger vehicles)				431,569		382,880	132,859,360
Internal-External VMT (passenger vehicles)				6,501,004		5,767,630	2,001,367,610
Internal VMT (trucks)				4,013		3,560	1,235,320
Internal-External VMT (trucks)				301,070		267,110	92,687,170
Total Adjusted (City)						6,421,180	2,228,149,460
VTA Model Total (not adjusted)	94,065	116,700	210,765	7,237,656	34.3	7,237,660	2,511,468,020
without Trucks (adjusted)				6,932,573	32.9	6,150,510	
VTA Model w/RTAC	94,065	116,700	210,765	3,836,619	18.2	3,836,620	1,331,307,140
without Trucks (adjusted)				3,682,071	17.5	3,266,695	
Scenario 4	94,065	116,700	210,765	3,836,619	18.2	3,836,620	1,331,307,140
SCENARIO 5 Unmitigated							
Internal VMT (passenger vehicles)				409,640		363,430	126,110,210
Internal-External VMT (passenger vehicles)				6,242,134		5,537,970	1,921,675,590
Internal VMT (trucks)				3,572		3,170	1,099,990
Internal-External VMT (trucks)				281,756		249,970	86,739,590
Total Adjusted (City)						6,154,540	2,135,625,380
VTA Model Total (not adjusted)	92,045	110,085	202,130	6,937,102	34.3	6,937,100	2,407,173,700
without Trucks (adjusted)				6,651,774	32.9	5,901,400	
VTA Model w/RTAC	92,045	110,085	202,130	3,675,157	18.2	3,675,160	1,275,280,520
without Trucks (adjusted)				3,530,707	17.5	3,132,415	
Scenario 5	92,045	110,085	202,130	3,675,157	18.2	3,675,160	1,275,280,520

SCENARIO 5 Mitigated							
Internal VMT (passenger vehicles)				399,859		354,750	123,098,250
Internal-External VMT (passenger vehicles)				6,209,011		5,508,580	1,911,477,260
Internal VMT (trucks)				3,572		3,170	1,099,990
Internal-External VMT (trucks)				281,756		249,970	86,739,590
Total Adjusted (City)						6,116,470	2,122,415,090
VTA Model Total (not adjusted)	92,045	110,085	202,130	6,894,198	34.1	6,894,200	2,392,287,400
without Trucks (adjusted)				6,608,870	32.7	5,863,330	
VTA Model w/RTAC	92,045	110,085	202,130	3,648,815	18.1	3,648,810	1,266,137,070
without Trucks (adjusted)				3,504,365	17.3	3,109,040	
Scenario 5	92,045	110,085	202,130	3,648,815	18.1	3,648,810	1,266,137,070
SCENARIO 6 unmitigated							
Internal VMT (passenger vehicles)				426,168		378,090	131,197,230
Internal-External VMT (passenger vehicles)				6,365,926		5,647,790	1,959,783,130
Internal VMT (trucks)				3,574		3,170	1,099,990
Internal-External VMT (trucks)				282,080		250,260	86,840,220
Total Adjusted (City)						6,279,310	2,178,920,570
VTA Model Total (not adjusted)	97,690	110,085	207,775	7,077,748	34.1	7,077,750	2,455,979,250
without Trucks (adjusted)				6,792,094	32.7	6,025,880	
VTA Model w/RTAC	97,690	110,085	207,775	3,753,745	18.1	3,753,750	1,302,551,250
without Trucks (adjusted)				3,609,131	17.4	3,201,985	
Scenario 6	97,690	110,085	207,775	3,753,745	18.1	3,753,750	1,302,551,250
SCENARIO 6 Mitigated							
Internal VMT (passenger vehicles)				415,499		368,630	127,914,610
Internal-External VMT (passenger vehicles)				6,331,092		5,616,890	1,949,060,830
Internal VMT (trucks)				3,574		3,170	1,099,990
Internal-External VMT (trucks)				282,080		250,260	86,840,220
Total Adjusted (City)						6,238,950	2,164,915,650
VTA Model Total (not adjusted)	97,690	110,085	207,775	7,032,245	33.8	7,032,250	2,440,190,750
without Trucks (adjusted)				6,746,591	32.5	5,985,520	
VTA Model w/RTAC	97,690	110,085	207,775	3,725,659	17.9	3,725,660	1,292,804,020
without Trucks (adjusted)				3,581,045	17.2	3,177,075	
Scenario 6	97,690	110,085	207,775	3,725,659	17.9	3,725,660	1,292,804,020
SCENARIO 7 - No Growth							
Internal VMT (passenger vehicles)				407,800		361,800	125,544,600
Internal-External VMT (passenger vehicles)				6,069,989		5,385,240	1,868,678,280
Internal VMT (trucks)				3,269		2,900	1,006,300
Internal-External VMT (trucks)				267,535		237,350	82,360,450
Total Adjusted (City)						5,987,290	2,077,589,630
VTA Model Total (not adjusted)	82,040	104,710	186,750	6,748,593	36.1	6,748,590	2,341,760,730
without Trucks (adjusted)				6,477,789	34.7	5,747,040	
VTA Model w/RTAC	82,040	104,710	186,750	3,579,831	19.2	3,579,830	1,242,201,010
without Trucks (adjusted)				3,442,795	18.4	3,054,420	
Scenario 7	82,040	104,710	186,750	3,579,831	19.2	3,579,830	1,242,201,010
AB 32 Estimate ³	88,600	110,450	199,050	3,623,367	18.2	3,214,620	1,115,473,140
¹ Passenger vehicle and truck VMT provided by Hexagon is based on the VTA Regional Transportation Demand Forecasting Model. For GHG emissions modeling, the transportation sector proportions 50 percent of the trip length for trips that occur outside of the City boundaries. Per the Regional Targets Advisory Committee (RTAC) under Senate Bill 375 (SB 375), 50 percent of the trip length for intrajurisdictional trips are the responsibility of the adjacent/corresponding jurisdiction while the other 50 percent are the responsibility of the City of Palo Alto. External-Internal and Internal-External trips include 50 percent of the trip length in accordance with these recommendations.							
² Daily VMT multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.							
³ VMT estimated using the VMT/SP rate and VMT by classifications for 2014.							

VMT re.
-26,350

VMT re.
-28,090

Percent VMT by Classification	2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Percent Passenger Vehicles	96%	96%	96%	96%	96%	93%	96%	96%
Percent Trucks	4%	4%	4%	4%	4%	4%	4%	4%

CRITERIA AIR POLLUTANTS

	lbs/day					
	ROG	NOx	CO	SOx	PM10	PM2.5
VMT 2012 - City only (F&P) ¹	323	1,316	9,432	16	242	107
Year 2014 - Existing City	392	1,621	12,058	25	378	162
2030 - Existing City	125	329	3,714	15	365	149
Scenario 1	139	372	4,135	17	407	167
Scenario 2	135	358	4,005	16	394	161
Scenario 3	137	365	4,069	16	401	164
Scenario 4	136	364	4,027	16	397	162
Scenario 5	126	338	3,722	15	367	150
Scenario 5M	125	336	3,695	15	364	149
Reductions	-1	-2	-27	0	-3	-1
Scenario 6	133	353	3,938	16	388	159
Scenario 6M	132	351	3,909	16	385	157
Reductions	-1	-3	-29	0	-3	-1
Scenario 7	127	336	3,755	15	370	151
	Tons/year					
	ROG	NOx	CO	SOx	PM10	PM2.5
VMT 2012 - City only (F&P) ¹	56	228	1,636	3	42	19
Year 2014 - Existing City	68	281	2,092	4	66	28
2030 - Existing City	22	57	644	3	63	26
Scenario 1	24	65	717	3	71	29
Scenario 2	23	62	695	3	68	28
Scenario 3	24	63	706	3	69	28
Scenario 4	24	63	699	3	69	28
Scenario 5	22	59	646	3	64	26
Scenario 5M	22	58	641	3	63	26
Scenario 6	23	61	683	3	67	28
Scenario 6M	23	61	678	3	67	27
Scenario 7	22	58	651	3	64	26
Daily emissions multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.						
Source: EMFAC2014-PL. Based on running exhaust, breakwear, and tirewear emission rates.						

GHG EMISSIONS

	MTons/year				CO ₂ e lbs/Mile	CO ₂ e lbs/SP/day
	CO ₂	CH ₄	N ₂ O	CO ₂ e		
Year 2014 - Existing City	391,826	15	11	395,436	0.71	13.15
Scenario 1	264,386	6	2	265,266	0.43	7.74
Scenario 2	255,452	6	2	256,299	0.43	7.69
Scenario 3	259,866	6	2	260,729	0.43	7.64
Scenario 4	257,882	6	2	258,743	0.43	7.42
Scenario 5	238,706	5	2	239,505	0.41	7.16
Scenario 5M	236,995	5	2	237,788	0.41	7.11
Scenario 6	251,511	6	2	252,347	0.43	7.34
Scenario 6M	249,629	6	2	250,459	0.43	7.28
Scenario 7	239,580	5	2	240,374	0.43	7.77
AB 32 Year 2020	301,709	8	5	303,333	0.60	9.20
Source: EMFAC2014-PL. Based on the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report Global Warming Potentials (GWPs)						
Note: MTons = metric tons; CO ₂ e = carbon dioxide-equivalent. Includes Pavley + California Advanced Clean Car Standards, the Low Carbon Fuel Standard (LCFS), on-road diesel fleet rules, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation.						
Unlike EMFAC2011, EMFAC2014 does not identify GHG emissions rates with Pavley+LCFS and rates without these GHG emissions regulations. Therefore, only the "with reductions" rate is included.						
¹ Fehr & Peers, 2013, March 19. City of Palo Alto Climate Protection Plan On-Road Community Transportation Inventory (Table 7).						

GHG from VMT reductions
-1,717 -1%

-1,888 -1%

Santa Clara County 2014 - all Model Years (40 MPH)				g/mile															
																VMT from default			
	PM2.5_RUN														EMFAC-SG	%VMT			
Veh	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX					
All Other Buses	1.59E-01	5.47E+00	5.14E-01	1.11E-02	7.81E-02	1.20E-02	1.30E-01	2.20E-01		7.48E-02	3.00E-03	5.59E-02	1.34E-01	1.17E+03	7.39E-03	30,540	0.07%		
LDA	2.78E-02	1.09E-01	1.20E+00	2.80E-03	1.68E-03	8.00E-03	3.68E-02	4.64E-02		1.56E-03	2.00E-03	1.58E-02	1.93E-02	2.78E+02	8.44E-03	24,850,262	57.57%		
LDT1	9.28E-02	2.78E-01	2.97E+00	3.28E-03	3.64E-03	8.00E-03	3.67E-02	4.84E-02		3.37E-03	2.00E-03	1.58E-02	2.11E-02	3.23E+02	2.27E-02	1,982,484	4.59%		
LDT2	3.55E-02	1.87E-01	1.58E+00	3.81E-03	1.48E-03	8.00E-03	3.68E-02	4.62E-02		1.36E-03	2.00E-03	1.58E-02	1.91E-02	3.79E+02	1.11E-02	8,377,756	19.41%		
LHD1	9.00E-02	2.02E+00	1.48E+00	6.08E-03	1.13E-02	9.45E-03	7.64E-02	9.72E-02		1.07E-02	2.36E-03	3.28E-02	4.59E-02	6.14E+02	1.93E-02	882,692	2.04%		
LHD2	8.42E-02	2.44E+00	9.49E-01	6.11E-03	1.54E-02	1.04E-02	8.92E-02	1.15E-01		1.47E-02	2.61E-03	3.82E-02	5.55E-02	6.26E+02	1.14E-02	209,158	0.48%		
MCY	2.22E+00	1.07E+00	2.08E+01	1.84E-03	1.43E-03	4.00E-03	1.18E-02	1.72E-02		1.35E-03	1.00E-03	5.04E-03	7.39E-03	1.44E+02	3.38E-01	238,631	0.55%		
MDV	5.60E-02	2.98E-01	2.24E+00	4.89E-03	1.72E-03	8.00E-03	3.67E-02	4.65E-02		1.59E-03	2.00E-03	1.58E-02	1.93E-02	4.86E+02	1.86E-02	5,053,963	11.71%		
MH	2.92E-01	2.00E+00	8.34E+00	1.10E-02	2.79E-02	1.28E-02	1.30E-01	1.71E-01		2.66E-02	3.19E-03	5.59E-02	8.57E-02	1.10E+03	6.28E-02	42,516	0.10%		
Motor Coach	2.72E-01	8.90E+00	1.01E+00	1.68E-02	9.61E-02	1.20E-02	1.30E-01	2.38E-01		9.19E-02	3.00E-03	5.59E-02	1.51E-01	1.76E+03	1.26E-02	12,489	0.03%		
OBUS	7.45E-02	5.93E-01	2.45E+00	1.13E-02	5.17E-04	1.20E-02	1.30E-01	1.43E-01		4.77E-04	3.00E-03	5.59E-02	5.93E-02	1.12E+03	2.73E-02	37,403	0.09%		
SBUS	1.51E-01	6.13E+00	2.96E+00	9.10E-03	4.89E-02	1.07E-02	7.45E-01	8.04E-01		4.68E-02	2.67E-03	3.19E-01	3.69E-01	9.41E+02	3.29E-02	24,413	0.06%		
T6 Ag	8.36E-01	1.11E+01	2.76E+00	1.07E-02	5.43E-01	1.20E-02	1.30E-01	6.86E-01		5.20E-01	3.00E-03	5.59E-02	5.79E-01	1.12E+03	3.88E-02	2,417	0.01%		
T6 CAIRP Heavy	1.42E-01	3.84E+00	4.74E-01	1.09E-02	7.58E-02	1.20E-02	1.30E-01	2.18E-01		7.25E-02	3.00E-03	5.59E-02	1.31E-01	1.14E+03	6.59E-03	688	0.00%		
T6 CAIRP Small	2.39E-01	4.45E+00	7.95E-01	1.10E-02	1.63E-01	1.20E-02	1.30E-01	3.06E-01		1.56E-01	3.00E-03	5.59E-02	2.15E-01	1.15E+03	1.11E-02	2,113	0.00%		
T6 Instate Construction Heavy	2.71E-01	6.82E+00	9.56E-01	1.09E-02	1.57E-01	1.20E-02	1.30E-01	3.00E-01		1.51E-01	3.00E-03	5.59E-02	2.09E-01	1.14E+03	1.26E-02	19,438	0.05%		
T6 Instate Construction Small	2.77E-01	5.26E+00	9.44E-01	1.09E-02	1.79E-01	1.20E-02	1.30E-01	3.21E-01		1.71E-01	3.00E-03	5.59E-02	2.30E-01	1.15E+03	1.29E-02	45,544	0.11%		
T6 Instate Heavy	2.26E-01	5.01E+00	7.48E-01	1.09E-02	1.25E-01	1.20E-02	1.30E-01	2.67E-01		1.19E-01	3.00E-03	5.59E-02	1.78E-01	1.14E+03	1.05E-02	115,292	0.27%		
T6 Instate Small	3.47E-01	6.34E+00	1.19E+00	1.08E-02	2.22E-01	1.20E-02	1.30E-01	3.64E-01		2.13E-01	3.00E-03	5.59E-02	2.71E-01	1.14E+03	1.61E-02	275,998	0.64%		
T6 OOS Heavy	9.99E-02	3.49E+00	3.28E-01	1.10E-02	4.62E-02	1.20E-02	1.30E-01	1.89E-01		4.42E-02	3.00E-03	5.59E-02	1.03E-01	1.15E+03	4.64E-03	394	0.00%		
T6 OOS Small	2.39E-01	4.45E+00	7.95E-01	1.10E-02	1.63E-01	1.20E-02	1.30E-01	3.06E-01		1.56E-01	3.00E-03	5.59E-02	2.15E-01	1.15E+03	1.11E-02	1,211	0.00%		
T6 Public	4.90E-02	6.54E+00	1.66E-01	1.10E-02	2.92E-02	1.20E-02	1.30E-01	1.72E-01		2.80E-02	3.00E-03	5.59E-02	8.68E-02	1.16E+03	2.27E-03	11,560	0.03%		
T6 Utility	3.67E-02	2.27E+00	1.27E-01	1.13E-02	9.86E-03	1.20E-02	1.30E-01	1.52E-01		9.43E-03	3.00E-03	5.59E-02	6.83E-02	1.19E+03	1.70E-03	2,078	0.00%		
T6TS	2.61E-01	1.61E+00	8.17E+00	1.14E-02	1.81E-03	1.20E-02	1.30E-01	1.44E-01		1.68E-03	3.00E-03	5.59E-02	6.05E-02	1.12E+03	8.88E-02	62,410	0.14%		
T7 Ag	1.42E+00	1.75E+01	7.00E+00	1.66E-02	9.33E-01	3.60E-02	6.17E-02	1.03E+00		8.92E-01	9.00E-03	2.65E-02	9.28E-01	1.73E+03	6.59E-02	2,061	0.00%		
T7 CAIRP	2.51E-01	6.59E+00	9.36E-01	1.61E-02	8.43E-02	3.60E-02	6.17E-02	1.82E-01		8.06E-02	9.00E-03	2.65E-02	1.16E-01	1.69E+03	1.17E-02	120,736	0.28%		
T7 CAIRP Construction	3.33E-01	8.59E+00	1.17E+00	1.66E-02	1.32E-01	3.60E-02	6.17E-02	2.30E-01		1.26E-01	9.00E-03	2.65E-02	1.62E-01	1.74E+03	1.55E-02	13,789	0.03%		
T7 NNOOS	1.11E-01	3.84E+00	4.70E-01	1.57E-02	2.32E-02	3.60E-02	6.17E-02	1.21E-01		2.22E-02	9.00E-03	2.65E-02	5.77E-02	1.64E+03	5.15E-03	149,713	0.35%		
T7 NOOS	1.88E-01	6.17E+00	7.04E-01	1.61E-02	5.15E-02	3.60E-02	6.17E-02	1.49E-01		4.92E-02	9.00E-03	2.65E-02	8.47E-02	1.69E+03	8.74E-03	47,691	0.11%		
T7 Other Port	1.60E-01	5.35E+00	5.23E-01	1.66E-02	2.64E-02	3.60E-02	6.17E-02	1.24E-01		2.53E-02	9.00E-03	2.65E-02	6.07E-02	1.74E+03	7.42E-03	27,033	0.06%		
T7 POAK	1.67E-01	5.64E+00	5.38E-01	1.67E-02	2.81E-02	3.60E-02	6.17E-02	1.26E-01		2.69E-02	9.00E-03	2.65E-02	6.23E-02	1.75E+03	7.77E-03	47,975	0.11%		
T7 Public	9.98E-02	1.28E+01	4.49E-01	1.68E-02	6.53E-02	3.60E-02	6.17E-02	1.63E-01		6.25E-02	9.00E-03	2.65E-02	9.80E-02	1.76E+03	4.64E-03	11,940	0.03%		
T7 Single	4.94E-01	1.15E+01	2.27E+00	1.65E-02	2.98E-01	3.60E-02	6.17E-02	3.96E-01		2.85E-01	9.00E-03	2.65E-02	3.21E-01	1.73E+03	2.30E-02	71,960	0.17%		
T7 Single Construction	3.39E-01	9.53E+00	1.46E+00	1.63E-02	1.68E-01	3.60E-02	6.17E-02	2.66E-01		1.61E-01	9.00E-03	2.65E-02	1.97E-01	1.71E+03	1.58E-02	35,671	0.08%		
T7 SWCV	5.74E-02	9.45E+00	9.91E-01	2.87E-02	9.71E-03	3.60E-02	6.17E-02	1.07E-01		9.29E-03	9.00E-03	2.65E-02	4.47E-02	3.62E+03	4.94E-01	22,311	0.05%		
T7 Tractor	3.63E-01	8.52E+00	1.52E+00	1.62E-02	1.52E-01	3.60E-02	6.17E-02	2.50E-01		1.45E-01	9.00E-03	2.65E-02	1.81E-01	1.69E+03	1.68E-02	221,585	0.51%		
T7 Tractor Construction	4.97E-01	1.03E+01	2.02E+00	1.64E-02	2.34E-01	3.60E-02	6.17E-02	3.32E-01		2.24E-01	9.00E-03	2.65E-02	2.60E-01	1.72E+03	2.31E-02	26,595	0.06%		
T7 Utility	7.30E-02	4.57E+00	2.82E-01	1.65E-02	1.59E-02	3.60E-02	6.17E-02	1.14E-01		1.53E-02	9.00E-03	2.65E-02	5.07E-02	1.73E+03	3.39E-03	1,224	0.00%		
T7IS	1.09E+00	4.77E+00	4.42E+01	1.87E-02	1.70E-03	2.00E-02	6.17E-02	8.34E-02		1.60E-03	5.00E-03	2.65E-02	3.31E-02	1.80E+03	3.21E-01	8,224	0.02%		
UBUS	4.86E-01	1.70E+01	5.01E+00	1.61E-02	2.13E-01	1.20E-02	7.34E-01	9.60E-01		2.04E-01	3.00E-03	3.15E-01	5.22E-01	1.73E+03	1.05E-01	77,648	0.18%		
															43,167,607	100.00%			
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																			

Santa Clara County 2014 - all Model Years (40 MPH)		lbs/Mile														
##																

Santa Clara County 2014 - all Model Years (40 MPH)		Mtons/Mile														
##																

Year 2014 - Existing City

Based on EMFAC2014

Emission year	Daily							
2014	3,541,480	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.07%	0.01%	1.82E-01	6.25E+00	5.87E-01	1.27E-02	2.52E-01	1.53E-01
LDA	57.57%	67.51%	1.47E+02	5.73E+02	6.34E+03	1.47E+01	2.45E+02	1.02E+02
LDT1	4.59%	5.39%	3.90E+01	1.17E+02	1.25E+03	1.38E+00	2.03E+01	8.88E+00
LDT2	19.41%	22.76%	6.30E+01	3.33E+02	2.81E+03	6.77E+00	8.21E+01	3.40E+01
LHD1	2.04%	0.42%	2.97E+00	6.66E+01	4.87E+01	2.01E-01	3.21E+00	1.51E+00
LHD2	0.48%	0.10%	6.59E-01	1.91E+01	7.43E+00	4.78E-02	9.00E-01	4.34E-01
MCY	0.55%	0.65%	1.12E+02	5.42E+01	1.05E+03	9.34E-02	8.70E-01	3.74E-01
MDV	11.71%	2.42%	1.06E+01	5.63E+01	4.24E+02	9.24E-01	8.79E+00	3.66E+00
MH	0.10%	0.02%	4.64E-01	3.18E+00	1.33E+01	1.76E-02	2.72E-01	1.36E-01
Motor Coach	0.03%	0.01%	1.27E-01	4.16E+00	4.73E-01	7.84E-03	1.11E-01	7.04E-02
OBUS	0.09%	0.02%	1.04E-01	8.29E-01	3.43E+00	1.58E-02	2.00E-01	8.30E-02
SBUS	0.06%	0.01%	1.38E-01	5.60E+00	2.70E+00	8.31E-03	7.35E-01	3.37E-01
T6 Ag	0.01%	0.00%	7.56E-02	1.00E+00	2.50E-01	9.69E-04	6.20E-02	5.23E-02
T6 CAIRP Heavy	0.00%	0.00%	3.66E-03	9.90E-02	1.22E-02	2.81E-04	5.62E-03	3.38E-03
T6 CAIRP Small	0.00%	0.00%	1.89E-02	3.52E-01	6.29E-02	8.67E-04	2.42E-02	1.70E-02
T6 Instate Construction Heavy	0.05%	0.01%	1.97E-01	4.96E+00	6.95E-01	7.91E-03	2.18E-01	1.52E-01
T6 Instate Construction Small	0.11%	0.02%	4.73E-01	8.96E+00	1.61E+00	1.86E-02	5.47E-01	3.92E-01
T6 Instate Heavy	0.27%	0.06%	9.74E-01	2.16E+01	3.23E+00	4.69E-02	1.15E+00	7.69E-01
T6 Instate Small	0.64%	0.13%	3.59E+00	6.55E+01	1.23E+01	1.12E-01	3.76E+00	2.80E+00
T6 OOS Heavy	0.00%	0.00%	1.47E-03	5.15E-02	4.84E-03	1.62E-04	2.78E-03	1.52E-03
T6 OOS Small	0.00%	0.00%	1.08E-02	2.02E-01	3.60E-02	4.97E-04	1.38E-02	9.74E-03
T6 Public	0.03%	0.01%	2.12E-02	2.83E+00	7.19E-02	4.77E-03	7.42E-02	3.76E-02
T6 Utility	0.00%	0.00%	2.85E-03	1.76E-01	9.91E-03	8.81E-04	1.18E-02	5.31E-03
T6TS	0.14%	0.03%	6.09E-01	3.76E+00	1.91E+01	2.65E-02	3.37E-01	1.41E-01
T7 Ag	0.00%	0.00%	1.09E-01	1.35E+00	5.40E-01	1.28E-03	7.95E-02	7.16E-02
T7 CAIRP	0.28%	0.06%	1.14E+00	2.98E+01	4.23E+00	7.27E-02	8.22E-01	5.24E-01
T7 CAIRP Construction	0.03%	0.01%	1.72E-01	4.43E+00	6.04E-01	8.56E-03	1.19E-01	8.35E-02
T7 NNOOS	0.35%	0.07%	6.21E-01	2.15E+01	2.63E+00	8.77E-02	6.77E-01	3.23E-01
T7 NOOS	0.11%	0.02%	3.36E-01	1.10E+01	1.26E+00	2.87E-02	2.66E-01	1.51E-01
T7 Other Port	0.06%	0.01%	1.62E-01	5.41E+00	5.29E-01	1.68E-02	1.26E-01	6.14E-02
T7 POAK	0.11%	0.02%	3.00E-01	1.01E+01	9.65E-01	3.00E-02	2.26E-01	1.12E-01
T7 Public	0.03%	0.01%	4.46E-02	5.73E+00	2.01E-01	7.51E-03	7.29E-02	4.38E-02
T7 Single	0.17%	0.03%	1.33E+00	3.09E+01	6.11E+00	4.46E-02	1.07E+00	8.64E-01
T7 Single Construction	0.08%	0.02%	4.53E-01	1.27E+01	1.95E+00	2.18E-02	3.55E-01	2.62E-01
T7 SWCV	0.05%	0.01%	4.79E-02	7.89E+00	8.27E-01	2.39E-02	8.97E-02	3.74E-02
T7 Tractor	0.51%	0.11%	3.01E+00	7.06E+01	1.26E+01	1.34E-01	2.07E+00	1.50E+00
T7 Tractor Construction	0.06%	0.01%	4.94E-01	1.03E+01	2.01E+00	1.63E-02	3.30E-01	2.58E-01
T7 Utility	0.00%	0.00%	3.34E-03	2.09E-01	1.29E-02	7.54E-04	5.21E-03	2.32E-03
T7IS	0.02%	0.00%	3.35E-01	1.47E+00	1.36E+01	5.74E-03	2.57E-02	1.02E-02
UBUS	0.18%	0.04%	1.41E+00	4.93E+01	1.46E+01	4.67E-02	2.79E+00	1.52E+00
TOTAL	100%	100%	392	1,621	12,058	25	378	162
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Year 2014 - Existing City

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2014	1,228,893,560	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.07%	0.01%	2.10E+02	1.33E-03	9.83E-01	0.04	223
LDA	57.57%	67.51%	2.31E+05	7.00E+00	9.01E+01	3.75	232,352
LDT1	4.59%	5.39%	2.14E+04	1.50E+00	1.84E+01	0.77	21,671
LDT2	19.41%	22.76%	1.06E+05	3.10E+00	5.24E+01	2.18	106,819
LHD1	2.04%	0.42%	3.19E+03	1.00E-01	1.05E+01	0.44	3,331
LHD2	0.48%	0.10%	7.71E+02	1.40E-02	3.01E+00	0.13	810
MCY	0.55%	0.65%	1.15E+03	2.69E+00	8.53E+00	0.35	1,317
MDV	11.71%	2.42%	1.45E+04	5.55E-01	8.86E+00	0.37	14,590
MH	0.10%	0.02%	2.76E+02	1.57E-02	5.00E-01	0.02	282
Motor Coach	0.03%	0.01%	1.29E+02	9.29E-04	6.54E-01	0.03	138
OBUS	0.09%	0.02%	2.48E+02	6.01E-03	1.31E-01	0.01	250
SBUS	0.06%	0.01%	1.35E+02	4.74E-03	8.81E-01	0.04	147
T6 Ag	0.01%	0.00%	1.60E+01	5.52E-04	1.57E-01	0.01	18
T6 CAIRP Heavy	0.00%	0.00%	4.63E+00	2.67E-05	1.56E-02	0.00	5
T6 CAIRP Small	0.00%	0.00%	1.43E+01	1.38E-04	5.54E-02	0.00	15
T6 Instate Construction Heavy	0.05%	0.01%	1.31E+02	1.44E-03	7.80E-01	0.03	141
T6 Instate Construction Small	0.11%	0.02%	3.07E+02	3.46E-03	1.41E+00	0.06	326
T6 Instate Heavy	0.27%	0.06%	7.74E+02	7.12E-03	3.40E+00	0.14	818
T6 Instate Small	0.64%	0.13%	1.85E+03	2.62E-02	1.03E+01	0.43	1,980
T6 OOS Heavy	0.00%	0.00%	2.67E+00	1.08E-05	8.10E-03	0.00	3
T6 OOS Small	0.00%	0.00%	8.20E+00	7.90E-05	3.17E-02	0.00	9
T6 Public	0.03%	0.01%	7.87E+01	1.55E-04	4.45E-01	0.02	84
T6 Utility	0.00%	0.00%	1.45E+01	2.08E-05	2.78E-02	0.00	15
T6TS	0.14%	0.03%	4.13E+02	3.26E-02	5.92E-01	0.02	422
T7 Ag	0.00%	0.00%	2.11E+01	8.00E-04	2.12E-01	0.01	24
T7 CAIRP	0.28%	0.06%	1.20E+03	8.30E-03	4.69E+00	0.19	1,260
T7 CAIRP Construction	0.03%	0.01%	1.41E+02	1.26E-03	6.98E-01	0.03	150
T7 NNOOS	0.35%	0.07%	1.45E+03	4.54E-03	3.38E+00	0.14	1,491
T7 NOOS	0.11%	0.02%	4.74E+02	2.46E-03	1.73E+00	0.07	496
T7 Other Port	0.06%	0.01%	2.78E+02	1.18E-03	8.52E-01	0.04	289
T7 POAK	0.11%	0.02%	4.94E+02	2.19E-03	1.59E+00	0.07	515
T7 Public	0.03%	0.01%	1.24E+02	3.26E-04	9.02E-01	0.04	136
T7 Single	0.17%	0.03%	7.35E+02	9.73E-03	4.87E+00	0.20	798
T7 Single Construction	0.08%	0.02%	3.60E+02	3.31E-03	2.00E+00	0.08	385
T7 SWCV	0.05%	0.01%	4.76E+02	6.50E-02	1.24E+00	0.05	493
T7 Tractor	0.51%	0.11%	2.21E+03	2.20E-02	1.11E+01	0.46	2,354
T7 Tractor Construction	0.06%	0.01%	2.69E+02	3.61E-03	1.62E+00	0.07	290
T7 Utility	0.00%	0.00%	1.24E+01	2.44E-05	3.29E-02	0.00	13
T7IS	0.02%	0.00%	8.70E+01	1.55E-02	2.31E-01	0.01	90
UBUS	0.18%	0.04%	7.89E+02	4.79E-02	7.76E+00	0.32	890
TOTAL	100%	100%	391,826	15	255	11	395,436

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Santa Clara County 2020 - all Model Years (40 MPH)				g/mile															
																VMT from default			
Veh					PM2.5_RUN										EMFAC-SG	%VMT			
	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX					
All Other Buses	6.51E-02	2.86E+00	2.23E-01	1.12E-02	1.62E-02	1.20E-02	1.30E-01	1.59E-01		1.55E-02	3.00E-03	5.59E-02	7.44E-02	1.17E+03	3.02E-03	37,997	0.08%		
LDA	9.66E-03	5.05E-02	6.08E-01	2.33E-03	1.47E-03	8.00E-03	3.68E-02	4.62E-02		1.36E-03	2.00E-03	1.58E-02	1.91E-02	2.33E+02	3.83E-03	28,535,430	60.48%		
LDT1	2.43E-02	1.20E-01	1.32E+00	2.85E-03	2.17E-03	8.00E-03	3.67E-02	4.69E-02		2.00E-03	2.00E-03	1.57E-02	1.98E-02	2.84E+02	9.70E-03	1,802,512	3.82%		
LDT2	1.36E-02	8.33E-02	8.27E-01	3.25E-03	1.39E-03	8.00E-03	3.67E-02	4.61E-02		1.28E-03	2.00E-03	1.58E-02	1.90E-02	3.25E+02	5.47E-03	8,735,504	18.51%		
LHD1	6.41E-02	1.38E+00	8.62E-01	5.66E-03	1.01E-02	9.90E-03	7.64E-02	9.64E-02		9.60E-03	2.47E-03	3.28E-02	4.48E-02	5.76E+02	1.12E-02	731,189	1.55%		
LHD2	4.72E-02	1.06E+00	3.83E-01	5.69E-03	1.05E-02	1.07E-02	8.92E-02	1.10E-01		1.00E-02	2.67E-03	3.82E-02	5.09E-02	5.84E+02	4.44E-03	234,988	0.50%		
MCY	1.97E+00	1.03E+00	1.76E+01	1.84E-03	1.62E-03	4.00E-03	1.18E-02	1.74E-02		1.52E-03	1.00E-03	5.04E-03	7.56E-03	1.50E+02	3.76E-01	253,032	0.54%		
MDV	3.23E-02	1.63E-01	1.42E+00	4.30E-03	1.64E-03	8.00E-03	3.67E-02	4.64E-02		1.52E-03	2.00E-03	1.57E-02	1.93E-02	4.29E+02	1.09E-02	5,119,735	10.85%		
MH	1.01E-01	1.34E+00	2.86E+00	1.07E-02	2.11E-02	1.28E-02	1.30E-01	1.64E-01		2.01E-02	3.21E-03	5.59E-02	7.92E-02	1.07E+03	3.19E-02	37,035	0.08%		
Motor Coach	1.29E-01	4.08E+00	5.04E-01	1.61E-02	2.26E-02	1.20E-02	1.30E-01	1.65E-01		2.16E-02	3.00E-03	5.59E-02	8.05E-02	1.69E+03	6.00E-03	15,952	0.03%		
OBUS	2.76E-02	2.47E-01	8.91E-01	1.08E-02	6.70E-04	1.20E-02	1.30E-01	1.43E-01		6.16E-04	3.00E-03	5.59E-02	5.95E-02	1.08E+03	1.12E-02	44,318	0.09%		
SBUS	6.65E-02	3.84E+00	1.09E+00	8.85E-03	1.75E-02	1.06E-02	7.45E-01	7.73E-01		1.67E-02	2.65E-03	3.19E-01	3.39E-01	9.18E+02	1.28E-02	29,230	0.06%		
T6 Ag	3.90E-01	5.10E+00	1.31E+00	1.12E-02	2.41E-01	1.20E-02	1.30E-01	3.83E-01		2.30E-01	3.00E-03	5.59E-02	2.89E-01	1.18E+03	1.81E-02	2,417	0.01%		
T6 CAIRP Heavy	3.90E-02	1.23E+00	1.70E-01	1.08E-02	6.65E-03	1.20E-02	1.30E-01	1.49E-01		6.36E-03	3.00E-03	5.59E-02	6.52E-02	1.13E+03	1.81E-03	879	0.00%		
T6 CAIRP Small	6.20E-02	1.01E+00	2.39E-01	1.08E-02	3.02E-02	1.20E-02	1.30E-01	1.73E-01		2.89E-02	3.00E-03	5.59E-02	8.78E-02	1.13E+03	2.88E-03	2,699	0.01%		
T6 Instate Construction Heavy	5.71E-02	2.66E+00	2.03E-01	1.10E-02	1.56E-02	1.20E-02	1.30E-01	1.58E-01		1.50E-02	3.00E-03	5.59E-02	7.38E-02	1.16E+03	2.65E-03	10,752	0.02%		
T6 Instate Construction Small	9.16E-02	1.61E+00	3.26E-01	1.09E-02	5.09E-02	1.20E-02	1.30E-01	1.93E-01		4.87E-02	3.00E-03	5.59E-02	1.08E-01	1.14E+03	4.25E-03	25,192	0.05%		
T6 Instate Heavy	5.70E-02	2.25E+00	2.10E-01	1.10E-02	1.21E-02	1.20E-02	1.30E-01	1.54E-01		1.16E-02	3.00E-03	5.59E-02	7.05E-02	1.15E+03	2.65E-03	129,403	0.27%		
T6 Instate Small	1.00E-01	1.69E+00	3.54E-01	1.09E-02	5.84E-02	1.20E-02	1.30E-01	2.01E-01		5.58E-02	3.00E-03	5.59E-02	1.15E-01	1.15E+03	4.66E-03	316,000	0.67%		
T6 OOS Heavy	3.93E-02	1.30E+00	1.71E-01	1.08E-02	7.09E-03	1.20E-02	1.30E-01	1.49E-01		6.78E-03	3.00E-03	5.59E-02	6.56E-02	1.13E+03	1.82E-03	504	0.00%		
T6 OOS Small	6.20E-02	1.01E+00	2.39E-01	1.08E-02	3.02E-02	1.20E-02	1.30E-01	1.73E-01		2.89E-02	3.00E-03	5.59E-02	8.78E-02	1.13E+03	2.88E-03	1,546	0.00%		
T6 Public	3.80E-02	3.43E+00	1.46E-01	1.09E-02	1.58E-02	1.20E-02	1.30E-01	1.58E-01		1.51E-02	3.00E-03	5.59E-02	7.40E-02	1.14E+03	1.76E-03	12,946	0.03%		
T6 Utility	2.21E-02	4.25E-01	1.16E-01	1.12E-02	1.97E-03	1.20E-02	1.30E-01	1.44E-01		1.89E-03	3.00E-03	5.59E-02	6.07E-02	1.17E+03	1.02E-03	2,212	0.00%		
T6TS	6.86E-02	5.29E-01	2.25E+00	1.09E-02	9.35E-04	1.20E-02	1.30E-01	1.43E-01		8.60E-04	3.00E-03	5.59E-02	5.97E-02	1.08E+03	2.77E-02	74,243	0.16%		
T7 Ag	7.97E-01	9.65E+00	3.94E+00	1.63E-02	5.07E-01	3.60E-02	6.17E-02	6.04E-01		4.85E-01	9.00E-03	2.65E-02	5.20E-01	1.71E+03	3.70E-02	2,061	0.00%		
T7 CAIRP	1.19E-01	3.40E+00	5.59E-01	1.51E-02	1.62E-02	3.60E-02	6.17E-02	1.14E-01		1.55E-02	9.00E-03	2.65E-02	5.10E-02	1.58E+03	5.53E-03	154,207	0.33%		
T7 CAIRP Construction	1.20E-01	3.48E+00	5.21E-01	1.52E-02	2.01E-02	3.60E-02	6.17E-02	1.18E-01		1.92E-02	9.00E-03	2.65E-02	5.47E-02	1.60E+03	5.56E-03	7,627	0.02%		
T7 NNOOS	7.39E-02	1.39E+00	4.02E-01	1.41E-02	7.66E-03	3.60E-02	6.17E-02	1.05E-01		7.33E-03	9.00E-03	2.65E-02	4.28E-02	1.48E+03	3.43E-03	191,217	0.41%		
T7 NOOS	1.19E-01	3.46E+00	5.60E-01	1.51E-02	1.65E-02	3.60E-02	6.17E-02	1.14E-01		1.58E-02	9.00E-03	2.65E-02	5.13E-02	1.58E+03	5.51E-03	60,912	0.13%		
T7 Other Port	1.54E-01	4.56E+00	5.85E-01	1.59E-02	2.31E-02	3.60E-02	6.17E-02	1.21E-01		2.21E-02	9.00E-03	2.65E-02	5.75E-02	1.66E+03	7.17E-03	32,132	0.07%		
T7 POAK	1.75E-01	5.35E+00	6.28E-01	1.61E-02	2.73E-02	3.60E-02	6.17E-02	1.25E-01		2.61E-02	9.00E-03	2.65E-02	6.16E-02	1.69E+03	8.11E-03	65,000	0.14%		
T7 Public	9.21E-02	9.76E+00	4.06E-01	1.63E-02	4.77E-02	3.60E-02	6.17E-02	1.45E-01		4.56E-02	9.00E-03	2.65E-02	8.11E-02	1.71E+03	4.28E-03	11,047	0.02%		
T7 Single	1.08E-01	4.75E+00	4.31E-01	1.60E-02	2.25E-02	3.60E-02	6.17E-02	1.20E-01		2.16E-02	9.00E-03	2.65E-02	5.70E-02	1.68E+03	5.02E-03	76,013	0.16%		
T7 Single Construction	9.19E-02	3.63E+00	3.91E-01	1.55E-02	1.75E-02	3.60E-02	6.17E-02	1.15E-01		1.67E-02	9.00E-03	2.65E-02	5.22E-02	1.62E+03	4.27E-03	19,730	0.04%		
T7 SWCV	4.85E-02	6.59E+00	2.20E+00	2.10E-02	7.65E-03	3.60E-02	6.17E-02	1.05E-01		7.32E-03	9.00E-03	2.65E-02	4.28E-02	3.35E+03	7.58E-01	21,399	0.05%		
T7 Tractor	1.41E-01	4.48E+00	5.77E-01	1.53E-02	2.29E-02	3.60E-02	6.17E-02	1.21E-01		2.19E-02	9.00E-03	2.65E-02	5.74E-02	1.61E+03	6.55E-03	284,221	0.60%		
T7 Tractor Construction	1.36E-01	4.71E+00	5.48E-01	1.56E-02	2.72E-02	3.60E-02	6.17E-02	1.25E-01		2.61E-02	9.00E-03	2.65E-02	6.15E-02	1.63E+03	6.32E-03	14,710	0.03%		
T7 Utility	4.49E-02	7.59E-01	2.65E-01	1.55E-02	3.02E-03	3.60E-02	6.17E-02	1.01E-01		2.89E-03	9.00E-03	2.65E-02	3.84E-02	1.62E+03	2.08E-03	1,303	0.00%		
T7IS	3.75E-01	2.92E+00	2.92E+01	1.71E-02	6.98E-04	2.00E-02	6.17E-02	8.24E-02		6.42E-04	5.00E-03	2.65E-02	3.21E-02	1.67E+03	1.51E-01	9,389	0.02%		
UBUS	2.74E-01	9.71E+00	2.76E+00	1.39E-02	1.21E-01	1.20E-02	6.33E-01	7.67E-01		1.16E-01	3.00E-03	2.71E-01	3.91E-01	1.55E+03	8.70E-02	74,139	0.16%		
																47,180,821	100.00%		
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																			

Santa Clara County 2020 - all Model Years (40 MPH)		lbs/Mile														
##																
Veh		ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUN		PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX
										EX						
All Other Buses		1.44E-04	6.30E-03	4.92E-04	2.46E-05	3.58E-05	2.65E-05	2.87E-04	3.50E-04	3.42E-05		6.61E-06	1.23E-04	1.64E-04	2.58E+00	6.67E-06
LDA		2.13E-05	1.11E-04	1.34E-03	5.14E-06	3.25E-06	1.76E-05	8.10E-05	1.02E-04	3.00E-06		4.41E-06	3.47E-05	4.21E-05	5.14E-01	8.44E-06
LDT1		5.36E-05	2.66E-04	2.90E-03	6.29E-06	4.79E-06	1.76E-05	8.10E-05	1.03E-04	4.41E-06		4.41E-06	3.47E-05	4.35E-05	6.25E-01	2.14E-05
LDT2		3.00E-05	1.84E-04	1.82E-03	7.18E-06	3.07E-06	1.76E-05	8.10E-05	1.02E-04	2.83E-06		4.41E-06	3.47E-05	4.20E-05	7.16E-01	1.21E-05
LHD1		1.41E-04	3.04E-03	1.90E-03	1.25E-05	2.22E-05	2.18E-05	1.69E-04	2.13E-04	2.12E-05		5.45E-06	7.22E-05	9.88E-05	1.27E+00	2.48E-05
LHD2		1.04E-04	2.34E-03	8.45E-04	1.25E-05	2.32E-05	2.36E-05	1.97E-04	2.43E-04	2.21E-05		5.90E-06	8.43E-05	1.12E-04	1.29E+00	9.78E-06
MCY		4.33E-03	2.28E-03	3.88E-02	4.06E-06	3.57E-06	8.82E-06	2.59E-05	3.83E-05	3.34E-06		2.20E-06	1.11E-05	1.67E-05	3.30E-01	8.30E-04
MDV		7.13E-05	3.59E-04	3.14E-03	9.47E-06	3.62E-06	1.76E-05	8.10E-05	1.02E-04	3.34E-06		4.41E-06	3.47E-05	4.25E-05	9.45E-01	2.40E-05
MH		2.23E-04	2.96E-03	6.30E-03	2.35E-05	4.65E-05	2.83E-05	2.87E-04	3.62E-04	4.44E-05		7.08E-06	1.23E-04	1.75E-04	2.37E+00	7.04E-05
Motor Coach		2.85E-04	9.00E-03	1.11E-03	3.55E-05	4.98E-05	2.65E-05	2.87E-04	3.64E-04	4.77E-05		6.61E-06	1.23E-04	1.77E-04	3.73E+00	1.32E-05
OBUS		6.09E-05	5.44E-04	1.96E-03	2.39E-05	1.48E-06	2.65E-05	2.87E-04	3.15E-04	1.36E-06		6.61E-06	1.23E-04	1.31E-04	2.39E+00	2.46E-05
SBUS		1.47E-04	8.47E-03	2.40E-03	1.95E-05	3.85E-05	2.34E-05	1.64E-03	1.70E-03	3.68E-05		5.84E-06	7.04E-04	7.46E-04	2.02E+00	2.81E-05
T6 Ag		8.59E-04	1.13E-02	2.90E-03	2.48E-05	5.31E-04	2.65E-05	2.87E-04	8.44E-04	5.08E-04		6.61E-06	1.23E-04	6.37E-04	2.60E+00	3.99E-05
T6 CAIRP Heavy		8.59E-05	2.71E-03	3.74E-04	2.37E-05	1.47E-05	2.65E-05	2.87E-04	3.28E-04	1.40E-05		6.61E-06	1.23E-04	1.44E-04	2.49E+00	3.99E-06
T6 CAIRP Small		1.37E-04	2.23E-03	5.27E-04	2.38E-05	6.66E-05	2.65E-05	2.87E-04	3.80E-04	6.37E-05		6.61E-06	1.23E-04	1.94E-04	2.50E+00	6.35E-06
T6 Instate Construction Heavy		1.26E-04	5.86E-03	4.48E-04	2.43E-05	3.45E-05	2.65E-05	2.87E-04	3.48E-04	3.30E-05		6.61E-06	1.23E-04	1.63E-04	2.55E+00	5.85E-06
T6 Instate Construction Small		2.02E-04	3.55E-03	7.19E-04	2.41E-05	1.12E-04	2.65E-05	2.87E-04	4.26E-04	1.07E-04		6.61E-06	1.23E-04	2.37E-04	2.52E+00	9.38E-06
T6 Instate Heavy		1.26E-04	4.97E-03	4.64E-04	2.41E-05	2.68E-05	2.65E-05	2.87E-04	3.41E-04	2.56E-05		6.61E-06	1.23E-04	1.55E-04	2.53E+00	5.84E-06
T6 Instate Small		2.21E-04	3.72E-03	7.81E-04	2.41E-05	1.29E-04	2.65E-05	2.87E-04	4.42E-04	1.23E-04		6.61E-06	1.23E-04	2.53E-04	2.53E+00	1.03E-05
T6 OOS Heavy		8.66E-05	2.86E-03	3.77E-04	2.37E-05	1.56E-05	2.65E-05	2.87E-04	3.29E-04	1.50E-05		6.61E-06	1.23E-04	1.45E-04	2.49E+00	4.02E-06
T6 OOS Small		1.37E-04	2.23E-03	5.27E-04	2.38E-05	6.66E-05	2.65E-05	2.87E-04	3.80E-04	6.37E-05		6.61E-06	1.23E-04	1.94E-04	2.50E+00	6.35E-06
T6 Public		8.37E-05	7.57E-03	3.21E-04	2.40E-05	3.48E-05	2.65E-05	2.87E-04	3.49E-04	3.33E-05		6.61E-06	1.23E-04	1.63E-04	2.52E+00	3.89E-06
T6 Utility		4.86E-05	9.37E-04	2.56E-04	2.46E-05	4.35E-06	2.65E-05	2.87E-04	3.18E-04	4.16E-06		6.61E-06	1.23E-04	1.34E-04	2.58E+00	2.26E-06
T6TS		1.51E-04	1.17E-03	4.95E-03	2.39E-05	2.06E-06	2.65E-05	2.87E-04	3.16E-04	1.90E-06		6.61E-06	1.23E-04	1.32E-04	2.39E+00	6.11E-05
T7 Ag		1.76E-03	2.13E-02	8.68E-03	3.60E-05	1.12E-03	7.94E-05	1.36E-04	1.33E-03	1.07E-03		1.98E-05	5.83E-05	1.15E-03	3.78E+00	8.17E-05
T7 CAIRP		2.62E-04	7.50E-03	1.23E-03	3.32E-05	3.57E-05	7.94E-05	1.36E-04	2.51E-04	3.42E-05		1.98E-05	5.83E-05	1.12E-04	3.48E+00	1.22E-05
T7 CAIRP Construction		2.64E-04	7.68E-03	1.15E-03	3.36E-05	4.43E-05	7.94E-05	1.36E-04	2.60E-04	4.24E-05		1.98E-05	5.83E-05	1.21E-04	3.52E+00	1.23E-05
T7 NNOOS		1.63E-04	3.07E-03	8.87E-04	3.10E-05	1.69E-05	7.94E-05	1.36E-04	2.32E-04	1.62E-05		1.98E-05	5.83E-05	9.43E-05	3.25E+00	7.56E-06
T7 NOOS		2.62E-04	7.64E-03	1.23E-03	3.33E-05	3.64E-05	7.94E-05	1.36E-04	2.52E-04	3.48E-05		1.98E-05	5.83E-05	1.13E-04	3.49E+00	1.21E-05
T7 Other Port		3.40E-04	1.01E-02	1.29E-03	3.50E-05	5.08E-05	7.94E-05	1.36E-04	2.66E-04	4.86E-05		1.98E-05	5.83E-05	1.27E-04	3.67E+00	1.58E-05
T7 POAK		3.85E-04	1.18E-02	1.39E-03	3.56E-05	6.02E-05	7.94E-05	1.36E-04	2.76E-04	5.76E-05		1.98E-05	5.83E-05	1.36E-04	3.73E+00	1.79E-05
T7 Public		2.03E-04	2.15E-02	8.96E-04	3.59E-05	1.05E-04	7.94E-05	1.36E-04	3.21E-04	1.01E-04		1.98E-05	5.83E-05	1.79E-04	3.76E+00	9.44E-06
T7 Single		2.38E-04	1.05E-02	9.50E-04	3.53E-05	4.97E-05	7.94E-05	1.36E-04	2.65E-04	4.75E-05		1.98E-05	5.83E-05	1.26E-04	3.70E+00	1.11E-05
T7 Single Construction		2.03E-04	8.00E-03	8.61E-04	3.41E-05	3.86E-05	7.94E-05	1.36E-04	2.54E-04	3.69E-05		1.98E-05	5.83E-05	1.15E-04	3.58E+00	9.41E-06
T7 SWCV		1.07E-04	1.45E-02	4.84E-03	4.62E-05	1.69E-05	7.94E-05	1.36E-04	2.32E-04	1.61E-05		1.98E-05	5.83E-05	9.43E-05	7.38E+00	1.67E-03
T7 Tractor		3.11E-04	9.89E-03	1.27E-03	3.38E-05	5.06E-05	7.94E-05	1.36E-04	2.66E-04	4.84E-05		1.98E-05	5.83E-05	1.27E-04	3.54E+00	1.45E-05
T7 Tractor Construction		3.00E-04	1.04E-02	1.21E-03	3.44E-05	6.00E-05	7.94E-05	1.36E-04	2.76E-04	5.74E-05		1.98E-05	5.83E-05	1.36E-04	3.60E+00	1.39E-05
T7 Utility		9.90E-05	1.67E-03	5.84E-04	3.41E-05	6.66E-06	7.94E-05	1.36E-04	2.22E-04	6.37E-06		1.98E-05	5.83E-05	8.45E-05	3.57E+00	4.60E-06
T7IS		8.28E-04	6.43E-03	6.44E-02	3.78E-05	1.54E-06	4.41E-05	1.36E-04	1.82E-04	1.42E-06		1.10E-05	5.83E-05	7.08E-05	3.68E+00	3.32E-04
UBUS		6.05E-04	2.14E-02	6.07E-03	3.07E-05	2.67E-04	2.65E-05	1.40E-03	1.69E-03	2.56E-04		6.61E-06	5.99E-04	8.61E-04	3.42E+00	1.92E-04

Santa Clara County 2020 - all Model Years (40 MPH)		Mtons/Mile														
##																

AB 32 Year 2020 Estimate

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2020	1,115,473,140	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.08%	0.02%	2.34E+02	6.04E-04	5.70E-01	0.02	241
LDA	60.48%	69.88%	1.82E+05	2.98E+00	3.94E+01	1.64	182,131
LDT1	3.82%	4.41%	1.40E+04	4.78E-01	5.93E+00	0.25	14,053
LDT2	18.51%	21.39%	7.75E+04	1.30E+00	1.99E+01	0.83	77,791
LHD1	1.55%	0.34%	2.21E+03	4.31E-02	5.29E+00	0.22	2,280
LHD2	0.50%	0.11%	7.21E+02	5.48E-03	1.31E+00	0.05	738
MCY	0.54%	0.62%	1.03E+03	2.60E+00	7.15E+00	0.30	1,182
MDV	10.85%	2.41%	1.15E+04	2.92E-01	4.38E+00	0.18	11,587
MH	0.08%	0.02%	2.09E+02	6.21E-03	2.61E-01	0.01	212
Motor Coach	0.03%	0.01%	1.42E+02	5.02E-04	3.42E-01	0.01	146
OBUS	0.09%	0.02%	2.52E+02	2.60E-03	5.74E-02	0.00	253
SBUS	0.06%	0.01%	1.41E+02	1.96E-03	5.90E-01	0.02	149
T6 Ag	0.01%	0.00%	1.49E+01	2.30E-04	6.48E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	5.21E+00	8.36E-06	5.68E-03	0.00	5
T6 CAIRP Small	0.01%	0.00%	1.61E+01	4.08E-05	1.44E-02	0.00	16
T6 Instate Construction Heavy	0.02%	0.01%	6.53E+01	1.50E-04	1.50E-01	0.01	67
T6 Instate Construction Small	0.05%	0.01%	1.51E+02	5.63E-04	2.13E-01	0.01	154
T6 Instate Heavy	0.27%	0.06%	7.80E+02	1.80E-03	1.53E+00	0.06	800
T6 Instate Small	0.67%	0.15%	1.90E+03	7.73E-03	2.80E+00	0.12	1,941
T6 OOS Heavy	0.00%	0.00%	2.99E+00	4.83E-06	3.43E-03	0.00	3
T6 OOS Small	0.00%	0.00%	9.20E+00	2.34E-05	8.22E-03	0.00	9
T6 Public	0.03%	0.01%	7.77E+01	1.20E-04	2.33E-01	0.01	81
T6 Utility	0.00%	0.00%	1.36E+01	1.19E-05	4.94E-03	0.00	14
T6TS	0.16%	0.03%	4.23E+02	1.08E-02	2.06E-01	0.01	425
T7 Ag	0.00%	0.00%	1.85E+01	4.01E-04	1.04E-01	0.00	20
T7 CAIRP	0.33%	0.07%	1.28E+03	4.48E-03	2.76E+00	0.11	1,315
T7 CAIRP Construction	0.02%	0.00%	6.40E+01	2.23E-04	1.40E-01	0.01	66
T7 NNOOS	0.41%	0.09%	1.48E+03	3.45E-03	1.40E+00	0.06	1,500
T7 NOOS	0.13%	0.03%	5.06E+02	1.76E-03	1.11E+00	0.05	520
T7 Other Port	0.07%	0.02%	2.81E+02	1.21E-03	7.69E-01	0.03	291
T7 POAK	0.14%	0.03%	5.77E+02	2.77E-03	1.83E+00	0.08	601
T7 Public	0.02%	0.01%	9.90E+01	2.48E-04	5.66E-01	0.02	106
T7 Single	0.16%	0.04%	6.70E+02	2.00E-03	1.90E+00	0.08	694
T7 Single Construction	0.04%	0.01%	1.68E+02	4.42E-04	3.76E-01	0.02	173
T7 SWCV	0.05%	0.01%	3.76E+02	8.52E-02	7.40E-01	0.03	388
T7 Tractor	0.60%	0.13%	2.40E+03	9.79E-03	6.69E+00	0.28	2,485
T7 Tractor Construction	0.03%	0.01%	1.26E+02	4.88E-04	3.64E-01	0.02	131
T7 Utility	0.00%	0.00%	1.11E+01	1.43E-05	5.20E-03	0.00	11
T7IS	0.02%	0.00%	8.23E+01	7.43E-03	1.44E-01	0.01	84
UBUS	0.16%	0.03%	6.05E+02	3.39E-02	3.78E+00	0.16	654
TOTAL	100%	100%	301,709	8	113	5	303,333

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Santa Clara County 2030 - all Model Years (40 MPH)				g/mile													
																VMT from default	
Veh	PM10_RUN					PM2.5_RUN					PM2.5_PMB					EMFAC-SG	%VMT
	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	W	PM2_5_Total	CO2_RUNEX	CH4_RUNEX			
All Other Buses	3.23E-02	5.40E-01	1.70E-01	1.08E-02	3.36E-03	1.20E-02	1.30E-01	1.46E-01	3.21E-03	3.00E-03	5.59E-02	6.21E-02	1.13E+03	1.50E-03	43,708	0.09%	
LDA	3.98E-03	2.26E-02	3.34E-01	1.60E-03	9.78E-04	8.00E-03	3.67E-02	4.57E-02	9.00E-04	2.00E-03	1.57E-02	1.86E-02	1.59E+02	1.59E-03	31,587,682	62.15%	
LDT1	7.74E-03	4.24E-02	5.44E-01	2.05E-03	1.24E-03	8.00E-03	3.67E-02	4.60E-02	1.14E-03	2.00E-03	1.57E-02	1.89E-02	2.05E+02	3.12E-03	1,730,766	3.41%	
LDT2	6.23E-03	3.59E-02	4.93E-01	2.33E-03	1.11E-03	8.00E-03	3.67E-02	4.59E-02	1.02E-03	2.00E-03	1.57E-02	1.88E-02	2.32E+02	2.51E-03	9,154,780	18.01%	
LHD1	3.33E-02	4.92E-01	3.10E-01	5.05E-03	6.79E-03	1.04E-02	7.64E-02	9.36E-02	6.48E-03	2.60E-03	3.28E-02	4.18E-02	5.17E+02	3.37E-03	602,713	1.19%	
LHD2	2.62E-02	1.81E-01	1.60E-01	5.26E-03	6.59E-03	1.08E-02	8.92E-02	1.07E-01	6.30E-03	2.71E-03	3.82E-02	4.72E-02	5.42E+02	1.66E-03	257,157	0.51%	
MCY	1.83E+00	1.01E+00	1.58E+01	1.84E-03	1.84E-03	4.00E-03	1.18E-02	1.76E-02	1.72E-03	1.00E-03	5.04E-03	7.76E-03	1.53E+02	3.93E-01	260,325	0.51%	
MDV	1.08E-02	6.23E-02	6.73E-01	3.16E-03	1.19E-03	8.00E-03	3.67E-02	4.59E-02	1.09E-03	2.00E-03	1.58E-02	1.88E-02	3.15E+02	4.31E-03	5,145,584	10.12%	
MH	2.13E-02	6.64E-01	4.04E-01	1.02E-02	9.30E-03	1.29E-02	1.30E-01	1.53E-01	8.87E-03	3.22E-03	5.59E-02	6.79E-02	1.03E+03	5.25E-03	33,071	0.07%	
Motor Coach	6.63E-02	7.86E-01	3.91E-01	1.52E-02	5.26E-03	1.20E-02	1.30E-01	1.48E-01	5.04E-03	3.00E-03	5.59E-02	6.39E-02	1.59E+03	3.08E-03	19,111	0.04%	
OBUS	9.40E-03	9.65E-02	2.62E-01	1.05E-02	8.87E-04	1.20E-02	1.30E-01	1.43E-01	8.16E-04	3.00E-03	5.59E-02	5.97E-02	1.05E+03	3.80E-03	50,039	0.10%	
SBUS	3.23E-02	1.07E+00	3.44E-01	8.37E-03	6.87E-03	1.04E-02	7.45E-01	7.62E-01	6.56E-03	2.59E-03	3.19E-01	3.28E-01	8.67E+02	4.16E-03	32,840	0.06%	
T6 Ag	3.59E-02	8.42E-01	1.89E-01	1.10E-02	3.78E-03	1.20E-02	1.30E-01	1.46E-01	3.62E-03	3.00E-03	5.59E-02	6.25E-02	1.16E+03	1.67E-03	2,417	0.00%	
T6 CAIRP Heavy	2.77E-02	3.71E-01	1.46E-01	1.03E-02	2.75E-03	1.20E-02	1.30E-01	1.45E-01	2.63E-03	3.00E-03	5.59E-02	6.15E-02	1.08E+03	1.29E-03	1,053	0.00%	
T6 CAIRP Small	2.61E-02	3.23E-01	1.37E-01	1.05E-02	2.53E-03	1.20E-02	1.30E-01	1.45E-01	2.43E-03	3.00E-03	5.59E-02	6.13E-02	1.10E+03	1.21E-03	3,234	0.01%	
T6 Instate Construction Heavy	3.19E-02	5.64E-01	1.68E-01	1.07E-02	3.33E-03	1.20E-02	1.30E-01	1.46E-01	3.18E-03	3.00E-03	5.59E-02	6.20E-02	1.13E+03	1.48E-03	19,235	0.04%	
T6 Instate Construction Small	2.87E-02	4.07E-01	1.51E-01	1.06E-02	2.92E-03	1.20E-02	1.30E-01	1.45E-01	2.79E-03	3.00E-03	5.59E-02	6.17E-02	1.11E+03	1.33E-03	45,068	0.09%	
T6 Instate Heavy	3.27E-02	6.12E-01	1.72E-01	1.05E-02	3.39E-03	1.20E-02	1.30E-01	1.46E-01	3.24E-03	3.00E-03	5.59E-02	6.21E-02	1.10E+03	1.52E-03	137,662	0.27%	
T6 Instate Small	2.92E-02	4.23E-01	1.54E-01	1.06E-02	2.96E-03	1.20E-02	1.30E-01	1.45E-01	2.83E-03	3.00E-03	5.59E-02	6.17E-02	1.11E+03	1.36E-03	348,155	0.69%	
T6 OOS Heavy	2.77E-02	3.74E-01	1.46E-01	1.03E-02	2.76E-03	1.20E-02	1.30E-01	1.45E-01	2.64E-03	3.00E-03	5.59E-02	6.15E-02	1.08E+03	1.29E-03	604	0.00%	
T6 OOS Small	2.61E-02	3.23E-01	1.37E-01	1.05E-02	2.53E-03	1.20E-02	1.30E-01	1.45E-01	2.43E-03	3.00E-03	5.59E-02	6.13E-02	1.10E+03	1.21E-03	1,853	0.00%	
T6 Public	2.75E-02	1.02E+00	1.28E-01	1.07E-02	5.39E-03	1.20E-02	1.30E-01	1.48E-01	5.15E-03	3.00E-03	5.59E-02	6.40E-02	1.12E+03	1.28E-03	14,652	0.03%	
T6 Utility	2.17E-02	2.64E-01	1.14E-01	1.06E-02	1.94E-03	1.20E-02	1.30E-01	1.44E-01	1.85E-03	3.00E-03	5.59E-02	6.07E-02	1.11E+03	1.01E-03	2,443	0.00%	
T6TS	1.17E-02	1.17E-01	3.53E-01	1.05E-02	9.02E-04	1.20E-02	1.30E-01	1.43E-01	8.29E-04	3.00E-03	5.59E-02	5.97E-02	1.05E+03	4.74E-03	89,913	0.18%	
T7 Ag	8.46E-02	1.99E+00	5.00E-01	1.55E-02	6.93E-03	3.60E-02	6.17E-02	1.05E-01	6.63E-03	9.00E-03	2.65E-02	4.21E-02	1.62E+03	3.93E-03	2,061	0.00%	
T7 CAIRP	7.00E-02	8.45E-01	4.14E-01	1.36E-02	5.65E-03	3.60E-02	6.17E-02	1.03E-01	5.41E-03	9.00E-03	2.65E-02	4.09E-02	1.43E+03	3.25E-03	184,747	0.36%	
T7 CAIRP Construction	7.07E-02	8.17E-01	4.17E-01	1.40E-02	5.76E-03	3.60E-02	6.17E-02	1.03E-01	5.51E-03	9.00E-03	2.65E-02	4.10E-02	1.46E+03	3.28E-03	13,645	0.03%	
T7 NNOOS	6.03E-02	6.22E-01	3.56E-01	1.35E-02	4.66E-03	3.60E-02	6.17E-02	1.02E-01	4.46E-03	9.00E-03	2.65E-02	3.99E-02	1.42E+03	2.80E-03	229,086	0.45%	
T7 NOOS	7.02E-02	8.51E-01	4.14E-01	1.36E-02	5.67E-03	3.60E-02	6.17E-02	1.03E-01	5.42E-03	9.00E-03	2.65E-02	4.09E-02	1.43E+03	3.26E-03	72,975	0.14%	
T7 Other Port	7.26E-02	8.14E-01	4.28E-01	1.39E-02	5.94E-03	3.60E-02	6.17E-02	1.04E-01	5.68E-03	9.00E-03	2.65E-02	4.11E-02	1.46E+03	3.37E-03	34,616	0.07%	
T7 POAK	7.33E-02	8.31E-01	4.33E-01	1.39E-02	6.01E-03	3.60E-02	6.17E-02	1.04E-01	5.75E-03	9.00E-03	2.65E-02	4.12E-02	1.46E+03	3.40E-03	108,511	0.21%	
T7 Public	7.61E-02	5.13E+00	3.48E-01	1.53E-02	2.41E-02	3.60E-02	6.17E-02	1.22E-01	2.31E-02	9.00E-03	2.65E-02	5.85E-02	1.60E+03	3.54E-03	9,848	0.02%	
T7 Single	6.19E-02	9.71E-01	3.65E-01	1.46E-02	4.74E-03	3.60E-02	6.17E-02	1.02E-01	4.54E-03	9.00E-03	2.65E-02	4.00E-02	1.53E+03	2.87E-03	67,349	0.13%	
T7 Single Construction	5.85E-02	7.98E-01	3.44E-01	1.43E-02	4.55E-03	3.60E-02	6.17E-02	1.02E-01	4.36E-03	9.00E-03	2.65E-02	3.98E-02	1.50E+03	2.72E-03	35,298	0.07%	
T7 SWCV	3.37E-02	2.93E+00	3.97E+00	9.65E-03	4.68E-03	3.60E-02	6.17E-02	1.02E-01	4.48E-03	9.00E-03	2.65E-02	3.99E-02	2.93E+03	1.15E+00	19,448	0.04%	
T7 Tractor	7.42E-02	1.03E+00	4.38E-01	1.38E-02	6.05E-03	3.60E-02	6.17E-02	1.04E-01	5.79E-03	9.00E-03	2.65E-02	4.13E-02	1.45E+03	3.45E-03	345,440	0.68%	
T7 Tractor Construction	7.51E-02	1.05E+00	4.43E-01	1.42E-02	6.21E-03	3.60E-02	6.17E-02	1.04E-01	5.94E-03	9.00E-03	2.65E-02	4.14E-02	1.49E+03	3.49E-03	26,317	0.05%	
T7 Utility	4.52E-02	5.20E-01	2.67E-01	1.43E-02	3.07E-03	3.60E-02	6.17E-02	1.01E-01	2.94E-03	9.00E-03	2.65E-02	3.84E-02	1.50E+03	2.10E-03	1,439	0.00%	
T7IS	2.43E-01	2.60E+00	2.89E+01	1.61E-02	8.92E-04	2.00E-02	6.17E-02	8.26E-02	8.20E-04	5.00E-03	2.65E-02	3.23E-02	1.56E+03	9.83E-02	12,055	0.02%	
UBUS	7.16E-02	3.49E+00	1.15E+00	1.18E-02	4.27E-02	1.20E-02	5.36E-01	5.91E-01	4.09E-02	3.00E-03	2.30E-01	2.74E-01	1.38E+03	5.37E-02	74,696	0.15%	
															50,821,595	100.00%	
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																	

Santa Clara County 2030 - all Model Years (40 MPH)		lbs/Mile													
Veh	##	PM10_RUN							PM2.5_RUN						
		ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMB W	PM2_5_Total	CO2_RUNEX	CH4_RUNEX
All Other Buses		7.12E-05	1.19E-03	3.75E-04	2.37E-05	7.41E-06	2.65E-05	2.87E-04	3.21E-04	7.08E-06	6.61E-06	1.23E-04	1.37E-04	2.49E+00	3.31E-06
LDA		8.77E-06	4.97E-05	7.37E-04	3.52E-06	2.16E-06	1.76E-05	8.10E-05	1.01E-04	1.98E-06	4.41E-06	3.47E-05	4.11E-05	3.51E-01	3.50E-06
LDT1		1.71E-05	9.34E-05	1.20E-03	4.53E-06	2.73E-06	1.76E-05	8.10E-05	1.01E-04	2.52E-06	4.41E-06	3.47E-05	4.16E-05	4.52E-01	6.89E-06
LDT2		1.37E-05	7.93E-05	1.09E-03	5.13E-06	2.45E-06	1.76E-05	8.10E-05	1.01E-04	2.25E-06	4.41E-06	3.47E-05	4.14E-05	5.12E-01	5.53E-06
LHD1		7.35E-05	1.09E-03	6.82E-04	1.11E-05	1.50E-05	2.30E-05	1.69E-04	2.06E-04	1.43E-05	5.74E-06	7.22E-05	9.23E-05	1.14E+00	7.42E-06
LHD2		5.77E-05	3.99E-04	3.52E-04	1.16E-05	1.45E-05	2.39E-05	1.97E-04	2.35E-04	1.39E-05	5.97E-06	8.43E-05	1.04E-04	1.19E+00	3.65E-06
MCV		4.03E-03	2.24E-03	3.49E-02	4.05E-06	4.06E-06	8.82E-06	2.59E-05	3.88E-05	3.79E-06	2.20E-06	1.11E-05	1.71E-05	3.36E-01	8.67E-04
MDV		2.38E-05	1.37E-04	1.48E-03	6.96E-06	2.62E-06	1.76E-05	8.10E-05	1.01E-04	2.41E-06	4.41E-06	3.47E-05	4.15E-05	6.95E-01	9.50E-06
MH		4.69E-05	1.46E-03	8.91E-04	2.26E-05	2.05E-05	2.84E-05	2.87E-04	3.36E-04	1.95E-05	7.10E-06	1.23E-04	1.50E-04	2.28E+00	1.16E-05
Motor Coach		1.46E-04	1.73E-03	8.63E-04	3.35E-05	1.16E-05	2.65E-05	2.87E-04	3.25E-04	1.11E-05	6.61E-06	1.23E-04	1.41E-04	3.52E+00	6.79E-06
OBUS		2.07E-05	2.13E-04	5.78E-04	2.31E-05	1.96E-06	2.65E-05	2.87E-04	3.16E-04	1.80E-06	6.61E-06	1.23E-04	1.32E-04	2.32E+00	8.37E-06
SBUS		7.13E-05	2.37E-03	7.58E-04	1.84E-05	1.51E-05	2.28E-05	1.64E-03	1.68E-03	1.45E-05	5.71E-06	7.04E-04	7.24E-04	1.91E+00	9.17E-06
T6 Ag		7.91E-05	1.86E-03	4.16E-04	2.43E-05	8.33E-06	2.65E-05	2.87E-04	3.22E-04	7.97E-06	6.61E-06	1.23E-04	1.38E-04	2.55E+00	3.67E-06
T6 CAIRP Heavy		6.10E-05	8.18E-04	3.21E-04	2.27E-05	6.07E-06	2.65E-05	2.87E-04	3.20E-04	5.80E-06	6.61E-06	1.23E-04	1.36E-04	2.37E+00	2.83E-06
T6 CAIRP Small		5.74E-05	7.12E-04	3.02E-04	2.32E-05	5.59E-06	2.65E-05	2.87E-04	3.19E-04	5.35E-06	6.61E-06	1.23E-04	1.35E-04	2.43E+00	2.67E-06
T6 Instate Construction Heavy		7.03E-05	1.24E-03	3.69E-04	2.37E-05	7.34E-06	2.65E-05	2.87E-04	3.21E-04	7.02E-06	6.61E-06	1.23E-04	1.37E-04	2.48E+00	3.26E-06
T6 Instate Construction Small		6.33E-05	8.97E-04	3.33E-04	2.34E-05	6.44E-06	2.65E-05	2.87E-04	3.20E-04	6.16E-06	6.61E-06	1.23E-04	1.36E-04	2.45E+00	2.94E-06
T6 Instate Heavy		7.20E-05	1.35E-03	3.79E-04	2.31E-05	7.47E-06	2.65E-05	2.87E-04	3.21E-04	7.15E-06	6.61E-06	1.23E-04	1.37E-04	2.42E+00	3.35E-06
T6 Instate Small		6.44E-05	9.32E-04	3.39E-04	2.34E-05	6.52E-06	2.65E-05	2.87E-04	3.20E-04	6.24E-06	6.61E-06	1.23E-04	1.36E-04	2.46E+00	2.99E-06
T6 OOS Heavy		6.12E-05	8.24E-04	3.22E-04	2.27E-05	6.08E-06	2.65E-05	2.87E-04	3.20E-04	5.82E-06	6.61E-06	1.23E-04	1.36E-04	2.37E+00	2.84E-06
T6 OOS Small		5.74E-05	7.12E-04	3.02E-04	2.32E-05	5.59E-06	2.65E-05	2.87E-04	3.19E-04	5.35E-06	6.61E-06	1.23E-04	1.35E-04	2.43E+00	2.67E-06
T6 Public		6.06E-05	2.24E-03	2.83E-04	2.35E-05	1.19E-05	2.65E-05	2.87E-04	3.26E-04	1.14E-05	6.61E-06	1.23E-04	1.41E-04	2.46E+00	2.81E-06
T6 Utility		4.79E-05	5.83E-04	2.52E-04	2.33E-05	4.27E-06	2.65E-05	2.87E-04	3.18E-04	4.09E-06	6.61E-06	1.23E-04	1.34E-04	2.45E+00	2.22E-06
T6TS		2.58E-05	2.58E-04	7.78E-04	2.31E-05	1.99E-06	2.65E-05	2.87E-04	3.16E-04	1.83E-06	6.61E-06	1.23E-04	1.32E-04	2.31E+00	1.04E-05
T7 Ag		1.87E-04	4.38E-03	1.10E-03	3.41E-05	1.53E-05	7.94E-05	1.36E-04	2.31E-04	1.46E-05	1.98E-05	5.83E-05	9.28E-05	3.58E+00	8.66E-06
T7 CAIRP		1.54E-04	1.86E-03	9.12E-04	3.00E-05	1.25E-05	7.94E-05	1.36E-04	2.28E-04	1.19E-05	1.98E-05	5.83E-05	9.01E-05	3.15E+00	7.17E-06
T7 CAIRP Construction		1.56E-04	1.80E-03	9.19E-04	3.08E-05	1.27E-05	7.94E-05	1.36E-04	2.28E-04	1.21E-05	1.98E-05	5.83E-05	9.03E-05	3.22E+00	7.24E-06
T7 NNOOS		1.33E-04	1.37E-03	7.85E-04	2.98E-05	1.03E-05	7.94E-05	1.36E-04	2.26E-04	9.83E-06	1.98E-05	5.83E-05	8.80E-05	3.12E+00	6.18E-06
T7 NOOS		1.55E-04	1.88E-03	9.13E-04	3.01E-05	1.25E-05	7.94E-05	1.36E-04	2.28E-04	1.20E-05	1.98E-05	5.83E-05	9.01E-05	3.15E+00	7.18E-06
T7 Other Port		1.60E-04	1.79E-03	9.45E-04	3.07E-05	1.31E-05	7.94E-05	1.36E-04	2.29E-04	1.25E-05	1.98E-05	5.83E-05	9.07E-05	3.21E+00	7.43E-06
T7 POAK		1.62E-04	1.83E-03	9.54E-04	3.07E-05	1.32E-05	7.94E-05	1.36E-04	2.29E-04	1.27E-05	1.98E-05	5.83E-05	9.08E-05	3.22E+00	7.50E-06
T7 Public		1.68E-04	1.13E-02	7.68E-04	3.36E-05	5.32E-05	7.94E-05	1.36E-04	2.69E-04	5.09E-05	1.98E-05	5.83E-05	1.29E-04	3.53E+00	7.80E-06
T7 Single		1.36E-04	2.14E-03	8.05E-04	3.22E-05	1.05E-05	7.94E-05	1.36E-04	2.26E-04	1.00E-05	1.98E-05	5.83E-05	8.82E-05	3.38E+00	6.34E-06
T7 Single Construction		1.29E-04	1.76E-03	7.59E-04	3.15E-05	1.00E-05	7.94E-05	1.36E-04	2.26E-04	9.61E-06	1.98E-05	5.83E-05	8.78E-05	3.31E+00	5.99E-06
T7 SWCV		7.43E-05	6.46E-03	8.76E-03	2.13E-05	1.03E-05	7.94E-05	1.36E-04	2.26E-04	9.87E-06	1.98E-05	5.83E-05	8.80E-05	6.45E+00	2.53E-03
T7 Tractor		1.64E-04	2.28E-03	9.66E-04	3.04E-05	1.33E-05	7.94E-05	1.36E-04	2.29E-04	1.28E-05	1.98E-05	5.83E-05	9.09E-05	3.19E+00	7.60E-06
T7 Tractor Construction		1.66E-04	2.32E-03	9.76E-04	3.14E-05	1.37E-05	7.94E-05	1.36E-04	2.29E-04	1.31E-05	1.98E-05	5.83E-05	9.13E-05	3.29E+00	7.69E-06
T7 Utility		9.98E-05	1.15E-03	5.89E-04	3.16E-05	6.76E-06	7.94E-05	1.36E-04	2.22E-04	6.47E-06	1.98E-05	5.83E-05	8.46E-05	3.31E+00	4.63E-06
T7IS		5.36E-04	5.73E-03	6.37E-02	3.54E-05	1.97E-06	4.41E-05	1.36E-04	1.82E-04	1.81E-06	1.10E-05	5.83E-05	7.12E-05	3.45E+00	2.17E-04
UBUS		1.58E-04	7.69E-03	2.54E-03	2.60E-05	9.42E-05	2.65E-05	1.18E-03	1.30E-03	9.01E-05	6.61E-06	5.06E-04	6.03E-04	3.03E+00	1.18E-04

Santa Clara County 2030 - all Model Years (40 MPH)		##	MTons/Mile													
Veh	PM10_RUN				PM2.5_RUN				PM2.5_PMB				CO2_RUNEX	CH4_RUNEX		
	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	W	PM2_5_Total				
All Other Buses	3.23E-08	5.40E-07	1.70E-07	1.08E-08	3.36E-09	1.20E-08	1.30E-07	1.46E-07	3.21E-09	3.00E-09	5.59E-08	6.21E-08	1.13E-03	1.50E-09		
LDA	3.98E-09	2.26E-08	3.34E-07	1.60E-09	9.78E-10	8.00E-09	3.67E-08	4.57E-08	9.00E-10	2.00E-09	1.57E-08	1.86E-08	1.59E-04	1.59E-09		
LDT1	7.74E-09	4.24E-08	5.44E-07	2.05E-09	1.24E-09	8.00E-09	3.67E-08	4.60E-08	1.14E-09	2.00E-09	1.57E-08	1.89E-08	2.05E-04	3.12E-09		
LDT2	6.23E-09	3.59E-08	4.93E-07	2.33E-09	1.11E-09	8.00E-09	3.67E-08	4.59E-08	1.02E-09	2.00E-09	1.57E-08	1.88E-08	2.32E-04	2.51E-09		
LHD1	3.33E-08	4.92E-07	3.10E-07	5.05E-09	6.79E-09	1.04E-08	7.64E-08	9.36E-08	6.48E-09	2.60E-09	3.28E-08	4.18E-08	5.17E-04	3.37E-09		
LHD2	2.62E-08	1.81E-07	1.60E-07	5.26E-09	6.59E-09	1.08E-08	8.92E-08	1.07E-07	6.30E-09	2.71E-09	3.82E-08	4.72E-08	5.42E-04	1.66E-09		
MCV	1.83E-06	1.01E-06	1.58E-05	1.84E-09	1.84E-09	4.00E-09	1.18E-08	1.76E-08	1.72E-09	1.00E-09	5.04E-09	7.76E-09	1.53E-04	3.93E-07		
MDV	1.08E-08	6.23E-08	6.73E-07	3.16E-09	1.19E-09	8.00E-09	3.67E-08	4.59E-08	1.09E-09	2.00E-09	1.58E-08	1.88E-08	3.15E-04	4.31E-09		
MH	2.13E-08	6.64E-07	4.04E-07	1.02E-08	9.30E-09	1.29E-08	1.30E-07	1.53E-07	8.87E-09	3.22E-09	5.59E-08	6.79E-08	1.03E-03	5.25E-09		
Motor Coach	6.63E-08	7.86E-07	3.91E-07	1.52E-08	5.26E-09	1.20E-08	1.30E-07	1.48E-07	5.04E-09	3.00E-09	5.59E-08	6.39E-08	1.59E-03	3.08E-09		
OBUS	9.40E-09	9.65E-08	2.62E-07	1.05E-08	8.87E-10	1.20E-08	1.30E-07	1.43E-07	8.16E-10	3.00E-09	5.59E-08	5.97E-08	1.05E-03	3.80E-09		
SBUS	3.23E-08	1.07E-06	3.44E-07	8.37E-09	6.87E-09	1.04E-08	7.45E-07	7.62E-07	6.56E-09	2.59E-09	3.19E-07	3.28E-07	8.67E-04	4.16E-09		
T6 Ag	3.59E-08	8.42E-07	1.89E-07	1.10E-08	3.78E-09	1.20E-08	1.30E-07	1.46E-07	3.62E-09	3.00E-09	5.59E-08	6.25E-08	1.16E-03	1.67E-09		
T6 CAIRP Heavy	2.77E-08	3.71E-07	1.46E-07	1.03E-08	2.75E-09	1.20E-08	1.30E-07	1.45E-07	2.63E-09	3.00E-09	5.59E-08	6.15E-08	1.08E-03	1.29E-09		
T6 CAIRP Small	2.61E-08	3.23E-07	1.37E-07	1.05E-08	2.53E-09	1.20E-08	1.30E-07	1.45E-07	2.43E-09	3.00E-09	5.59E-08	6.13E-08	1.10E-03	1.21E-09		
T6 Instate Construction Heavy	3.19E-08	5.64E-07	1.68E-07	1.07E-08	3.33E-09	1.20E-08	1.30E-07	1.46E-07	3.18E-09	3.00E-09	5.59E-08	6.20E-08	1.13E-03	1.48E-09		
T6 Instate Construction Small	2.87E-08	4.07E-07	1.51E-07	1.06E-08	2.92E-09	1.20E-08	1.30E-07	1.45E-07	2.79E-09	3.00E-09	5.59E-08	6.17E-08	1.11E-03	1.33E-09		
T6 Instate Heavy	3.27E-08	6.12E-07	1.72E-07	1.05E-08	3.39E-09	1.20E-08	1.30E-07	1.46E-07	3.24E-09	3.00E-09	5.59E-08	6.21E-08	1.10E-03	1.52E-09		
T6 Instate Small	2.92E-08	4.23E-07	1.54E-07	1.06E-08	2.96E-09	1.20E-08	1.30E-07	1.45E-07	2.83E-09	3.00E-09	5.59E-08	6.17E-08	1.11E-03	1.36E-09		
T6 OOS Heavy	2.77E-08	3.74E-07	1.46E-07	1.03E-08	2.76E-09	1.20E-08	1.30E-07	1.45E-07	2.64E-09	3.00E-09	5.59E-08	6.15E-08	1.08E-03	1.29E-09		
T6 OOS Small	2.61E-08	3.23E-07	1.37E-07	1.05E-08	2.53E-09	1.20E-08	1.30E-07	1.45E-07	2.43E-09	3.00E-09	5.59E-08	6.13E-08	1.10E-03	1.21E-09		
T6 Public	2.75E-08	1.02E-06	1.28E-07	1.07E-08	5.39E-09	1.20E-08	1.30E-07	1.48E-07	5.15E-09	3.00E-09	5.59E-08	6.40E-08	1.12E-03	1.28E-09		
T6 Utility	2.17E-08	2.64E-07	1.14E-07	1.06E-08	1.94E-09	1.20E-08	1.30E-07	1.44E-07	1.85E-09	3.00E-09	5.59E-08	6.07E-08	1.11E-03	1.01E-09		
T6TS	1.17E-08	1.17E-07	3.53E-07	1.05E-08	9.02E-10	1.20E-08	1.30E-07	1.43E-07	8.29E-10	3.00E-09	5.59E-08	5.97E-08	1.05E-03	4.74E-09		
T7 Ag	8.46E-08	1.99E-06	5.00E-07	1.55E-08	6.93E-09	3.60E-08	6.17E-08	1.05E-07	6.63E-09	9.00E-09	2.65E-08	4.21E-08	1.62E-03	3.93E-09		
T7 CAIRP	7.00E-08	8.45E-07	4.14E-07	1.36E-08	5.65E-09	3.60E-08	6.17E-08	1.03E-07	5.41E-09	9.00E-09	2.65E-08	4.09E-08	1.43E-03	3.25E-09		
T7 CAIRP Construction	7.07E-08	8.17E-07	4.17E-07	1.40E-08	5.76E-09	3.60E-08	6.17E-08	1.03E-07	5.51E-09	9.00E-09	2.65E-08	4.10E-08	1.46E-03	3.28E-09		
T7 NNOOS	6.03E-08	6.22E-07	3.56E-07	1.35E-08	4.66E-09	3.60E-08	6.17E-08	1.02E-07	4.46E-09	9.00E-09	2.65E-08	3.99E-08	1.42E-03	2.80E-09		
T7 NOOS	7.02E-08	8.51E-07	4.14E-07	1.36E-08	5.67E-09	3.60E-08	6.17E-08	1.03E-07	5.42E-09	9.00E-09	2.65E-08	4.09E-08	1.43E-03	3.26E-09		
T7 Other Port	7.26E-08	8.14E-07	4.28E-07	1.39E-08	5.94E-09	3.60E-08	6.17E-08	1.04E-07	5.68E-09	9.00E-09	2.65E-08	4.11E-08	1.46E-03	3.37E-09		
T7 POAK	7.33E-08	8.31E-07	4.33E-07	1.39E-08	6.01E-09	3.60E-08	6.17E-08	1.04E-07	5.75E-09	9.00E-09	2.65E-08	4.12E-08	1.46E-03	3.40E-09		
T7 Public	7.61E-08	5.13E-06	3.48E-07	1.53E-08	2.41E-08	3.60E-08	6.17E-08	1.22E-07	2.31E-08	9.00E-09	2.65E-08	5.85E-08	1.60E-03	3.54E-09		
T7 Single	6.19E-08	9.71E-07	3.65E-07	1.46E-08	4.74E-09	3.60E-08	6.17E-08	1.02E-07	4.54E-09	9.00E-09	2.65E-08	4.00E-08	1.53E-03	2.87E-09		
T7 Single Construction	5.85E-08	7.98E-07	3.44E-07	1.43E-08	4.55E-09	3.60E-08	6.17E-08	1.02E-07	4.36E-09	9.00E-09	2.65E-08	3.98E-08	1.50E-03	2.72E-09		
T7 SWCV	3.37E-08	2.93E-06	3.97E-06	9.65E-09	4.68E-09	3.60E-08	6.17E-08	1.02E-07	4.48E-09	9.00E-09	2.65E-08	3.99E-08	2.93E-03	1.15E-06		
T7 Tractor	7.42E-08	1.03E-06	4.38E-07	1.38E-08	6.05E-09	3.60E-08	6.17E-08	1.04E-07	5.79E-09	9.00E-09	2.65E-08	4.13E-08	1.45E-03	3.45E-09		
T7 Tractor Construction	7.51E-08	1.05E-06	4.43E-07	1.42E-08	6.21E-09	3.60E-08	6.17E-08	1.04E-07	5.94E-09	9.00E-09	2.65E-08	4.14E-08	1.49E-03	3.49E-09		
T7 Utility	4.52E-08	5.20E-07	2.67E-07	1.43E-08	3.07E-09	3.60E-08	6.17E-08	1.01E-07	2.94E-09	9.00E-09	2.65E-08	3.84E-08	1.50E-03	2.10E-09		
T7IS	2.43E-07	2.60E-06	2.89E-05	1.61E-08	8.92E-10	2.00E-08	6.17E-08	8.26E-08	8.20E-10	5.00E-09	2.65E-08	3.23E-08	1.56E-03	9.83E-08		
UBUS	7.16E-08	3.49E-06	1.15E-06	1.18E-08	4.27E-08	1.20E-08	5.36E-07	5.91E-07	4.09E-08	3.00E-09	2.30E-07	2.74E-07	1.38E-03	5.37E-08		

2030 - Existing City

Based on EMFAC2014

Emission year	Daily							
2030	3,541,480	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.04E-02	8.43E-01	2.65E-01	1.68E-02	2.27E-01	9.69E-02
LDA	62.15%	71.18%	2.21E+01	1.25E+02	1.86E+03	8.87E+00	2.54E+02	1.04E+02
LDT1	3.41%	3.90%	2.36E+00	1.29E+01	1.66E+02	6.25E-01	1.40E+01	5.75E+00
LDT2	18.01%	20.63%	1.00E+01	5.79E+01	7.94E+02	3.75E+00	7.39E+01	3.02E+01
LHD1	1.19%	0.28%	7.17E-01	1.06E+01	6.66E+00	1.09E-01	2.02E+00	9.00E-01
LHD2	0.51%	0.12%	2.40E-01	1.66E+00	1.46E+00	4.83E-02	9.79E-01	4.34E-01
MCY	0.51%	0.59%	8.38E+01	4.65E+01	7.24E+02	8.42E-02	8.06E-01	3.55E-01
MDV	10.12%	2.35%	1.98E+00	1.14E+01	1.24E+02	5.80E-01	8.44E+00	3.46E+00
MH	0.07%	0.02%	2.51E-02	7.83E-01	4.77E-01	1.21E-02	1.80E-01	8.02E-02
Motor Coach	0.04%	0.01%	4.52E-02	5.36E-01	2.67E-01	1.04E-02	1.01E-01	4.36E-02
OBUS	0.10%	0.02%	1.68E-02	1.72E-01	4.68E-01	1.87E-02	2.56E-01	1.07E-01
SBUS	0.06%	0.02%	3.79E-02	1.26E+00	4.03E-01	9.81E-03	8.93E-01	3.85E-01
T6 Ag	0.00%	0.00%	3.09E-03	7.26E-02	1.63E-02	9.52E-04	1.26E-02	5.39E-03
T6 CAIRP Heavy	0.00%	0.00%	1.04E-03	1.40E-02	5.48E-03	3.86E-04	5.46E-03	2.31E-03
T6 CAIRP Small	0.01%	0.00%	3.01E-03	3.73E-02	1.58E-02	1.21E-03	1.67E-02	7.08E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.19E-02	3.87E-01	1.15E-01	7.38E-03	1.00E-01	4.26E-02
T6 Instate Construction Small	0.09%	0.02%	4.62E-02	6.55E-01	2.43E-01	1.71E-02	2.34E-01	9.92E-02
T6 Instate Heavy	0.27%	0.06%	1.61E-01	3.01E+00	8.45E-01	5.14E-02	7.16E-01	3.05E-01
T6 Instate Small	0.69%	0.16%	3.63E-01	5.26E+00	1.91E+00	1.32E-01	1.81E+00	7.67E-01
T6 OOS Heavy	0.00%	0.00%	5.98E-04	8.05E-03	3.15E-03	2.21E-04	3.13E-03	1.33E-03
T6 OOS Small	0.00%	0.00%	1.72E-03	2.14E-02	9.07E-03	6.96E-04	9.58E-03	4.05E-03
T6 Public	0.03%	0.01%	1.44E-02	5.32E-01	6.71E-02	5.58E-03	7.73E-02	3.35E-02
T6 Utility	0.00%	0.00%	1.89E-03	2.31E-02	9.97E-03	9.23E-04	1.26E-02	5.30E-03
T6TS	0.18%	0.04%	3.76E-02	3.76E-01	1.13E+00	3.36E-02	4.60E-01	1.92E-01
T7 Ag	0.00%	0.00%	6.23E-03	1.46E-01	3.68E-02	1.14E-03	7.70E-03	3.10E-03
T7 CAIRP	0.36%	0.08%	4.62E-01	5.57E+00	2.73E+00	8.99E-02	6.82E-01	2.70E-01
T7 CAIRP Construction	0.03%	0.01%	3.44E-02	3.98E-01	2.03E-01	6.80E-03	5.04E-02	2.00E-02
T7 NNOOS	0.45%	0.10%	4.93E-01	5.08E+00	2.91E+00	1.11E-01	8.38E-01	3.26E-01
T7 NOOS	0.14%	0.03%	1.83E-01	2.22E+00	1.08E+00	3.55E-02	2.69E-01	1.07E-01
T7 Other Port	0.07%	0.02%	8.97E-02	1.01E+00	5.30E-01	1.72E-02	1.28E-01	5.08E-02
T7 POAK	0.21%	0.05%	2.84E-01	3.22E+00	1.68E+00	5.39E-02	4.02E-01	1.60E-01
T7 Public	0.02%	0.00%	2.68E-02	1.81E+00	1.22E-01	5.37E-03	4.28E-02	2.06E-02
T7 Single	0.13%	0.03%	1.49E-01	2.34E+00	8.78E-01	3.51E-02	2.46E-01	9.62E-02
T7 Single Construction	0.07%	0.02%	7.37E-02	1.01E+00	4.34E-01	1.80E-02	1.29E-01	5.02E-02
T7 SWCV	0.04%	0.01%	2.34E-02	2.04E+00	2.76E+00	6.70E-03	7.11E-02	2.77E-02
T7 Tractor	0.68%	0.16%	9.15E-01	1.27E+01	5.40E+00	1.70E-01	1.28E+00	5.09E-01
T7 Tractor Construction	0.05%	0.01%	7.05E-02	9.90E-01	4.16E-01	1.34E-02	9.77E-02	3.89E-02
T7 Utility	0.00%	0.00%	2.32E-03	2.67E-02	1.37E-02	7.36E-04	5.18E-03	1.97E-03
T7IS	0.02%	0.01%	1.05E-01	1.12E+00	1.24E+01	6.92E-03	3.56E-02	1.39E-02
UBUS	0.15%	0.03%	1.91E-01	9.30E+00	3.07E+00	3.14E-02	1.57E+00	7.29E-01
TOTAL	100%	100%	125	329	3,714	15	365	149
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 1

Based on EMFAC2014

Emission year	Daily							
2030	3,940,470	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.99E-02	1.00E+00	3.15E-01	1.99E-02	2.70E-01	1.15E-01
LDA	62.15%	71.00%	2.45E+01	1.39E+02	2.06E+03	9.84E+00	2.82E+02	1.15E+02
LDT1	3.41%	3.89%	2.62E+00	1.43E+01	1.84E+02	6.94E-01	1.55E+01	6.38E+00
LDT2	18.01%	20.58%	1.11E+01	6.43E+01	8.81E+02	4.16E+00	8.20E+01	3.36E+01
LHD1	1.19%	0.29%	8.51E-01	1.26E+01	7.91E+00	1.29E-01	2.39E+00	1.07E+00
LHD2	0.51%	0.13%	2.85E-01	1.97E+00	1.74E+00	5.74E-02	1.16E+00	5.15E-01
MCY	0.51%	0.59%	9.30E+01	5.16E+01	8.04E+02	9.34E-02	8.95E-01	3.94E-01
MDV	10.12%	2.51%	2.35E+00	1.36E+01	1.47E+02	6.88E-01	1.00E+01	4.11E+00
MH	0.07%	0.02%	2.98E-02	9.30E-01	5.66E-01	1.44E-02	2.14E-01	9.52E-02
Motor Coach	0.04%	0.01%	5.37E-02	6.36E-01	3.17E-01	1.23E-02	1.20E-01	5.17E-02
OBUS	0.10%	0.02%	1.99E-02	2.05E-01	5.56E-01	2.22E-02	3.04E-01	1.27E-01
SBUS	0.06%	0.02%	4.50E-02	1.49E+00	4.79E-01	1.16E-02	1.06E+00	4.57E-01
T6 Ag	0.00%	0.00%	3.67E-03	8.62E-02	1.93E-02	1.13E-03	1.50E-02	6.40E-03
T6 CAIRP Heavy	0.00%	0.00%	1.24E-03	1.66E-02	6.50E-03	4.59E-04	6.48E-03	2.74E-03
T6 CAIRP Small	0.01%	0.00%	3.57E-03	4.42E-02	1.88E-02	1.44E-03	1.98E-02	8.40E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.60E-02	4.60E-01	1.37E-01	8.76E-03	1.19E-01	5.06E-02
T6 Instate Construction Small	0.09%	0.02%	5.49E-02	7.77E-01	2.88E-01	2.03E-02	2.77E-01	1.18E-01
T6 Instate Heavy	0.27%	0.07%	1.91E-01	3.57E+00	1.00E+00	6.11E-02	8.50E-01	3.62E-01
T6 Instate Small	0.69%	0.17%	4.31E-01	6.24E+00	2.27E+00	1.57E-01	2.14E+00	9.10E-01
T6 OOS Heavy	0.00%	0.00%	7.09E-04	9.56E-03	3.73E-03	2.63E-04	3.71E-03	1.57E-03
T6 OOS Small	0.00%	0.00%	2.05E-03	2.53E-02	1.08E-02	8.26E-04	1.14E-02	4.81E-03
T6 Public	0.03%	0.01%	1.71E-02	6.31E-01	7.96E-02	6.62E-03	9.17E-02	3.97E-02
T6 Utility	0.00%	0.00%	2.25E-03	2.74E-02	1.18E-02	1.10E-03	1.49E-02	6.29E-03
T6TS	0.18%	0.04%	4.47E-02	4.46E-01	1.34E+00	3.99E-02	5.46E-01	2.27E-01
T7 Ag	0.00%	0.00%	7.39E-03	1.73E-01	4.36E-02	1.35E-03	9.14E-03	3.68E-03
T7 CAIRP	0.36%	0.09%	5.48E-01	6.61E+00	3.24E+00	1.07E-01	8.09E-01	3.20E-01
T7 CAIRP Construction	0.03%	0.01%	4.09E-02	4.72E-01	2.41E-01	8.07E-03	5.98E-02	2.37E-02
T7 NNOOS	0.45%	0.11%	5.85E-01	6.03E+00	3.46E+00	1.31E-01	9.94E-01	3.87E-01
T7 NOOS	0.14%	0.04%	2.17E-01	2.63E+00	1.28E+00	4.22E-02	3.20E-01	1.26E-01
T7 Other Port	0.07%	0.02%	1.06E-01	1.19E+00	6.29E-01	2.04E-02	1.52E-01	6.03E-02
T7 POAK	0.21%	0.05%	3.37E-01	3.82E+00	1.99E+00	6.40E-02	4.77E-01	1.89E-01
T7 Public	0.02%	0.00%	3.18E-02	2.14E+00	1.45E-01	6.37E-03	5.09E-02	2.44E-02
T7 Single	0.13%	0.03%	1.77E-01	2.77E+00	1.04E+00	4.17E-02	2.92E-01	1.14E-01
T7 Single Construction	0.07%	0.02%	8.75E-02	1.19E+00	5.15E-01	2.14E-02	1.53E-01	5.96E-02
T7 SWCV	0.04%	0.01%	2.78E-02	2.42E+00	3.27E+00	7.95E-03	8.44E-02	3.29E-02
T7 Tractor	0.68%	0.17%	1.09E+00	1.51E+01	6.41E+00	2.02E-01	1.52E+00	6.04E-01
T7 Tractor Construction	0.05%	0.01%	8.37E-02	1.17E+00	4.94E-01	1.59E-02	1.16E-01	4.62E-02
T7 Utility	0.00%	0.00%	2.76E-03	3.17E-02	1.63E-02	8.74E-04	6.15E-03	2.34E-03
T7IS	0.02%	0.01%	1.24E-01	1.33E+00	1.48E+01	8.21E-03	4.22E-02	1.65E-02
UBUS	0.15%	0.04%	2.27E-01	1.10E+01	3.65E+00	3.73E-02	1.87E+00	8.66E-01
TOTAL	100%	100%	139	372	4,135	17	407	167
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 1

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,367,343,090	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.29E+02	4.38E-04	1.57E-01	0.01	331
LDA	62.15%	71.00%	1.55E+05	1.54E+00	2.19E+01	0.91	155,082
LDT1	3.41%	3.89%	1.09E+04	1.66E-01	2.25E+00	0.09	10,934
LDT2	18.01%	20.58%	6.53E+04	7.06E-01	1.01E+01	0.42	65,492
LHD1	1.19%	0.29%	2.08E+03	1.35E-02	1.98E+00	0.08	2,103
LHD2	0.51%	0.13%	9.30E+02	2.84E-03	3.10E-01	0.01	934
MCY	0.51%	0.59%	1.22E+03	3.15E+00	8.12E+00	0.34	1,392
MDV	10.12%	2.51%	1.08E+04	1.48E-01	2.14E+00	0.09	10,857
MH	0.07%	0.02%	2.28E+02	1.16E-03	1.46E-01	0.01	230
Motor Coach	0.04%	0.01%	2.03E+02	3.92E-04	1.00E-01	0.00	205
OBUS	0.10%	0.02%	3.50E+02	1.27E-03	3.22E-02	0.00	351
SBUS	0.06%	0.02%	1.90E+02	9.11E-04	2.35E-01	0.01	193
T6 Ag	0.00%	0.00%	1.86E+01	2.69E-05	1.36E-02	0.00	19
T6 CAIRP Heavy	0.00%	0.00%	7.57E+00	9.03E-06	2.61E-03	0.00	8
T6 CAIRP Small	0.01%	0.00%	2.38E+01	2.61E-05	6.96E-03	0.00	24
T6 Instate Construction Heavy	0.04%	0.01%	1.45E+02	1.90E-04	7.23E-02	0.00	145
T6 Instate Construction Small	0.09%	0.02%	3.34E+02	4.01E-04	1.22E-01	0.01	336
T6 Instate Heavy	0.27%	0.07%	1.01E+03	1.39E-03	5.62E-01	0.02	1,015
T6 Instate Small	0.69%	0.17%	2.59E+03	3.15E-03	9.82E-01	0.04	2,601
T6 OOS Heavy	0.00%	0.00%	4.34E+00	5.19E-06	1.50E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.36E+01	1.50E-05	3.99E-03	0.00	14
T6 Public	0.03%	0.01%	1.09E+02	1.25E-04	9.93E-02	0.00	111
T6 Utility	0.00%	0.00%	1.81E+01	1.64E-05	4.31E-03	0.00	18
T6TS	0.18%	0.04%	6.29E+02	2.84E-03	7.02E-02	0.00	630
T7 Ag	0.00%	0.00%	2.23E+01	5.40E-05	2.73E-02	0.00	23
T7 CAIRP	0.36%	0.09%	1.76E+03	4.01E-03	1.04E+00	0.04	1,774
T7 CAIRP Construction	0.03%	0.01%	1.33E+02	2.99E-04	7.44E-02	0.00	134
T7 NNOOS	0.45%	0.11%	2.17E+03	4.28E-03	9.50E-01	0.04	2,178
T7 NOOS	0.14%	0.04%	6.95E+02	1.59E-03	4.14E-01	0.02	701
T7 Other Port	0.07%	0.02%	3.36E+02	7.78E-04	1.88E-01	0.01	339
T7 POAK	0.21%	0.05%	1.06E+03	2.46E-03	6.01E-01	0.03	1,064
T7 Public	0.02%	0.00%	1.05E+02	2.32E-04	3.37E-01	0.01	109
T7 Single	0.13%	0.03%	6.88E+02	1.29E-03	4.36E-01	0.02	693
T7 Single Construction	0.07%	0.02%	3.53E+02	6.40E-04	1.88E-01	0.01	355
T7 SWCV	0.04%	0.01%	3.80E+02	1.49E-01	3.80E-01	0.02	388
T7 Tractor	0.68%	0.17%	3.33E+03	7.94E-03	2.38E+00	0.10	3,365
T7 Tractor Construction	0.05%	0.01%	2.62E+02	6.12E-04	1.85E-01	0.01	264
T7 Utility	0.00%	0.00%	1.44E+01	2.02E-05	5.00E-03	0.00	14
T7IS	0.02%	0.01%	1.26E+02	7.90E-03	2.09E-01	0.01	129
UBUS	0.15%	0.04%	6.85E+02	2.68E-02	1.74E+00	0.07	708
TOTAL	100%	100%	264,386	6	59	2	265,266

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Scenario 2

Based on EMFAC2014

Emission year	Daily							
2030	3,818,350	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.60E-02	9.36E-01	2.95E-01	1.87E-02	2.53E-01	1.08E-01
LDA	62.15%	71.10%	2.38E+01	1.35E+02	2.00E+03	9.55E+00	2.74E+02	1.12E+02
LDT1	3.41%	3.90%	2.54E+00	1.39E+01	1.78E+02	6.74E-01	1.51E+01	6.20E+00
LDT2	18.01%	20.61%	1.08E+01	6.24E+01	8.55E+02	4.03E+00	7.96E+01	3.26E+01
LHD1	1.19%	0.28%	7.97E-01	1.18E+01	7.40E+00	1.21E-01	2.24E+00	1.00E+00
LHD2	0.51%	0.12%	2.67E-01	1.84E+00	1.63E+00	5.37E-02	1.09E+00	4.82E-01
MCY	0.51%	0.59%	9.03E+01	5.00E+01	7.80E+02	9.07E-02	8.68E-01	3.83E-01
MDV	10.12%	2.43%	2.20E+00	1.27E+01	1.37E+02	6.44E-01	9.38E+00	3.85E+00
MH	0.07%	0.02%	2.79E-02	8.71E-01	5.30E-01	1.34E-02	2.00E-01	8.91E-02
Motor Coach	0.04%	0.01%	5.03E-02	5.96E-01	2.97E-01	1.15E-02	1.12E-01	4.84E-02
OBUS	0.10%	0.02%	1.87E-02	1.92E-01	5.21E-01	2.08E-02	2.84E-01	1.18E-01
SBUS	0.06%	0.02%	4.21E-02	1.40E+00	4.48E-01	1.09E-02	9.93E-01	4.28E-01
T6 Ag	0.00%	0.00%	3.44E-03	8.07E-02	1.81E-02	1.06E-03	1.40E-02	5.99E-03
T6 CAIRP Heavy	0.00%	0.00%	1.16E-03	1.55E-02	6.09E-03	4.29E-04	6.06E-03	2.57E-03
T6 CAIRP Small	0.01%	0.00%	3.34E-03	4.14E-02	1.76E-02	1.35E-03	1.86E-02	7.86E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.43E-02	4.30E-01	1.28E-01	8.20E-03	1.11E-01	4.73E-02
T6 Instate Construction Small	0.09%	0.02%	5.14E-02	7.28E-01	2.70E-01	1.90E-02	2.60E-01	1.10E-01
T6 Instate Heavy	0.27%	0.06%	1.78E-01	3.34E+00	9.39E-01	5.72E-02	7.96E-01	3.39E-01
T6 Instate Small	0.69%	0.16%	4.04E-01	5.84E+00	2.13E+00	1.47E-01	2.01E+00	8.52E-01
T6 OOS Heavy	0.00%	0.00%	6.64E-04	8.95E-03	3.50E-03	2.46E-04	3.47E-03	1.47E-03
T6 OOS Small	0.00%	0.00%	1.92E-03	2.37E-02	1.01E-02	7.73E-04	1.06E-02	4.50E-03
T6 Public	0.03%	0.01%	1.60E-02	5.91E-01	7.46E-02	6.20E-03	8.59E-02	3.72E-02
T6 Utility	0.00%	0.00%	2.10E-03	2.56E-02	1.11E-02	1.03E-03	1.40E-02	5.88E-03
T6TS	0.18%	0.04%	4.18E-02	4.17E-01	1.26E+00	3.74E-02	5.11E-01	2.13E-01
T7 Ag	0.00%	0.00%	6.92E-03	1.62E-01	4.09E-02	1.27E-03	8.56E-03	3.44E-03
T7 CAIRP	0.36%	0.09%	5.13E-01	6.19E+00	3.03E+00	9.99E-02	7.58E-01	3.00E-01
T7 CAIRP Construction	0.03%	0.01%	3.83E-02	4.42E-01	2.26E-01	7.55E-03	5.60E-02	2.22E-02
T7 NNOOS	0.45%	0.11%	5.48E-01	5.65E+00	3.24E+00	1.23E-01	9.31E-01	3.63E-01
T7 NOOS	0.14%	0.03%	2.03E-01	2.46E+00	1.20E+00	3.95E-02	2.99E-01	1.18E-01
T7 Other Port	0.07%	0.02%	9.97E-02	1.12E+00	5.88E-01	1.91E-02	1.42E-01	5.65E-02
T7 POAK	0.21%	0.05%	3.15E-01	3.58E+00	1.86E+00	5.99E-02	4.47E-01	1.77E-01
T7 Public	0.02%	0.00%	2.97E-02	2.01E+00	1.36E-01	5.96E-03	4.76E-02	2.29E-02
T7 Single	0.13%	0.03%	1.65E-01	2.59E+00	9.76E-01	3.90E-02	2.74E-01	1.07E-01
T7 Single Construction	0.07%	0.02%	8.19E-02	1.12E+00	4.82E-01	2.00E-02	1.43E-01	5.58E-02
T7 SWCV	0.04%	0.01%	2.60E-02	2.26E+00	3.07E+00	7.44E-03	7.90E-02	3.08E-02
T7 Tractor	0.68%	0.16%	1.02E+00	1.42E+01	6.00E+00	1.89E-01	1.42E+00	5.65E-01
T7 Tractor Construction	0.05%	0.01%	7.84E-02	1.10E+00	4.62E-01	1.49E-02	1.09E-01	4.32E-02
T7 Utility	0.00%	0.00%	2.58E-03	2.97E-02	1.53E-02	8.18E-04	5.75E-03	2.19E-03
T7IS	0.02%	0.01%	1.16E-01	1.24E+00	1.38E+01	7.69E-03	3.95E-02	1.54E-02
UBUS	0.15%	0.04%	2.12E-01	1.03E+01	3.42E+00	3.49E-02	1.75E+00	8.11E-01
TOTAL	100%	100%	135	358	4,005	16	394	161
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 2

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,324,967,450	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.08E+02	4.10E-04	1.47E-01	0.01	310
LDA	62.15%	71.10%	1.50E+05	1.50E+00	2.13E+01	0.88	150,485
LDT1	3.41%	3.90%	1.06E+04	1.61E-01	2.19E+00	0.09	10,610
LDT2	18.01%	20.61%	6.34E+04	6.85E-01	9.81E+00	0.41	63,550
LHD1	1.19%	0.28%	1.95E+03	1.27E-02	1.85E+00	0.08	1,969
LHD2	0.51%	0.12%	8.70E+02	2.66E-03	2.90E-01	0.01	874
MCY	0.51%	0.59%	1.18E+03	3.05E+00	7.88E+00	0.33	1,350
MDV	10.12%	2.43%	1.01E+04	1.39E-01	2.00E+00	0.08	10,165
MH	0.07%	0.02%	2.14E+02	1.08E-03	1.37E-01	0.01	215
Motor Coach	0.04%	0.01%	1.90E+02	3.67E-04	9.38E-02	0.00	192
OBUS	0.10%	0.02%	3.28E+02	1.19E-03	3.02E-02	0.00	329
SBUS	0.06%	0.02%	1.78E+02	8.53E-04	2.20E-01	0.01	181
T6 Ag	0.00%	0.00%	1.74E+01	2.51E-05	1.27E-02	0.00	18
T6 CAIRP Heavy	0.00%	0.00%	7.08E+00	8.46E-06	2.44E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.23E+01	2.44E-05	6.52E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.35E+02	1.78E-04	6.77E-02	0.00	136
T6 Instate Construction Small	0.09%	0.02%	3.13E+02	3.76E-04	1.15E-01	0.00	314
T6 Instate Heavy	0.27%	0.06%	9.43E+02	1.30E-03	5.26E-01	0.02	950
T6 Instate Small	0.69%	0.16%	2.42E+03	2.95E-03	9.19E-01	0.04	2,436
T6 OOS Heavy	0.00%	0.00%	4.06E+00	4.86E-06	1.41E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.28E+01	1.40E-05	3.73E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.17E-04	9.30E-02	0.00	103
T6 Utility	0.00%	0.00%	1.69E+01	1.54E-05	4.03E-03	0.00	17
T6TS	0.18%	0.04%	5.89E+02	2.66E-03	6.57E-02	0.00	590
T7 Ag	0.00%	0.00%	2.09E+01	5.06E-05	2.56E-02	0.00	21
T7 CAIRP	0.36%	0.09%	1.65E+03	3.75E-03	9.75E-01	0.04	1,661
T7 CAIRP Construction	0.03%	0.01%	1.25E+02	2.80E-04	6.96E-02	0.00	126
T7 NNOOS	0.45%	0.11%	2.03E+03	4.01E-03	8.89E-01	0.04	2,039
T7 NOOS	0.14%	0.03%	6.51E+02	1.49E-03	3.88E-01	0.02	656
T7 Other Port	0.07%	0.02%	3.15E+02	7.29E-04	1.76E-01	0.01	317
T7 POAK	0.21%	0.05%	9.89E+02	2.31E-03	5.63E-01	0.02	996
T7 Public	0.02%	0.00%	9.84E+01	2.17E-04	3.16E-01	0.01	102
T7 Single	0.13%	0.03%	6.44E+02	1.21E-03	4.08E-01	0.02	649
T7 Single Construction	0.07%	0.02%	3.30E+02	5.99E-04	1.76E-01	0.01	333
T7 SWCV	0.04%	0.01%	3.55E+02	1.39E-01	3.56E-01	0.01	363
T7 Tractor	0.68%	0.16%	3.12E+03	7.43E-03	2.23E+00	0.09	3,151
T7 Tractor Construction	0.05%	0.01%	2.45E+02	5.73E-04	1.73E-01	0.01	247
T7 Utility	0.00%	0.00%	1.35E+01	1.89E-05	4.68E-03	0.00	14
T7IS	0.02%	0.01%	1.18E+02	7.40E-03	1.96E-01	0.01	120
UBUS	0.15%	0.04%	6.42E+02	2.51E-02	1.63E+00	0.07	663
TOTAL	100%	100%	255,452	6	56	2	256,299

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Scenario 3

Based on EMFAC2014

Emission year	Daily							
2030	3,879,140	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.78E-02	9.67E-01	3.04E-01	1.93E-02	2.61E-01	1.11E-01
LDA	62.15%	71.05%	2.42E+01	1.37E+02	2.03E+03	9.69E+00	2.78E+02	1.13E+02
LDT1	3.41%	3.89%	2.58E+00	1.41E+01	1.81E+02	6.84E-01	1.53E+01	6.29E+00
LDT2	18.01%	20.59%	1.10E+01	6.33E+01	8.68E+02	4.10E+00	8.08E+01	3.31E+01
LHD1	1.19%	0.29%	8.22E-01	1.22E+01	7.64E+00	1.25E-01	2.31E+00	1.03E+00
LHD2	0.51%	0.12%	2.76E-01	1.90E+00	1.68E+00	5.54E-02	1.12E+00	4.97E-01
MCY	0.51%	0.59%	9.16E+01	5.08E+01	7.92E+02	9.20E-02	8.81E-01	3.89E-01
MDV	10.12%	2.46%	2.27E+00	1.31E+01	1.42E+02	6.65E-01	9.68E+00	3.97E+00
MH	0.07%	0.02%	2.88E-02	8.99E-01	5.47E-01	1.39E-02	2.07E-01	9.20E-02
Motor Coach	0.04%	0.01%	5.19E-02	6.15E-01	3.06E-01	1.19E-02	1.16E-01	5.00E-02
OBUS	0.10%	0.02%	1.93E-02	1.98E-01	5.37E-01	2.15E-02	2.94E-01	1.22E-01
SBUS	0.06%	0.02%	4.35E-02	1.44E+00	4.63E-01	1.13E-02	1.02E+00	4.42E-01
T6 Ag	0.00%	0.00%	3.55E-03	8.33E-02	1.87E-02	1.09E-03	1.45E-02	6.18E-03
T6 CAIRP Heavy	0.00%	0.00%	1.19E-03	1.60E-02	6.29E-03	4.43E-04	6.26E-03	2.65E-03
T6 CAIRP Small	0.01%	0.00%	3.45E-03	4.27E-02	1.82E-02	1.39E-03	1.92E-02	8.12E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.51E-02	4.44E-01	1.32E-01	8.47E-03	1.15E-01	4.89E-02
T6 Instate Construction Small	0.09%	0.02%	5.30E-02	7.51E-01	2.79E-01	1.96E-02	2.68E-01	1.14E-01
T6 Instate Heavy	0.27%	0.07%	1.84E-01	3.45E+00	9.70E-01	5.90E-02	8.22E-01	3.50E-01
T6 Instate Small	0.69%	0.17%	4.17E-01	6.03E+00	2.19E+00	1.52E-01	2.07E+00	8.80E-01
T6 OOS Heavy	0.00%	0.00%	6.86E-04	9.24E-03	3.61E-03	2.54E-04	3.59E-03	1.52E-03
T6 OOS Small	0.00%	0.00%	1.98E-03	2.45E-02	1.04E-02	7.98E-04	1.10E-02	4.65E-03
T6 Public	0.03%	0.01%	1.65E-02	6.10E-01	7.70E-02	6.40E-03	8.86E-02	3.84E-02
T6 Utility	0.00%	0.00%	2.17E-03	2.65E-02	1.14E-02	1.06E-03	1.44E-02	6.08E-03
T6TS	0.18%	0.04%	4.32E-02	4.31E-01	1.30E+00	3.86E-02	5.27E-01	2.20E-01
T7 Ag	0.00%	0.00%	7.14E-03	1.68E-01	4.22E-02	1.31E-03	8.84E-03	3.55E-03
T7 CAIRP	0.36%	0.09%	5.30E-01	6.39E+00	3.13E+00	1.03E-01	7.82E-01	3.09E-01
T7 CAIRP Construction	0.03%	0.01%	3.95E-02	4.57E-01	2.33E-01	7.80E-03	5.78E-02	2.29E-02
T7 NNOOS	0.45%	0.11%	5.66E-01	5.83E+00	3.34E+00	1.27E-01	9.61E-01	3.75E-01
T7 NOOS	0.14%	0.03%	2.10E-01	2.54E+00	1.24E+00	4.07E-02	3.09E-01	1.22E-01
T7 Other Port	0.07%	0.02%	1.03E-01	1.15E+00	6.07E-01	1.97E-02	1.47E-01	5.83E-02
T7 POAK	0.21%	0.05%	3.26E-01	3.69E+00	1.92E+00	6.19E-02	4.61E-01	1.83E-01
T7 Public	0.02%	0.00%	3.07E-02	2.07E+00	1.40E-01	6.16E-03	4.91E-02	2.36E-02
T7 Single	0.13%	0.03%	1.71E-01	2.68E+00	1.01E+00	4.03E-02	2.83E-01	1.10E-01
T7 Single Construction	0.07%	0.02%	8.46E-02	1.15E+00	4.98E-01	2.07E-02	1.48E-01	5.76E-02
T7 SWCV	0.04%	0.01%	2.69E-02	2.34E+00	3.16E+00	7.68E-03	8.16E-02	3.18E-02
T7 Tractor	0.68%	0.17%	1.05E+00	1.46E+01	6.20E+00	1.95E-01	1.47E+00	5.84E-01
T7 Tractor Construction	0.05%	0.01%	8.09E-02	1.14E+00	4.77E-01	1.53E-02	1.12E-01	4.46E-02
T7 Utility	0.00%	0.00%	2.67E-03	3.07E-02	1.57E-02	8.45E-04	5.94E-03	2.26E-03
T7IS	0.02%	0.01%	1.20E-01	1.28E+00	1.43E+01	7.94E-03	4.08E-02	1.59E-02
UBUS	0.15%	0.04%	2.19E-01	1.07E+01	3.53E+00	3.60E-02	1.81E+00	8.37E-01
TOTAL	100%	100%	137	365	4,069	16	401	164
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 3

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,346,061,580	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.18E+02	4.23E-04	1.52E-01	0.01	320
LDA	62.15%	71.05%	1.52E+05	1.52E+00	2.16E+01	0.90	152,783
LDT1	3.41%	3.89%	1.07E+04	1.64E-01	2.22E+00	0.09	10,772
LDT2	18.01%	20.59%	6.44E+04	6.96E-01	9.96E+00	0.41	64,520
LHD1	1.19%	0.29%	2.01E+03	1.31E-02	1.91E+00	0.08	2,033
LHD2	0.51%	0.12%	8.98E+02	2.75E-03	3.00E-01	0.01	902
MCY	0.51%	0.59%	1.20E+03	3.10E+00	8.00E+00	0.33	1,371
MDV	10.12%	2.46%	1.05E+04	1.43E-01	2.07E+00	0.09	10,494
MH	0.07%	0.02%	2.21E+02	1.12E-03	1.41E-01	0.01	222
Motor Coach	0.04%	0.01%	1.96E+02	3.79E-04	9.68E-02	0.00	198
OBUS	0.10%	0.02%	3.39E+02	1.22E-03	3.11E-02	0.00	339
SBUS	0.06%	0.02%	1.84E+02	8.80E-04	2.27E-01	0.01	186
T6 Ag	0.00%	0.00%	1.80E+01	2.60E-05	1.31E-02	0.00	18
T6 CAIRP Heavy	0.00%	0.00%	7.31E+00	8.73E-06	2.52E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.30E+01	2.52E-05	6.73E-03	0.00	23
T6 Instate Construction Heavy	0.04%	0.01%	1.40E+02	1.84E-04	6.99E-02	0.00	141
T6 Instate Construction Small	0.09%	0.02%	3.23E+02	3.88E-04	1.18E-01	0.00	324
T6 Instate Heavy	0.27%	0.07%	9.74E+02	1.35E-03	5.43E-01	0.02	981
T6 Instate Small	0.69%	0.17%	2.50E+03	3.05E-03	9.49E-01	0.04	2,514
T6 OOS Heavy	0.00%	0.00%	4.19E+00	5.01E-06	1.45E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.32E+01	1.45E-05	3.85E-03	0.00	13
T6 Public	0.03%	0.01%	1.06E+02	1.21E-04	9.60E-02	0.00	107
T6 Utility	0.00%	0.00%	1.75E+01	1.59E-05	4.16E-03	0.00	18
T6TS	0.18%	0.04%	6.08E+02	2.74E-03	6.78E-02	0.00	609
T7 Ag	0.00%	0.00%	2.15E+01	5.22E-05	2.64E-02	0.00	22
T7 CAIRP	0.36%	0.09%	1.70E+03	3.87E-03	1.01E+00	0.04	1,714
T7 CAIRP Construction	0.03%	0.01%	1.29E+02	2.89E-04	7.19E-02	0.00	130
T7 NNOOS	0.45%	0.11%	2.09E+03	4.14E-03	9.18E-01	0.04	2,105
T7 NOOS	0.14%	0.03%	6.72E+02	1.53E-03	4.00E-01	0.02	677
T7 Other Port	0.07%	0.02%	3.25E+02	7.52E-04	1.82E-01	0.01	328
T7 POAK	0.21%	0.05%	1.02E+03	2.38E-03	5.81E-01	0.02	1,028
T7 Public	0.02%	0.00%	1.02E+02	2.25E-04	3.26E-01	0.01	106
T7 Single	0.13%	0.03%	6.65E+02	1.25E-03	4.22E-01	0.02	670
T7 Single Construction	0.07%	0.02%	3.41E+02	6.18E-04	1.82E-01	0.01	343
T7 SWCV	0.04%	0.01%	3.67E+02	1.44E-01	3.68E-01	0.02	375
T7 Tractor	0.68%	0.17%	3.22E+03	7.67E-03	2.30E+00	0.10	3,253
T7 Tractor Construction	0.05%	0.01%	2.53E+02	5.92E-04	1.79E-01	0.01	255
T7 Utility	0.00%	0.00%	1.39E+01	1.95E-05	4.83E-03	0.00	14
T7IS	0.02%	0.01%	1.22E+02	7.64E-03	2.02E-01	0.01	124
UBUS	0.15%	0.04%	6.62E+02	2.59E-02	1.68E+00	0.07	685
TOTAL	100%	100%	259,866	6	57	2	260,729
N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)							
Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.							
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.							

Scenario 4

Based on EMFAC2014

Emission year	Daily							
2030	3,836,620	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.95E-02	9.94E-01	3.13E-01	1.98E-02	2.68E-01	1.14E-01
LDA	62.15%	70.94%	2.39E+01	1.35E+02	2.00E+03	9.57E+00	2.74E+02	1.12E+02
LDT1	3.41%	3.89%	2.54E+00	1.39E+01	1.79E+02	6.75E-01	1.51E+01	6.21E+00
LDT2	18.01%	20.56%	1.08E+01	6.25E+01	8.57E+02	4.04E+00	7.98E+01	3.26E+01
LHD1	1.19%	0.30%	8.46E-01	1.25E+01	7.86E+00	1.28E-01	2.38E+00	1.06E+00
LHD2	0.51%	0.13%	2.83E-01	1.96E+00	1.73E+00	5.70E-02	1.15E+00	5.12E-01
MCY	0.51%	0.58%	9.05E+01	5.02E+01	7.82E+02	9.09E-02	8.70E-01	3.84E-01
MDV	10.12%	2.56%	2.34E+00	1.35E+01	1.46E+02	6.84E-01	9.96E+00	4.08E+00
MH	0.07%	0.02%	2.96E-02	9.24E-01	5.63E-01	1.43E-02	2.12E-01	9.47E-02
Motor Coach	0.04%	0.01%	5.34E-02	6.33E-01	3.15E-01	1.22E-02	1.19E-01	5.14E-02
OBUS	0.10%	0.02%	1.98E-02	2.03E-01	5.53E-01	2.21E-02	3.02E-01	1.26E-01
SBUS	0.06%	0.02%	4.47E-02	1.48E+00	4.76E-01	1.16E-02	1.05E+00	4.54E-01
T6 Ag	0.00%	0.00%	3.65E-03	8.57E-02	1.92E-02	1.12E-03	1.49E-02	6.36E-03
T6 CAIRP Heavy	0.00%	0.00%	1.23E-03	1.65E-02	6.47E-03	4.56E-04	6.44E-03	2.73E-03
T6 CAIRP Small	0.01%	0.00%	3.55E-03	4.40E-02	1.87E-02	1.43E-03	1.97E-02	8.35E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.58E-02	4.57E-01	1.36E-01	8.71E-03	1.18E-01	5.03E-02
T6 Instate Construction Small	0.09%	0.02%	5.46E-02	7.73E-01	2.87E-01	2.01E-02	2.76E-01	1.17E-01
T6 Instate Heavy	0.27%	0.07%	1.89E-01	3.55E+00	9.97E-01	6.07E-02	8.45E-01	3.60E-01
T6 Instate Small	0.69%	0.17%	4.29E-01	6.20E+00	2.26E+00	1.56E-01	2.13E+00	9.05E-01
T6 OOS Heavy	0.00%	0.00%	7.05E-04	9.50E-03	3.71E-03	2.61E-04	3.69E-03	1.56E-03
T6 OOS Small	0.00%	0.00%	2.03E-03	2.52E-02	1.07E-02	8.21E-04	1.13E-02	4.78E-03
T6 Public	0.03%	0.01%	1.70E-02	6.28E-01	7.92E-02	6.58E-03	9.12E-02	3.95E-02
T6 Utility	0.00%	0.00%	2.23E-03	2.72E-02	1.18E-02	1.09E-03	1.48E-02	6.25E-03
T6TS	0.18%	0.04%	4.44E-02	4.43E-01	1.34E+00	3.97E-02	5.43E-01	2.26E-01
T7 Ag	0.00%	0.00%	7.35E-03	1.72E-01	4.34E-02	1.34E-03	9.09E-03	3.66E-03
T7 CAIRP	0.36%	0.09%	5.45E-01	6.58E+00	3.22E+00	1.06E-01	8.05E-01	3.18E-01
T7 CAIRP Construction	0.03%	0.01%	4.06E-02	4.70E-01	2.40E-01	8.02E-03	5.95E-02	2.35E-02
T7 NNOOS	0.45%	0.11%	5.82E-01	6.00E+00	3.44E+00	1.30E-01	9.88E-01	3.85E-01
T7 NOOS	0.14%	0.04%	2.16E-01	2.61E+00	1.27E+00	4.19E-02	3.18E-01	1.26E-01
T7 Other Port	0.07%	0.02%	1.06E-01	1.19E+00	6.25E-01	2.03E-02	1.51E-01	6.00E-02
T7 POAK	0.21%	0.05%	3.35E-01	3.80E+00	1.98E+00	6.36E-02	4.74E-01	1.88E-01
T7 Public	0.02%	0.00%	3.16E-02	2.13E+00	1.44E-01	6.33E-03	5.06E-02	2.43E-02
T7 Single	0.13%	0.03%	1.76E-01	2.76E+00	1.04E+00	4.14E-02	2.91E-01	1.13E-01
T7 Single Construction	0.07%	0.02%	8.70E-02	1.19E+00	5.12E-01	2.13E-02	1.52E-01	5.92E-02
T7 SWCV	0.04%	0.01%	2.76E-02	2.40E+00	3.25E+00	7.90E-03	8.39E-02	3.27E-02
T7 Tractor	0.68%	0.17%	1.08E+00	1.50E+01	6.38E+00	2.01E-01	1.51E+00	6.00E-01
T7 Tractor Construction	0.05%	0.01%	8.32E-02	1.17E+00	4.91E-01	1.58E-02	1.15E-01	4.59E-02
T7 Utility	0.00%	0.00%	2.74E-03	3.16E-02	1.62E-02	8.69E-04	6.11E-03	2.33E-03
T7IS	0.02%	0.01%	1.23E-01	1.32E+00	1.47E+01	8.16E-03	4.20E-02	1.64E-02
UBUS	0.15%	0.04%	2.25E-01	1.10E+01	3.63E+00	3.70E-02	1.86E+00	8.61E-01
TOTAL	100%	100%	136	364	4,027	16	397	162
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 4

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,331,307,140	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.27E+02	4.35E-04	1.57E-01	0.01	329
LDA	62.15%	70.94%	1.51E+05	1.50E+00	2.13E+01	0.89	150,864
LDT1	3.41%	3.89%	1.06E+04	1.62E-01	2.19E+00	0.09	10,636
LDT2	18.01%	20.56%	6.36E+04	6.87E-01	9.84E+00	0.41	63,710
LHD1	1.19%	0.30%	2.07E+03	1.35E-02	1.97E+00	0.08	2,091
LHD2	0.51%	0.13%	9.24E+02	2.82E-03	3.08E-01	0.01	928
MCY	0.51%	0.58%	1.19E+03	3.06E+00	7.90E+00	0.33	1,354
MDV	10.12%	2.56%	1.08E+04	1.47E-01	2.12E+00	0.09	10,794
MH	0.07%	0.02%	2.27E+02	1.15E-03	1.46E-01	0.01	229
Motor Coach	0.04%	0.01%	2.02E+02	3.90E-04	9.96E-02	0.00	203
OBUS	0.10%	0.02%	3.48E+02	1.26E-03	3.20E-02	0.00	349
SBUS	0.06%	0.02%	1.89E+02	9.06E-04	2.34E-01	0.01	192
T6 Ag	0.00%	0.00%	1.85E+01	2.67E-05	1.35E-02	0.00	19
T6 CAIRP Heavy	0.00%	0.00%	7.52E+00	8.98E-06	2.59E-03	0.00	8
T6 CAIRP Small	0.01%	0.00%	2.36E+01	2.59E-05	6.92E-03	0.00	24
T6 Instate Construction Heavy	0.04%	0.01%	1.44E+02	1.89E-04	7.19E-02	0.00	145
T6 Instate Construction Small	0.09%	0.02%	3.32E+02	3.99E-04	1.22E-01	0.01	334
T6 Instate Heavy	0.27%	0.07%	1.00E+03	1.39E-03	5.59E-01	0.02	1,009
T6 Instate Small	0.69%	0.17%	2.57E+03	3.13E-03	9.76E-01	0.04	2,586
T6 OOS Heavy	0.00%	0.00%	4.31E+00	5.16E-06	1.50E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.35E+01	1.49E-05	3.97E-03	0.00	14
T6 Public	0.03%	0.01%	1.09E+02	1.24E-04	9.88E-02	0.00	110
T6 Utility	0.00%	0.00%	1.80E+01	1.63E-05	4.28E-03	0.00	18
T6TS	0.18%	0.04%	6.26E+02	2.82E-03	6.98E-02	0.00	627
T7 Ag	0.00%	0.00%	2.22E+01	5.37E-05	2.71E-02	0.00	23
T7 CAIRP	0.36%	0.09%	1.75E+03	3.98E-03	1.03E+00	0.04	1,763
T7 CAIRP Construction	0.03%	0.01%	1.32E+02	2.97E-04	7.39E-02	0.00	133
T7 NNOOS	0.45%	0.11%	2.15E+03	4.26E-03	9.44E-01	0.04	2,165
T7 NOOS	0.14%	0.04%	6.91E+02	1.58E-03	4.12E-01	0.02	697
T7 Other Port	0.07%	0.02%	3.35E+02	7.74E-04	1.87E-01	0.01	337
T7 POAK	0.21%	0.05%	1.05E+03	2.45E-03	5.98E-01	0.02	1,058
T7 Public	0.02%	0.00%	1.04E+02	2.31E-04	3.35E-01	0.01	109
T7 Single	0.13%	0.03%	6.84E+02	1.28E-03	4.34E-01	0.02	689
T7 Single Construction	0.07%	0.02%	3.51E+02	6.36E-04	1.87E-01	0.01	353
T7 SWCV	0.04%	0.01%	3.77E+02	1.48E-01	3.78E-01	0.02	385
T7 Tractor	0.68%	0.17%	3.32E+03	7.89E-03	2.37E+00	0.10	3,346
T7 Tractor Construction	0.05%	0.01%	2.60E+02	6.09E-04	1.84E-01	0.01	263
T7 Utility	0.00%	0.00%	1.43E+01	2.01E-05	4.97E-03	0.00	14
T7IS	0.02%	0.01%	1.25E+02	7.85E-03	2.08E-01	0.01	128
UBUS	0.15%	0.04%	6.81E+02	2.66E-02	1.73E+00	0.07	704
TOTAL	100%	100%	257,882	6	57	2	258,743

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 5 Unmitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,675,160	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.60E-02	9.36E-01	2.95E-01	1.87E-02	2.53E-01	1.08E-01
LDA	62.15%	68.38%	2.20E+01	1.25E+02	1.85E+03	8.84E+00	2.53E+02	1.03E+02
LDT1	3.41%	3.75%	2.35E+00	1.29E+01	1.65E+02	6.24E-01	1.40E+01	5.74E+00
LDT2	18.01%	19.82%	1.00E+01	5.77E+01	7.92E+02	3.73E+00	7.36E+01	3.01E+01
LHD1	1.19%	0.30%	7.96E-01	1.18E+01	7.40E+00	1.21E-01	2.24E+00	1.00E+00
LHD2	0.51%	0.13%	2.67E-01	1.84E+00	1.63E+00	5.37E-02	1.09E+00	4.82E-01
MCY	0.51%	0.56%	8.36E+01	4.63E+01	7.22E+02	8.39E-02	8.04E-01	3.54E-01
MDV	10.12%	2.52%	2.20E+00	1.27E+01	1.37E+02	6.44E-01	9.37E+00	3.85E+00
MH	0.07%	0.02%	2.79E-02	8.70E-01	5.30E-01	1.34E-02	2.00E-01	8.91E-02
Motor Coach	0.04%	0.01%	5.02E-02	5.96E-01	2.97E-01	1.15E-02	1.12E-01	4.84E-02
OBUS	0.10%	0.02%	1.86E-02	1.92E-01	5.20E-01	2.08E-02	2.84E-01	1.18E-01
SBUS	0.06%	0.02%	4.21E-02	1.40E+00	4.48E-01	1.09E-02	9.92E-01	4.28E-01
T6 Ag	0.00%	0.00%	3.44E-03	8.07E-02	1.81E-02	1.06E-03	1.40E-02	5.99E-03
T6 CAIRP Heavy	0.00%	0.00%	1.16E-03	1.55E-02	6.09E-03	4.29E-04	6.06E-03	2.57E-03
T6 CAIRP Small	0.01%	0.00%	3.34E-03	4.14E-02	1.76E-02	1.35E-03	1.86E-02	7.86E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.43E-02	4.30E-01	1.28E-01	8.20E-03	1.11E-01	4.73E-02
T6 Instate Construction Small	0.09%	0.02%	5.14E-02	7.27E-01	2.70E-01	1.90E-02	2.60E-01	1.10E-01
T6 Instate Heavy	0.27%	0.07%	1.78E-01	3.34E+00	9.39E-01	5.71E-02	7.96E-01	3.39E-01
T6 Instate Small	0.69%	0.17%	4.04E-01	5.84E+00	2.12E+00	1.47E-01	2.01E+00	8.52E-01
T6 OOS Heavy	0.00%	0.00%	6.64E-04	8.95E-03	3.50E-03	2.46E-04	3.47E-03	1.47E-03
T6 OOS Small	0.00%	0.00%	1.91E-03	2.37E-02	1.01E-02	7.73E-04	1.06E-02	4.50E-03
T6 Public	0.03%	0.01%	1.60E-02	5.91E-01	7.45E-02	6.20E-03	8.58E-02	3.72E-02
T6 Utility	0.00%	0.00%	2.10E-03	2.56E-02	1.11E-02	1.03E-03	1.40E-02	5.88E-03
T6TS	0.18%	0.04%	4.18E-02	4.17E-01	1.26E+00	3.74E-02	5.11E-01	2.13E-01
T7 Ag	0.00%	0.00%	6.92E-03	1.62E-01	4.08E-02	1.26E-03	8.56E-03	3.44E-03
T7 CAIRP	0.36%	0.09%	5.13E-01	6.19E+00	3.03E+00	9.99E-02	7.58E-01	2.99E-01
T7 CAIRP Construction	0.03%	0.01%	3.82E-02	4.42E-01	2.26E-01	7.55E-03	5.60E-02	2.22E-02
T7 NNOOS	0.45%	0.11%	5.48E-01	5.65E+00	3.24E+00	1.23E-01	9.30E-01	3.63E-01
T7 NOOS	0.14%	0.04%	2.03E-01	2.46E+00	1.20E+00	3.95E-02	2.99E-01	1.18E-01
T7 Other Port	0.07%	0.02%	9.96E-02	1.12E+00	5.88E-01	1.91E-02	1.42E-01	5.65E-02
T7 POAK	0.21%	0.05%	3.15E-01	3.58E+00	1.86E+00	5.99E-02	4.46E-01	1.77E-01
T7 Public	0.02%	0.00%	2.97E-02	2.01E+00	1.36E-01	5.96E-03	4.76E-02	2.29E-02
T7 Single	0.13%	0.03%	1.65E-01	2.59E+00	9.76E-01	3.90E-02	2.74E-01	1.07E-01
T7 Single Construction	0.07%	0.02%	8.19E-02	1.12E+00	4.82E-01	2.00E-02	1.43E-01	5.57E-02
T7 SWCV	0.04%	0.01%	2.60E-02	2.26E+00	3.06E+00	7.44E-03	7.90E-02	3.08E-02
T7 Tractor	0.68%	0.17%	1.02E+00	1.42E+01	6.00E+00	1.89E-01	1.42E+00	5.65E-01
T7 Tractor Construction	0.05%	0.01%	7.84E-02	1.10E+00	4.62E-01	1.49E-02	1.08E-01	4.32E-02
T7 Utility	0.00%	0.00%	2.58E-03	2.97E-02	1.52E-02	8.18E-04	5.75E-03	2.19E-03
T7IS	0.02%	0.01%	1.16E-01	1.24E+00	1.38E+01	7.69E-03	3.95E-02	1.54E-02
UBUS	0.15%	0.04%	2.12E-01	1.03E+01	3.42E+00	3.49E-02	1.75E+00	8.10E-01
TOTAL	100%	96%	126	338	3,722	15	367	150
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 5 Mitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,648,810	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.56E-02	9.29E-01	2.93E-01	1.85E-02	2.51E-01	1.07E-01
LDA	62.15%	68.38%	2.19E+01	1.24E+02	1.84E+03	8.78E+00	2.52E+02	1.03E+02
LDT1	3.41%	3.75%	2.33E+00	1.28E+01	1.64E+02	6.19E-01	1.39E+01	5.69E+00
LDT2	18.01%	19.82%	9.93E+00	5.73E+01	7.86E+02	3.71E+00	7.31E+01	2.99E+01
LHD1	1.19%	0.30%	7.91E-01	1.17E+01	7.35E+00	1.20E-01	2.22E+00	9.93E-01
LHD2	0.51%	0.13%	2.65E-01	1.83E+00	1.61E+00	5.33E-02	1.08E+00	4.78E-01
MCY	0.51%	0.56%	8.30E+01	4.60E+01	7.17E+02	8.33E-02	7.98E-01	3.52E-01
MDV	10.12%	2.52%	2.19E+00	1.26E+01	1.36E+02	6.39E-01	9.31E+00	3.82E+00
MH	0.07%	0.02%	2.77E-02	8.64E-01	5.26E-01	1.33E-02	1.99E-01	8.85E-02
Motor Coach	0.04%	0.01%	4.99E-02	5.91E-01	2.95E-01	1.14E-02	1.11E-01	4.81E-02
OBUS	0.10%	0.02%	1.85E-02	1.90E-01	5.17E-01	2.07E-02	2.82E-01	1.18E-01
SBUS	0.06%	0.02%	4.18E-02	1.39E+00	4.45E-01	1.08E-02	9.85E-01	4.25E-01
T6 Ag	0.00%	0.00%	3.41E-03	8.01E-02	1.80E-02	1.05E-03	1.39E-02	5.95E-03
T6 CAIRP Heavy	0.00%	0.00%	1.15E-03	1.54E-02	6.04E-03	4.26E-04	6.02E-03	2.55E-03
T6 CAIRP Small	0.01%	0.00%	3.32E-03	4.11E-02	1.75E-02	1.34E-03	1.84E-02	7.80E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.41E-02	4.27E-01	1.27E-01	8.14E-03	1.10E-01	4.70E-02
T6 Instate Construction Small	0.09%	0.02%	5.10E-02	7.22E-01	2.68E-01	1.88E-02	2.58E-01	1.09E-01
T6 Instate Heavy	0.27%	0.07%	1.77E-01	3.32E+00	9.32E-01	5.67E-02	7.90E-01	3.37E-01
T6 Instate Small	0.69%	0.17%	4.01E-01	5.80E+00	2.11E+00	1.46E-01	1.99E+00	8.46E-01
T6 OOS Heavy	0.00%	0.00%	6.59E-04	8.88E-03	3.47E-03	2.44E-04	3.45E-03	1.46E-03
T6 OOS Small	0.00%	0.00%	1.90E-03	2.35E-02	1.00E-02	7.67E-04	1.06E-02	4.47E-03
T6 Public	0.03%	0.01%	1.59E-02	5.87E-01	7.40E-02	6.15E-03	8.52E-02	3.69E-02
T6 Utility	0.00%	0.00%	2.09E-03	2.54E-02	1.10E-02	1.02E-03	1.39E-02	5.84E-03
T6TS	0.18%	0.04%	4.15E-02	4.14E-01	1.25E+00	3.71E-02	5.07E-01	2.11E-01
T7 Ag	0.00%	0.00%	6.87E-03	1.61E-01	4.05E-02	1.26E-03	8.50E-03	3.42E-03
T7 CAIRP	0.36%	0.09%	5.09E-01	6.15E+00	3.01E+00	9.91E-02	7.52E-01	2.97E-01
T7 CAIRP Construction	0.03%	0.01%	3.80E-02	4.39E-01	2.24E-01	7.50E-03	5.56E-02	2.20E-02
T7 NNOOS	0.45%	0.11%	5.44E-01	5.61E+00	3.21E+00	1.22E-01	9.24E-01	3.60E-01
T7 NOOS	0.14%	0.04%	2.02E-01	2.44E+00	1.19E+00	3.92E-02	2.97E-01	1.17E-01
T7 Other Port	0.07%	0.02%	9.89E-02	1.11E+00	5.84E-01	1.90E-02	1.41E-01	5.61E-02
T7 POAK	0.21%	0.05%	3.13E-01	3.55E+00	1.85E+00	5.95E-02	4.43E-01	1.76E-01
T7 Public	0.02%	0.00%	2.95E-02	1.99E+00	1.35E-01	5.92E-03	4.73E-02	2.27E-02
T7 Single	0.13%	0.03%	1.64E-01	2.58E+00	9.69E-01	3.87E-02	2.72E-01	1.06E-01
T7 Single Construction	0.07%	0.02%	8.13E-02	1.11E+00	4.79E-01	1.99E-02	1.42E-01	5.53E-02
T7 SWCV	0.04%	0.01%	2.58E-02	2.25E+00	3.04E+00	7.39E-03	7.84E-02	3.06E-02
T7 Tractor	0.68%	0.17%	1.01E+00	1.41E+01	5.96E+00	1.88E-01	1.41E+00	5.61E-01
T7 Tractor Construction	0.05%	0.01%	7.78E-02	1.09E+00	4.59E-01	1.48E-02	1.08E-01	4.29E-02
T7 Utility	0.00%	0.00%	2.56E-03	2.95E-02	1.51E-02	8.12E-04	5.71E-03	2.18E-03
T7IS	0.02%	0.01%	1.15E-01	1.23E+00	1.37E+01	7.63E-03	3.92E-02	1.53E-02
UBUS	0.15%	0.04%	2.11E-01	1.03E+01	3.39E+00	3.46E-02	1.74E+00	8.04E-01
TOTAL	100%	96%	125	336	3,695	15	364	149
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 5 Unmitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,275,280,520	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.08E+02	4.10E-04	1.47E-01	0.01	310
LDA	62.15%	68.38%	1.39E+05	1.38E+00	1.97E+01	0.82	139,310
LDT1	3.41%	3.75%	9.79E+03	1.49E-01	2.02E+00	0.08	9,822
LDT2	18.01%	19.82%	5.87E+04	6.34E-01	9.09E+00	0.38	58,831
LHD1	1.19%	0.30%	1.94E+03	1.27E-02	1.85E+00	0.08	1,969
LHD2	0.51%	0.13%	8.70E+02	2.66E-03	2.90E-01	0.01	874
MCY	0.51%	0.56%	1.10E+03	2.83E+00	7.29E+00	0.30	1,250
MDV	10.12%	2.52%	1.01E+04	1.38E-01	2.00E+00	0.08	10,161
MH	0.07%	0.02%	2.14E+02	1.08E-03	1.37E-01	0.01	215
Motor Coach	0.04%	0.01%	1.90E+02	3.67E-04	9.37E-02	0.00	191
OBUS	0.10%	0.02%	3.28E+02	1.19E-03	3.02E-02	0.00	328
SBUS	0.06%	0.02%	1.78E+02	8.53E-04	2.20E-01	0.01	181
T6 Ag	0.00%	0.00%	1.74E+01	2.51E-05	1.27E-02	0.00	18
T6 CAIRP Heavy	0.00%	0.00%	7.08E+00	8.45E-06	2.44E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.23E+01	2.44E-05	6.51E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.35E+02	1.78E-04	6.77E-02	0.00	136
T6 Instate Construction Small	0.09%	0.02%	3.13E+02	3.75E-04	1.14E-01	0.00	314
T6 Instate Heavy	0.27%	0.07%	9.43E+02	1.30E-03	5.26E-01	0.02	950
T6 Instate Small	0.69%	0.17%	2.42E+03	2.95E-03	9.19E-01	0.04	2,435
T6 OOS Heavy	0.00%	0.00%	4.06E+00	4.85E-06	1.41E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.28E+01	1.40E-05	3.73E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.17E-04	9.30E-02	0.00	103
T6 Utility	0.00%	0.00%	1.69E+01	1.54E-05	4.03E-03	0.00	17
T6TS	0.18%	0.04%	5.89E+02	2.66E-03	6.57E-02	0.00	590
T7 Ag	0.00%	0.00%	2.09E+01	5.06E-05	2.55E-02	0.00	21
T7 CAIRP	0.36%	0.09%	1.65E+03	3.75E-03	9.74E-01	0.04	1,660
T7 CAIRP Construction	0.03%	0.01%	1.25E+02	2.80E-04	6.96E-02	0.00	125
T7 NNOOS	0.45%	0.11%	2.03E+03	4.01E-03	8.89E-01	0.04	2,038
T7 NOOS	0.14%	0.04%	6.51E+02	1.48E-03	3.87E-01	0.02	656
T7 Other Port	0.07%	0.02%	3.15E+02	7.28E-04	1.76E-01	0.01	317
T7 POAK	0.21%	0.05%	9.89E+02	2.30E-03	5.63E-01	0.02	996
T7 Public	0.02%	0.00%	9.83E+01	2.17E-04	3.16E-01	0.01	102
T7 Single	0.13%	0.03%	6.44E+02	1.21E-03	4.08E-01	0.02	649
T7 Single Construction	0.07%	0.02%	3.30E+02	5.99E-04	1.76E-01	0.01	333
T7 SWCV	0.04%	0.01%	3.55E+02	1.39E-01	3.56E-01	0.01	363
T7 Tractor	0.68%	0.17%	3.12E+03	7.43E-03	2.23E+00	0.09	3,150
T7 Tractor Construction	0.05%	0.01%	2.45E+02	5.73E-04	1.73E-01	0.01	247
T7 Utility	0.00%	0.00%	1.35E+01	1.89E-05	4.68E-03	0.00	14
T7IS	0.02%	0.01%	1.18E+02	7.39E-03	1.96E-01	0.01	120
UBUS	0.15%	0.04%	6.41E+02	2.51E-02	1.63E+00	0.07	663
TOTAL	100%	96%	238,706	5	53	2	239,505

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 5 Mitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,266,137,070	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.06E+02	4.07E-04	1.46E-01	0.01	308
LDA	62.15%	68.38%	1.38E+05	1.37E+00	1.95E+01	0.81	138,311
LDT1	3.41%	3.75%	9.72E+03	1.48E-01	2.01E+00	0.08	9,751
LDT2	18.01%	19.82%	5.83E+04	6.30E-01	9.02E+00	0.38	58,409
LHD1	1.19%	0.30%	1.93E+03	1.26E-02	1.84E+00	0.08	1,955
LHD2	0.51%	0.13%	8.64E+02	2.64E-03	2.88E-01	0.01	868
MCY	0.51%	0.56%	1.09E+03	2.81E+00	7.24E+00	0.30	1,241
MDV	10.12%	2.52%	1.01E+04	1.37E-01	1.99E+00	0.08	10,088
MH	0.07%	0.02%	2.12E+02	1.08E-03	1.36E-01	0.01	214
Motor Coach	0.04%	0.01%	1.89E+02	3.65E-04	9.31E-02	0.00	190
OBUS	0.10%	0.02%	3.26E+02	1.18E-03	2.99E-02	0.00	326
SBUS	0.06%	0.02%	1.76E+02	8.46E-04	2.18E-01	0.01	179
T6 Ag	0.00%	0.00%	1.73E+01	2.50E-05	1.26E-02	0.00	17
T6 CAIRP Heavy	0.00%	0.00%	7.03E+00	8.39E-06	2.42E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.21E+01	2.43E-05	6.47E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.34E+02	1.77E-04	6.72E-02	0.00	135
T6 Instate Construction Small	0.09%	0.02%	3.10E+02	3.73E-04	1.14E-01	0.00	312
T6 Instate Heavy	0.27%	0.07%	9.36E+02	1.29E-03	5.22E-01	0.02	943
T6 Instate Small	0.69%	0.17%	2.41E+03	2.93E-03	9.12E-01	0.04	2,417
T6 OOS Heavy	0.00%	0.00%	4.03E+00	4.82E-06	1.40E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.27E+01	1.39E-05	3.71E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.16E-04	9.23E-02	0.00	103
T6 Utility	0.00%	0.00%	1.68E+01	1.53E-05	4.00E-03	0.00	17
T6TS	0.18%	0.04%	5.85E+02	2.64E-03	6.52E-02	0.00	586
T7 Ag	0.00%	0.00%	2.07E+01	5.02E-05	2.54E-02	0.00	21
T7 CAIRP	0.36%	0.09%	1.64E+03	3.72E-03	9.67E-01	0.04	1,648
T7 CAIRP Construction	0.03%	0.01%	1.24E+02	2.78E-04	6.91E-02	0.00	125
T7 NNOOS	0.45%	0.11%	2.01E+03	3.98E-03	8.83E-01	0.04	2,024
T7 NOOS	0.14%	0.04%	6.46E+02	1.47E-03	3.85E-01	0.02	651
T7 Other Port	0.07%	0.02%	3.13E+02	7.23E-04	1.75E-01	0.01	315
T7 POAK	0.21%	0.05%	9.81E+02	2.29E-03	5.59E-01	0.02	989
T7 Public	0.02%	0.00%	9.76E+01	2.16E-04	3.13E-01	0.01	102
T7 Single	0.13%	0.03%	6.39E+02	1.20E-03	4.05E-01	0.02	644
T7 Single Construction	0.07%	0.02%	3.28E+02	5.94E-04	1.75E-01	0.01	330
T7 SWCV	0.04%	0.01%	3.53E+02	1.38E-01	3.53E-01	0.01	360
T7 Tractor	0.68%	0.17%	3.10E+03	7.38E-03	2.21E+00	0.09	3,127
T7 Tractor Construction	0.05%	0.01%	2.43E+02	5.69E-04	1.72E-01	0.01	246
T7 Utility	0.00%	0.00%	1.34E+01	1.87E-05	4.64E-03	0.00	13
T7IS	0.02%	0.01%	1.17E+02	7.34E-03	1.94E-01	0.01	120
UBUS	0.15%	0.04%	6.37E+02	2.49E-02	1.61E+00	0.07	658
TOTAL	100%	96%	236,995	5	53	2	237,788

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 6 unmitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,753,750	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.61E-02	9.37E-01	2.95E-01	1.87E-02	2.53E-01	1.08E-01
LDA	62.15%	71.05%	2.34E+01	1.33E+02	1.96E+03	9.38E+00	2.69E+02	1.10E+02
LDT1	3.41%	3.89%	2.49E+00	1.36E+01	1.75E+02	6.62E-01	1.48E+01	6.09E+00
LDT2	18.01%	20.59%	1.06E+01	6.13E+01	8.40E+02	3.96E+00	7.81E+01	3.20E+01
LHD1	1.19%	0.29%	7.98E-01	1.18E+01	7.41E+00	1.21E-01	2.24E+00	1.00E+00
LHD2	0.51%	0.12%	2.67E-01	1.85E+00	1.63E+00	5.38E-02	1.09E+00	4.82E-01
MCY	0.51%	0.59%	8.87E+01	4.92E+01	7.66E+02	8.91E-02	8.53E-01	3.76E-01
MDV	10.12%	2.47%	2.21E+00	1.27E+01	1.38E+02	6.45E-01	9.39E+00	3.85E+00
MH	0.07%	0.02%	2.79E-02	8.72E-01	5.31E-01	1.35E-02	2.00E-01	8.92E-02
Motor Coach	0.04%	0.01%	5.03E-02	5.96E-01	2.97E-01	1.15E-02	1.12E-01	4.85E-02
OBUS	0.10%	0.02%	1.87E-02	1.92E-01	5.21E-01	2.08E-02	2.85E-01	1.19E-01
SBUS	0.06%	0.02%	4.22E-02	1.40E+00	4.49E-01	1.09E-02	9.94E-01	4.28E-01
T6 Ag	0.00%	0.00%	3.44E-03	8.08E-02	1.81E-02	1.06E-03	1.40E-02	6.00E-03
T6 CAIRP Heavy	0.00%	0.00%	1.16E-03	1.55E-02	6.10E-03	4.30E-04	6.07E-03	2.57E-03
T6 CAIRP Small	0.01%	0.00%	3.35E-03	4.15E-02	1.76E-02	1.35E-03	1.86E-02	7.87E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.44E-02	4.31E-01	1.28E-01	8.21E-03	1.11E-01	4.74E-02
T6 Instate Construction Small	0.09%	0.02%	5.14E-02	7.28E-01	2.70E-01	1.90E-02	2.60E-01	1.10E-01
T6 Instate Heavy	0.27%	0.07%	1.79E-01	3.35E+00	9.40E-01	5.72E-02	7.97E-01	3.40E-01
T6 Instate Small	0.69%	0.17%	4.04E-01	5.85E+00	2.13E+00	1.47E-01	2.01E+00	8.53E-01
T6 OOS Heavy	0.00%	0.00%	6.65E-04	8.96E-03	3.50E-03	2.46E-04	3.48E-03	1.47E-03
T6 OOS Small	0.00%	0.00%	1.92E-03	2.38E-02	1.01E-02	7.74E-04	1.07E-02	4.51E-03
T6 Public	0.03%	0.01%	1.60E-02	5.92E-01	7.46E-02	6.21E-03	8.60E-02	3.73E-02
T6 Utility	0.00%	0.00%	2.11E-03	2.57E-02	1.11E-02	1.03E-03	1.40E-02	5.89E-03
T6TS	0.18%	0.04%	4.19E-02	4.18E-01	1.26E+00	3.74E-02	5.12E-01	2.13E-01
T7 Ag	0.00%	0.00%	6.93E-03	1.63E-01	4.09E-02	1.27E-03	8.57E-03	3.45E-03
T7 CAIRP	0.36%	0.09%	5.14E-01	6.20E+00	3.03E+00	1.00E-01	7.59E-01	3.00E-01
T7 CAIRP Construction	0.03%	0.01%	3.83E-02	4.43E-01	2.26E-01	7.56E-03	5.61E-02	2.22E-02
T7 NNOOS	0.45%	0.11%	5.49E-01	5.66E+00	3.24E+00	1.23E-01	9.32E-01	3.63E-01
T7 NOOS	0.14%	0.04%	2.03E-01	2.47E+00	1.20E+00	3.95E-02	3.00E-01	1.18E-01
T7 Other Port	0.07%	0.02%	9.98E-02	1.12E+00	5.89E-01	1.91E-02	1.43E-01	5.66E-02
T7 POAK	0.21%	0.05%	3.16E-01	3.58E+00	1.86E+00	6.00E-02	4.47E-01	1.78E-01
T7 Public	0.02%	0.00%	2.98E-02	2.01E+00	1.36E-01	5.97E-03	4.77E-02	2.29E-02
T7 Single	0.13%	0.03%	1.65E-01	2.60E+00	9.77E-01	3.91E-02	2.74E-01	1.07E-01
T7 Single Construction	0.07%	0.02%	8.20E-02	1.12E+00	4.83E-01	2.01E-02	1.43E-01	5.58E-02
T7 SWCV	0.04%	0.01%	2.60E-02	2.26E+00	3.07E+00	7.45E-03	7.91E-02	3.08E-02
T7 Tractor	0.68%	0.17%	1.02E+00	1.42E+01	6.01E+00	1.89E-01	1.42E+00	5.66E-01
T7 Tractor Construction	0.05%	0.01%	7.85E-02	1.10E+00	4.63E-01	1.49E-02	1.09E-01	4.33E-02
T7 Utility	0.00%	0.00%	2.59E-03	2.97E-02	1.53E-02	8.19E-04	5.76E-03	2.19E-03
T7IS	0.02%	0.01%	1.16E-01	1.25E+00	1.38E+01	7.70E-03	3.96E-02	1.55E-02
UBUS	0.15%	0.04%	2.12E-01	1.03E+01	3.42E+00	3.49E-02	1.75E+00	8.11E-01
TOTAL	100%	100%	133	353	3,938	16	388	159
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 6 Mitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,725,660	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.57E-02	9.30E-01	2.93E-01	1.85E-02	2.51E-01	1.07E-01
LDA	62.15%	71.05%	2.32E+01	1.32E+02	1.95E+03	9.31E+00	2.67E+02	1.09E+02
LDT1	3.41%	3.89%	2.47E+00	1.35E+01	1.74E+02	6.57E-01	1.47E+01	6.04E+00
LDT2	18.01%	20.59%	1.05E+01	6.08E+01	8.34E+02	3.93E+00	7.76E+01	3.17E+01
LHD1	1.19%	0.29%	7.92E-01	1.17E+01	7.35E+00	1.20E-01	2.22E+00	9.94E-01
LHD2	0.51%	0.12%	2.65E-01	1.83E+00	1.62E+00	5.34E-02	1.08E+00	4.79E-01
MCY	0.51%	0.59%	8.80E+01	4.88E+01	7.61E+02	8.84E-02	8.47E-01	3.73E-01
MDV	10.12%	2.47%	2.19E+00	1.26E+01	1.37E+02	6.40E-01	9.32E+00	3.82E+00
MH	0.07%	0.02%	2.77E-02	8.65E-01	5.27E-01	1.33E-02	1.99E-01	8.86E-02
Motor Coach	0.04%	0.01%	4.99E-02	5.92E-01	2.95E-01	1.15E-02	1.11E-01	4.81E-02
OBUS	0.10%	0.02%	1.85E-02	1.90E-01	5.17E-01	2.07E-02	2.83E-01	1.18E-01
SBUS	0.06%	0.02%	4.19E-02	1.39E+00	4.45E-01	1.08E-02	9.86E-01	4.25E-01
T6 Ag	0.00%	0.00%	3.42E-03	8.02E-02	1.80E-02	1.05E-03	1.39E-02	5.95E-03
T6 CAIRP Heavy	0.00%	0.00%	1.15E-03	1.54E-02	6.05E-03	4.27E-04	6.02E-03	2.55E-03
T6 CAIRP Small	0.01%	0.00%	3.32E-03	4.11E-02	1.75E-02	1.34E-03	1.85E-02	7.81E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.42E-02	4.28E-01	1.27E-01	8.15E-03	1.10E-01	4.70E-02
T6 Instate Construction Small	0.09%	0.02%	5.10E-02	7.23E-01	2.68E-01	1.88E-02	2.58E-01	1.10E-01
T6 Instate Heavy	0.27%	0.07%	1.77E-01	3.32E+00	9.33E-01	5.68E-02	7.91E-01	3.37E-01
T6 Instate Small	0.69%	0.17%	4.01E-01	5.80E+00	2.11E+00	1.46E-01	1.99E+00	8.47E-01
T6 OOS Heavy	0.00%	0.00%	6.60E-04	8.89E-03	3.47E-03	2.44E-04	3.45E-03	1.46E-03
T6 OOS Small	0.00%	0.00%	1.90E-03	2.36E-02	1.00E-02	7.68E-04	1.06E-02	4.48E-03
T6 Public	0.03%	0.01%	1.59E-02	5.87E-01	7.41E-02	6.16E-03	8.53E-02	3.70E-02
T6 Utility	0.00%	0.00%	2.09E-03	2.55E-02	1.10E-02	1.02E-03	1.39E-02	5.85E-03
T6TS	0.18%	0.04%	4.15E-02	4.15E-01	1.25E+00	3.71E-02	5.08E-01	2.12E-01
T7 Ag	0.00%	0.00%	6.87E-03	1.61E-01	4.06E-02	1.26E-03	8.51E-03	3.42E-03
T7 CAIRP	0.36%	0.09%	5.10E-01	6.15E+00	3.01E+00	9.92E-02	7.53E-01	2.98E-01
T7 CAIRP Construction	0.03%	0.01%	3.80E-02	4.39E-01	2.24E-01	7.50E-03	5.57E-02	2.20E-02
T7 NNOOS	0.45%	0.11%	5.45E-01	5.61E+00	3.22E+00	1.22E-01	9.25E-01	3.60E-01
T7 NOOS	0.14%	0.04%	2.02E-01	2.45E+00	1.19E+00	3.92E-02	2.97E-01	1.18E-01
T7 Other Port	0.07%	0.02%	9.90E-02	1.11E+00	5.85E-01	1.90E-02	1.41E-01	5.61E-02
T7 POAK	0.21%	0.05%	3.13E-01	3.55E+00	1.85E+00	5.96E-02	4.44E-01	1.76E-01
T7 Public	0.02%	0.00%	2.96E-02	1.99E+00	1.35E-01	5.92E-03	4.73E-02	2.27E-02
T7 Single	0.13%	0.03%	1.64E-01	2.58E+00	9.70E-01	3.88E-02	2.72E-01	1.06E-01
T7 Single Construction	0.07%	0.02%	8.14E-02	1.11E+00	4.79E-01	1.99E-02	1.42E-01	5.54E-02
T7 SWCV	0.04%	0.01%	2.58E-02	2.25E+00	3.05E+00	7.39E-03	7.85E-02	3.06E-02
T7 Tractor	0.68%	0.17%	1.01E+00	1.41E+01	5.97E+00	1.88E-01	1.41E+00	5.62E-01
T7 Tractor Construction	0.05%	0.01%	7.79E-02	1.09E+00	4.59E-01	1.48E-02	1.08E-01	4.30E-02
T7 Utility	0.00%	0.00%	2.57E-03	2.95E-02	1.52E-02	8.13E-04	5.72E-03	2.18E-03
T7IS	0.02%	0.01%	1.16E-01	1.24E+00	1.37E+01	7.64E-03	3.93E-02	1.53E-02
UBUS	0.15%	0.04%	2.11E-01	1.03E+01	3.39E+00	3.47E-02	1.74E+00	8.05E-01
TOTAL	100%	100%	132	351	3,909	16	385	157
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 6 unmitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,302,551,250	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.08E+02	4.10E-04	1.48E-01	0.01	310
LDA	62.15%	71.05%	1.48E+05	1.47E+00	2.09E+01	0.87	147,831
LDT1	3.41%	3.89%	1.04E+04	1.58E-01	2.15E+00	0.09	10,422
LDT2	18.01%	20.59%	6.23E+04	6.73E-01	9.64E+00	0.40	62,429
LHD1	1.19%	0.29%	1.95E+03	1.27E-02	1.85E+00	0.08	1,972
LHD2	0.51%	0.12%	8.71E+02	2.66E-03	2.91E-01	0.01	875
MCY	0.51%	0.59%	1.16E+03	3.00E+00	7.74E+00	0.32	1,327
MDV	10.12%	2.47%	1.01E+04	1.39E-01	2.00E+00	0.08	10,176
MH	0.07%	0.02%	2.14E+02	1.08E-03	1.37E-01	0.01	216
Motor Coach	0.04%	0.01%	1.90E+02	3.68E-04	9.39E-02	0.00	192
OBUS	0.10%	0.02%	3.28E+02	1.19E-03	3.02E-02	0.00	329
SBUS	0.06%	0.02%	1.78E+02	8.54E-04	2.20E-01	0.01	181
T6 Ag	0.00%	0.00%	1.75E+01	2.52E-05	1.27E-02	0.00	18
T6 CAIRP Heavy	0.00%	0.00%	7.09E+00	8.47E-06	2.44E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.23E+01	2.45E-05	6.52E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.35E+02	1.78E-04	6.78E-02	0.00	136
T6 Instate Construction Small	0.09%	0.02%	3.13E+02	3.76E-04	1.15E-01	0.00	315
T6 Instate Heavy	0.27%	0.07%	9.44E+02	1.31E-03	5.27E-01	0.02	951
T6 Instate Small	0.69%	0.17%	2.43E+03	2.95E-03	9.20E-01	0.04	2,438
T6 OOS Heavy	0.00%	0.00%	4.06E+00	4.86E-06	1.41E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.28E+01	1.40E-05	3.74E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.17E-04	9.31E-02	0.00	104
T6 Utility	0.00%	0.00%	1.69E+01	1.54E-05	4.04E-03	0.00	17
T6TS	0.18%	0.04%	5.90E+02	2.66E-03	6.58E-02	0.00	591
T7 Ag	0.00%	0.00%	2.09E+01	5.06E-05	2.56E-02	0.00	21
T7 CAIRP	0.36%	0.09%	1.65E+03	3.76E-03	9.76E-01	0.04	1,662
T7 CAIRP Construction	0.03%	0.01%	1.25E+02	2.80E-04	6.97E-02	0.00	126
T7 NNOOS	0.45%	0.11%	2.03E+03	4.01E-03	8.90E-01	0.04	2,041
T7 NOOS	0.14%	0.04%	6.52E+02	1.49E-03	3.88E-01	0.02	657
T7 Other Port	0.07%	0.02%	3.15E+02	7.29E-04	1.76E-01	0.01	318
T7 POAK	0.21%	0.05%	9.90E+02	2.31E-03	5.64E-01	0.02	997
T7 Public	0.02%	0.00%	9.85E+01	2.18E-04	3.16E-01	0.01	103
T7 Single	0.13%	0.03%	6.45E+02	1.21E-03	4.09E-01	0.02	650
T7 Single Construction	0.07%	0.02%	3.31E+02	6.00E-04	1.76E-01	0.01	333
T7 SWCV	0.04%	0.01%	3.56E+02	1.40E-01	3.56E-01	0.01	363
T7 Tractor	0.68%	0.17%	3.13E+03	7.44E-03	2.23E+00	0.09	3,154
T7 Tractor Construction	0.05%	0.01%	2.45E+02	5.74E-04	1.73E-01	0.01	248
T7 Utility	0.00%	0.00%	1.35E+01	1.89E-05	4.68E-03	0.00	14
T7IS	0.02%	0.01%	1.18E+02	7.40E-03	1.96E-01	0.01	121
UBUS	0.15%	0.04%	6.42E+02	2.51E-02	1.63E+00	0.07	664
TOTAL	100%	100%	251,511	6	56	2	252,347

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 6 Mitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,292,804,020	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.06E+02	4.07E-04	1.46E-01	0.01	308
LDA	62.15%	71.05%	1.46E+05	1.46E+00	2.07E+01	0.86	146,725
LDT1	3.41%	3.89%	1.03E+04	1.57E-01	2.13E+00	0.09	10,344
LDT2	18.01%	20.59%	6.18E+04	6.68E-01	9.57E+00	0.40	61,962
LHD1	1.19%	0.29%	1.93E+03	1.26E-02	1.84E+00	0.08	1,957
LHD2	0.51%	0.12%	8.65E+02	2.64E-03	2.89E-01	0.01	869
MCY	0.51%	0.59%	1.16E+03	2.98E+00	7.68E+00	0.32	1,317
MDV	10.12%	2.47%	1.01E+04	1.38E-01	1.99E+00	0.08	10,100
MH	0.07%	0.02%	2.12E+02	1.08E-03	1.36E-01	0.01	214
Motor Coach	0.04%	0.01%	1.89E+02	3.65E-04	9.32E-02	0.00	190
OBUS	0.10%	0.02%	3.26E+02	1.18E-03	3.00E-02	0.00	326
SBUS	0.06%	0.02%	1.77E+02	8.47E-04	2.19E-01	0.01	179
T6 Ag	0.00%	0.00%	1.73E+01	2.50E-05	1.26E-02	0.00	17
T6 CAIRP Heavy	0.00%	0.00%	7.04E+00	8.40E-06	2.42E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.21E+01	2.43E-05	6.48E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.34E+02	1.77E-04	6.73E-02	0.00	135
T6 Instate Construction Small	0.09%	0.02%	3.11E+02	3.73E-04	1.14E-01	0.00	312
T6 Instate Heavy	0.27%	0.07%	9.37E+02	1.30E-03	5.23E-01	0.02	944
T6 Instate Small	0.69%	0.17%	2.41E+03	2.93E-03	9.13E-01	0.04	2,420
T6 OOS Heavy	0.00%	0.00%	4.03E+00	4.83E-06	1.40E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.27E+01	1.39E-05	3.71E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.16E-04	9.24E-02	0.00	103
T6 Utility	0.00%	0.00%	1.68E+01	1.53E-05	4.01E-03	0.00	17
T6TS	0.18%	0.04%	5.85E+02	2.64E-03	6.53E-02	0.00	586
T7 Ag	0.00%	0.00%	2.07E+01	5.03E-05	2.54E-02	0.00	21
T7 CAIRP	0.36%	0.09%	1.64E+03	3.73E-03	9.68E-01	0.04	1,650
T7 CAIRP Construction	0.03%	0.01%	1.24E+02	2.78E-04	6.92E-02	0.00	125
T7 NNOOS	0.45%	0.11%	2.01E+03	3.98E-03	8.84E-01	0.04	2,026
T7 NOOS	0.14%	0.04%	6.47E+02	1.48E-03	3.85E-01	0.02	652
T7 Other Port	0.07%	0.02%	3.13E+02	7.24E-04	1.75E-01	0.01	315
T7 POAK	0.21%	0.05%	9.83E+02	2.29E-03	5.59E-01	0.02	990
T7 Public	0.02%	0.00%	9.77E+01	2.16E-04	3.14E-01	0.01	102
T7 Single	0.13%	0.03%	6.40E+02	1.20E-03	4.06E-01	0.02	645
T7 Single Construction	0.07%	0.02%	3.28E+02	5.95E-04	1.75E-01	0.01	331
T7 SWCV	0.04%	0.01%	3.53E+02	1.39E-01	3.54E-01	0.01	361
T7 Tractor	0.68%	0.17%	3.10E+03	7.39E-03	2.21E+00	0.09	3,131
T7 Tractor Construction	0.05%	0.01%	2.44E+02	5.69E-04	1.72E-01	0.01	246
T7 Utility	0.00%	0.00%	1.34E+01	1.88E-05	4.65E-03	0.00	13
T7IS	0.02%	0.01%	1.17E+02	7.35E-03	1.95E-01	0.01	120
UBUS	0.15%	0.04%	6.38E+02	2.49E-02	1.62E+00	0.07	659
TOTAL	100%	100%	249,629	6	55	2	250,459
N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)							
Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.							
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.							

SCENARIO 7 - No Growth

Based on EMFAC2014

Emission year	Daily							
2030	3,579,830	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.28E-02	8.82E-01	2.78E-01	1.76E-02	2.38E-01	1.01E-01
LDA	62.15%	71.09%	2.23E+01	1.27E+02	1.87E+03	8.95E+00	2.57E+02	1.05E+02
LDT1	3.41%	3.90%	2.38E+00	1.30E+01	1.67E+02	6.31E-01	1.41E+01	5.81E+00
LDT2	18.01%	20.60%	1.01E+01	5.85E+01	8.02E+02	3.78E+00	7.46E+01	3.05E+01
LHD1	1.19%	0.29%	7.50E-01	1.11E+01	6.97E+00	1.14E-01	2.11E+00	9.42E-01
LHD2	0.51%	0.12%	2.51E-01	1.74E+00	1.53E+00	5.06E-02	1.02E+00	4.54E-01
MCY	0.51%	0.59%	8.46E+01	4.69E+01	7.31E+02	8.50E-02	8.14E-01	3.59E-01
MDV	10.12%	2.44%	2.07E+00	1.20E+01	1.29E+02	6.07E-01	8.83E+00	3.62E+00
MH	0.07%	0.02%	2.63E-02	8.20E-01	4.99E-01	1.27E-02	1.88E-01	8.39E-02
Motor Coach	0.04%	0.01%	4.73E-02	5.61E-01	2.79E-01	1.09E-02	1.05E-01	4.56E-02
OBUS	0.10%	0.02%	1.76E-02	1.80E-01	4.90E-01	1.96E-02	2.68E-01	1.12E-01
SBUS	0.06%	0.02%	3.97E-02	1.32E+00	4.22E-01	1.03E-02	9.35E-01	4.03E-01
T6 Ag	0.00%	0.00%	3.24E-03	7.60E-02	1.70E-02	9.96E-04	1.32E-02	5.64E-03
T6 CAIRP Heavy	0.00%	0.00%	1.09E-03	1.46E-02	5.73E-03	4.04E-04	5.71E-03	2.42E-03
T6 CAIRP Small	0.01%	0.00%	3.15E-03	3.90E-02	1.66E-02	1.27E-03	1.75E-02	7.40E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.29E-02	4.05E-01	1.20E-01	7.72E-03	1.05E-01	4.46E-02
T6 Instate Construction Small	0.09%	0.02%	4.84E-02	6.85E-01	2.54E-01	1.79E-02	2.45E-01	1.04E-01
T6 Instate Heavy	0.27%	0.07%	1.68E-01	3.15E+00	8.84E-01	5.38E-02	7.49E-01	3.19E-01
T6 Instate Small	0.69%	0.16%	3.80E-01	5.50E+00	2.00E+00	1.38E-01	1.89E+00	8.02E-01
T6 OOS Heavy	0.00%	0.00%	6.25E-04	8.43E-03	3.29E-03	2.32E-04	3.27E-03	1.39E-03
T6 OOS Small	0.00%	0.00%	1.80E-03	2.23E-02	9.49E-03	7.28E-04	1.00E-02	4.24E-03
T6 Public	0.03%	0.01%	1.50E-02	5.56E-01	7.02E-02	5.84E-03	8.09E-02	3.50E-02
T6 Utility	0.00%	0.00%	1.98E-03	2.41E-02	1.04E-02	9.66E-04	1.32E-02	5.54E-03
T6TS	0.18%	0.04%	3.94E-02	3.93E-01	1.18E+00	3.52E-02	4.81E-01	2.00E-01
T7 Ag	0.00%	0.00%	6.51E-03	1.53E-01	3.85E-02	1.19E-03	8.06E-03	3.24E-03
T7 CAIRP	0.36%	0.09%	4.83E-01	5.83E+00	2.85E+00	9.40E-02	7.13E-01	2.82E-01
T7 CAIRP Construction	0.03%	0.01%	3.60E-02	4.16E-01	2.13E-01	7.11E-03	5.28E-02	2.09E-02
T7 NNOOS	0.45%	0.11%	5.16E-01	5.32E+00	3.05E+00	1.16E-01	8.76E-01	3.42E-01
T7 NOOS	0.14%	0.03%	1.91E-01	2.32E+00	1.13E+00	3.72E-02	2.82E-01	1.11E-01
T7 Other Port	0.07%	0.02%	9.38E-02	1.05E+00	5.54E-01	1.80E-02	1.34E-01	5.32E-02
T7 POAK	0.21%	0.05%	2.97E-01	3.37E+00	1.75E+00	5.64E-02	4.21E-01	1.67E-01
T7 Public	0.02%	0.00%	2.80E-02	1.89E+00	1.28E-01	5.61E-03	4.48E-02	2.15E-02
T7 Single	0.13%	0.03%	1.56E-01	2.44E+00	9.19E-01	3.67E-02	2.58E-01	1.01E-01
T7 Single Construction	0.07%	0.02%	7.71E-02	1.05E+00	4.54E-01	1.89E-02	1.35E-01	5.25E-02
T7 SWCV	0.04%	0.01%	2.45E-02	2.13E+00	2.89E+00	7.01E-03	7.44E-02	2.90E-02
T7 Tractor	0.68%	0.16%	9.57E-01	1.33E+01	5.65E+00	1.78E-01	1.34E+00	5.32E-01
T7 Tractor Construction	0.05%	0.01%	7.38E-02	1.04E+00	4.35E-01	1.40E-02	1.02E-01	4.07E-02
T7 Utility	0.00%	0.00%	2.43E-03	2.80E-02	1.44E-02	7.70E-04	5.42E-03	2.06E-03
T7IS	0.02%	0.01%	1.09E-01	1.17E+00	1.30E+01	7.24E-03	3.72E-02	1.45E-02
UBUS	0.15%	0.04%	2.00E-01	9.73E+00	3.22E+00	3.28E-02	1.65E+00	7.63E-01
TOTAL	100%	100%	127	336	3,755	15	370	151
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 7 - No Growth

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,242,201,010	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.90E+02	3.86E-04	1.39E-01	0.01	292
LDA	62.15%	71.09%	1.41E+05	1.40E+00	1.99E+01	0.83	141,061
LDT1	3.41%	3.90%	9.92E+03	1.51E-01	2.05E+00	0.09	9,945
LDT2	18.01%	20.60%	5.94E+04	6.42E-01	9.20E+00	0.38	59,570
LHD1	1.19%	0.29%	1.83E+03	1.19E-02	1.74E+00	0.07	1,854
LHD2	0.51%	0.12%	8.19E+02	2.50E-03	2.73E-01	0.01	823
MCY	0.51%	0.59%	1.11E+03	2.86E+00	7.38E+00	0.31	1,266
MDV	10.12%	2.44%	9.54E+03	1.30E-01	1.88E+00	0.08	9,571
MH	0.07%	0.02%	2.01E+02	1.02E-03	1.29E-01	0.01	203
Motor Coach	0.04%	0.01%	1.79E+02	3.46E-04	8.83E-02	0.00	180
OBUS	0.10%	0.02%	3.09E+02	1.12E-03	2.84E-02	0.00	309
SBUS	0.06%	0.02%	1.67E+02	8.03E-04	2.07E-01	0.01	170
T6 Ag	0.00%	0.00%	1.64E+01	2.37E-05	1.20E-02	0.00	17
T6 CAIRP Heavy	0.00%	0.00%	6.67E+00	7.96E-06	2.30E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.10E+01	2.30E-05	6.14E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.27E+02	1.67E-04	6.38E-02	0.00	128
T6 Instate Construction Small	0.09%	0.02%	2.95E+02	3.54E-04	1.08E-01	0.00	296
T6 Instate Heavy	0.27%	0.07%	8.88E+02	1.23E-03	4.95E-01	0.02	894
T6 Instate Small	0.69%	0.16%	2.28E+03	2.78E-03	8.65E-01	0.04	2,293
T6 OOS Heavy	0.00%	0.00%	3.82E+00	4.57E-06	1.33E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.20E+01	1.32E-05	3.52E-03	0.00	12
T6 Public	0.03%	0.01%	9.63E+01	1.10E-04	8.76E-02	0.00	97
T6 Utility	0.00%	0.00%	1.59E+01	1.45E-05	3.80E-03	0.00	16
T6TS	0.18%	0.04%	5.55E+02	2.50E-03	6.19E-02	0.00	556
T7 Ag	0.00%	0.00%	1.97E+01	4.76E-05	2.41E-02	0.00	20
T7 CAIRP	0.36%	0.09%	1.55E+03	3.53E-03	9.18E-01	0.04	1,564
T7 CAIRP Construction	0.03%	0.01%	1.17E+02	2.63E-04	6.55E-02	0.00	118
T7 NNOOS	0.45%	0.11%	1.91E+03	3.77E-03	8.37E-01	0.03	1,920
T7 NOOS	0.14%	0.03%	6.13E+02	1.40E-03	3.65E-01	0.02	618
T7 Other Port	0.07%	0.02%	2.97E+02	6.86E-04	1.66E-01	0.01	299
T7 POAK	0.21%	0.05%	9.31E+02	2.17E-03	5.30E-01	0.02	938
T7 Public	0.02%	0.00%	9.26E+01	2.05E-04	2.97E-01	0.01	96
T7 Single	0.13%	0.03%	6.06E+02	1.14E-03	3.85E-01	0.02	611
T7 Single Construction	0.07%	0.02%	3.11E+02	5.64E-04	1.66E-01	0.01	313
T7 SWCV	0.04%	0.01%	3.35E+02	1.31E-01	3.35E-01	0.01	342
T7 Tractor	0.68%	0.16%	2.94E+03	7.00E-03	2.10E+00	0.09	2,967
T7 Tractor Construction	0.05%	0.01%	2.31E+02	5.40E-04	1.63E-01	0.01	233
T7 Utility	0.00%	0.00%	1.27E+01	1.78E-05	4.40E-03	0.00	13
T7IS	0.02%	0.01%	1.11E+02	6.96E-03	1.84E-01	0.01	113
UBUS	0.15%	0.04%	6.04E+02	2.36E-02	1.53E+00	0.06	624
TOTAL	100%	100%	239,580	5	53	2	240,374

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

On-Road Transportation

CITY OF PALO ALTO (City Only) — TRANSPORTATION SECTOR

EMFAC2014 v1.0.7

Based on SAR GWPs

Black - VMT with SB 375 RTAC method applied (I-I*100%, I-X*50%)

VMT	City of Palo Alto (City Only)						
	Population	Employment	Service Population (SP)	Daily VMT ¹	Rate (VMT / SP) ¹	Adjusted Daily VMT	Annual VMT ²
EXISTING 2014							
Internal VMT (passenger vehicles)				310,078		310,080	107,597,760
Internal-External VMT (passenger vehicles)				5,010,853		5,010,850	1,738,764,950
Internal VMT (trucks)				3,056		3,060	1,061,820
Internal-External VMT (trucks)				237,813		237,810	82,520,070
Total Adjusted (City)						5,561,800	1,929,944,600
VTA Model Total (not adjusted)	65,685	95,460	161,145	5,561,800	34.5	5,561,800	1,929,944,600
without Trucks (adjusted)				5,320,931	33.0	5,320,930	
VTA Model w/RTAC	65,685	95,460	161,145	2,937,467	18.2	2,937,470	1,019,302,090
without Trucks (adjusted)				2,815,505	17.5	2,815,505	
Year 2014 - Existing City	65,685	95,460	161,145	2,937,467	18.2	2,937,470	1,019,302,090
SCENARIO 1							
Internal VMT (passenger vehicles)				335,585		335,590	116,449,730
Internal-External VMT (passenger vehicles)				5,611,573		5,611,570	1,947,214,790
Internal VMT (trucks)				3,396		3,400	1,179,800
Internal-External VMT (trucks)				151,092		151,090	52,428,230
Total Adjusted (City)						6,101,650	2,117,272,550
VTA Model Total (not adjusted)	72,285	110,940	183,225	6,101,646	33.3	6,101,650	2,117,272,550
without Trucks (adjusted)				5,947,158	32.5	5,947,160	
VTA Model w/RTAC	72,285	110,940	183,225	3,220,314	17.6	3,220,310	1,117,447,570
without Trucks (adjusted)				3,141,372	17.1	3,141,375	
Scenario 1	72,285	110,940	183,225	3,220,314	17.6	3,220,310	1,117,447,570
SCENARIO 2							
Internal VMT (passenger vehicles)				325,298		325,300	112,879,100
Internal-External VMT (passenger vehicles)				5,416,075		5,416,080	1,879,379,760
Internal VMT (trucks)				3,045		3,050	1,058,350
Internal-External VMT (trucks)				265,813		265,810	92,236,070
Total Adjusted (City)						6,010,240	2,085,553,280
VTA Model Total (not adjusted)	72,285	105,310	177,595	6,010,231	33.8	6,010,230	2,085,549,810
without Trucks (adjusted)				5,741,373	32.3	5,741,380	
VTA Model w/RTAC	72,285	105,310	177,595	3,169,287	17.8	3,169,290	1,099,743,630
without Trucks (adjusted)				3,033,336	17.1	3,033,340	
Scenario 2	72,285	105,310	177,595	3,169,287	17.8	3,169,290	1,099,743,630
SCENARIO 3							
Internal VMT (passenger vehicles)				333,351		333,350	115,672,450
Internal-External VMT (passenger vehicles)				5,519,850		5,519,850	1,915,387,950
Internal VMT (trucks)				3,234		3,230	1,120,810
Internal-External VMT (trucks)				274,844		274,840	95,369,480
Total Adjusted (City)						6,131,270	2,127,550,690
VTA Model Total (not adjusted)	74,120	108,215	182,335	6,131,279	33.6	6,131,280	2,127,554,160
without Trucks (adjusted)				5,853,201	32.1	5,853,200	
VTA Model w/RTAC	74,120	108,215	182,335	3,233,932	17.7	3,233,930	1,122,173,710
without Trucks (adjusted)				3,093,276	17.0	3,093,275	
Scenario 3	74,120	108,215	182,335	3,233,932	17.7	3,233,930	1,122,173,710
SCENARIO 4							
Internal VMT (passenger vehicles)				310,100		310,100	107,604,700
Internal-External VMT (passenger vehicles)				5,478,397		5,478,400	1,901,004,800
Internal VMT (trucks)				3,401		3,400	1,179,800
Internal-External VMT (trucks)				283,109		283,110	98,239,170
Total Adjusted (City)						6,075,010	2,108,028,470
VTA Model Total (not adjusted)	76,140	110,940	187,080	6,075,007	32.5	6,075,010	2,108,028,470
without Trucks (adjusted)				5,788,497	30.9	5,788,500	
VTA Model w/RTAC	76,140	110,940	187,080	3,194,254	17.1	3,194,250	1,108,404,750
without Trucks (adjusted)				3,049,299	16.3	3,049,300	
Scenario 4	76,140	110,940	187,080	3,194,254	17.1	3,194,250	1,108,404,750
SCENARIO 5 Unmitigated							
Internal VMT (passenger vehicles)				291,587		291,590	101,181,730
Internal-External VMT (passenger vehicles)				5,219,860		5,219,860	1,811,291,420
Internal VMT (trucks)				2,988		2,990	1,037,530
Internal-External VMT (trucks)				263,824		263,820	91,545,540
Total Adjusted (City)						5,778,260	2,005,056,220
VTA Model Total (not adjusted)	74,120	104,325	178,445	5,778,259	32.4	5,778,260	2,005,056,220
without Trucks (adjusted)				5,511,447	30.9	5,511,450	
VTA Model w/RTAC	74,120	104,325	178,445	3,036,417	17.0	3,036,420	1,053,637,740
without Trucks (adjusted)				2,901,517	16.3	2,901,520	
Scenario 5	74,120	104,325	178,445	3,036,417	17.0	3,036,420	1,053,637,740

SCENARIO 5 Mitigated							
Internal VMT (passenger vehicles)				283,236		283,240	98,284,280
Internal-External VMT (passenger vehicles)				5,186,022		5,186,020	1,799,548,940
Internal VMT (trucks)				2,988		2,990	1,037,530
Internal-External VMT (trucks)				263,824		263,820	91,545,540
Total Adjusted (City)						5,736,070	1,990,416,290
VTA Model Total (not adjusted)	74,120	104,325	178,445	5,736,070	32.1	5,736,070	1,990,416,290
without Trucks (adjusted)				5,469,258	30.6	5,469,260	
VTA Model w/RTAC	74,120	104,325	178,445	3,011,147	16.9	3,011,150	1,044,869,050
without Trucks (adjusted)				2,876,247	16.1	2,876,250	
Scenario 5	74,120	104,325	178,445	3,011,147	16.9	3,011,150	1,044,869,050
SCENARIO 6 unmitigated							
Internal VMT (passenger vehicles)				307,342		307,340	106,646,980
Internal-External VMT (passenger vehicles)				5,355,698		5,355,700	1,858,427,900
Internal VMT (trucks)				2,992		2,990	1,037,530
Internal-External VMT (trucks)				264,198		264,200	91,677,400
Total Adjusted (City)						5,930,230	2,057,789,810
VTA Model Total (not adjusted)	79,765	104,325	184,090	5,930,230	32.2	5,930,230	2,057,789,810
without Trucks (adjusted)				5,663,040	30.8	5,663,040	
VTA Model w/RTAC	79,765	104,325	184,090	3,120,282	16.9	3,120,280	1,082,737,160
without Trucks (adjusted)				2,985,191	16.2	2,985,190	
Scenario 6	79,765	104,325	184,090	3,120,282	16.9	3,120,280	1,082,737,160
SCENARIO 6 Mitigated							
Internal VMT (passenger vehicles)				298,154		298,150	103,458,050
Internal-External VMT (passenger vehicles)				5,320,123		5,320,120	1,846,081,640
Internal VMT (trucks)				2,992		2,990	1,037,530
Internal-External VMT (trucks)				264,198		264,200	91,677,400
Total Adjusted (City)						5,885,460	2,042,254,620
VTA Model Total (not adjusted)	79,765	104,325	184,090	5,885,467	32.0	5,885,470	2,042,258,090
without Trucks (adjusted)				5,618,277	30.5	5,618,270	
VTA Model w/RTAC	79,765	104,325	184,090	3,093,307	16.8	3,093,310	1,073,378,570
without Trucks (adjusted)				2,958,216	16.1	2,958,210	
Scenario 6	79,765	104,325	184,090	3,093,307	16.8	3,093,310	1,073,378,570
SCENARIO 7 - No Growth							
Internal VMT (passenger vehicles)				295,793		295,790	102,639,130
Internal-External VMT (passenger vehicles)				5,054,044		5,054,040	1,753,751,880
Internal VMT (trucks)				2,740		2,740	950,780
Internal-External VMT (trucks)				250,603		250,600	86,958,200
Total Adjusted (City)						5,603,170	1,944,299,990
VTA Model Total (not adjusted)	66,920	99,340	166,260	5,603,180	33.7	5,603,180	1,944,303,460
without Trucks (adjusted)				5,349,837	32.2	5,349,830	
VTA Model w/RTAC	66,920	99,340	166,260	2,950,857	17.7	2,950,860	1,023,948,420
without Trucks (adjusted)				2,822,815	17.0	2,822,810	
Scenario 7	66,920	99,340	166,260	2,950,857	17.7	2,950,860	1,023,948,420
AB 32 Estimate ³	70,500	104,820	175,320	2,993,461	17.1	2,993,460	1,038,730,620
¹ Passenger vehicle and truck VMT provided by Hexagon is based on the VTA Regional Transportation Demand Forecasting Model. For GHG emissions modeling, the transportation sector proportions 50 percent of the trip length for trips that occur outside of the City boundaries. Per the Regional Targets Advisory Committee (RTAC) under Senate Bill 375 (SB 375), 50 percent of the trip length for intrajurisdictional trips are the responsibility of the adjacent/corresponding jurisdiction while the other 50 percent are the responsibility of the City of Palo Alto. External-Internal and Internal-External trips include 50 percent of the trip length in accordance with these recommendations.							
² Daily VMT multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.							
³ VMT estimated using the VMT/SP rate and VMT by classifications for 2014.							

VMT re.
-25,270

VMT re.
-26,970

Percent VMT by Classification	2014	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Percent Passenger Vehicles	96%	98%	96%	96%	95%	92%	96%	96%
Percent Trucks	4%	2%	4%	4%	5%	4%	4%	4%

CRITERIA AIR POLLUTANTS

	lbs/day					
	ROG	NOx	CO	SOx	PM10	PM2.5
VMT 2012 - City only (F&P) ¹	326	1,367	9,447	16	244	109
Year 2014 - Existing City	327	1,396	10,017	21	315	135
2030 - Existing City	104	281	3,084	13	304	124
Scenario 1	113	276	3,365	13	329	135
Scenario 2	112	306	3,328	14	328	134
Scenario 3	115	313	3,397	14	335	137
Scenario 4	113	313	3,357	14	331	136
Scenario 5	104	288	3,066	13	303	124
Scenario 5M	103	285	3,040	12	300	123
Scenario 6	111	303	3,278	13	323	132
Scenario 6M	110	300	3,249	13	320	131
Scenario 7	105	286	3,100	13	306	125
	Tons/year					
	ROG	NOx	CO	SOx	PM10	PM2.5
VMT 2012 - City only (F&P) ¹	56	237	1,639	3	42	19
Year 2014 - Existing City	57	242	1,738	4	55	23
2030 - Existing City	18	49	535	2	53	22
Scenario 1	20	48	584	2	57	23
Scenario 2	19	53	577	2	57	23
Scenario 3	20	54	589	2	58	24
Scenario 4	20	54	582	2	57	24
Scenario 5	18	50	532	2	53	21
Scenario 5M	18	50	527	2	52	21
Scenario 6	19	52	569	2	56	23
Scenario 6M	19	52	564	2	56	23
Scenario 7	18	50	538	2	53	22
Daily emissions multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.						
Source: EMFAC2014-PL. Based on running exhaust, breakwear, and tirewear emission rates.						

GHG EMISSIONS

	MTons/year				CO ₂ e lbs/Mile	CO ₂ e lbs/SP/day
	CO ₂	CH ₄	N ₂ O	CO ₂ e		
Year 2014 - Existing City	326,864	13	9	329,963	0.71	12.37
Scenario 1	209,070	5	2	209,731	0.41	6.91
Scenario 2	214,232	5	2	214,954	0.43	7.31
Scenario 3	218,883	5	2	219,621	0.43	7.28
Scenario 4	217,073	5	2	217,810	0.43	7.03
Scenario 5	198,704	4	2	199,381	0.42	6.75
Scenario 5M	197,050	4	2	197,722	0.42	6.69
Scenario 6	211,271	5	2	211,985	0.43	6.96
Scenario 6M	209,445	5	2	210,152	0.43	6.90
Scenario 7	199,680	4	2	200,353	0.43	7.28
AB 32 Year 2020	282,905	7	5	284,474	0.60	9.80
Source: EMFAC2014-PL. Based on the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report Global Warming Potentials (GWPs)						
Note: MTons = metric tons; CO ₂ e = carbon dioxide-equivalent. Includes Pavley + California Advanced Clean Car Standards, the Low Carbon Fuel Standard (LCFS), on-road diesel fleet rules, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation.						
Unlike EMFAC2011, EMFAC2014 does not identify GHG emissions rates with Pavley+LCFS and rates without these GHG emissions regulations. Therefore, only the "with reductions" rate is included.						
¹ Fehr & Peers, 2013, March 19. City of Palo Alto Climate Protection Plan On-Road Community Transportation Inventory (Table 7).						

GHG from VMT reductions
-1,659

-1,832

Santa Clara County 2014 - all Model Years (40 MPH)				g/mile															
																VMT from default			
	PM2.5_RUN														EMFAC-SG	%VMT			
Veh	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX					
All Other Buses	1.59E-01	5.47E+00	5.14E-01	1.11E-02	7.81E-02	1.20E-02	1.30E-01	2.20E-01		7.48E-02	3.00E-03	5.59E-02	1.34E-01	1.17E+03	7.39E-03	30,540	0.07%		
LDA	2.78E-02	1.09E-01	1.20E+00	2.80E-03	1.68E-03	8.00E-03	3.68E-02	4.64E-02		1.56E-03	2.00E-03	1.58E-02	1.93E-02	2.78E+02	8.44E-03	24,850,262	57.57%		
LDT1	9.28E-02	2.78E-01	2.97E+00	3.28E-03	3.64E-03	8.00E-03	3.67E-02	4.84E-02		3.37E-03	2.00E-03	1.58E-02	2.11E-02	3.23E+02	2.27E-02	1,982,484	4.59%		
LDT2	3.55E-02	1.87E-01	1.58E+00	3.81E-03	1.48E-03	8.00E-03	3.68E-02	4.62E-02		1.36E-03	2.00E-03	1.58E-02	1.91E-02	3.79E+02	1.11E-02	8,377,756	19.41%		
LHD1	9.00E-02	2.02E+00	1.48E+00	6.08E-03	1.13E-02	9.45E-03	7.64E-02	9.72E-02		1.07E-02	2.36E-03	3.28E-02	4.59E-02	6.14E+02	1.93E-02	882,692	2.04%		
LHD2	8.42E-02	2.44E+00	9.49E-01	6.11E-03	1.54E-02	1.04E-02	8.92E-02	1.15E-01		1.47E-02	2.61E-03	3.82E-02	5.55E-02	6.26E+02	1.14E-02	209,158	0.48%		
MCY	2.22E+00	1.07E+00	2.08E+01	1.84E-03	1.43E-03	4.00E-03	1.18E-02	1.72E-02		1.35E-03	1.00E-03	5.04E-03	7.39E-03	1.44E+02	3.38E-01	238,631	0.55%		
MDV	5.60E-02	2.98E-01	2.24E+00	4.89E-03	1.72E-03	8.00E-03	3.67E-02	4.65E-02		1.59E-03	2.00E-03	1.58E-02	1.93E-02	4.86E+02	1.86E-02	5,053,963	11.71%		
MH	2.92E-01	2.00E+00	8.34E+00	1.10E-02	2.79E-02	1.28E-02	1.30E-01	1.71E-01		2.66E-02	3.19E-03	5.59E-02	8.57E-02	1.10E+03	6.28E-02	42,516	0.10%		
Motor Coach	2.72E-01	8.90E+00	1.01E+00	1.68E-02	9.61E-02	1.20E-02	1.30E-01	2.38E-01		9.19E-02	3.00E-03	5.59E-02	1.51E-01	1.76E+03	1.26E-02	12,489	0.03%		
OBUS	7.45E-02	5.93E-01	2.45E+00	1.13E-02	5.17E-04	1.20E-02	1.30E-01	1.43E-01		4.77E-04	3.00E-03	5.59E-02	5.93E-02	1.12E+03	2.73E-02	37,403	0.09%		
SBUS	1.51E-01	6.13E+00	2.96E+00	9.10E-03	4.89E-02	1.07E-02	7.45E-01	8.04E-01		4.68E-02	2.67E-03	3.19E-01	3.69E-01	9.41E+02	3.29E-02	24,413	0.06%		
T6 Ag	8.36E-01	1.11E+01	2.76E+00	1.07E-02	5.43E-01	1.20E-02	1.30E-01	6.86E-01		5.20E-01	3.00E-03	5.59E-02	5.79E-01	1.12E+03	3.88E-02	2,417	0.01%		
T6 CAIRP Heavy	1.42E-01	3.84E+00	4.74E-01	1.09E-02	7.58E-02	1.20E-02	1.30E-01	2.18E-01		7.25E-02	3.00E-03	5.59E-02	1.31E-01	1.14E+03	6.59E-03	688	0.00%		
T6 CAIRP Small	2.39E-01	4.45E+00	7.95E-01	1.10E-02	1.63E-01	1.20E-02	1.30E-01	3.06E-01		1.56E-01	3.00E-03	5.59E-02	2.15E-01	1.15E+03	1.11E-02	2,113	0.00%		
T6 Instate Construction Heavy	2.71E-01	6.82E+00	9.56E-01	1.09E-02	1.57E-01	1.20E-02	1.30E-01	3.00E-01		1.51E-01	3.00E-03	5.59E-02	2.09E-01	1.14E+03	1.26E-02	19,438	0.05%		
T6 Instate Construction Small	2.77E-01	5.26E+00	9.44E-01	1.09E-02	1.79E-01	1.20E-02	1.30E-01	3.21E-01		1.71E-01	3.00E-03	5.59E-02	2.30E-01	1.15E+03	1.29E-02	45,544	0.11%		
T6 Instate Heavy	2.26E-01	5.01E+00	7.48E-01	1.09E-02	1.25E-01	1.20E-02	1.30E-01	2.67E-01		1.19E-01	3.00E-03	5.59E-02	1.78E-01	1.14E+03	1.05E-02	115,292	0.27%		
T6 Instate Small	3.47E-01	6.34E+00	1.19E+00	1.08E-02	2.22E-01	1.20E-02	1.30E-01	3.64E-01		2.13E-01	3.00E-03	5.59E-02	2.71E-01	1.14E+03	1.61E-02	275,998	0.64%		
T6 OOS Heavy	9.99E-02	3.49E+00	3.28E-01	1.10E-02	4.62E-02	1.20E-02	1.30E-01	1.89E-01		4.42E-02	3.00E-03	5.59E-02	1.03E-01	1.15E+03	4.64E-03	394	0.00%		
T6 OOS Small	2.39E-01	4.45E+00	7.95E-01	1.10E-02	1.63E-01	1.20E-02	1.30E-01	3.06E-01		1.56E-01	3.00E-03	5.59E-02	2.15E-01	1.15E+03	1.11E-02	1,211	0.00%		
T6 Public	4.90E-02	6.54E+00	1.66E-01	1.10E-02	2.92E-02	1.20E-02	1.30E-01	1.72E-01		2.80E-02	3.00E-03	5.59E-02	8.68E-02	1.16E+03	2.27E-03	11,560	0.03%		
T6 Utility	3.67E-02	2.27E+00	1.27E-01	1.13E-02	9.86E-03	1.20E-02	1.30E-01	1.52E-01		9.43E-03	3.00E-03	5.59E-02	6.83E-02	1.19E+03	1.70E-03	2,078	0.00%		
T6TS	2.61E-01	1.61E+00	8.17E+00	1.14E-02	1.81E-03	1.20E-02	1.30E-01	1.44E-01		1.68E-03	3.00E-03	5.59E-02	6.05E-02	1.12E+03	8.88E-02	62,410	0.14%		
T7 Ag	1.42E+00	1.75E+01	7.00E+00	1.66E-02	9.33E-01	3.60E-02	6.17E-02	1.03E+00		8.92E-01	9.00E-03	2.65E-02	9.28E-01	1.73E+03	6.59E-02	2,061	0.00%		
T7 CAIRP	2.51E-01	6.59E+00	9.36E-01	1.61E-02	8.43E-02	3.60E-02	6.17E-02	1.82E-01		8.06E-02	9.00E-03	2.65E-02	1.16E-01	1.69E+03	1.17E-02	120,736	0.28%		
T7 CAIRP Construction	3.33E-01	8.59E+00	1.17E+00	1.66E-02	1.32E-01	3.60E-02	6.17E-02	2.30E-01		1.26E-01	9.00E-03	2.65E-02	1.62E-01	1.74E+03	1.55E-02	13,789	0.03%		
T7 NNOOS	1.11E-01	3.84E+00	4.70E-01	1.57E-02	2.32E-02	3.60E-02	6.17E-02	1.21E-01		2.22E-02	9.00E-03	2.65E-02	5.77E-02	1.64E+03	5.15E-03	149,713	0.35%		
T7 NOOS	1.88E-01	6.17E+00	7.04E-01	1.61E-02	5.15E-02	3.60E-02	6.17E-02	1.49E-01		4.92E-02	9.00E-03	2.65E-02	8.47E-02	1.69E+03	8.74E-03	47,691	0.11%		
T7 Other Port	1.60E-01	5.35E+00	5.23E-01	1.66E-02	2.64E-02	3.60E-02	6.17E-02	1.24E-01		2.53E-02	9.00E-03	2.65E-02	6.07E-02	1.74E+03	7.42E-03	27,033	0.06%		
T7 POAK	1.67E-01	5.64E+00	5.38E-01	1.67E-02	2.81E-02	3.60E-02	6.17E-02	1.26E-01		2.69E-02	9.00E-03	2.65E-02	6.23E-02	1.75E+03	7.77E-03	47,975	0.11%		
T7 Public	9.98E-02	1.28E+01	4.49E-01	1.68E-02	6.53E-02	3.60E-02	6.17E-02	1.63E-01		6.25E-02	9.00E-03	2.65E-02	9.80E-02	1.76E+03	4.64E-03	11,940	0.03%		
T7 Single	4.94E-01	1.15E+01	2.27E+00	1.65E-02	2.98E-01	3.60E-02	6.17E-02	3.96E-01		2.85E-01	9.00E-03	2.65E-02	3.21E-01	1.73E+03	2.30E-02	71,960	0.17%		
T7 Single Construction	3.39E-01	9.53E+00	1.46E+00	1.63E-02	1.68E-01	3.60E-02	6.17E-02	2.66E-01		1.61E-01	9.00E-03	2.65E-02	1.97E-01	1.71E+03	1.58E-02	35,671	0.08%		
T7 SWCV	5.74E-02	9.45E+00	9.91E-01	2.87E-02	9.71E-03	3.60E-02	6.17E-02	1.07E-01		9.29E-03	9.00E-03	2.65E-02	4.47E-02	3.62E+03	4.94E-01	22,311	0.05%		
T7 Tractor	3.63E-01	8.52E+00	1.52E+00	1.62E-02	1.52E-01	3.60E-02	6.17E-02	2.50E-01		1.45E-01	9.00E-03	2.65E-02	1.81E-01	1.69E+03	1.68E-02	221,585	0.51%		
T7 Tractor Construction	4.97E-01	1.03E+01	2.02E+00	1.64E-02	2.34E-01	3.60E-02	6.17E-02	3.32E-01		2.24E-01	9.00E-03	2.65E-02	2.60E-01	1.72E+03	2.31E-02	26,595	0.06%		
T7 Utility	7.30E-02	4.57E+00	2.82E-01	1.65E-02	1.59E-02	3.60E-02	6.17E-02	1.14E-01		1.53E-02	9.00E-03	2.65E-02	5.07E-02	1.73E+03	3.39E-03	1,224	0.00%		
T7IS	1.09E+00	4.77E+00	4.42E+01	1.87E-02	1.70E-03	2.00E-02	6.17E-02	8.34E-02		1.60E-03	5.00E-03	2.65E-02	3.31E-02	1.80E+03	3.21E-01	8,224	0.02%		
UBUS	4.86E-01	1.70E+01	5.01E+00	1.61E-02	2.13E-01	1.20E-02	7.34E-01	9.60E-01		2.04E-01	3.00E-03	3.15E-01	5.22E-01	1.73E+03	1.05E-01	77,648	0.18%		
															43,167,607	100.00%			
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																			

Santa Clara County 2014 - all Model Years (40 MPH)		lbs/Mile														
##																
Veh		ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUN		PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX
										EX						
All Other Buses		3.51E-04	1.21E-02	1.13E-03	2.45E-05	1.72E-04	2.65E-05	2.87E-04	4.86E-04	1.65E-04		6.61E-06	1.23E-04	2.95E-04	2.57E+00	1.63E-05
LDA		6.14E-05	2.40E-04	2.65E-03	6.17E-06	3.71E-06	1.76E-05	8.10E-05	1.02E-04	3.44E-06		4.41E-06	3.47E-05	4.26E-05	6.14E-01	1.86E-05
LDT1		2.05E-04	6.13E-04	6.54E-03	7.22E-06	8.03E-06	1.76E-05	8.10E-05	1.07E-04	7.43E-06		4.41E-06	3.47E-05	4.66E-05	7.13E-01	4.99E-05
LDT2		7.82E-05	4.13E-04	3.49E-03	8.40E-06	3.25E-06	1.76E-05	8.10E-05	1.02E-04	3.00E-06		4.41E-06	3.47E-05	4.21E-05	8.36E-01	2.44E-05
LHD1		1.98E-04	4.45E-03	3.25E-03	1.34E-05	2.48E-05	2.08E-05	1.69E-04	2.14E-04	2.37E-05		5.21E-06	7.22E-05	1.01E-04	1.35E+00	4.25E-05
LHD2		1.86E-04	5.38E-03	2.09E-03	1.35E-05	3.39E-05	2.30E-05	1.97E-04	2.54E-04	3.24E-05		5.76E-06	8.43E-05	1.22E-04	1.38E+00	2.50E-05
MCY		4.90E-03	2.36E-03	4.59E-02	4.07E-06	3.14E-06	8.82E-06	2.59E-05	3.79E-05	2.97E-06		2.20E-06	1.11E-05	1.63E-05	3.18E-01	7.46E-04
MDV		1.24E-04	6.56E-04	4.94E-03	1.08E-05	3.78E-06	1.76E-05	8.10E-05	1.02E-04	3.49E-06		4.41E-06	3.47E-05	4.26E-05	1.07E+00	4.11E-05
MH		6.44E-04	4.41E-03	1.84E-02	2.43E-05	6.16E-05	2.81E-05	2.87E-04	3.77E-04	5.87E-05		7.03E-06	1.23E-04	1.89E-04	2.43E+00	1.38E-04
Motor Coach		5.99E-04	1.96E-02	2.23E-03	3.70E-05	2.12E-04	2.65E-05	2.87E-04	5.26E-04	2.03E-04		6.61E-06	1.23E-04	3.32E-04	3.88E+00	2.78E-05
OBUS		1.64E-04	1.31E-03	5.41E-03	2.48E-05	1.14E-06	2.65E-05	2.87E-04	3.15E-04	1.05E-06		6.61E-06	1.23E-04	1.31E-04	2.48E+00	6.02E-05
SBUS		3.32E-04	1.35E-02	6.52E-03	2.01E-05	1.08E-04	2.35E-05	1.64E-03	1.77E-03	1.03E-04		5.89E-06	7.04E-04	8.13E-04	2.07E+00	7.26E-05
T6 Ag		1.84E-03	2.44E-02	6.08E-03	2.36E-05	1.20E-03	2.65E-05	2.87E-04	1.51E-03	1.15E-03		6.61E-06	1.23E-04	1.28E-03	2.48E+00	8.56E-05
T6 CAIRP Heavy		3.13E-04	8.47E-03	1.05E-03	2.40E-05	1.67E-04	2.65E-05	2.87E-04	4.81E-04	1.60E-04		6.61E-06	1.23E-04	2.90E-04	2.52E+00	1.45E-05
T6 CAIRP Small		5.26E-04	9.81E-03	1.75E-03	2.42E-05	3.60E-04	2.65E-05	2.87E-04	6.74E-04	3.44E-04		6.61E-06	1.23E-04	4.74E-04	2.53E+00	2.44E-05
T6 Instate Construction Heavy		5.97E-04	1.50E-02	2.11E-03	2.40E-05	3.47E-04	2.65E-05	2.87E-04	6.61E-04	3.32E-04		6.61E-06	1.23E-04	4.62E-04	2.51E+00	2.77E-05
T6 Instate Construction Small		6.12E-04	1.16E-02	2.08E-03	2.41E-05	3.94E-04	2.65E-05	2.87E-04	7.08E-04	3.77E-04		6.61E-06	1.23E-04	5.07E-04	2.53E+00	2.84E-05
T6 Instate Heavy		4.98E-04	1.10E-02	1.65E-03	2.40E-05	2.75E-04	2.65E-05	2.87E-04	5.89E-04	2.63E-04		6.61E-06	1.23E-04	3.93E-04	2.51E+00	2.31E-05
T6 Instate Small		7.66E-04	1.40E-02	2.63E-03	2.39E-05	4.90E-04	2.65E-05	2.87E-04	8.03E-04	4.69E-04		6.61E-06	1.23E-04	5.98E-04	2.50E+00	3.56E-05
T6 OOS Heavy		2.20E-04	7.69E-03	7.24E-04	2.42E-05	1.02E-04	2.65E-05	2.87E-04	4.16E-04	9.75E-05		6.61E-06	1.23E-04	2.27E-04	2.53E+00	1.02E-05
T6 OOS Small		5.26E-04	9.81E-03	1.75E-03	2.42E-05	3.60E-04	2.65E-05	2.87E-04	6.74E-04	3.44E-04		6.61E-06	1.23E-04	4.74E-04	2.53E+00	2.44E-05
T6 Public		1.08E-04	1.44E-02	3.67E-04	2.43E-05	6.45E-05	2.65E-05	2.87E-04	3.78E-04	6.17E-05		6.61E-06	1.23E-04	1.91E-04	2.55E+00	5.01E-06
T6 Utility		8.09E-05	5.00E-03	2.81E-04	2.50E-05	2.17E-05	2.65E-05	2.87E-04	3.36E-04	2.08E-05		6.61E-06	1.23E-04	1.51E-04	2.62E+00	3.76E-06
T6TS		5.75E-04	3.55E-03	1.80E-02	2.51E-05	4.00E-06	2.65E-05	2.87E-04	3.18E-04	3.70E-06		6.61E-06	1.23E-04	1.33E-04	2.48E+00	1.96E-04
T7 Ag		3.13E-03	3.86E-02	1.54E-02	3.65E-05	2.06E-03	7.94E-05	1.36E-04	2.27E-03	1.97E-03		1.98E-05	5.83E-05	2.05E-03	3.82E+00	1.45E-04
T7 CAIRP		5.54E-04	1.45E-02	2.06E-03	3.55E-05	1.86E-04	7.94E-05	1.36E-04	4.01E-04	1.78E-04		1.98E-05	5.83E-05	2.56E-04	3.72E+00	2.57E-05
T7 CAIRP Construction		7.34E-04	1.89E-02	2.58E-03	3.66E-05	2.91E-04	7.94E-05	1.36E-04	5.07E-04	2.79E-04		1.98E-05	5.83E-05	3.57E-04	3.83E+00	3.41E-05
T7 NNOOS		2.44E-04	8.46E-03	1.04E-03	3.45E-05	5.12E-05	7.94E-05	1.36E-04	2.67E-04	4.90E-05		1.98E-05	5.83E-05	1.27E-04	3.62E+00	1.14E-05
T7 NOOS		4.15E-04	1.36E-02	1.55E-03	3.55E-05	1.13E-04	7.94E-05	1.36E-04	3.29E-04	1.09E-04		1.98E-05	5.83E-05	1.87E-04	3.72E+00	1.93E-05
T7 Other Port		3.52E-04	1.18E-02	1.15E-03	3.67E-05	5.82E-05	7.94E-05	1.36E-04	2.74E-04	5.57E-05		1.98E-05	5.83E-05	1.34E-04	3.84E+00	1.64E-05
T7 POAK		3.69E-04	1.24E-02	1.19E-03	3.68E-05	6.19E-05	7.94E-05	1.36E-04	2.77E-04	5.93E-05		1.98E-05	5.83E-05	1.37E-04	3.86E+00	1.71E-05
T7 Public		2.20E-04	2.83E-02	9.91E-04	3.71E-05	1.44E-04	7.94E-05	1.36E-04	3.60E-04	1.38E-04		1.98E-05	5.83E-05	2.16E-04	3.88E+00	1.02E-05
T7 Single		1.09E-03	2.53E-02	5.01E-03	3.65E-05	6.58E-04	7.94E-05	1.36E-04	8.73E-04	6.29E-04		1.98E-05	5.83E-05	7.07E-04	3.82E+00	5.06E-05
T7 Single Construction		7.48E-04	2.10E-02	3.22E-03	3.60E-05	3.71E-04	7.94E-05	1.36E-04	5.87E-04	3.55E-04		1.98E-05	5.83E-05	4.34E-04	3.77E+00	3.47E-05
T7 SWCV		1.26E-04	2.08E-02	2.18E-03	6.32E-05	2.14E-05	7.94E-05	1.36E-04	2.37E-04	2.05E-05		1.98E-05	5.83E-05	9.87E-05	7.98E+00	1.09E-03
T7 Tractor		8.00E-04	1.88E-02	3.34E-03	3.56E-05	3.35E-04	7.94E-05	1.36E-04	5.50E-04	3.20E-04		1.98E-05	5.83E-05	3.99E-04	3.73E+00	3.71E-05
T7 Tractor Construction		1.09E-03	2.28E-02	4.46E-03	3.61E-05	5.16E-04	7.94E-05	1.36E-04	7.32E-04	4.94E-04		1.98E-05	5.83E-05	5.72E-04	3.79E+00	5.09E-05
T7 Utility		1.61E-04	1.01E-02	6.23E-04	3.63E-05	3.52E-05	7.94E-05	1.36E-04	2.51E-04	3.36E-05		1.98E-05	5.83E-05	1.12E-04	3.81E+00	7.47E-06
T7IS		2.40E-03	1.05E-02	9.74E-02	4.11E-05	3.75E-06	4.41E-05	1.36E-04	1.84E-04	3.52E-06		1.10E-05	5.83E-05	7.29E-05	3.96E+00	7.07E-04
UBUS		1.07E-03	3.74E-02	1.11E-02	3.55E-05	4.71E-04	2.65E-05	1.62E-03	2.12E-03	4.50E-04		6.61E-06	6.94E-04	1.15E-03	3.80E+00	2.31E-04

Santa Clara County 2014 - all Model Years (40 MPH)		Mtons/Mile														
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Year 2014 - Existing City

Based on EMFAC2014

Emission year	Daily							
2014	2,937,470	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.07%	0.02%	1.69E-01	5.82E+00	5.47E-01	1.18E-02	2.35E-01	1.42E-01
LDA	57.57%	67.19%	1.21E+02	4.73E+02	5.24E+03	1.22E+01	2.02E+02	8.40E+01
LDT1	4.59%	5.36%	3.22E+01	9.65E+01	1.03E+03	1.14E+00	1.68E+01	7.33E+00
LDT2	19.41%	22.65%	5.20E+01	2.75E+02	2.32E+03	5.59E+00	6.78E+01	2.80E+01
LHD1	2.04%	0.47%	2.77E+00	6.21E+01	4.54E+01	1.87E-01	2.99E+00	1.41E+00
LHD2	0.48%	0.11%	6.14E-01	1.78E+01	6.91E+00	4.46E-02	8.38E-01	4.05E-01
MCY	0.55%	0.65%	9.28E+01	4.48E+01	8.69E+02	7.71E-02	7.18E-01	3.09E-01
MDV	11.71%	2.72%	9.87E+00	5.24E+01	3.95E+02	8.60E-01	8.18E+00	3.40E+00
MH	0.10%	0.02%	4.32E-01	2.96E+00	1.24E+01	1.64E-02	2.53E-01	1.27E-01
Motor Coach	0.03%	0.01%	1.18E-01	3.87E+00	4.40E-01	7.30E-03	1.04E-01	6.56E-02
OBUS	0.09%	0.02%	9.71E-02	7.72E-01	3.20E+00	1.47E-02	1.86E-01	7.73E-02
SBUS	0.06%	0.01%	1.28E-01	5.21E+00	2.52E+00	7.74E-03	6.84E-01	3.14E-01
T6 Ag	0.01%	0.00%	7.04E-02	9.31E-01	2.32E-01	9.03E-04	5.77E-02	4.87E-02
T6 CAIRP Heavy	0.00%	0.00%	3.40E-03	9.22E-02	1.14E-02	2.61E-04	5.23E-03	3.15E-03
T6 CAIRP Small	0.00%	0.00%	1.76E-02	3.28E-01	5.85E-02	8.07E-04	2.25E-02	1.58E-02
T6 Instate Construction Heavy	0.05%	0.01%	1.83E-01	4.62E+00	6.47E-01	7.37E-03	2.03E-01	1.42E-01
T6 Instate Construction Small	0.11%	0.02%	4.40E-01	8.34E+00	1.50E+00	1.73E-02	5.09E-01	3.65E-01
T6 Instate Heavy	0.27%	0.06%	9.07E-01	2.01E+01	3.00E+00	4.37E-02	1.07E+00	7.16E-01
T6 Instate Small	0.64%	0.15%	3.34E+00	6.10E+01	1.15E+01	1.04E-01	3.50E+00	2.61E+00
T6 OOS Heavy	0.00%	0.00%	1.37E-03	4.79E-02	4.51E-03	1.51E-04	2.59E-03	1.42E-03
T6 OOS Small	0.00%	0.00%	1.01E-02	1.88E-01	3.35E-02	4.63E-04	1.29E-02	9.07E-03
T6 Public	0.03%	0.01%	1.97E-02	2.63E+00	6.70E-02	4.44E-03	6.91E-02	3.50E-02
T6 Utility	0.00%	0.00%	2.65E-03	1.64E-01	9.23E-03	8.21E-04	1.10E-02	4.94E-03
T6TS	0.14%	0.03%	5.68E-01	3.50E+00	1.78E+01	2.47E-02	3.13E-01	1.32E-01
T7 Ag	0.00%	0.00%	1.02E-01	1.26E+00	5.03E-01	1.19E-03	7.40E-02	6.66E-02
T7 CAIRP	0.28%	0.06%	1.06E+00	2.77E+01	3.94E+00	6.77E-02	7.66E-01	4.88E-01
T7 CAIRP Construction	0.03%	0.01%	1.60E-01	4.13E+00	5.62E-01	7.97E-03	1.10E-01	7.78E-02
T7 NNOOS	0.35%	0.08%	5.78E-01	2.00E+01	2.45E+00	8.17E-02	6.31E-01	3.01E-01
T7 NOOS	0.11%	0.03%	3.13E-01	1.03E+01	1.17E+00	2.67E-02	2.48E-01	1.41E-01
T7 Other Port	0.06%	0.01%	1.51E-01	5.04E+00	4.93E-01	1.57E-02	1.17E-01	5.72E-02
T7 POAK	0.11%	0.03%	2.80E-01	9.43E+00	8.99E-01	2.79E-02	2.10E-01	1.04E-01
T7 Public	0.03%	0.01%	4.15E-02	5.33E+00	1.87E-01	6.99E-03	6.78E-02	4.08E-02
T7 Single	0.17%	0.04%	1.24E+00	2.88E+01	5.69E+00	4.15E-02	9.93E-01	8.04E-01
T7 Single Construction	0.08%	0.02%	4.21E-01	1.18E+01	1.81E+00	2.03E-02	3.31E-01	2.44E-01
T7 SWCV	0.05%	0.01%	4.46E-02	7.35E+00	7.70E-01	2.23E-02	8.35E-02	3.48E-02
T7 Tractor	0.51%	0.12%	2.80E+00	6.58E+01	1.17E+01	1.25E-01	1.93E+00	1.40E+00
T7 Tractor Construction	0.06%	0.01%	4.60E-01	9.57E+00	1.87E+00	1.52E-02	3.08E-01	2.40E-01
T7 Utility	0.00%	0.00%	3.11E-03	1.95E-01	1.20E-02	7.02E-04	4.85E-03	2.16E-03
T7IS	0.02%	0.00%	3.12E-01	1.37E+00	1.27E+01	5.35E-03	2.39E-02	9.47E-03
UBUS	0.18%	0.04%	1.32E+00	4.59E+01	1.36E+01	4.35E-02	2.60E+00	1.41E+00
TOTAL	100%	100%	327	1,396	10,017	21	315	135
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Year 2014 - Existing City

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2014	1,019,302,090	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.07%	0.02%	1.95E+02	1.24E-03	9.15E-01	0.04	207
LDA	57.57%	67.19%	1.91E+05	5.78E+00	7.44E+01	3.10	191,816
LDT1	4.59%	5.36%	1.77E+04	1.24E+00	1.52E+01	0.63	17,890
LDT2	19.41%	22.65%	8.76E+04	2.56E+00	4.32E+01	1.80	88,183
LHD1	2.04%	0.47%	2.97E+03	9.33E-02	9.77E+00	0.41	3,102
LHD2	0.48%	0.11%	7.18E+02	1.30E-02	2.80E+00	0.12	754
MCY	0.55%	0.65%	9.50E+02	2.22E+00	7.04E+00	0.29	1,087
MDV	11.71%	2.72%	1.35E+04	5.17E-01	8.25E+00	0.34	13,586
MH	0.10%	0.02%	2.57E+02	1.46E-02	4.66E-01	0.02	263
Motor Coach	0.03%	0.01%	1.20E+02	8.65E-04	6.09E-01	0.03	128
OBUS	0.09%	0.02%	2.31E+02	5.60E-03	1.22E-01	0.01	232
SBUS	0.06%	0.01%	1.26E+02	4.41E-03	8.20E-01	0.03	137
T6 Ag	0.01%	0.00%	1.49E+01	5.14E-04	1.47E-01	0.01	17
T6 CAIRP Heavy	0.00%	0.00%	4.31E+00	2.49E-05	1.45E-02	0.00	5
T6 CAIRP Small	0.00%	0.00%	1.33E+01	1.28E-04	5.16E-02	0.00	14
T6 Instate Construction Heavy	0.05%	0.01%	1.22E+02	1.34E-03	7.27E-01	0.03	131
T6 Instate Construction Small	0.11%	0.02%	2.86E+02	3.22E-03	1.31E+00	0.05	303
T6 Instate Heavy	0.27%	0.06%	7.21E+02	6.63E-03	3.17E+00	0.13	762
T6 Instate Small	0.64%	0.15%	1.72E+03	2.44E-02	9.60E+00	0.40	1,843
T6 OOS Heavy	0.00%	0.00%	2.48E+00	1.00E-05	7.54E-03	0.00	3
T6 OOS Small	0.00%	0.00%	7.63E+00	7.36E-05	2.95E-02	0.00	8
T6 Public	0.03%	0.01%	7.33E+01	1.44E-04	4.14E-01	0.02	79
T6 Utility	0.00%	0.00%	1.35E+01	1.94E-05	2.59E-02	0.00	14
T6TS	0.14%	0.03%	3.85E+02	3.04E-02	5.52E-01	0.02	393
T7 Ag	0.00%	0.00%	1.96E+01	7.45E-04	1.98E-01	0.01	22
T7 CAIRP	0.28%	0.06%	1.12E+03	7.73E-03	4.36E+00	0.18	1,173
T7 CAIRP Construction	0.03%	0.01%	1.31E+02	1.17E-03	6.50E-01	0.03	140
T7 NNOOS	0.35%	0.08%	1.35E+03	4.23E-03	3.15E+00	0.13	1,388
T7 NOOS	0.11%	0.03%	4.41E+02	2.29E-03	1.61E+00	0.07	462
T7 Other Port	0.06%	0.01%	2.59E+02	1.10E-03	7.93E-01	0.03	269
T7 POAK	0.11%	0.03%	4.60E+02	2.04E-03	1.48E+00	0.06	480
T7 Public	0.03%	0.01%	1.15E+02	3.04E-04	8.40E-01	0.03	126
T7 Single	0.17%	0.04%	6.84E+02	9.06E-03	4.53E+00	0.19	743
T7 Single Construction	0.08%	0.02%	3.35E+02	3.08E-03	1.86E+00	0.08	359
T7 SWCV	0.05%	0.01%	4.43E+02	6.05E-02	1.16E+00	0.05	459
T7 Tractor	0.51%	0.12%	2.06E+03	2.05E-02	1.03E+01	0.43	2,192
T7 Tractor Construction	0.06%	0.01%	2.51E+02	3.36E-03	1.51E+00	0.06	270
T7 Utility	0.00%	0.00%	1.16E+01	2.27E-05	3.07E-02	0.00	12
T7IS	0.02%	0.00%	8.10E+01	1.45E-02	2.15E-01	0.01	84
UBUS	0.18%	0.04%	7.35E+02	4.46E-02	7.23E+00	0.30	829
TOTAL	100%	100%	326,864	13	220	9	329,963

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Santa Clara County 2020 - all Model Years (40 MPH)					g/mile														
																	VMT from default		
	PM2.5_RUN																EMFAC-SG	%VMT	
Veh	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX					
All Other Buses	6.51E-02	2.86E+00	2.23E-01	1.12E-02	1.62E-02	1.20E-02	1.30E-01	1.59E-01		1.55E-02	3.00E-03	5.59E-02	7.44E-02	1.17E+03	3.02E-03	37,997	0.08%		
LDA	9.66E-03	5.05E-02	6.08E-01	2.33E-03	1.47E-03	8.00E-03	3.68E-02	4.62E-02		1.36E-03	2.00E-03	1.58E-02	1.91E-02	2.33E+02	3.83E-03	28,535,430	60.48%		
LDT1	2.43E-02	1.20E-01	1.32E+00	2.85E-03	2.17E-03	8.00E-03	3.67E-02	4.69E-02		2.00E-03	2.00E-03	1.57E-02	1.98E-02	2.84E+02	9.70E-03	1,802,512	3.82%		
LDT2	1.36E-02	8.33E-02	8.27E-01	3.25E-03	1.39E-03	8.00E-03	3.67E-02	4.61E-02		1.28E-03	2.00E-03	1.58E-02	1.90E-02	3.25E+02	5.47E-03	8,735,504	18.51%		
LHD1	6.41E-02	1.38E+00	8.62E-01	5.66E-03	1.01E-02	9.90E-03	7.64E-02	9.64E-02		9.60E-03	2.47E-03	3.28E-02	4.48E-02	5.76E+02	1.12E-02	731,189	1.55%		
LHD2	4.72E-02	1.06E+00	3.83E-01	5.69E-03	1.05E-02	1.07E-02	8.92E-02	1.10E-01		1.00E-02	2.67E-03	3.82E-02	5.09E-02	5.84E+02	4.44E-03	234,988	0.50%		
MCY	1.97E+00	1.03E+00	1.76E+01	1.84E-03	1.62E-03	4.00E-03	1.18E-02	1.74E-02		1.52E-03	1.00E-03	5.04E-03	7.56E-03	1.50E+02	3.76E-01	253,032	0.54%		
MDV	3.23E-02	1.63E-01	1.42E+00	4.30E-03	1.64E-03	8.00E-03	3.67E-02	4.64E-02		1.52E-03	2.00E-03	1.57E-02	1.93E-02	4.29E+02	1.09E-02	5,119,735	10.85%		
MH	1.01E-01	1.34E+00	2.86E+00	1.07E-02	2.11E-02	1.28E-02	1.30E-01	1.64E-01		2.01E-02	3.21E-03	5.59E-02	7.92E-02	1.07E+03	3.19E-02	37,035	0.08%		
Motor Coach	1.29E-01	4.08E+00	5.04E-01	1.61E-02	2.26E-02	1.20E-02	1.30E-01	1.65E-01		2.16E-02	3.00E-03	5.59E-02	8.05E-02	1.69E+03	6.00E-03	15,952	0.03%		
OBUS	2.76E-02	2.47E-01	8.91E-01	1.08E-02	6.70E-04	1.20E-02	1.30E-01	1.43E-01		6.16E-04	3.00E-03	5.59E-02	5.95E-02	1.08E+03	1.12E-02	44,318	0.09%		
SBUS	6.65E-02	3.84E+00	1.09E+00	8.85E-03	1.75E-02	1.06E-02	7.45E-01	7.73E-01		1.67E-02	2.65E-03	3.19E-01	3.39E-01	9.18E+02	1.28E-02	29,230	0.06%		
T6 Ag	3.90E-01	5.10E+00	1.31E+00	1.12E-02	2.41E-01	1.20E-02	1.30E-01	3.83E-01		2.30E-01	3.00E-03	5.59E-02	2.89E-01	1.18E+03	1.81E-02	2,417	0.01%		
T6 CAIRP Heavy	3.90E-02	1.23E+00	1.70E-01	1.08E-02	6.65E-03	1.20E-02	1.30E-01	1.49E-01		6.36E-03	3.00E-03	5.59E-02	6.52E-02	1.13E+03	1.81E-03	879	0.00%		
T6 CAIRP Small	6.20E-02	1.01E+00	2.39E-01	1.08E-02	3.02E-02	1.20E-02	1.30E-01	1.73E-01		2.89E-02	3.00E-03	5.59E-02	8.78E-02	1.13E+03	2.88E-03	2,699	0.01%		
T6 Instate Construction Heavy	5.71E-02	2.66E+00	2.03E-01	1.10E-02	1.56E-02	1.20E-02	1.30E-01	1.58E-01		1.50E-02	3.00E-03	5.59E-02	7.38E-02	1.16E+03	2.65E-03	10,752	0.02%		
T6 Instate Construction Small	9.16E-02	1.61E+00	3.26E-01	1.09E-02	5.09E-02	1.20E-02	1.30E-01	1.93E-01		4.87E-02	3.00E-03	5.59E-02	1.08E-01	1.14E+03	4.25E-03	25,192	0.05%		
T6 Instate Heavy	5.70E-02	2.25E+00	2.10E-01	1.10E-02	1.21E-02	1.20E-02	1.30E-01	1.54E-01		1.16E-02	3.00E-03	5.59E-02	7.05E-02	1.15E+03	2.65E-03	129,403	0.27%		
T6 Instate Small	1.00E-01	1.69E+00	3.54E-01	1.09E-02	5.84E-02	1.20E-02	1.30E-01	2.01E-01		5.58E-02	3.00E-03	5.59E-02	1.15E-01	1.15E+03	4.66E-03	316,000	0.67%		
T6 OOS Heavy	3.93E-02	1.30E+00	1.71E-01	1.08E-02	7.09E-03	1.20E-02	1.30E-01	1.49E-01		6.78E-03	3.00E-03	5.59E-02	6.56E-02	1.13E+03	1.82E-03	504	0.00%		
T6 OOS Small	6.20E-02	1.01E+00	2.39E-01	1.08E-02	3.02E-02	1.20E-02	1.30E-01	1.73E-01		2.89E-02	3.00E-03	5.59E-02	8.78E-02	1.13E+03	2.88E-03	1,546	0.00%		
T6 Public	3.80E-02	3.43E+00	1.46E-01	1.09E-02	1.58E-02	1.20E-02	1.30E-01	1.58E-01		1.51E-02	3.00E-03	5.59E-02	7.40E-02	1.14E+03	1.76E-03	12,946	0.03%		
T6 Utility	2.21E-02	4.25E-01	1.16E-01	1.12E-02	1.97E-03	1.20E-02	1.30E-01	1.44E-01		1.89E-03	3.00E-03	5.59E-02	6.07E-02	1.17E+03	1.02E-03	2,212	0.00%		
T6TS	6.86E-02	5.29E-01	2.25E+00	1.09E-02	9.35E-04	1.20E-02	1.30E-01	1.43E-01		8.60E-04	3.00E-03	5.59E-02	5.97E-02	1.08E+03	2.77E-02	74,243	0.16%		
T7 Ag	7.97E-01	9.65E+00	3.94E+00	1.63E-02	5.07E-01	3.60E-02	6.17E-02	6.04E-01		4.85E-01	9.00E-03	2.65E-02	5.20E-01	1.71E+03	3.70E-02	2,061	0.00%		
T7 CAIRP	1.19E-01	3.40E+00	5.59E-01	1.51E-02	1.62E-02	3.60E-02	6.17E-02	1.14E-01		1.55E-02	9.00E-03	2.65E-02	5.10E-02	1.58E+03	5.53E-03	154,207	0.33%		
T7 CAIRP Construction	1.20E-01	3.48E+00	5.21E-01	1.52E-02	2.01E-02	3.60E-02	6.17E-02	1.18E-01		1.92E-02	9.00E-03	2.65E-02	5.47E-02	1.60E+03	5.56E-03	7,627	0.02%		
T7 NNOOS	7.39E-02	1.39E+00	4.02E-01	1.41E-02	7.66E-03	3.60E-02	6.17E-02	1.05E-01		7.33E-03	9.00E-03	2.65E-02	4.28E-02	1.48E+03	3.43E-03	191,217	0.41%		
T7 NOOS	1.19E-01	3.46E+00	5.60E-01	1.51E-02	1.65E-02	3.60E-02	6.17E-02	1.14E-01		1.58E-02	9.00E-03	2.65E-02	5.13E-02	1.58E+03	5.51E-03	60,912	0.13%		
T7 Other Port	1.54E-01	4.56E+00	5.85E-01	1.59E-02	2.31E-02	3.60E-02	6.17E-02	1.21E-01		2.21E-02	9.00E-03	2.65E-02	5.75E-02	1.66E+03	7.17E-03	32,132	0.07%		
T7 POAK	1.75E-01	5.35E+00	6.28E-01	1.61E-02	2.73E-02	3.60E-02	6.17E-02	1.25E-01		2.61E-02	9.00E-03	2.65E-02	6.16E-02	1.69E+03	8.11E-03	65,000	0.14%		
T7 Public	9.21E-02	9.76E+00	4.06E-01	1.63E-02	4.77E-02	3.60E-02	6.17E-02	1.45E-01		4.56E-02	9.00E-03	2.65E-02	8.11E-02	1.71E+03	4.28E-03	11,047	0.02%		
T7 Single	1.08E-01	4.75E+00	4.31E-01	1.60E-02	2.25E-02	3.60E-02	6.17E-02	1.20E-01		2.16E-02	9.00E-03	2.65E-02	5.70E-02	1.68E+03	5.02E-03	76,013	0.16%		
T7 Single Construction	9.19E-02	3.63E+00	3.91E-01	1.55E-02	1.75E-02	3.60E-02	6.17E-02	1.15E-01		1.67E-02	9.00E-03	2.65E-02	5.22E-02	1.62E+03	4.27E-03	19,730	0.04%		
T7 SWCV	4.85E-02	6.59E+00	2.20E+00	2.10E-02	7.65E-03	3.60E-02	6.17E-02	1.05E-01		7.32E-03	9.00E-03	2.65E-02	4.28E-02	3.35E+03	7.58E-01	21,399	0.05%		
T7 Tractor	1.41E-01	4.48E+00	5.77E-01	1.53E-02	2.29E-02	3.60E-02	6.17E-02	1.21E-01		2.19E-02	9.00E-03	2.65E-02	5.74E-02	1.61E+03	6.55E-03	284,221	0.60%		
T7 Tractor Construction	1.36E-01	4.71E+00	5.48E-01	1.56E-02	2.72E-02	3.60E-02	6.17E-02	1.25E-01		2.61E-02	9.00E-03	2.65E-02	6.15E-02	1.63E+03	6.32E-03	14,710	0.03%		
T7 Utility	4.49E-02	7.59E-01	2.65E-01	1.55E-02	3.02E-03	3.60E-02	6.17E-02	1.01E-01		2.89E-03	9.00E-03	2.65E-02	3.84E-02	1.62E+03	2.08E-03	1,303	0.00%		
T7IS	3.75E-01	2.92E+00	2.92E+01	1.71E-02	6.98E-04	2.00E-02	6.17E-02	8.24E-02		6.42E-04	5.00E-03	2.65E-02	3.21E-02	1.67E+03	1.51E-01	9,389	0.02%		
UBUS	2.74E-01	9.71E+00	2.76E+00	1.39E-02	1.21E-01	1.20E-02	6.33E-01	7.67E-01		1.16E-01	3.00E-03	2.71E-01	3.91E-01	1.55E+03	8.70E-02	74,139	0.16%		
															47,180,821	100.00%			
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																			

Santa Clara County 2020 - all Model Years (40 MPH)		lbs/Mile														
##																
Veh		ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	PM10_RUN EX	PM10_PMTW	PM10_PMBW	PM10_Total	PM2.5_RUN		PM2.5_PMTW	PM2.5_PMBW	PM2_5_Total	CO2_RUNEX	CH4_RUNEX
										EX						
All Other Buses		1.44E-04	6.30E-03	4.92E-04	2.46E-05	3.58E-05	2.65E-05	2.87E-04	3.50E-04	3.42E-05		6.61E-06	1.23E-04	1.64E-04	2.58E+00	6.67E-06
LDA		2.13E-05	1.11E-04	1.34E-03	5.14E-06	3.25E-06	1.76E-05	8.10E-05	1.02E-04	3.00E-06		4.41E-06	3.47E-05	4.21E-05	5.14E-01	8.44E-06
LDT1		5.36E-05	2.66E-04	2.90E-03	6.29E-06	4.79E-06	1.76E-05	8.10E-05	1.03E-04	4.41E-06		4.41E-06	3.47E-05	4.35E-05	6.25E-01	2.14E-05
LDT2		3.00E-05	1.84E-04	1.82E-03	7.18E-06	3.07E-06	1.76E-05	8.10E-05	1.02E-04	2.83E-06		4.41E-06	3.47E-05	4.20E-05	7.16E-01	1.21E-05
LHD1		1.41E-04	3.04E-03	1.90E-03	1.25E-05	2.22E-05	2.18E-05	1.69E-04	2.13E-04	2.12E-05		5.45E-06	7.22E-05	9.88E-05	1.27E+00	2.48E-05
LHD2		1.04E-04	2.34E-03	8.45E-04	1.25E-05	2.32E-05	2.36E-05	1.97E-04	2.43E-04	2.21E-05		5.90E-06	8.43E-05	1.12E-04	1.29E+00	9.78E-06
MCY		4.33E-03	2.28E-03	3.88E-02	4.06E-06	3.57E-06	8.82E-06	2.59E-05	3.83E-05	3.34E-06		2.20E-06	1.11E-05	1.67E-05	3.30E-01	8.30E-04
MDV		7.13E-05	3.59E-04	3.14E-03	9.47E-06	3.62E-06	1.76E-05	8.10E-05	1.02E-04	3.34E-06		4.41E-06	3.47E-05	4.25E-05	9.45E-01	2.40E-05
MH		2.23E-04	2.96E-03	6.30E-03	2.35E-05	4.65E-05	2.83E-05	2.87E-04	3.62E-04	4.44E-05		7.08E-06	1.23E-04	1.75E-04	2.37E+00	7.04E-05
Motor Coach		2.85E-04	9.00E-03	1.11E-03	3.55E-05	4.98E-05	2.65E-05	2.87E-04	3.64E-04	4.77E-05		6.61E-06	1.23E-04	1.77E-04	3.73E+00	1.32E-05
OBUS		6.09E-05	5.44E-04	1.96E-03	2.39E-05	1.48E-06	2.65E-05	2.87E-04	3.15E-04	1.36E-06		6.61E-06	1.23E-04	1.31E-04	2.39E+00	2.46E-05
SBUS		1.47E-04	8.47E-03	2.40E-03	1.95E-05	3.85E-05	2.34E-05	1.64E-03	1.70E-03	3.68E-05		5.84E-06	7.04E-04	7.46E-04	2.02E+00	2.81E-05
T6 Ag		8.59E-04	1.13E-02	2.90E-03	2.48E-05	5.31E-04	2.65E-05	2.87E-04	8.44E-04	5.08E-04		6.61E-06	1.23E-04	6.37E-04	2.60E+00	3.99E-05
T6 CAIRP Heavy		8.59E-05	2.71E-03	3.74E-04	2.37E-05	1.47E-05	2.65E-05	2.87E-04	3.28E-04	1.40E-05		6.61E-06	1.23E-04	1.44E-04	2.49E+00	3.99E-06
T6 CAIRP Small		1.37E-04	2.23E-03	5.27E-04	2.38E-05	6.66E-05	2.65E-05	2.87E-04	3.80E-04	6.37E-05		6.61E-06	1.23E-04	1.94E-04	2.50E+00	6.35E-06
T6 Instate Construction Heavy		1.26E-04	5.86E-03	4.48E-04	2.43E-05	3.45E-05	2.65E-05	2.87E-04	3.48E-04	3.30E-05		6.61E-06	1.23E-04	1.63E-04	2.55E+00	5.85E-06
T6 Instate Construction Small		2.02E-04	3.55E-03	7.19E-04	2.41E-05	1.12E-04	2.65E-05	2.87E-04	4.26E-04	1.07E-04		6.61E-06	1.23E-04	2.37E-04	2.52E+00	9.38E-06
T6 Instate Heavy		1.26E-04	4.97E-03	4.64E-04	2.41E-05	2.68E-05	2.65E-05	2.87E-04	3.41E-04	2.56E-05		6.61E-06	1.23E-04	1.55E-04	2.53E+00	5.84E-06
T6 Instate Small		2.21E-04	3.72E-03	7.81E-04	2.41E-05	1.29E-04	2.65E-05	2.87E-04	4.42E-04	1.23E-04		6.61E-06	1.23E-04	2.53E-04	2.53E+00	1.03E-05
T6 OOS Heavy		8.66E-05	2.86E-03	3.77E-04	2.37E-05	1.56E-05	2.65E-05	2.87E-04	3.29E-04	1.50E-05		6.61E-06	1.23E-04	1.45E-04	2.49E+00	4.02E-06
T6 OOS Small		1.37E-04	2.23E-03	5.27E-04	2.38E-05	6.66E-05	2.65E-05	2.87E-04	3.80E-04	6.37E-05		6.61E-06	1.23E-04	1.94E-04	2.50E+00	6.35E-06
T6 Public		8.37E-05	7.57E-03	3.21E-04	2.40E-05	3.48E-05	2.65E-05	2.87E-04	3.49E-04	3.33E-05		6.61E-06	1.23E-04	1.63E-04	2.52E+00	3.89E-06
T6 Utility		4.86E-05	9.37E-04	2.56E-04	2.46E-05	4.35E-06	2.65E-05	2.87E-04	3.18E-04	4.16E-06		6.61E-06	1.23E-04	1.34E-04	2.58E+00	2.26E-06
T6TS		1.51E-04	1.17E-03	4.95E-03	2.39E-05	2.06E-06	2.65E-05	2.87E-04	3.16E-04	1.90E-06		6.61E-06	1.23E-04	1.32E-04	2.39E+00	6.11E-05
T7 Ag		1.76E-03	2.13E-02	8.68E-03	3.60E-05	1.12E-03	7.94E-05	1.36E-04	1.33E-03	1.07E-03		1.98E-05	5.83E-05	1.15E-03	3.78E+00	8.17E-05
T7 CAIRP		2.62E-04	7.50E-03	1.23E-03	3.32E-05	3.57E-05	7.94E-05	1.36E-04	2.51E-04	3.42E-05		1.98E-05	5.83E-05	1.12E-04	3.48E+00	1.22E-05
T7 CAIRP Construction		2.64E-04	7.68E-03	1.15E-03	3.36E-05	4.43E-05	7.94E-05	1.36E-04	2.60E-04	4.24E-05		1.98E-05	5.83E-05	1.21E-04	3.52E+00	1.23E-05
T7 NNOOS		1.63E-04	3.07E-03	8.87E-04	3.10E-05	1.69E-05	7.94E-05	1.36E-04	2.32E-04	1.62E-05		1.98E-05	5.83E-05	9.43E-05	3.25E+00	7.56E-06
T7 NOOS		2.62E-04	7.64E-03	1.23E-03	3.33E-05	3.64E-05	7.94E-05	1.36E-04	2.52E-04	3.48E-05		1.98E-05	5.83E-05	1.13E-04	3.49E+00	1.21E-05
T7 Other Port		3.40E-04	1.01E-02	1.29E-03	3.50E-05	5.08E-05	7.94E-05	1.36E-04	2.66E-04	4.86E-05		1.98E-05	5.83E-05	1.27E-04	3.67E+00	1.58E-05
T7 POAK		3.85E-04	1.18E-02	1.39E-03	3.56E-05	6.02E-05	7.94E-05	1.36E-04	2.76E-04	5.76E-05		1.98E-05	5.83E-05	1.36E-04	3.73E+00	1.79E-05
T7 Public		2.03E-04	2.15E-02	8.96E-04	3.59E-05	1.05E-04	7.94E-05	1.36E-04	3.21E-04	1.01E-04		1.98E-05	5.83E-05	1.79E-04	3.76E+00	9.44E-06
T7 Single		2.38E-04	1.05E-02	9.50E-04	3.53E-05	4.97E-05	7.94E-05	1.36E-04	2.65E-04	4.75E-05		1.98E-05	5.83E-05	1.26E-04	3.70E+00	1.11E-05
T7 Single Construction		2.03E-04	8.00E-03	8.61E-04	3.41E-05	3.86E-05	7.94E-05	1.36E-04	2.54E-04	3.69E-05		1.98E-05	5.83E-05	1.15E-04	3.58E+00	9.41E-06
T7 SWCV		1.07E-04	1.45E-02	4.84E-03	4.62E-05	1.69E-05	7.94E-05	1.36E-04	2.32E-04	1.61E-05		1.98E-05	5.83E-05	9.43E-05	7.38E+00	1.67E-03
T7 Tractor		3.11E-04	9.89E-03	1.27E-03	3.38E-05	5.06E-05	7.94E-05	1.36E-04	2.66E-04	4.84E-05		1.98E-05	5.83E-05	1.27E-04	3.54E+00	1.45E-05
T7 Tractor Construction		3.00E-04	1.04E-02	1.21E-03	3.44E-05	6.00E-05	7.94E-05	1.36E-04	2.76E-04	5.74E-05		1.98E-05	5.83E-05	1.36E-04	3.60E+00	1.39E-05
T7 Utility		9.90E-05	1.67E-03	5.84E-04	3.41E-05	6.66E-06	7.94E-05	1.36E-04	2.22E-04	6.37E-06		1.98E-05	5.83E-05	8.45E-05	3.57E+00	4.60E-06
T7IS		8.28E-04	6.43E-03	6.44E-02	3.78E-05	1.54E-06	4.41E-05	1.36E-04	1.82E-04	1.42E-06		1.10E-05	5.83E-05	7.08E-05	3.68E+00	3.32E-04
UBUS		6.05E-04	2.14E-02	6.07E-03	3.07E-05	2.67E-04	2.65E-05	1.40E-03	1.69E-03	2.56E-04		6.61E-06	5.99E-04	8.61E-04	3.42E+00	1.92E-04

Santa Clara County 2020 - all Model Years (40 MPH)		Mtons/Mile														
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AB 32 Year 2020 Estimate

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2020	1,038,730,620	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.08%	0.02%	2.44E+02	6.31E-04	5.96E-01	0.02	252
LDA	60.48%	69.55%	1.68E+05	2.77E+00	3.65E+01	1.52	168,802
LDT1	3.82%	4.39%	1.29E+04	4.43E-01	5.50E+00	0.23	13,025
LDT2	18.51%	21.29%	7.18E+04	1.21E+00	1.84E+01	0.77	72,098
LHD1	1.55%	0.39%	2.31E+03	4.51E-02	5.53E+00	0.23	2,383
LHD2	0.50%	0.12%	7.54E+02	5.72E-03	1.37E+00	0.06	772
MCY	0.54%	0.62%	9.59E+02	2.41E+00	6.63E+00	0.28	1,095
MDV	10.85%	2.71%	1.20E+04	3.06E-01	4.58E+00	0.19	12,113
MH	0.08%	0.02%	2.18E+02	6.49E-03	2.73E-01	0.01	222
Motor Coach	0.03%	0.01%	1.48E+02	5.25E-04	3.58E-01	0.01	153
OBUS	0.09%	0.02%	2.64E+02	2.71E-03	6.00E-02	0.00	265
SBUS	0.06%	0.02%	1.47E+02	2.05E-03	6.17E-01	0.03	155
T6 Ag	0.01%	0.00%	1.56E+01	2.40E-04	6.77E-02	0.00	17
T6 CAIRP Heavy	0.00%	0.00%	5.44E+00	8.74E-06	5.94E-03	0.00	6
T6 CAIRP Small	0.01%	0.00%	1.68E+01	4.27E-05	1.50E-02	0.00	17
T6 Instate Construction Heavy	0.02%	0.01%	6.83E+01	1.57E-04	1.57E-01	0.01	70
T6 Instate Construction Small	0.05%	0.01%	1.58E+02	5.88E-04	2.23E-01	0.01	161
T6 Instate Heavy	0.27%	0.07%	8.16E+02	1.88E-03	1.60E+00	0.07	836
T6 Instate Small	0.67%	0.17%	1.99E+03	8.08E-03	2.93E+00	0.12	2,029
T6 OOS Heavy	0.00%	0.00%	3.12E+00	5.05E-06	3.58E-03	0.00	3
T6 OOS Small	0.00%	0.00%	9.62E+00	2.45E-05	8.60E-03	0.00	10
T6 Public	0.03%	0.01%	8.12E+01	1.25E-04	2.44E-01	0.01	84
T6 Utility	0.00%	0.00%	1.42E+01	1.24E-05	5.16E-03	0.00	14
T6TS	0.16%	0.04%	4.42E+02	1.13E-02	2.16E-01	0.01	445
T7 Ag	0.00%	0.00%	1.94E+01	4.19E-04	1.09E-01	0.00	21
T7 CAIRP	0.33%	0.08%	1.34E+03	4.68E-03	2.88E+00	0.12	1,375
T7 CAIRP Construction	0.02%	0.00%	6.69E+01	2.33E-04	1.46E-01	0.01	69
T7 NNOOS	0.41%	0.10%	1.55E+03	3.60E-03	1.46E+00	0.06	1,568
T7 NOOS	0.13%	0.03%	5.29E+02	1.84E-03	1.16E+00	0.05	544
T7 Other Port	0.07%	0.02%	2.93E+02	1.26E-03	8.04E-01	0.03	304
T7 POAK	0.14%	0.03%	6.03E+02	2.89E-03	1.91E+00	0.08	628
T7 Public	0.02%	0.01%	1.03E+02	2.60E-04	5.92E-01	0.02	111
T7 Single	0.16%	0.04%	7.00E+02	2.09E-03	1.98E+00	0.08	726
T7 Single Construction	0.04%	0.01%	1.76E+02	4.63E-04	3.93E-01	0.02	181
T7 SWCV	0.05%	0.01%	3.93E+02	8.91E-02	7.74E-01	0.03	405
T7 Tractor	0.60%	0.15%	2.51E+03	1.02E-02	7.00E+00	0.29	2,597
T7 Tractor Construction	0.03%	0.01%	1.32E+02	5.11E-04	3.81E-01	0.02	137
T7 Utility	0.00%	0.00%	1.16E+01	1.49E-05	5.43E-03	0.00	12
T7IS	0.02%	0.00%	8.60E+01	7.77E-03	1.50E-01	0.01	88
UBUS	0.16%	0.04%	6.32E+02	3.54E-02	3.95E+00	0.16	684
TOTAL	100%	100%	282,905	7	110	5	284,474

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Santa Clara County 2030 - all Model Years (40 MPH)					g/mile													
																	VMT from default	
Veh	PM10_RUN					PM2.5_RUN		PM2.5_PMB							EMFAC-SG	%VMT		
	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	W	PM2_5_Total	CO2_RUNEX	CH4_RUNEX				
All Other Buses	3.23E-02	5.40E-01	1.70E-01	1.08E-02	3.36E-03	1.20E-02	1.30E-01	1.46E-01	3.21E-03	3.00E-03	5.59E-02	6.21E-02	1.13E+03	1.50E-03	43,708	0.09%		
LDA	3.98E-03	2.26E-02	3.34E-01	1.60E-03	9.78E-04	8.00E-03	3.67E-02	4.57E-02	9.00E-04	2.00E-03	1.57E-02	1.86E-02	1.59E+02	1.59E-03	31,587,682	62.15%		
LDT1	7.74E-03	4.24E-02	5.44E-01	2.05E-03	1.24E-03	8.00E-03	3.67E-02	4.60E-02	1.14E-03	2.00E-03	1.57E-02	1.89E-02	2.05E+02	3.12E-03	1,730,766	3.41%		
LDT2	6.23E-03	3.59E-02	4.93E-01	2.33E-03	1.11E-03	8.00E-03	3.67E-02	4.59E-02	1.02E-03	2.00E-03	1.57E-02	1.88E-02	2.32E+02	2.51E-03	9,154,780	18.01%		
LHD1	3.33E-02	4.92E-01	3.10E-01	5.05E-03	6.79E-03	1.04E-02	7.64E-02	9.36E-02	6.48E-03	3.28E-02	3.28E-02	4.18E-02	5.17E+02	3.37E-03	602,713	1.19%		
LHD2	2.62E-02	1.81E-01	1.60E-01	5.26E-03	6.59E-03	1.08E-02	8.92E-02	1.07E-01	6.30E-03	2.71E-03	3.82E-02	4.72E-02	5.42E+02	1.66E-03	257,157	0.51%		
MCY	1.83E+00	1.01E+00	1.58E+01	1.84E-03	1.84E-03	4.00E-03	1.18E-02	1.76E-02	1.72E-03	1.00E-03	5.04E-03	7.76E-03	1.53E+02	3.93E-01	260,325	0.51%		
MDV	1.08E-02	6.23E-02	6.73E-01	3.16E-03	1.19E-03	8.00E-03	3.67E-02	4.59E-02	1.09E-03	2.00E-03	1.58E-02	1.88E-02	3.15E+02	4.31E-03	5,145,584	10.12%		
MH	2.13E-02	6.64E-01	4.04E-01	1.02E-02	9.30E-03	1.29E-02	1.30E-01	1.53E-01	8.87E-03	3.22E-03	5.59E-02	6.79E-02	1.03E+03	5.25E-03	33,071	0.07%		
Motor Coach	6.63E-02	7.86E-01	3.91E-01	1.52E-02	5.26E-03	1.20E-02	1.30E-01	1.48E-01	5.04E-03	3.00E-03	5.59E-02	6.39E-02	1.59E+03	3.08E-03	19,111	0.04%		
OBUS	9.40E-03	9.65E-02	2.62E-01	1.05E-02	8.87E-04	1.20E-02	1.30E-01	1.43E-01	8.16E-04	3.00E-03	5.59E-02	5.97E-02	1.05E+03	3.80E-03	50,039	0.10%		
SBUS	3.23E-02	1.07E+00	3.44E-01	8.37E-03	6.87E-03	1.04E-02	7.45E-01	7.62E-01	6.56E-03	2.59E-03	3.19E-01	3.28E-01	8.67E+02	4.16E-03	32,840	0.06%		
T6 Ag	3.59E-02	8.42E-01	1.89E-01	1.10E-02	3.78E-03	1.20E-02	1.30E-01	1.46E-01	3.62E-03	3.00E-03	5.59E-02	6.25E-02	1.16E+03	1.67E-03	2,417	0.00%		
T6 CAIRP Heavy	2.77E-02	3.71E-01	1.46E-01	1.03E-02	2.75E-03	1.20E-02	1.30E-01	1.45E-01	2.63E-03	3.00E-03	5.59E-02	6.15E-02	1.08E+03	1.29E-03	1,053	0.00%		
T6 CAIRP Small	2.61E-02	3.23E-01	1.37E-01	1.05E-02	2.53E-03	1.20E-02	1.30E-01	1.45E-01	2.43E-03	3.00E-03	5.59E-02	6.13E-02	1.10E+03	1.21E-03	3,234	0.01%		
T6 Instate Construction Heavy	3.19E-02	5.64E-01	1.68E-01	1.07E-02	3.33E-03	1.20E-02	1.30E-01	1.46E-01	3.18E-03	3.00E-03	5.59E-02	6.20E-02	1.13E+03	1.48E-03	19,235	0.04%		
T6 Instate Construction Small	2.87E-02	4.07E-01	1.51E-01	1.06E-02	2.92E-03	1.20E-02	1.30E-01	1.45E-01	2.79E-03	3.00E-03	5.59E-02	6.17E-02	1.11E+03	1.33E-03	45,068	0.09%		
T6 Instate Heavy	3.27E-02	6.12E-01	1.72E-01	1.05E-02	3.39E-03	1.20E-02	1.30E-01	1.46E-01	3.24E-03	3.00E-03	5.59E-02	6.21E-02	1.10E+03	1.52E-03	137,662	0.27%		
T6 Instate Small	2.92E-02	4.23E-01	1.54E-01	1.06E-02	2.96E-03	1.20E-02	1.30E-01	1.45E-01	2.83E-03	3.00E-03	5.59E-02	6.17E-02	1.11E+03	1.36E-03	348,155	0.69%		
T6 OOS Heavy	2.77E-02	3.74E-01	1.46E-01	1.03E-02	2.76E-03	1.20E-02	1.30E-01	1.45E-01	2.64E-03	3.00E-03	5.59E-02	6.15E-02	1.08E+03	1.29E-03	604	0.00%		
T6 OOS Small	2.61E-02	3.23E-01	1.37E-01	1.05E-02	2.53E-03	1.20E-02	1.30E-01	1.45E-01	2.43E-03	3.00E-03	5.59E-02	6.13E-02	1.10E+03	1.21E-03	1,853	0.00%		
T6 Public	2.75E-02	1.02E+00	1.28E-01	1.07E-02	5.39E-03	1.20E-02	1.30E-01	1.48E-01	5.15E-03	3.00E-03	5.59E-02	6.40E-02	1.12E+03	1.28E-03	14,652	0.03%		
T6 Utility	2.17E-02	2.64E-01	1.14E-01	1.06E-02	1.94E-03	1.20E-02	1.30E-01	1.44E-01	1.85E-03	3.00E-03	5.59E-02	6.07E-02	1.11E+03	1.01E-03	2,443	0.00%		
T6TS	1.17E-02	1.17E-01	3.53E-01	1.05E-02	9.02E-04	1.20E-02	1.30E-01	1.43E-01	8.29E-04	3.00E-03	5.59E-02	5.97E-02	1.05E+03	4.74E-03	89,913	0.18%		
T7 Ag	8.46E-02	1.99E+00	5.00E-01	1.55E-02	6.93E-03	3.60E-02	6.17E-02	1.05E-01	6.63E-03	9.00E-03	2.65E-02	4.21E-02	1.62E+03	3.93E-03	2,061	0.00%		
T7 CAIRP	7.00E-02	8.45E-01	4.14E-01	1.36E-02	5.65E-03	3.60E-02	6.17E-02	1.03E-01	5.41E-03	9.00E-03	2.65E-02	4.09E-02	1.43E+03	3.25E-03	184,747	0.36%		
T7 CAIRP Construction	7.07E-02	8.17E-01	4.17E-01	1.40E-02	5.76E-03	3.60E-02	6.17E-02	1.03E-01	5.51E-03	9.00E-03	2.65E-02	4.10E-02	1.46E+03	3.28E-03	13,645	0.03%		
T7 NNOOS	6.03E-02	6.22E-01	3.56E-01	1.35E-02	4.66E-03	3.60E-02	6.17E-02	1.02E-01	4.46E-03	9.00E-03	2.65E-02	3.99E-02	1.42E+03	2.80E-03	229,086	0.45%		
T7 NOOS	7.02E-02	8.51E-01	4.14E-01	1.36E-02	5.67E-03	3.60E-02	6.17E-02	1.03E-01	5.42E-03	9.00E-03	2.65E-02	4.09E-02	1.43E+03	3.26E-03	72,975	0.14%		
T7 Other Port	7.26E-02	8.14E-01	4.28E-01	1.39E-02	5.94E-03	3.60E-02	6.17E-02	1.04E-01	5.68E-03	9.00E-03	2.65E-02	4.11E-02	1.46E+03	3.37E-03	34,616	0.07%		
T7 POAK	7.33E-02	8.31E-01	4.33E-01	1.39E-02	6.01E-03	3.60E-02	6.17E-02	1.04E-01	5.75E-03	9.00E-03	2.65E-02	4.12E-02	1.46E+03	3.40E-03	108,511	0.21%		
T7 Public	7.61E-02	5.13E+00	3.48E-01	1.53E-02	2.41E-02	3.60E-02	6.17E-02	1.22E-01	2.31E-02	9.00E-03	2.65E-02	5.85E-02	1.60E+03	3.54E-03	9,848	0.02%		
T7 Single	6.19E-02	9.71E-01	3.65E-01	1.46E-02	4.74E-03	3.60E-02	6.17E-02	1.02E-01	4.54E-03	9.00E-03	2.65E-02	4.00E-02	1.53E+03	2.87E-03	67,349	0.13%		
T7 Single Construction	5.85E-02	7.98E-01	3.44E-01	1.43E-02	4.55E-03	3.60E-02	6.17E-02	1.02E-01	4.36E-03	9.00E-03	2.65E-02	3.98E-02	1.50E+03	2.72E-03	35,298	0.07%		
T7 SWCV	3.37E-02	2.93E+00	3.97E+00	9.65E-03	4.68E-03	3.60E-02	6.17E-02	1.02E-01	4.48E-03	9.00E-03	2.65E-02	3.99E-02	2.93E+03	1.15E+00	19,448	0.04%		
T7 Tractor	7.42E-02	1.03E+00	4.38E-01	1.38E-02	6.05E-03	3.60E-02	6.17E-02	1.04E-01	5.79E-03	9.00E-03	2.65E-02	4.13E-02	1.45E+03	3.45E-03	345,440	0.68%		
T7 Tractor Construction	7.51E-02	1.05E+00	4.43E-01	1.42E-02	6.21E-03	3.60E-02	6.17E-02	1.04E-01	5.94E-03	9.00E-03	2.65E-02	4.14E-02	1.49E+03	3.49E-03	26,317	0.05%		
T7 Utility	4.52E-02	5.20E-01	2.67E-01	1.43E-02	3.07E-03	3.60E-02	6.17E-02	1.01E-01	2.94E-03	9.00E-03	2.65E-02	3.84E-02	1.50E+03	2.10E-03	1,439	0.00%		
T7IS	2.43E-01	2.60E+00	2.89E+01	1.61E-02	8.92E-04	2.00E-02	6.17E-02	8.26E-02	8.20E-04	5.00E-03	2.65E-02	3.23E-02	1.56E+03	9.83E-02	12,055	0.02%		
UBUS	7.16E-02	3.49E+00	1.15E+00	1.18E-02	4.27E-02	1.20E-02	5.36E-01	5.91E-01	4.09E-02	3.00E-03	2.30E-01	2.74E-01	1.38E+03	5.37E-02	74,696	0.15%		
															50,821,595	100.00%		
EMFAC2014v1.0.7 based on the average annual temperature and humidity for Palo Alto from USA.com (http://www.usa.com/palo-alto-ca-weather.htm) accessed March 31, 2014. Assumes an average 40 mph speed based on CalEEMod Users' Manual.																		

Santa Clara County 2030 - all Model Years (40 MPH)		lbs/Mile													
Veh	##	PM10_RUN							PM2.5_RUN						
		ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	PM2.5_PMB W	PM2_5_Total	CO2_RUNEX	CH4_RUNEX
All Other Buses		7.12E-05	1.19E-03	3.75E-04	2.37E-05	7.41E-06	2.65E-05	2.87E-04	3.21E-04	7.08E-06	6.61E-06	1.23E-04	1.37E-04	2.49E+00	3.31E-06
LDA		8.77E-06	4.97E-05	7.37E-04	3.52E-06	2.16E-06	1.76E-05	8.10E-05	1.01E-04	1.98E-06	4.41E-06	3.47E-05	4.11E-05	3.51E-01	3.50E-06
LDT1		1.71E-05	9.34E-05	1.20E-03	4.53E-06	2.73E-06	1.76E-05	8.10E-05	1.01E-04	2.52E-06	4.41E-06	3.47E-05	4.16E-05	4.52E-01	6.89E-06
LDT2		1.37E-05	7.93E-05	1.09E-03	5.13E-06	2.45E-06	1.76E-05	8.10E-05	1.01E-04	2.25E-06	4.41E-06	3.47E-05	4.14E-05	5.12E-01	5.53E-06
LHD1		7.35E-05	1.09E-03	6.82E-04	1.11E-05	1.50E-05	2.30E-05	1.69E-04	2.06E-04	1.43E-05	5.74E-06	7.22E-05	9.23E-05	1.14E+00	7.42E-06
LHD2		5.77E-05	3.99E-04	3.52E-04	1.16E-05	1.45E-05	2.39E-05	1.97E-04	2.35E-04	1.39E-05	5.97E-06	8.43E-05	1.04E-04	1.19E+00	3.65E-06
MCV		4.03E-03	2.24E-03	3.49E-02	4.05E-06	4.06E-06	8.82E-06	2.59E-05	3.88E-05	3.79E-06	2.20E-06	1.11E-05	1.71E-05	3.36E-01	8.67E-04
MDV		2.38E-05	1.37E-04	1.48E-03	6.96E-06	2.62E-06	1.76E-05	8.10E-05	1.01E-04	2.41E-06	4.41E-06	3.47E-05	4.15E-05	6.95E-01	9.50E-06
MH		4.69E-05	1.46E-03	8.91E-04	2.26E-05	2.05E-05	2.84E-05	2.87E-04	3.36E-04	1.95E-05	7.10E-06	1.23E-04	1.50E-04	2.28E+00	1.16E-05
Motor Coach		1.46E-04	1.73E-03	8.63E-04	3.35E-05	1.16E-05	2.65E-05	2.87E-04	3.25E-04	1.11E-05	6.61E-06	1.23E-04	1.41E-04	3.52E+00	6.79E-06
OBUS		2.07E-05	2.13E-04	5.78E-04	2.31E-05	1.96E-06	2.65E-05	2.87E-04	3.16E-04	1.80E-06	6.61E-06	1.23E-04	1.32E-04	2.32E+00	8.37E-06
SBUS		7.13E-05	2.37E-03	7.58E-04	1.84E-05	1.51E-05	2.28E-05	1.64E-03	1.68E-03	1.45E-05	5.71E-06	7.04E-04	7.24E-04	1.91E+00	9.17E-06
T6 Ag		7.91E-05	1.86E-03	4.16E-04	2.43E-05	8.33E-06	2.65E-05	2.87E-04	3.22E-04	7.97E-06	6.61E-06	1.23E-04	1.38E-04	2.55E+00	3.67E-06
T6 CAIRP Heavy		6.10E-05	8.18E-04	3.21E-04	2.27E-05	6.07E-06	2.65E-05	2.87E-04	3.20E-04	5.80E-06	6.61E-06	1.23E-04	1.36E-04	2.37E+00	2.83E-06
T6 CAIRP Small		5.74E-05	7.12E-04	3.02E-04	2.32E-05	5.59E-06	2.65E-05	2.87E-04	3.19E-04	5.35E-06	6.61E-06	1.23E-04	1.35E-04	2.43E+00	2.67E-06
T6 Instate Construction Heavy		7.03E-05	1.24E-03	3.69E-04	2.37E-05	7.34E-06	2.65E-05	2.87E-04	3.21E-04	7.02E-06	6.61E-06	1.23E-04	1.37E-04	2.48E+00	3.26E-06
T6 Instate Construction Small		6.33E-05	8.97E-04	3.33E-04	2.34E-05	6.44E-06	2.65E-05	2.87E-04	3.20E-04	6.16E-06	6.61E-06	1.23E-04	1.36E-04	2.45E+00	2.94E-06
T6 Instate Heavy		7.20E-05	1.35E-03	3.79E-04	2.31E-05	7.47E-06	2.65E-05	2.87E-04	3.21E-04	7.15E-06	6.61E-06	1.23E-04	1.37E-04	2.42E+00	3.35E-06
T6 Instate Small		6.44E-05	9.32E-04	3.39E-04	2.34E-05	6.52E-06	2.65E-05	2.87E-04	3.20E-04	6.24E-06	6.61E-06	1.23E-04	1.36E-04	2.46E+00	2.99E-06
T6 OOS Heavy		6.12E-05	8.24E-04	3.22E-04	2.27E-05	6.08E-06	2.65E-05	2.87E-04	3.20E-04	5.82E-06	6.61E-06	1.23E-04	1.36E-04	2.37E+00	2.84E-06
T6 OOS Small		5.74E-05	7.12E-04	3.02E-04	2.32E-05	5.59E-06	2.65E-05	2.87E-04	3.19E-04	5.35E-06	6.61E-06	1.23E-04	1.35E-04	2.43E+00	2.67E-06
T6 Public		6.06E-05	2.24E-03	2.83E-04	2.35E-05	1.19E-05	2.65E-05	2.87E-04	3.26E-04	1.14E-05	6.61E-06	1.23E-04	1.41E-04	2.46E+00	2.81E-06
T6 Utility		4.79E-05	5.83E-04	2.52E-04	2.33E-05	4.27E-06	2.65E-05	2.87E-04	3.18E-04	4.09E-06	6.61E-06	1.23E-04	1.34E-04	2.45E+00	2.22E-06
T6TS		2.58E-05	2.58E-04	7.78E-04	2.31E-05	1.99E-06	2.65E-05	2.87E-04	3.16E-04	1.83E-06	6.61E-06	1.23E-04	1.32E-04	2.31E+00	1.04E-05
T7 Ag		1.87E-04	4.38E-03	1.10E-03	3.41E-05	1.53E-05	7.94E-05	1.36E-04	2.31E-04	1.46E-05	1.98E-05	5.83E-05	9.28E-05	3.58E+00	8.66E-06
T7 CAIRP		1.54E-04	1.86E-03	9.12E-04	3.00E-05	1.25E-05	7.94E-05	1.36E-04	2.28E-04	1.19E-05	1.98E-05	5.83E-05	9.01E-05	3.15E+00	7.17E-06
T7 CAIRP Construction		1.56E-04	1.80E-03	9.19E-04	3.08E-05	1.27E-05	7.94E-05	1.36E-04	2.28E-04	1.21E-05	1.98E-05	5.83E-05	9.03E-05	3.22E+00	7.24E-06
T7 NNOOS		1.33E-04	1.37E-03	7.85E-04	2.98E-05	1.03E-05	7.94E-05	1.36E-04	2.26E-04	9.83E-06	1.98E-05	5.83E-05	8.80E-05	3.12E+00	6.18E-06
T7 NOOS		1.55E-04	1.88E-03	9.13E-04	3.01E-05	1.25E-05	7.94E-05	1.36E-04	2.28E-04	1.20E-05	1.98E-05	5.83E-05	9.01E-05	3.15E+00	7.18E-06
T7 Other Port		1.60E-04	1.79E-03	9.45E-04	3.07E-05	1.31E-05	7.94E-05	1.36E-04	2.29E-04	1.25E-05	1.98E-05	5.83E-05	9.07E-05	3.21E+00	7.43E-06
T7 POAK		1.62E-04	1.83E-03	9.54E-04	3.07E-05	1.32E-05	7.94E-05	1.36E-04	2.29E-04	1.27E-05	1.98E-05	5.83E-05	9.08E-05	3.22E+00	7.50E-06
T7 Public		1.68E-04	1.13E-02	7.68E-04	3.36E-05	5.32E-05	7.94E-05	1.36E-04	2.69E-04	5.09E-05	1.98E-05	5.83E-05	1.29E-04	3.53E+00	7.80E-06
T7 Single		1.36E-04	2.14E-03	8.05E-04	3.22E-05	1.05E-05	7.94E-05	1.36E-04	2.26E-04	1.00E-05	1.98E-05	5.83E-05	8.82E-05	3.38E+00	6.34E-06
T7 Single Construction		1.29E-04	1.76E-03	7.59E-04	3.15E-05	1.00E-05	7.94E-05	1.36E-04	2.26E-04	9.61E-06	1.98E-05	5.83E-05	8.78E-05	3.31E+00	5.99E-06
T7 SWCV		7.43E-05	6.46E-03	8.76E-03	2.13E-05	1.03E-05	7.94E-05	1.36E-04	2.26E-04	9.87E-06	1.98E-05	5.83E-05	8.80E-05	6.45E+00	2.53E-03
T7 Tractor		1.64E-04	2.28E-03	9.66E-04	3.04E-05	1.33E-05	7.94E-05	1.36E-04	2.29E-04	1.28E-05	1.98E-05	5.83E-05	9.09E-05	3.19E+00	7.60E-06
T7 Tractor Construction		1.66E-04	2.32E-03	9.76E-04	3.14E-05	1.37E-05	7.94E-05	1.36E-04	2.29E-04	1.31E-05	1.98E-05	5.83E-05	9.13E-05	3.29E+00	7.69E-06
T7 Utility		9.98E-05	1.15E-03	5.89E-04	3.16E-05	6.76E-06	7.94E-05	1.36E-04	2.22E-04	6.47E-06	1.98E-05	5.83E-05	8.46E-05	3.31E+00	4.63E-06
T7IS		5.36E-04	5.73E-03	6.37E-02	3.54E-05	1.97E-06	4.41E-05	1.36E-04	1.82E-04	1.81E-06	1.10E-05	5.83E-05	7.12E-05	3.45E+00	2.17E-04
UBUS		1.58E-04	7.69E-03	2.54E-03	2.60E-05	9.42E-05	2.65E-05	1.18E-03	1.30E-03	9.01E-05	6.61E-06	5.06E-04	6.03E-04	3.03E+00	1.18E-04

Santa Clara County 2030 - all Model Years (40 MPH)		##	MTons/Mile													
Veh	PM10_RUN				PM2.5_RUN				PM2.5_PMB				CO2_RUNEX	CH4_RUNEX		
	ROG_RUNEX	NOx_RUNEX	CO_RUNEX	SOx_RUNEX	EX	PM10_PMTW	PM10_PMBW	PM10_Total	EX	PM2.5_PMTW	W	PM2_5_Total				
All Other Buses	3.23E-08	5.40E-07	1.70E-07	1.08E-08	3.36E-09	1.20E-08	1.30E-07	1.46E-07	3.21E-09	3.00E-09	5.59E-08	6.21E-08	1.13E-03	1.50E-09		
LDA	3.98E-09	2.26E-08	3.34E-07	1.60E-09	9.78E-10	8.00E-09	3.67E-08	4.57E-08	9.00E-10	2.00E-09	1.57E-08	1.86E-08	1.59E-04	1.59E-09		
LDT1	7.74E-09	4.24E-08	5.44E-07	2.05E-09	1.24E-09	8.00E-09	3.67E-08	4.60E-08	1.14E-09	2.00E-09	1.57E-08	1.89E-08	2.05E-04	3.12E-09		
LDT2	6.23E-09	3.59E-08	4.93E-07	2.33E-09	1.11E-09	8.00E-09	3.67E-08	4.59E-08	1.02E-09	2.00E-09	1.57E-08	1.88E-08	2.32E-04	2.51E-09		
LHD1	3.33E-08	4.92E-07	3.10E-07	5.05E-09	6.79E-09	1.04E-08	7.64E-08	9.36E-08	6.48E-09	2.60E-09	3.28E-08	4.18E-08	5.17E-04	3.37E-09		
LHD2	2.62E-08	1.81E-07	1.60E-07	5.26E-09	6.59E-09	1.08E-08	8.92E-08	1.07E-07	6.30E-09	2.71E-09	3.82E-08	4.72E-08	5.42E-04	1.66E-09		
MCV	1.83E-06	1.01E-06	1.58E-05	1.84E-09	1.84E-09	4.00E-09	1.18E-08	1.76E-08	1.72E-09	1.00E-09	5.04E-09	7.76E-09	1.53E-04	3.93E-07		
MDV	1.08E-08	6.23E-08	6.73E-07	3.16E-09	1.19E-09	8.00E-09	3.67E-08	4.59E-08	1.09E-09	2.00E-09	1.58E-08	1.88E-08	3.15E-04	4.31E-09		
MH	2.13E-08	6.64E-07	4.04E-07	1.02E-08	9.30E-09	1.29E-08	1.30E-07	1.53E-07	8.87E-09	3.22E-09	5.59E-08	6.79E-08	1.03E-03	5.25E-09		
Motor Coach	6.63E-08	7.86E-07	3.91E-07	1.52E-08	5.26E-09	1.20E-08	1.30E-07	1.48E-07	5.04E-09	3.00E-09	5.59E-08	6.39E-08	1.59E-03	3.08E-09		
OBUS	9.40E-09	9.65E-08	2.62E-07	1.05E-08	8.87E-10	1.20E-08	1.30E-07	1.43E-07	8.16E-10	3.00E-09	5.59E-08	5.97E-08	1.05E-03	3.80E-09		
SBUS	3.23E-08	1.07E-06	3.44E-07	8.37E-09	6.87E-09	1.04E-08	7.45E-07	7.62E-07	6.56E-09	2.59E-09	3.19E-07	3.28E-07	8.67E-04	4.16E-09		
T6 Ag	3.59E-08	8.42E-07	1.89E-07	1.10E-08	3.78E-09	1.20E-08	1.30E-07	1.46E-07	3.62E-09	3.00E-09	5.59E-08	6.25E-08	1.16E-03	1.67E-09		
T6 CAIRP Heavy	2.77E-08	3.71E-07	1.46E-07	1.03E-08	2.75E-09	1.20E-08	1.30E-07	1.45E-07	2.63E-09	3.00E-09	5.59E-08	6.15E-08	1.08E-03	1.29E-09		
T6 CAIRP Small	2.61E-08	3.23E-07	1.37E-07	1.05E-08	2.53E-09	1.20E-08	1.30E-07	1.45E-07	2.43E-09	3.00E-09	5.59E-08	6.13E-08	1.10E-03	1.21E-09		
T6 Instate Construction Heavy	3.19E-08	5.64E-07	1.68E-07	1.07E-08	3.33E-09	1.20E-08	1.30E-07	1.46E-07	3.18E-09	3.00E-09	5.59E-08	6.20E-08	1.13E-03	1.48E-09		
T6 Instate Construction Small	2.87E-08	4.07E-07	1.51E-07	1.06E-08	2.92E-09	1.20E-08	1.30E-07	1.45E-07	2.79E-09	3.00E-09	5.59E-08	6.17E-08	1.11E-03	1.33E-09		
T6 Instate Heavy	3.27E-08	6.12E-07	1.72E-07	1.05E-08	3.39E-09	1.20E-08	1.30E-07	1.46E-07	3.24E-09	3.00E-09	5.59E-08	6.21E-08	1.10E-03	1.52E-09		
T6 Instate Small	2.92E-08	4.23E-07	1.54E-07	1.06E-08	2.96E-09	1.20E-08	1.30E-07	1.45E-07	2.83E-09	3.00E-09	5.59E-08	6.17E-08	1.11E-03	1.36E-09		
T6 OOS Heavy	2.77E-08	3.74E-07	1.46E-07	1.03E-08	2.76E-09	1.20E-08	1.30E-07	1.45E-07	2.64E-09	3.00E-09	5.59E-08	6.15E-08	1.08E-03	1.29E-09		
T6 OOS Small	2.61E-08	3.23E-07	1.37E-07	1.05E-08	2.53E-09	1.20E-08	1.30E-07	1.45E-07	2.43E-09	3.00E-09	5.59E-08	6.13E-08	1.10E-03	1.21E-09		
T6 Public	2.75E-08	1.02E-06	1.28E-07	1.07E-08	5.39E-09	1.20E-08	1.30E-07	1.48E-07	5.15E-09	3.00E-09	5.59E-08	6.40E-08	1.12E-03	1.28E-09		
T6 Utility	2.17E-08	2.64E-07	1.14E-07	1.06E-08	1.94E-09	1.20E-08	1.30E-07	1.44E-07	1.85E-09	3.00E-09	5.59E-08	6.07E-08	1.11E-03	1.01E-09		
T6TS	1.17E-08	1.17E-07	3.53E-07	1.05E-08	9.02E-10	1.20E-08	1.30E-07	1.43E-07	8.29E-10	3.00E-09	5.59E-08	5.97E-08	1.05E-03	4.74E-09		
T7 Ag	8.46E-08	1.99E-06	5.00E-07	1.55E-08	6.93E-09	3.60E-08	6.17E-08	1.05E-07	6.63E-09	9.00E-09	2.65E-08	4.21E-08	1.62E-03	3.93E-09		
T7 CAIRP	7.00E-08	8.45E-07	4.14E-07	1.36E-08	5.65E-09	3.60E-08	6.17E-08	1.03E-07	5.41E-09	9.00E-09	2.65E-08	4.09E-08	1.43E-03	3.25E-09		
T7 CAIRP Construction	7.07E-08	8.17E-07	4.17E-07	1.40E-08	5.76E-09	3.60E-08	6.17E-08	1.03E-07	5.51E-09	9.00E-09	2.65E-08	4.10E-08	1.46E-03	3.28E-09		
T7 NNOOS	6.03E-08	6.22E-07	3.56E-07	1.35E-08	4.66E-09	3.60E-08	6.17E-08	1.02E-07	4.46E-09	9.00E-09	2.65E-08	3.99E-08	1.42E-03	2.80E-09		
T7 NOOS	7.02E-08	8.51E-07	4.14E-07	1.36E-08	5.67E-09	3.60E-08	6.17E-08	1.03E-07	5.42E-09	9.00E-09	2.65E-08	4.09E-08	1.43E-03	3.26E-09		
T7 Other Port	7.26E-08	8.14E-07	4.28E-07	1.39E-08	5.94E-09	3.60E-08	6.17E-08	1.04E-07	5.68E-09	9.00E-09	2.65E-08	4.11E-08	1.46E-03	3.37E-09		
T7 POAK	7.33E-08	8.31E-07	4.33E-07	1.39E-08	6.01E-09	3.60E-08	6.17E-08	1.04E-07	5.75E-09	9.00E-09	2.65E-08	4.12E-08	1.46E-03	3.40E-09		
T7 Public	7.61E-08	5.13E-06	3.48E-07	1.53E-08	2.41E-08	3.60E-08	6.17E-08	1.22E-07	2.31E-08	9.00E-09	2.65E-08	5.85E-08	1.60E-03	3.54E-09		
T7 Single	6.19E-08	9.71E-07	3.65E-07	1.46E-08	4.74E-09	3.60E-08	6.17E-08	1.02E-07	4.54E-09	9.00E-09	2.65E-08	4.00E-08	1.53E-03	2.87E-09		
T7 Single Construction	5.85E-08	7.98E-07	3.44E-07	1.43E-08	4.55E-09	3.60E-08	6.17E-08	1.02E-07	4.36E-09	9.00E-09	2.65E-08	3.98E-08	1.50E-03	2.72E-09		
T7 SWCV	3.37E-08	2.93E-06	3.97E-06	9.65E-09	4.68E-09	3.60E-08	6.17E-08	1.02E-07	4.48E-09	9.00E-09	2.65E-08	3.99E-08	2.93E-03	1.15E-06		
T7 Tractor	7.42E-08	1.03E-06	4.38E-07	1.38E-08	6.05E-09	3.60E-08	6.17E-08	1.04E-07	5.79E-09	9.00E-09	2.65E-08	4.13E-08	1.45E-03	3.45E-09		
T7 Tractor Construction	7.51E-08	1.05E-06	4.43E-07	1.42E-08	6.21E-09	3.60E-08	6.17E-08	1.04E-07	5.94E-09	9.00E-09	2.65E-08	4.14E-08	1.49E-03	3.49E-09		
T7 Utility	4.52E-08	5.20E-07	2.67E-07	1.43E-08	3.07E-09	3.60E-08	6.17E-08	1.01E-07	2.94E-09	9.00E-09	2.65E-08	3.84E-08	1.50E-03	2.10E-09		
T7IS	2.43E-07	2.60E-06	2.89E-05	1.61E-08	8.92E-10	2.00E-08	6.17E-08	8.26E-08	8.20E-10	5.00E-09	2.65E-08	3.23E-08	1.56E-03	9.83E-08		
UBUS	7.16E-08	3.49E-06	1.15E-06	1.18E-08	4.27E-08	1.20E-08	5.36E-07	5.91E-07	4.09E-08	3.00E-09	2.30E-07	2.74E-07	1.38E-03	5.37E-08		

Scenario 1

Based on EMFAC2014

Emission year	Daily							
2030	3,220,310	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.01%	3.04E-02	5.08E-01	1.60E-01	1.01E-02	1.37E-01	5.84E-02
LDA	62.15%	72.11%	2.04E+01	1.16E+02	1.71E+03	8.17E+00	2.34E+02	9.55E+01
LDT1	3.41%	3.95%	2.17E+00	1.19E+01	1.53E+02	5.76E-01	1.29E+01	5.30E+00
LDT2	18.01%	20.90%	9.24E+00	5.33E+01	7.31E+02	3.45E+00	6.80E+01	2.79E+01
LHD1	1.19%	0.18%	4.32E-01	6.38E+00	4.01E+00	6.55E-02	1.21E+00	5.43E-01
LHD2	0.51%	0.08%	1.45E-01	1.00E+00	8.83E-01	2.91E-02	5.90E-01	2.61E-01
MCY	0.51%	0.59%	7.72E+01	4.28E+01	6.67E+02	7.75E-02	7.43E-01	3.27E-01
MDV	10.12%	1.56%	1.20E+00	6.90E+00	7.45E+01	3.49E-01	5.09E+00	2.09E+00
MH	0.07%	0.01%	1.51E-02	4.72E-01	2.88E-01	7.29E-03	1.09E-01	4.84E-02
Motor Coach	0.04%	0.01%	2.73E-02	3.23E-01	1.61E-01	6.26E-03	6.07E-02	2.63E-02
OBUS	0.10%	0.02%	1.01E-02	1.04E-01	2.82E-01	1.13E-02	1.54E-01	6.43E-02
SBUS	0.06%	0.01%	2.28E-02	7.58E-01	2.43E-01	5.91E-03	5.38E-01	2.32E-01
T6 Ag	0.00%	0.00%	1.87E-03	4.38E-02	9.82E-03	5.74E-04	7.60E-03	3.25E-03
T6 CAIRP Heavy	0.00%	0.00%	6.27E-04	8.41E-03	3.30E-03	2.33E-04	3.29E-03	1.39E-03
T6 CAIRP Small	0.01%	0.00%	1.81E-03	2.25E-02	9.54E-03	7.32E-04	1.01E-02	4.26E-03
T6 Instate Construction Heavy	0.04%	0.01%	1.32E-02	2.33E-01	6.93E-02	4.45E-03	6.03E-02	2.57E-02
T6 Instate Construction Small	0.09%	0.01%	2.79E-02	3.95E-01	1.47E-01	1.03E-02	1.41E-01	5.98E-02
T6 Instate Heavy	0.27%	0.04%	9.68E-02	1.81E+00	5.09E-01	3.10E-02	4.32E-01	1.84E-01
T6 Instate Small	0.69%	0.11%	2.19E-01	3.17E+00	1.15E+00	7.97E-02	1.09E+00	4.62E-01
T6 OOS Heavy	0.00%	0.00%	3.60E-04	4.85E-03	1.90E-03	1.33E-04	1.88E-03	7.99E-04
T6 OOS Small	0.00%	0.00%	1.04E-03	1.29E-02	5.47E-03	4.19E-04	5.78E-03	2.44E-03
T6 Public	0.03%	0.00%	8.67E-03	3.21E-01	4.04E-02	3.36E-03	4.66E-02	2.02E-02
T6 Utility	0.00%	0.00%	1.14E-03	1.39E-02	6.01E-03	5.56E-04	7.58E-03	3.19E-03
T6TS	0.18%	0.03%	2.27E-02	2.26E-01	6.82E-01	2.03E-02	2.77E-01	1.15E-01
T7 Ag	0.00%	0.00%	3.75E-03	8.81E-02	2.22E-02	6.86E-04	4.64E-03	1.87E-03
T7 CAIRP	0.36%	0.06%	2.78E-01	3.36E+00	1.64E+00	5.42E-02	4.11E-01	1.62E-01
T7 CAIRP Construction	0.03%	0.00%	2.07E-02	2.40E-01	1.22E-01	4.10E-03	3.04E-02	1.20E-02
T7 NNOOS	0.45%	0.07%	2.97E-01	3.06E+00	1.76E+00	6.67E-02	5.05E-01	1.97E-01
T7 NOOS	0.14%	0.02%	1.10E-01	1.34E+00	6.51E-01	2.14E-02	1.62E-01	6.42E-02
T7 Other Port	0.07%	0.01%	5.41E-02	6.06E-01	3.19E-01	1.04E-02	7.72E-02	3.06E-02
T7 POAK	0.21%	0.03%	1.71E-01	1.94E+00	1.01E+00	3.25E-02	2.42E-01	9.62E-02
T7 Public	0.02%	0.00%	1.61E-02	1.09E+00	7.38E-02	3.23E-03	2.58E-02	1.24E-02
T7 Single	0.13%	0.02%	8.97E-02	1.41E+00	5.29E-01	2.12E-02	1.49E-01	5.80E-02
T7 Single Construction	0.07%	0.01%	4.44E-02	6.06E-01	2.62E-01	1.09E-02	7.77E-02	3.02E-02
T7 SWCV	0.04%	0.01%	1.41E-02	1.23E+00	1.66E+00	4.04E-03	4.29E-02	1.67E-02
T7 Tractor	0.68%	0.10%	5.52E-01	7.68E+00	3.26E+00	1.03E-01	7.72E-01	3.07E-01
T7 Tractor Construction	0.05%	0.01%	4.25E-02	5.97E-01	2.51E-01	8.06E-03	5.89E-02	2.34E-02
T7 Utility	0.00%	0.00%	1.40E-03	1.61E-02	8.27E-03	4.44E-04	3.12E-03	1.19E-03
T7IS	0.02%	0.00%	6.31E-02	6.75E-01	7.49E+00	4.17E-03	2.14E-02	8.37E-03
UBUS	0.15%	0.02%	1.15E-01	5.61E+00	1.85E+00	1.89E-02	9.49E-01	4.40E-01
TOTAL	100%	100%	113	276	3,365	13	329	135
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 1

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,117,447,570	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.01%	1.67E+02	2.22E-04	7.99E-02	0.00	168
LDA	62.15%	72.11%	1.28E+05	1.28E+00	1.82E+01	0.76	128,710
LDT1	3.41%	3.95%	9.05E+03	1.38E-01	1.87E+00	0.08	9,074
LDT2	18.01%	20.90%	5.42E+04	5.86E-01	8.39E+00	0.35	54,355
LHD1	1.19%	0.18%	1.06E+03	6.87E-03	1.00E+00	0.04	1,068
LHD2	0.51%	0.08%	4.72E+02	1.44E-03	1.58E-01	0.01	474
MCY	0.51%	0.59%	1.01E+03	2.61E+00	6.74E+00	0.28	1,155
MDV	10.12%	1.56%	5.50E+03	7.51E-02	1.09E+00	0.05	5,513
MH	0.07%	0.01%	1.16E+02	5.88E-04	7.43E-02	0.00	117
Motor Coach	0.04%	0.01%	1.03E+02	1.99E-04	5.09E-02	0.00	104
OBUS	0.10%	0.02%	1.78E+02	6.44E-04	1.64E-02	0.00	178
SBUS	0.06%	0.01%	9.64E+01	4.63E-04	1.19E-01	0.00	98
T6 Ag	0.00%	0.00%	9.46E+00	1.36E-05	6.89E-03	0.00	10
T6 CAIRP Heavy	0.00%	0.00%	3.84E+00	4.59E-06	1.32E-03	0.00	4
T6 CAIRP Small	0.01%	0.00%	1.21E+01	1.33E-05	3.53E-03	0.00	12
T6 Instate Construction Heavy	0.04%	0.01%	7.34E+01	9.65E-05	3.67E-02	0.00	74
T6 Instate Construction Small	0.09%	0.01%	1.70E+02	2.04E-04	6.21E-02	0.00	170
T6 Instate Heavy	0.27%	0.04%	5.12E+02	7.08E-04	2.85E-01	0.01	515
T6 Instate Small	0.69%	0.11%	1.31E+03	1.60E-03	4.99E-01	0.02	1,321
T6 OOS Heavy	0.00%	0.00%	2.20E+00	2.63E-06	7.64E-04	0.00	2
T6 OOS Small	0.00%	0.00%	6.92E+00	7.59E-06	2.03E-03	0.00	7
T6 Public	0.03%	0.00%	5.55E+01	6.34E-05	5.05E-02	0.00	56
T6 Utility	0.00%	0.00%	9.18E+00	8.34E-06	2.19E-03	0.00	9
T6TS	0.18%	0.03%	3.20E+02	1.44E-03	3.56E-02	0.00	320
T7 Ag	0.00%	0.00%	1.13E+01	2.74E-05	1.39E-02	0.00	12
T7 CAIRP	0.36%	0.06%	8.94E+02	2.04E-03	5.29E-01	0.02	901
T7 CAIRP Construction	0.03%	0.00%	6.76E+01	1.52E-04	3.78E-02	0.00	68
T7 NNOOS	0.45%	0.07%	1.10E+03	2.17E-03	4.82E-01	0.02	1,106
T7 NOOS	0.14%	0.02%	3.53E+02	8.05E-04	2.10E-01	0.01	356
T7 Other Port	0.07%	0.01%	1.71E+02	3.95E-04	9.54E-02	0.00	172
T7 POAK	0.21%	0.03%	5.36E+02	1.25E-03	3.05E-01	0.01	540
T7 Public	0.02%	0.00%	5.34E+01	1.18E-04	1.71E-01	0.01	56
T7 Single	0.13%	0.02%	3.49E+02	6.56E-04	2.22E-01	0.01	352
T7 Single Construction	0.07%	0.01%	1.79E+02	3.25E-04	9.54E-02	0.00	180
T7 SWCV	0.04%	0.01%	1.93E+02	7.56E-02	1.93E-01	0.01	197
T7 Tractor	0.68%	0.10%	1.69E+03	4.03E-03	1.21E+00	0.05	1,709
T7 Tractor Construction	0.05%	0.01%	1.33E+02	3.11E-04	9.39E-02	0.00	134
T7 Utility	0.00%	0.00%	7.32E+00	1.02E-05	2.54E-03	0.00	7
T7IS	0.02%	0.00%	6.39E+01	4.01E-03	1.06E-01	0.00	65
UBUS	0.15%	0.02%	3.48E+02	1.36E-02	8.82E-01	0.04	360
TOTAL	100%	100%	209,070	5	43	2	209,731

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Scenario 2

Based on EMFAC2014

Emission year	Daily							
2030	3,169,290	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.23E-02	8.75E-01	2.76E-01	1.74E-02	2.36E-01	1.01E-01
LDA	62.15%	70.75%	1.97E+01	1.12E+02	1.65E+03	7.89E+00	2.26E+02	9.22E+01
LDT1	3.41%	3.88%	2.10E+00	1.15E+01	1.47E+02	5.56E-01	1.25E+01	5.12E+00
LDT2	18.01%	20.50%	8.93E+00	5.15E+01	7.06E+02	3.33E+00	6.57E+01	2.69E+01
LHD1	1.19%	0.32%	7.44E-01	1.10E+01	6.91E+00	1.13E-01	2.09E+00	9.35E-01
LHD2	0.51%	0.14%	2.49E-01	1.72E+00	1.52E+00	5.02E-02	1.02E+00	4.50E-01
MCY	0.51%	0.58%	7.45E+01	4.13E+01	6.44E+02	7.49E-02	7.17E-01	3.16E-01
MDV	10.12%	2.73%	2.06E+00	1.19E+01	1.28E+02	6.02E-01	8.76E+00	3.59E+00
MH	0.07%	0.02%	2.61E-02	8.13E-01	4.95E-01	1.26E-02	1.87E-01	8.33E-02
Motor Coach	0.04%	0.01%	4.70E-02	5.57E-01	2.77E-01	1.08E-02	1.05E-01	4.52E-02
OBUS	0.10%	0.03%	1.74E-02	1.79E-01	4.86E-01	1.94E-02	2.66E-01	1.11E-01
SBUS	0.06%	0.02%	3.93E-02	1.31E+00	4.19E-01	1.02E-02	9.27E-01	4.00E-01
T6 Ag	0.00%	0.00%	3.21E-03	7.54E-02	1.69E-02	9.88E-04	1.31E-02	5.60E-03
T6 CAIRP Heavy	0.00%	0.00%	1.08E-03	1.45E-02	5.69E-03	4.01E-04	5.66E-03	2.40E-03
T6 CAIRP Small	0.01%	0.00%	3.12E-03	3.87E-02	1.64E-02	1.26E-03	1.74E-02	7.34E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.27E-02	4.02E-01	1.19E-01	7.66E-03	1.04E-01	4.42E-02
T6 Instate Construction Small	0.09%	0.02%	4.80E-02	6.80E-01	2.52E-01	1.77E-02	2.43E-01	1.03E-01
T6 Instate Heavy	0.27%	0.07%	1.67E-01	3.12E+00	8.77E-01	5.34E-02	7.43E-01	3.17E-01
T6 Instate Small	0.69%	0.18%	3.77E-01	5.45E+00	1.99E+00	1.37E-01	1.87E+00	7.96E-01
T6 OOS Heavy	0.00%	0.00%	6.20E-04	8.36E-03	3.27E-03	2.30E-04	3.25E-03	1.38E-03
T6 OOS Small	0.00%	0.00%	1.79E-03	2.22E-02	9.42E-03	7.22E-04	9.95E-03	4.21E-03
T6 Public	0.03%	0.01%	1.49E-02	5.52E-01	6.96E-02	5.79E-03	8.02E-02	3.48E-02
T6 Utility	0.00%	0.00%	1.97E-03	2.39E-02	1.03E-02	9.58E-04	1.31E-02	5.50E-03
T6TS	0.18%	0.05%	3.90E-02	3.90E-01	1.18E+00	3.49E-02	4.77E-01	1.99E-01
T7 Ag	0.00%	0.00%	6.46E-03	1.52E-01	3.82E-02	1.18E-03	8.00E-03	3.22E-03
T7 CAIRP	0.36%	0.10%	4.79E-01	5.78E+00	2.83E+00	9.33E-02	7.08E-01	2.80E-01
T7 CAIRP Construction	0.03%	0.01%	3.57E-02	4.13E-01	2.11E-01	7.05E-03	5.23E-02	2.07E-02
T7 NNOOS	0.45%	0.12%	5.12E-01	5.28E+00	3.02E+00	1.15E-01	8.69E-01	3.39E-01
T7 NOOS	0.14%	0.04%	1.90E-01	2.30E+00	1.12E+00	3.69E-02	2.80E-01	1.11E-01
T7 Other Port	0.07%	0.02%	9.31E-02	1.04E+00	5.50E-01	1.78E-02	1.33E-01	5.28E-02
T7 POAK	0.21%	0.06%	2.95E-01	3.34E+00	1.74E+00	5.60E-02	4.17E-01	1.66E-01
T7 Public	0.02%	0.01%	2.78E-02	1.87E+00	1.27E-01	5.57E-03	4.45E-02	2.14E-02
T7 Single	0.13%	0.04%	1.54E-01	2.42E+00	9.12E-01	3.65E-02	2.56E-01	9.98E-02
T7 Single Construction	0.07%	0.02%	7.65E-02	1.04E+00	4.51E-01	1.87E-02	1.34E-01	5.21E-02
T7 SWCV	0.04%	0.01%	2.43E-02	2.11E+00	2.86E+00	6.95E-03	7.38E-02	2.88E-02
T7 Tractor	0.68%	0.18%	9.50E-01	1.32E+01	5.61E+00	1.77E-01	1.33E+00	5.28E-01
T7 Tractor Construction	0.05%	0.01%	7.32E-02	1.03E+00	4.32E-01	1.39E-02	1.01E-01	4.04E-02
T7 Utility	0.00%	0.00%	2.41E-03	2.78E-02	1.42E-02	7.64E-04	5.38E-03	2.05E-03
T7IS	0.02%	0.01%	1.09E-01	1.16E+00	1.29E+01	7.18E-03	3.69E-02	1.44E-02
UBUS	0.15%	0.04%	1.98E-01	9.65E+00	3.19E+00	3.26E-02	1.63E+00	7.57E-01
TOTAL	100%	100%	112	306	3,328	14	328	134
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 2

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,099,743,630	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.88E+02	3.83E-04	1.38E-01	0.01	289
LDA	62.15%	70.75%	1.24E+05	1.23E+00	1.76E+01	0.73	124,284
LDT1	3.41%	3.88%	8.74E+03	1.33E-01	1.81E+00	0.08	8,762
LDT2	18.01%	20.50%	5.24E+04	5.66E-01	8.11E+00	0.34	52,485
LHD1	1.19%	0.32%	1.82E+03	1.18E-02	1.73E+00	0.07	1,840
LHD2	0.51%	0.14%	8.13E+02	2.48E-03	2.71E-01	0.01	817
MCY	0.51%	0.58%	9.78E+02	2.52E+00	6.51E+00	0.27	1,115
MDV	10.12%	2.73%	9.47E+03	1.29E-01	1.87E+00	0.08	9,495
MH	0.07%	0.02%	2.00E+02	1.01E-03	1.28E-01	0.01	201
Motor Coach	0.04%	0.01%	1.78E+02	3.43E-04	8.76E-02	0.00	179
OBUS	0.10%	0.03%	3.06E+02	1.11E-03	2.82E-02	0.00	307
SBUS	0.06%	0.02%	1.66E+02	7.97E-04	2.06E-01	0.01	169
T6 Ag	0.00%	0.00%	1.63E+01	2.35E-05	1.19E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	6.62E+00	7.90E-06	2.28E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.08E+01	2.28E-05	6.09E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.26E+02	1.66E-04	6.33E-02	0.00	127
T6 Instate Construction Small	0.09%	0.02%	2.92E+02	3.51E-04	1.07E-01	0.00	294
T6 Instate Heavy	0.27%	0.07%	8.81E+02	1.22E-03	4.91E-01	0.02	887
T6 Instate Small	0.69%	0.18%	2.26E+03	2.76E-03	8.59E-01	0.04	2,275
T6 OOS Heavy	0.00%	0.00%	3.79E+00	4.54E-06	1.32E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.19E+01	1.31E-05	3.49E-03	0.00	12
T6 Public	0.03%	0.01%	9.55E+01	1.09E-04	8.69E-02	0.00	97
T6 Utility	0.00%	0.00%	1.58E+01	1.44E-05	3.77E-03	0.00	16
T6TS	0.18%	0.05%	5.50E+02	2.48E-03	6.14E-02	0.00	551
T7 Ag	0.00%	0.00%	1.95E+01	4.72E-05	2.39E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.54E+03	3.51E-03	9.10E-01	0.04	1,551
T7 CAIRP Construction	0.03%	0.01%	1.16E+02	2.61E-04	6.50E-02	0.00	117
T7 NNOOS	0.45%	0.12%	1.89E+03	3.74E-03	8.31E-01	0.03	1,905
T7 NOOS	0.14%	0.04%	6.08E+02	1.39E-03	3.62E-01	0.02	613
T7 Other Port	0.07%	0.02%	2.94E+02	6.81E-04	1.64E-01	0.01	296
T7 POAK	0.21%	0.06%	9.24E+02	2.15E-03	5.26E-01	0.02	931
T7 Public	0.02%	0.01%	9.19E+01	2.03E-04	2.95E-01	0.01	96
T7 Single	0.13%	0.04%	6.01E+02	1.13E-03	3.81E-01	0.02	606
T7 Single Construction	0.07%	0.02%	3.09E+02	5.59E-04	1.64E-01	0.01	311
T7 SWCV	0.04%	0.01%	3.32E+02	1.30E-01	3.33E-01	0.01	339
T7 Tractor	0.68%	0.18%	2.92E+03	6.94E-03	2.08E+00	0.09	2,943
T7 Tractor Construction	0.05%	0.01%	2.29E+02	5.35E-04	1.62E-01	0.01	231
T7 Utility	0.00%	0.00%	1.26E+01	1.76E-05	4.37E-03	0.00	13
T7IS	0.02%	0.01%	1.10E+02	6.91E-03	1.83E-01	0.01	113
UBUS	0.15%	0.04%	5.99E+02	2.34E-02	1.52E+00	0.06	619
TOTAL	100%	100%	214,232	5	48	2	214,954

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Scenario 3

Based on EMFAC2014

Emission year	Daily							
2030	3,233,930	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.42E-02	9.05E-01	2.85E-01	1.80E-02	2.44E-01	1.04E-01
LDA	62.15%	70.70%	2.00E+01	1.14E+02	1.68E+03	8.04E+00	2.31E+02	9.40E+01
LDT1	3.41%	3.87%	2.14E+00	1.17E+01	1.50E+02	5.67E-01	1.27E+01	5.22E+00
LDT2	18.01%	20.49%	9.10E+00	5.25E+01	7.20E+02	3.40E+00	6.70E+01	2.74E+01
LHD1	1.19%	0.32%	7.70E-01	1.14E+01	7.15E+00	1.17E-01	2.16E+00	9.67E-01
LHD2	0.51%	0.14%	2.58E-01	1.78E+00	1.57E+00	5.19E-02	1.05E+00	4.66E-01
MCY	0.51%	0.58%	7.60E+01	4.22E+01	6.57E+02	7.64E-02	7.31E-01	3.22E-01
MDV	10.12%	2.77%	2.13E+00	1.23E+01	1.33E+02	6.23E-01	9.06E+00	3.72E+00
MH	0.07%	0.02%	2.70E-02	8.41E-01	5.12E-01	1.30E-02	1.93E-01	8.62E-02
Motor Coach	0.04%	0.01%	4.86E-02	5.76E-01	2.87E-01	1.11E-02	1.08E-01	4.68E-02
OBUS	0.10%	0.03%	1.80E-02	1.85E-01	5.03E-01	2.01E-02	2.75E-01	1.14E-01
SBUS	0.06%	0.02%	4.07E-02	1.35E+00	4.33E-01	1.05E-02	9.59E-01	4.13E-01
T6 Ag	0.00%	0.00%	3.32E-03	7.80E-02	1.75E-02	1.02E-03	1.35E-02	5.79E-03
T6 CAIRP Heavy	0.00%	0.00%	1.12E-03	1.50E-02	5.88E-03	4.15E-04	5.86E-03	2.48E-03
T6 CAIRP Small	0.01%	0.00%	3.23E-03	4.00E-02	1.70E-02	1.30E-03	1.80E-02	7.60E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.35E-02	4.16E-01	1.24E-01	7.93E-03	1.07E-01	4.58E-02
T6 Instate Construction Small	0.09%	0.02%	4.97E-02	7.03E-01	2.61E-01	1.83E-02	2.51E-01	1.07E-01
T6 Instate Heavy	0.27%	0.07%	1.72E-01	3.23E+00	9.08E-01	5.52E-02	7.69E-01	3.28E-01
T6 Instate Small	0.69%	0.19%	3.90E-01	5.64E+00	2.05E+00	1.42E-01	1.94E+00	8.23E-01
T6 OOS Heavy	0.00%	0.00%	6.42E-04	8.65E-03	3.38E-03	2.38E-04	3.36E-03	1.42E-03
T6 OOS Small	0.00%	0.00%	1.85E-03	2.29E-02	9.74E-03	7.47E-04	1.03E-02	4.35E-03
T6 Public	0.03%	0.01%	1.54E-02	5.71E-01	7.20E-02	5.99E-03	8.30E-02	3.60E-02
T6 Utility	0.00%	0.00%	2.03E-03	2.48E-02	1.07E-02	9.92E-04	1.35E-02	5.69E-03
T6TS	0.18%	0.05%	4.04E-02	4.03E-01	1.22E+00	3.61E-02	4.94E-01	2.06E-01
T7 Ag	0.00%	0.00%	6.69E-03	1.57E-01	3.95E-02	1.22E-03	8.27E-03	3.33E-03
T7 CAIRP	0.36%	0.10%	4.96E-01	5.98E+00	2.93E+00	9.65E-02	7.32E-01	2.89E-01
T7 CAIRP Construction	0.03%	0.01%	3.70E-02	4.27E-01	2.18E-01	7.30E-03	5.41E-02	2.14E-02
T7 NNOOS	0.45%	0.12%	5.30E-01	5.46E+00	3.13E+00	1.19E-01	8.99E-01	3.51E-01
T7 NOOS	0.14%	0.04%	1.96E-01	2.38E+00	1.16E+00	3.81E-02	2.89E-01	1.14E-01
T7 Other Port	0.07%	0.02%	9.63E-02	1.08E+00	5.69E-01	1.85E-02	1.38E-01	5.46E-02
T7 POAK	0.21%	0.06%	3.05E-01	3.46E+00	1.80E+00	5.79E-02	4.32E-01	1.71E-01
T7 Public	0.02%	0.01%	2.87E-02	1.94E+00	1.31E-01	5.76E-03	4.60E-02	2.21E-02
T7 Single	0.13%	0.04%	1.60E-01	2.51E+00	9.43E-01	3.77E-02	2.65E-01	1.03E-01
T7 Single Construction	0.07%	0.02%	7.92E-02	1.08E+00	4.66E-01	1.94E-02	1.38E-01	5.39E-02
T7 SWCV	0.04%	0.01%	2.51E-02	2.19E+00	2.96E+00	7.19E-03	7.64E-02	2.98E-02
T7 Tractor	0.68%	0.19%	9.83E-01	1.37E+01	5.80E+00	1.83E-01	1.37E+00	5.46E-01
T7 Tractor Construction	0.05%	0.01%	7.58E-02	1.06E+00	4.47E-01	1.44E-02	1.05E-01	4.18E-02
T7 Utility	0.00%	0.00%	2.50E-03	2.87E-02	1.47E-02	7.91E-04	5.56E-03	2.12E-03
T7IS	0.02%	0.01%	1.12E-01	1.20E+00	1.34E+01	7.43E-03	3.82E-02	1.49E-02
UBUS	0.15%	0.04%	2.05E-01	9.99E+00	3.30E+00	3.37E-02	1.69E+00	7.83E-01
TOTAL	100%	100%	115	313	3,397	14	335	137
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 3

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,122,173,710	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.98E+02	3.96E-04	1.42E-01	0.01	299
LDA	62.15%	70.70%	1.26E+05	1.26E+00	1.79E+01	0.74	126,740
LDT1	3.41%	3.87%	8.91E+03	1.36E-01	1.84E+00	0.08	8,935
LDT2	18.01%	20.49%	5.34E+04	5.77E-01	8.27E+00	0.34	53,522
LHD1	1.19%	0.32%	1.88E+03	1.22E-02	1.79E+00	0.07	1,903
LHD2	0.51%	0.14%	8.41E+02	2.57E-03	2.81E-01	0.01	845
MCY	0.51%	0.58%	9.98E+02	2.57E+00	6.63E+00	0.28	1,137
MDV	10.12%	2.77%	9.80E+03	1.34E-01	1.93E+00	0.08	9,823
MH	0.07%	0.02%	2.06E+02	1.05E-03	1.32E-01	0.01	208
Motor Coach	0.04%	0.01%	1.84E+02	3.55E-04	9.06E-02	0.00	185
OBUS	0.10%	0.03%	3.17E+02	1.15E-03	2.92E-02	0.00	317
SBUS	0.06%	0.02%	1.72E+02	8.24E-04	2.13E-01	0.01	175
T6 Ag	0.00%	0.00%	1.69E+01	2.43E-05	1.23E-02	0.00	17
T6 CAIRP Heavy	0.00%	0.00%	6.85E+00	8.17E-06	2.36E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.15E+01	2.36E-05	6.30E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.31E+02	1.72E-04	6.55E-02	0.00	132
T6 Instate Construction Small	0.09%	0.02%	3.02E+02	3.63E-04	1.11E-01	0.00	304
T6 Instate Heavy	0.27%	0.07%	9.11E+02	1.26E-03	5.08E-01	0.02	918
T6 Instate Small	0.69%	0.19%	2.34E+03	2.85E-03	8.88E-01	0.04	2,354
T6 OOS Heavy	0.00%	0.00%	3.92E+00	4.69E-06	1.36E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.23E+01	1.35E-05	3.61E-03	0.00	12
T6 Public	0.03%	0.01%	9.88E+01	1.13E-04	8.99E-02	0.00	100
T6 Utility	0.00%	0.00%	1.64E+01	1.49E-05	3.90E-03	0.00	16
T6TS	0.18%	0.05%	5.69E+02	2.57E-03	6.35E-02	0.00	570
T7 Ag	0.00%	0.00%	2.02E+01	4.89E-05	2.47E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.59E+03	3.63E-03	9.42E-01	0.04	1,605
T7 CAIRP Construction	0.03%	0.01%	1.20E+02	2.70E-04	6.73E-02	0.00	121
T7 NNOOS	0.45%	0.12%	1.96E+03	3.87E-03	8.59E-01	0.04	1,971
T7 NOOS	0.14%	0.04%	6.29E+02	1.44E-03	3.75E-01	0.02	634
T7 Other Port	0.07%	0.02%	3.04E+02	7.04E-04	1.70E-01	0.01	307
T7 POAK	0.21%	0.06%	9.56E+02	2.23E-03	5.44E-01	0.02	963
T7 Public	0.02%	0.01%	9.51E+01	2.10E-04	3.05E-01	0.01	99
T7 Single	0.13%	0.04%	6.22E+02	1.17E-03	3.95E-01	0.02	627
T7 Single Construction	0.07%	0.02%	3.19E+02	5.79E-04	1.70E-01	0.01	322
T7 SWCV	0.04%	0.01%	3.43E+02	1.35E-01	3.44E-01	0.01	351
T7 Tractor	0.68%	0.19%	3.02E+03	7.18E-03	2.15E+00	0.09	3,045
T7 Tractor Construction	0.05%	0.01%	2.37E+02	5.54E-04	1.67E-01	0.01	239
T7 Utility	0.00%	0.00%	1.30E+01	1.82E-05	4.52E-03	0.00	13
T7IS	0.02%	0.01%	1.14E+02	7.15E-03	1.89E-01	0.01	116
UBUS	0.15%	0.04%	6.20E+02	2.42E-02	1.57E+00	0.07	641
TOTAL	100%	100%	218,883	5	49	2	219,621

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Scenario 4

Based on EMFAC2014

Emission year	Daily							
2030	3,194,250	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.58E-02	9.33E-01	2.94E-01	1.86E-02	2.52E-01	1.07E-01
LDA	62.15%	70.56%	1.98E+01	1.12E+02	1.66E+03	7.93E+00	2.27E+02	9.27E+01
LDT1	3.41%	3.87%	2.11E+00	1.15E+01	1.48E+02	5.59E-01	1.25E+01	5.14E+00
LDT2	18.01%	20.45%	8.97E+00	5.18E+01	7.10E+02	3.35E+00	6.60E+01	2.70E+01
LHD1	1.19%	0.34%	7.93E-01	1.17E+01	7.37E+00	1.20E-01	2.23E+00	9.97E-01
LHD2	0.51%	0.14%	2.66E-01	1.84E+00	1.62E+00	5.35E-02	1.08E+00	4.80E-01
MCY	0.51%	0.58%	7.49E+01	4.16E+01	6.48E+02	7.53E-02	7.21E-01	3.18E-01
MDV	10.12%	2.89%	2.19E+00	1.27E+01	1.37E+02	6.42E-01	9.34E+00	3.83E+00
MH	0.07%	0.02%	2.78E-02	8.67E-01	5.28E-01	1.34E-02	1.99E-01	8.88E-02
Motor Coach	0.04%	0.01%	5.01E-02	5.93E-01	2.96E-01	1.15E-02	1.11E-01	4.82E-02
OBUS	0.10%	0.03%	1.86E-02	1.91E-01	5.18E-01	2.07E-02	2.83E-01	1.18E-01
SBUS	0.06%	0.02%	4.20E-02	1.39E+00	4.46E-01	1.09E-02	9.89E-01	4.26E-01
T6 Ag	0.00%	0.00%	3.42E-03	8.04E-02	1.80E-02	1.05E-03	1.40E-02	5.97E-03
T6 CAIRP Heavy	0.00%	0.00%	1.15E-03	1.54E-02	6.06E-03	4.28E-04	6.04E-03	2.56E-03
T6 CAIRP Small	0.01%	0.00%	3.33E-03	4.12E-02	1.75E-02	1.34E-03	1.85E-02	7.83E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.42E-02	4.29E-01	1.27E-01	8.17E-03	1.11E-01	4.72E-02
T6 Instate Construction Small	0.09%	0.03%	5.12E-02	7.25E-01	2.69E-01	1.89E-02	2.59E-01	1.10E-01
T6 Instate Heavy	0.27%	0.08%	1.78E-01	3.33E+00	9.35E-01	5.69E-02	7.93E-01	3.38E-01
T6 Instate Small	0.69%	0.20%	4.02E-01	5.82E+00	2.12E+00	1.46E-01	2.00E+00	8.49E-01
T6 OOS Heavy	0.00%	0.00%	6.62E-04	8.91E-03	3.48E-03	2.45E-04	3.46E-03	1.47E-03
T6 OOS Small	0.00%	0.00%	1.91E-03	2.36E-02	1.00E-02	7.70E-04	1.06E-02	4.49E-03
T6 Public	0.03%	0.01%	1.59E-02	5.89E-01	7.43E-02	6.17E-03	8.55E-02	3.71E-02
T6 Utility	0.00%	0.00%	2.10E-03	2.55E-02	1.10E-02	1.02E-03	1.39E-02	5.86E-03
T6TS	0.18%	0.05%	4.16E-02	4.16E-01	1.25E+00	3.72E-02	5.09E-01	2.12E-01
T7 Ag	0.00%	0.00%	6.89E-03	1.62E-01	4.07E-02	1.26E-03	8.53E-03	3.43E-03
T7 CAIRP	0.36%	0.10%	5.11E-01	6.17E+00	3.02E+00	9.95E-02	7.55E-01	2.98E-01
T7 CAIRP Construction	0.03%	0.01%	3.81E-02	4.40E-01	2.25E-01	7.52E-03	5.58E-02	2.21E-02
T7 NNOOS	0.45%	0.13%	5.46E-01	5.63E+00	3.22E+00	1.22E-01	9.27E-01	3.61E-01
T7 NOOS	0.14%	0.04%	2.02E-01	2.45E+00	1.19E+00	3.93E-02	2.98E-01	1.18E-01
T7 Other Port	0.07%	0.02%	9.93E-02	1.11E+00	5.86E-01	1.90E-02	1.42E-01	5.63E-02
T7 POAK	0.21%	0.06%	3.14E-01	3.56E+00	1.85E+00	5.97E-02	4.45E-01	1.77E-01
T7 Public	0.02%	0.01%	2.96E-02	2.00E+00	1.35E-01	5.94E-03	4.74E-02	2.28E-02
T7 Single	0.13%	0.04%	1.65E-01	2.58E+00	9.72E-01	3.89E-02	2.73E-01	1.06E-01
T7 Single Construction	0.07%	0.02%	8.16E-02	1.11E+00	4.80E-01	1.99E-02	1.43E-01	5.55E-02
T7 SWCV	0.04%	0.01%	2.59E-02	2.25E+00	3.05E+00	7.41E-03	7.87E-02	3.07E-02
T7 Tractor	0.68%	0.19%	1.01E+00	1.41E+01	5.98E+00	1.88E-01	1.42E+00	5.63E-01
T7 Tractor Construction	0.05%	0.01%	7.81E-02	1.10E+00	4.60E-01	1.48E-02	1.08E-01	4.31E-02
T7 Utility	0.00%	0.00%	2.57E-03	2.96E-02	1.52E-02	8.15E-04	5.73E-03	2.18E-03
T7IS	0.02%	0.01%	1.16E-01	1.24E+00	1.38E+01	7.66E-03	3.94E-02	1.54E-02
UBUS	0.15%	0.04%	2.11E-01	1.03E+01	3.40E+00	3.47E-02	1.74E+00	8.07E-01
TOTAL	100%	100%	113	313	3,357	14	331	136
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

Scenario 4

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,108,404,750	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	3.07E+02	4.08E-04	1.47E-01	0.01	309
LDA	62.15%	70.56%	1.25E+05	1.24E+00	1.76E+01	0.73	124,938
LDT1	3.41%	3.87%	8.78E+03	1.34E-01	1.82E+00	0.08	8,808
LDT2	18.01%	20.45%	5.26E+04	5.69E-01	8.15E+00	0.34	52,761
LHD1	1.19%	0.34%	1.94E+03	1.26E-02	1.85E+00	0.08	1,961
LHD2	0.51%	0.14%	8.67E+02	2.65E-03	2.89E-01	0.01	871
MCY	0.51%	0.58%	9.84E+02	2.53E+00	6.54E+00	0.27	1,121
MDV	10.12%	2.89%	1.01E+04	1.38E-01	1.99E+00	0.08	10,124
MH	0.07%	0.02%	2.13E+02	1.08E-03	1.36E-01	0.01	215
Motor Coach	0.04%	0.01%	1.90E+02	3.66E-04	9.34E-02	0.00	191
OBUS	0.10%	0.03%	3.27E+02	1.18E-03	3.00E-02	0.00	327
SBUS	0.06%	0.02%	1.77E+02	8.49E-04	2.19E-01	0.01	180
T6 Ag	0.00%	0.00%	1.74E+01	2.50E-05	1.26E-02	0.00	18
T6 CAIRP Heavy	0.00%	0.00%	7.06E+00	8.42E-06	2.43E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.22E+01	2.43E-05	6.49E-03	0.00	22
T6 Instate Construction Heavy	0.04%	0.01%	1.35E+02	1.77E-04	6.75E-02	0.00	136
T6 Instate Construction Small	0.09%	0.03%	3.12E+02	3.74E-04	1.14E-01	0.00	313
T6 Instate Heavy	0.27%	0.08%	9.39E+02	1.30E-03	5.24E-01	0.02	946
T6 Instate Small	0.69%	0.20%	2.41E+03	2.94E-03	9.15E-01	0.04	2,426
T6 OOS Heavy	0.00%	0.00%	4.04E+00	4.84E-06	1.40E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.27E+01	1.39E-05	3.72E-03	0.00	13
T6 Public	0.03%	0.01%	1.02E+02	1.16E-04	9.26E-02	0.00	103
T6 Utility	0.00%	0.00%	1.69E+01	1.53E-05	4.02E-03	0.00	17
T6TS	0.18%	0.05%	5.87E+02	2.65E-03	6.54E-02	0.00	588
T7 Ag	0.00%	0.00%	2.08E+01	5.04E-05	2.55E-02	0.00	21
T7 CAIRP	0.36%	0.10%	1.64E+03	3.74E-03	9.71E-01	0.04	1,654
T7 CAIRP Construction	0.03%	0.01%	1.24E+02	2.79E-04	6.93E-02	0.00	125
T7 NNOOS	0.45%	0.13%	2.02E+03	3.99E-03	8.86E-01	0.04	2,031
T7 NOOS	0.14%	0.04%	6.48E+02	1.48E-03	3.86E-01	0.02	653
T7 Other Port	0.07%	0.02%	3.14E+02	7.26E-04	1.75E-01	0.01	316
T7 POAK	0.21%	0.06%	9.85E+02	2.30E-03	5.61E-01	0.02	992
T7 Public	0.02%	0.01%	9.80E+01	2.17E-04	3.14E-01	0.01	102
T7 Single	0.13%	0.04%	6.41E+02	1.20E-03	4.07E-01	0.02	647
T7 Single Construction	0.07%	0.02%	3.29E+02	5.96E-04	1.75E-01	0.01	331
T7 SWCV	0.04%	0.01%	3.54E+02	1.39E-01	3.55E-01	0.01	361
T7 Tractor	0.68%	0.19%	3.11E+03	7.40E-03	2.22E+00	0.09	3,138
T7 Tractor Construction	0.05%	0.01%	2.44E+02	5.71E-04	1.72E-01	0.01	246
T7 Utility	0.00%	0.00%	1.34E+01	1.88E-05	4.66E-03	0.00	14
T7IS	0.02%	0.01%	1.17E+02	7.37E-03	1.95E-01	0.01	120
UBUS	0.15%	0.04%	6.39E+02	2.50E-02	1.62E+00	0.07	660
TOTAL	100%	100%	217,073	5	49	2	217,810

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 5 Unmitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,036,420	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.24E-02	8.75E-01	2.76E-01	1.74E-02	2.36E-01	1.01E-01
LDA	62.15%	67.68%	1.80E+01	1.02E+02	1.51E+03	7.23E+00	2.07E+02	8.45E+01
LDT1	3.41%	3.71%	1.92E+00	1.05E+01	1.35E+02	5.10E-01	1.14E+01	4.69E+00
LDT2	18.01%	19.61%	8.18E+00	4.72E+01	6.47E+02	3.05E+00	6.02E+01	2.46E+01
LHD1	1.19%	0.33%	7.45E-01	1.10E+01	6.92E+00	1.13E-01	2.09E+00	9.35E-01
LHD2	0.51%	0.14%	2.49E-01	1.72E+00	1.52E+00	5.02E-02	1.02E+00	4.50E-01
MCY	0.51%	0.56%	6.83E+01	3.79E+01	5.90E+02	6.86E-02	6.57E-01	2.90E-01
MDV	10.12%	2.85%	2.06E+00	1.19E+01	1.28E+02	6.02E-01	8.76E+00	3.60E+00
MH	0.07%	0.02%	2.61E-02	8.14E-01	4.96E-01	1.26E-02	1.87E-01	8.33E-02
Motor Coach	0.04%	0.01%	4.70E-02	5.57E-01	2.77E-01	1.08E-02	1.05E-01	4.53E-02
OBUS	0.10%	0.03%	1.74E-02	1.79E-01	4.87E-01	1.95E-02	2.66E-01	1.11E-01
SBUS	0.06%	0.02%	3.94E-02	1.31E+00	4.19E-01	1.02E-02	9.28E-01	4.00E-01
T6 Ag	0.00%	0.00%	3.21E-03	7.54E-02	1.69E-02	9.88E-04	1.31E-02	5.60E-03
T6 CAIRP Heavy	0.00%	0.00%	1.08E-03	1.45E-02	5.69E-03	4.01E-04	5.67E-03	2.40E-03
T6 CAIRP Small	0.01%	0.00%	3.12E-03	3.87E-02	1.64E-02	1.26E-03	1.74E-02	7.35E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.27E-02	4.02E-01	1.19E-01	7.67E-03	1.04E-01	4.43E-02
T6 Instate Construction Small	0.09%	0.02%	4.80E-02	6.80E-01	2.52E-01	1.77E-02	2.43E-01	1.03E-01
T6 Instate Heavy	0.27%	0.08%	1.67E-01	3.12E+00	8.78E-01	5.34E-02	7.44E-01	3.17E-01
T6 Instate Small	0.69%	0.19%	3.77E-01	5.46E+00	1.99E+00	1.37E-01	1.88E+00	7.96E-01
T6 OOS Heavy	0.00%	0.00%	6.21E-04	8.36E-03	3.27E-03	2.30E-04	3.25E-03	1.38E-03
T6 OOS Small	0.00%	0.00%	1.79E-03	2.22E-02	9.42E-03	7.23E-04	9.95E-03	4.21E-03
T6 Public	0.03%	0.01%	1.49E-02	5.52E-01	6.97E-02	5.79E-03	8.03E-02	3.48E-02
T6 Utility	0.00%	0.00%	1.97E-03	2.40E-02	1.04E-02	9.59E-04	1.31E-02	5.50E-03
T6TS	0.18%	0.05%	3.91E-02	3.90E-01	1.18E+00	3.49E-02	4.78E-01	1.99E-01
T7 Ag	0.00%	0.00%	6.47E-03	1.52E-01	3.82E-02	1.18E-03	8.00E-03	3.22E-03
T7 CAIRP	0.36%	0.10%	4.80E-01	5.79E+00	2.83E+00	9.34E-02	7.08E-01	2.80E-01
T7 CAIRP Construction	0.03%	0.01%	3.58E-02	4.13E-01	2.11E-01	7.06E-03	5.24E-02	2.07E-02
T7 NNOOS	0.45%	0.13%	5.12E-01	5.28E+00	3.03E+00	1.15E-01	8.70E-01	3.39E-01
T7 NOOS	0.14%	0.04%	1.90E-01	2.30E+00	1.12E+00	3.69E-02	2.80E-01	1.11E-01
T7 Other Port	0.07%	0.02%	9.31E-02	1.04E+00	5.50E-01	1.78E-02	1.33E-01	5.28E-02
T7 POAK	0.21%	0.06%	2.95E-01	3.34E+00	1.74E+00	5.60E-02	4.17E-01	1.66E-01
T7 Public	0.02%	0.01%	2.78E-02	1.87E+00	1.27E-01	5.57E-03	4.45E-02	2.14E-02
T7 Single	0.13%	0.04%	1.55E-01	2.43E+00	9.12E-01	3.65E-02	2.56E-01	9.99E-02
T7 Single Construction	0.07%	0.02%	7.66E-02	1.04E+00	4.51E-01	1.87E-02	1.34E-01	5.21E-02
T7 SWCV	0.04%	0.01%	2.43E-02	2.11E+00	2.86E+00	6.96E-03	7.39E-02	2.88E-02
T7 Tractor	0.68%	0.19%	9.50E-01	1.32E+01	5.61E+00	1.77E-01	1.33E+00	5.28E-01
T7 Tractor Construction	0.05%	0.01%	7.33E-02	1.03E+00	4.32E-01	1.39E-02	1.01E-01	4.04E-02
T7 Utility	0.00%	0.00%	2.41E-03	2.78E-02	1.43E-02	7.65E-04	5.38E-03	2.05E-03
T7IS	0.02%	0.01%	1.09E-01	1.16E+00	1.29E+01	7.19E-03	3.69E-02	1.44E-02
UBUS	0.15%	0.04%	1.98E-01	9.66E+00	3.19E+00	3.26E-02	1.64E+00	7.58E-01
TOTAL	100%	96%	104	288	3,066	13	303	124
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 5 Mitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,011,150	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.19E-02	8.68E-01	2.73E-01	1.73E-02	2.34E-01	9.98E-02
LDA	62.15%	67.68%	1.79E+01	1.01E+02	1.50E+03	7.17E+00	2.05E+02	8.38E+01
LDT1	3.41%	3.71%	1.91E+00	1.04E+01	1.34E+02	5.06E-01	1.13E+01	4.65E+00
LDT2	18.01%	19.61%	8.11E+00	4.68E+01	6.42E+02	3.03E+00	5.97E+01	2.44E+01
LHD1	1.19%	0.33%	7.38E-01	1.09E+01	6.86E+00	1.12E-01	2.08E+00	9.27E-01
LHD2	0.51%	0.14%	2.47E-01	1.71E+00	1.51E+00	4.98E-02	1.01E+00	4.47E-01
MCY	0.51%	0.56%	6.77E+01	3.76E+01	5.85E+02	6.81E-02	6.52E-01	2.87E-01
MDV	10.12%	2.85%	2.04E+00	1.18E+01	1.27E+02	5.97E-01	8.69E+00	3.57E+00
MH	0.07%	0.02%	2.59E-02	8.07E-01	4.91E-01	1.25E-02	1.85E-01	8.26E-02
Motor Coach	0.04%	0.01%	4.66E-02	5.52E-01	2.75E-01	1.07E-02	1.04E-01	4.49E-02
OBUS	0.10%	0.03%	1.73E-02	1.78E-01	4.82E-01	1.93E-02	2.64E-01	1.10E-01
SBUS	0.06%	0.02%	3.90E-02	1.30E+00	4.15E-01	1.01E-02	9.20E-01	3.96E-01
T6 Ag	0.00%	0.00%	3.19E-03	7.48E-02	1.68E-02	9.80E-04	1.30E-02	5.55E-03
T6 CAIRP Heavy	0.00%	0.00%	1.07E-03	1.44E-02	5.64E-03	3.98E-04	5.62E-03	2.38E-03
T6 CAIRP Small	0.01%	0.00%	3.10E-03	3.84E-02	1.63E-02	1.25E-03	1.72E-02	7.29E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.25E-02	3.99E-01	1.18E-01	7.60E-03	1.03E-01	4.39E-02
T6 Instate Construction Small	0.09%	0.02%	4.76E-02	6.74E-01	2.50E-01	1.76E-02	2.41E-01	1.02E-01
T6 Instate Heavy	0.27%	0.08%	1.65E-01	3.10E+00	8.70E-01	5.30E-02	7.38E-01	3.14E-01
T6 Instate Small	0.69%	0.19%	3.74E-01	5.41E+00	1.97E+00	1.36E-01	1.86E+00	7.90E-01
T6 OOS Heavy	0.00%	0.00%	6.16E-04	8.29E-03	3.24E-03	2.28E-04	3.22E-03	1.36E-03
T6 OOS Small	0.00%	0.00%	1.77E-03	2.20E-02	9.34E-03	7.17E-04	9.87E-03	4.18E-03
T6 Public	0.03%	0.01%	1.48E-02	5.48E-01	6.91E-02	5.75E-03	7.96E-02	3.45E-02
T6 Utility	0.00%	0.00%	1.95E-03	2.38E-02	1.03E-02	9.51E-04	1.30E-02	5.45E-03
T6TS	0.18%	0.05%	3.87E-02	3.87E-01	1.17E+00	3.46E-02	4.74E-01	1.97E-01
T7 Ag	0.00%	0.00%	6.41E-03	1.50E-01	3.79E-02	1.17E-03	7.93E-03	3.19E-03
T7 CAIRP	0.36%	0.10%	4.76E-01	5.74E+00	2.81E+00	9.26E-02	7.02E-01	2.78E-01
T7 CAIRP Construction	0.03%	0.01%	3.55E-02	4.10E-01	2.09E-01	7.00E-03	5.19E-02	2.06E-02
T7 NNOOS	0.45%	0.13%	5.08E-01	5.24E+00	3.00E+00	1.14E-01	8.63E-01	3.36E-01
T7 NOOS	0.14%	0.04%	1.88E-01	2.28E+00	1.11E+00	3.66E-02	2.77E-01	1.10E-01
T7 Other Port	0.07%	0.02%	9.24E-02	1.04E+00	5.45E-01	1.77E-02	1.32E-01	5.24E-02
T7 POAK	0.21%	0.06%	2.92E-01	3.32E+00	1.73E+00	5.56E-02	4.14E-01	1.64E-01
T7 Public	0.02%	0.01%	2.76E-02	1.86E+00	1.26E-01	5.53E-03	4.41E-02	2.12E-02
T7 Single	0.13%	0.04%	1.53E-01	2.40E+00	9.05E-01	3.62E-02	2.54E-01	9.91E-02
T7 Single Construction	0.07%	0.02%	7.59E-02	1.04E+00	4.47E-01	1.86E-02	1.33E-01	5.17E-02
T7 SWCV	0.04%	0.01%	2.41E-02	2.10E+00	2.84E+00	6.90E-03	7.32E-02	2.86E-02
T7 Tractor	0.68%	0.19%	9.43E-01	1.31E+01	5.57E+00	1.75E-01	1.32E+00	5.24E-01
T7 Tractor Construction	0.05%	0.01%	7.27E-02	1.02E+00	4.28E-01	1.38E-02	1.01E-01	4.01E-02
T7 Utility	0.00%	0.00%	2.39E-03	2.75E-02	1.41E-02	7.58E-04	5.33E-03	2.03E-03
T7IS	0.02%	0.01%	1.08E-01	1.15E+00	1.28E+01	7.13E-03	3.66E-02	1.43E-02
UBUS	0.15%	0.04%	1.97E-01	9.58E+00	3.17E+00	3.23E-02	1.62E+00	7.51E-01
TOTAL	100%	96%	103	285	3,040	12	300	123
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 5 Unmitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,053,637,740	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.88E+02	3.83E-04	1.38E-01	0.01	290
LDA	62.15%	67.68%	1.14E+05	1.13E+00	1.61E+01	0.67	113,903
LDT1	3.41%	3.71%	8.01E+03	1.22E-01	1.65E+00	0.07	8,030
LDT2	18.01%	19.61%	4.80E+04	5.19E-01	7.43E+00	0.31	48,102
LHD1	1.19%	0.33%	1.82E+03	1.18E-02	1.73E+00	0.07	1,841
LHD2	0.51%	0.14%	8.13E+02	2.49E-03	2.71E-01	0.01	817
MCY	0.51%	0.56%	8.97E+02	2.31E+00	5.96E+00	0.25	1,022
MDV	10.12%	2.85%	9.47E+03	1.29E-01	1.87E+00	0.08	9,501
MH	0.07%	0.02%	2.00E+02	1.01E-03	1.28E-01	0.01	201
Motor Coach	0.04%	0.01%	1.78E+02	3.43E-04	8.76E-02	0.00	179
OBUS	0.10%	0.03%	3.07E+02	1.11E-03	2.82E-02	0.00	307
SBUS	0.06%	0.02%	1.66E+02	7.97E-04	2.06E-01	0.01	169
T6 Ag	0.00%	0.00%	1.63E+01	2.35E-05	1.19E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	6.62E+00	7.90E-06	2.28E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.08E+01	2.28E-05	6.09E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.26E+02	1.66E-04	6.33E-02	0.00	127
T6 Instate Construction Small	0.09%	0.02%	2.92E+02	3.51E-04	1.07E-01	0.00	294
T6 Instate Heavy	0.27%	0.08%	8.81E+02	1.22E-03	4.92E-01	0.02	888
T6 Instate Small	0.69%	0.19%	2.27E+03	2.76E-03	8.59E-01	0.04	2,276
T6 OOS Heavy	0.00%	0.00%	3.79E+00	4.54E-06	1.32E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.19E+01	1.31E-05	3.49E-03	0.00	12
T6 Public	0.03%	0.01%	9.56E+01	1.09E-04	8.69E-02	0.00	97
T6 Utility	0.00%	0.00%	1.58E+01	1.44E-05	3.77E-03	0.00	16
T6TS	0.18%	0.05%	5.51E+02	2.49E-03	6.14E-02	0.00	552
T7 Ag	0.00%	0.00%	1.95E+01	4.73E-05	2.39E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.54E+03	3.51E-03	9.11E-01	0.04	1,552
T7 CAIRP Construction	0.03%	0.01%	1.16E+02	2.61E-04	6.51E-02	0.00	117
T7 NNOOS	0.45%	0.13%	1.90E+03	3.75E-03	8.31E-01	0.03	1,906
T7 NOOS	0.14%	0.04%	6.09E+02	1.39E-03	3.62E-01	0.02	613
T7 Other Port	0.07%	0.02%	2.94E+02	6.81E-04	1.64E-01	0.01	297
T7 POAK	0.21%	0.06%	9.24E+02	2.15E-03	5.26E-01	0.02	931
T7 Public	0.02%	0.01%	9.19E+01	2.03E-04	2.95E-01	0.01	96
T7 Single	0.13%	0.04%	6.02E+02	1.13E-03	3.82E-01	0.02	607
T7 Single Construction	0.07%	0.02%	3.09E+02	5.60E-04	1.64E-01	0.01	311
T7 SWCV	0.04%	0.01%	3.32E+02	1.30E-01	3.33E-01	0.01	339
T7 Tractor	0.68%	0.19%	2.92E+03	6.95E-03	2.08E+00	0.09	2,945
T7 Tractor Construction	0.05%	0.01%	2.29E+02	5.36E-04	1.62E-01	0.01	231
T7 Utility	0.00%	0.00%	1.26E+01	1.76E-05	4.37E-03	0.00	13
T7IS	0.02%	0.01%	1.10E+02	6.91E-03	1.83E-01	0.01	113
UBUS	0.15%	0.04%	6.00E+02	2.34E-02	1.52E+00	0.06	620
TOTAL	100%	96%	198,704	4	45	2	199,381

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 5 Mitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,044,869,050	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.85E+02	3.80E-04	1.37E-01	0.01	287
LDA	62.15%	67.68%	1.13E+05	1.12E+00	1.60E+01	0.66	112,955
LDT1	3.41%	3.71%	7.94E+03	1.21E-01	1.64E+00	0.07	7,964
LDT2	18.01%	19.61%	4.76E+04	5.14E-01	7.37E+00	0.31	47,701
LHD1	1.19%	0.33%	1.80E+03	1.17E-02	1.72E+00	0.07	1,825
LHD2	0.51%	0.14%	8.07E+02	2.46E-03	2.69E-01	0.01	810
MCY	0.51%	0.56%	8.89E+02	2.29E+00	5.91E+00	0.25	1,014
MDV	10.12%	2.85%	9.39E+03	1.28E-01	1.85E+00	0.08	9,422
MH	0.07%	0.02%	1.98E+02	1.00E-03	1.27E-01	0.01	200
Motor Coach	0.04%	0.01%	1.76E+02	3.41E-04	8.69E-02	0.00	177
OBUS	0.10%	0.03%	3.04E+02	1.10E-03	2.80E-02	0.00	304
SBUS	0.06%	0.02%	1.65E+02	7.90E-04	2.04E-01	0.01	167
T6 Ag	0.00%	0.00%	1.62E+01	2.33E-05	1.18E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	6.57E+00	7.84E-06	2.26E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.06E+01	2.26E-05	6.04E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.25E+02	1.65E-04	6.28E-02	0.00	126
T6 Instate Construction Small	0.09%	0.02%	2.90E+02	3.48E-04	1.06E-01	0.00	291
T6 Instate Heavy	0.27%	0.08%	8.74E+02	1.21E-03	4.88E-01	0.02	880
T6 Instate Small	0.69%	0.19%	2.25E+03	2.74E-03	8.52E-01	0.04	2,257
T6 OOS Heavy	0.00%	0.00%	3.76E+00	4.50E-06	1.31E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.18E+01	1.30E-05	3.46E-03	0.00	12
T6 Public	0.03%	0.01%	9.48E+01	1.08E-04	8.62E-02	0.00	96
T6 Utility	0.00%	0.00%	1.57E+01	1.43E-05	3.74E-03	0.00	16
T6TS	0.18%	0.05%	5.46E+02	2.46E-03	6.09E-02	0.00	547
T7 Ag	0.00%	0.00%	1.93E+01	4.69E-05	2.37E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.53E+03	3.48E-03	9.03E-01	0.04	1,539
T7 CAIRP Construction	0.03%	0.01%	1.15E+02	2.59E-04	6.45E-02	0.00	116
T7 NNOOS	0.45%	0.13%	1.88E+03	3.71E-03	8.24E-01	0.03	1,890
T7 NOOS	0.14%	0.04%	6.03E+02	1.38E-03	3.59E-01	0.01	608
T7 Other Port	0.07%	0.02%	2.92E+02	6.75E-04	1.63E-01	0.01	294
T7 POAK	0.21%	0.06%	9.17E+02	2.14E-03	5.22E-01	0.02	923
T7 Public	0.02%	0.01%	9.12E+01	2.02E-04	2.93E-01	0.01	95
T7 Single	0.13%	0.04%	5.97E+02	1.12E-03	3.79E-01	0.02	602
T7 Single Construction	0.07%	0.02%	3.06E+02	5.55E-04	1.63E-01	0.01	308
T7 SWCV	0.04%	0.01%	3.29E+02	1.29E-01	3.30E-01	0.01	336
T7 Tractor	0.68%	0.19%	2.89E+03	6.89E-03	2.07E+00	0.09	2,920
T7 Tractor Construction	0.05%	0.01%	2.27E+02	5.31E-04	1.60E-01	0.01	229
T7 Utility	0.00%	0.00%	1.25E+01	1.75E-05	4.33E-03	0.00	13
T7IS	0.02%	0.01%	1.09E+02	6.86E-03	1.81E-01	0.01	112
UBUS	0.15%	0.04%	5.95E+02	2.32E-02	1.51E+00	0.06	615
TOTAL	100%	96%	197,050	4	45	2	197,722

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 6 unmitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,120,280	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.25E-02	8.77E-01	2.76E-01	1.75E-02	2.37E-01	1.01E-01
LDA	62.15%	70.69%	1.93E+01	1.10E+02	1.62E+03	7.76E+00	2.22E+02	9.07E+01
LDT1	3.41%	3.87%	2.06E+00	1.13E+01	1.45E+02	5.47E-01	1.23E+01	5.03E+00
LDT2	18.01%	20.49%	8.78E+00	5.07E+01	6.95E+02	3.28E+00	6.46E+01	2.65E+01
LHD1	1.19%	0.33%	7.46E-01	1.10E+01	6.93E+00	1.13E-01	2.10E+00	9.37E-01
LHD2	0.51%	0.14%	2.50E-01	1.73E+00	1.52E+00	5.03E-02	1.02E+00	4.51E-01
MCY	0.51%	0.58%	7.33E+01	4.07E+01	6.34E+02	7.37E-02	7.05E-01	3.11E-01
MDV	10.12%	2.78%	2.06E+00	1.19E+01	1.29E+02	6.03E-01	8.78E+00	3.60E+00
MH	0.07%	0.02%	2.61E-02	8.15E-01	4.96E-01	1.26E-02	1.87E-01	8.35E-02
Motor Coach	0.04%	0.01%	4.71E-02	5.58E-01	2.78E-01	1.08E-02	1.05E-01	4.54E-02
OBUS	0.10%	0.03%	1.75E-02	1.79E-01	4.87E-01	1.95E-02	2.66E-01	1.11E-01
SBUS	0.06%	0.02%	3.94E-02	1.31E+00	4.19E-01	1.02E-02	9.30E-01	4.01E-01
T6 Ag	0.00%	0.00%	3.22E-03	7.56E-02	1.69E-02	9.90E-04	1.31E-02	5.61E-03
T6 CAIRP Heavy	0.00%	0.00%	1.08E-03	1.45E-02	5.70E-03	4.02E-04	5.68E-03	2.41E-03
T6 CAIRP Small	0.01%	0.00%	3.13E-03	3.88E-02	1.65E-02	1.26E-03	1.74E-02	7.36E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.28E-02	4.03E-01	1.20E-01	7.68E-03	1.04E-01	4.43E-02
T6 Instate Construction Small	0.09%	0.02%	4.81E-02	6.81E-01	2.53E-01	1.78E-02	2.43E-01	1.03E-01
T6 Instate Heavy	0.27%	0.07%	1.67E-01	3.13E+00	8.79E-01	5.35E-02	7.45E-01	3.18E-01
T6 Instate Small	0.69%	0.19%	3.78E-01	5.47E+00	1.99E+00	1.38E-01	1.88E+00	7.98E-01
T6 OOS Heavy	0.00%	0.00%	6.22E-04	8.38E-03	3.27E-03	2.30E-04	3.25E-03	1.38E-03
T6 OOS Small	0.00%	0.00%	1.79E-03	2.22E-02	9.44E-03	7.24E-04	9.97E-03	4.22E-03
T6 Public	0.03%	0.01%	1.50E-02	5.53E-01	6.98E-02	5.80E-03	8.04E-02	3.48E-02
T6 Utility	0.00%	0.00%	1.97E-03	2.40E-02	1.04E-02	9.61E-04	1.31E-02	5.51E-03
T6TS	0.18%	0.05%	3.91E-02	3.91E-01	1.18E+00	3.50E-02	4.78E-01	1.99E-01
T7 Ag	0.00%	0.00%	6.48E-03	1.52E-01	3.82E-02	1.18E-03	8.01E-03	3.22E-03
T7 CAIRP	0.36%	0.10%	4.81E-01	5.80E+00	2.84E+00	9.35E-02	7.10E-01	2.80E-01
T7 CAIRP Construction	0.03%	0.01%	3.58E-02	4.14E-01	2.11E-01	7.07E-03	5.25E-02	2.08E-02
T7 NNOOS	0.45%	0.12%	5.13E-01	5.29E+00	3.03E+00	1.15E-01	8.71E-01	3.40E-01
T7 NOOS	0.14%	0.04%	1.90E-01	2.31E+00	1.12E+00	3.70E-02	2.80E-01	1.11E-01
T7 Other Port	0.07%	0.02%	9.33E-02	1.05E+00	5.51E-01	1.79E-02	1.33E-01	5.29E-02
T7 POAK	0.21%	0.06%	2.95E-01	3.35E+00	1.74E+00	5.61E-02	4.18E-01	1.66E-01
T7 Public	0.02%	0.01%	2.79E-02	1.88E+00	1.27E-01	5.58E-03	4.46E-02	2.14E-02
T7 Single	0.13%	0.04%	1.55E-01	2.43E+00	9.14E-01	3.65E-02	2.56E-01	1.00E-01
T7 Single Construction	0.07%	0.02%	7.67E-02	1.05E+00	4.52E-01	1.88E-02	1.34E-01	5.22E-02
T7 SWCV	0.04%	0.01%	2.44E-02	2.12E+00	2.87E+00	6.97E-03	7.40E-02	2.88E-02
T7 Tractor	0.68%	0.19%	9.52E-01	1.33E+01	5.62E+00	1.77E-01	1.33E+00	5.29E-01
T7 Tractor Construction	0.05%	0.01%	7.34E-02	1.03E+00	4.33E-01	1.39E-02	1.02E-01	4.05E-02
T7 Utility	0.00%	0.00%	2.42E-03	2.78E-02	1.43E-02	7.66E-04	5.39E-03	2.05E-03
T7IS	0.02%	0.01%	1.09E-01	1.16E+00	1.29E+01	7.20E-03	3.70E-02	1.45E-02
UBUS	0.15%	0.04%	1.99E-01	9.68E+00	3.20E+00	3.27E-02	1.64E+00	7.59E-01
TOTAL	100%	100%	111	303	3,278	13	323	132
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 6 Mitigated

Based on EMFAC2014

Emission year	Daily							
2030	3,093,310	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	5.20E-02	8.69E-01	2.74E-01	1.73E-02	2.34E-01	9.99E-02
LDA	62.15%	70.69%	1.92E+01	1.09E+02	1.61E+03	7.69E+00	2.20E+02	8.99E+01
LDT1	3.41%	3.87%	2.04E+00	1.12E+01	1.44E+02	5.42E-01	1.21E+01	4.99E+00
LDT2	18.01%	20.49%	8.71E+00	5.02E+01	6.89E+02	3.25E+00	6.41E+01	2.62E+01
LHD1	1.19%	0.33%	7.39E-01	1.09E+01	6.87E+00	1.12E-01	2.08E+00	9.29E-01
LHD2	0.51%	0.14%	2.48E-01	1.71E+00	1.51E+00	4.98E-02	1.01E+00	4.47E-01
MCY	0.51%	0.58%	7.27E+01	4.03E+01	6.28E+02	7.30E-02	6.99E-01	3.08E-01
MDV	10.12%	2.78%	2.05E+00	1.18E+01	1.28E+02	5.98E-01	8.70E+00	3.57E+00
MH	0.07%	0.02%	2.59E-02	8.08E-01	4.92E-01	1.25E-02	1.86E-01	8.27E-02
Motor Coach	0.04%	0.01%	4.67E-02	5.53E-01	2.75E-01	1.07E-02	1.04E-01	4.50E-02
OBUS	0.10%	0.03%	1.73E-02	1.78E-01	4.83E-01	1.93E-02	2.64E-01	1.10E-01
SBUS	0.06%	0.02%	3.91E-02	1.30E+00	4.16E-01	1.01E-02	9.21E-01	3.97E-01
T6 Ag	0.00%	0.00%	3.19E-03	7.49E-02	1.68E-02	9.81E-04	1.30E-02	5.56E-03
T6 CAIRP Heavy	0.00%	0.00%	1.07E-03	1.44E-02	5.65E-03	3.99E-04	5.63E-03	2.39E-03
T6 CAIRP Small	0.01%	0.00%	3.10E-03	3.84E-02	1.63E-02	1.25E-03	1.72E-02	7.30E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.26E-02	3.99E-01	1.19E-01	7.61E-03	1.03E-01	4.39E-02
T6 Instate Construction Small	0.09%	0.02%	4.77E-02	6.75E-01	2.51E-01	1.76E-02	2.41E-01	1.02E-01
T6 Instate Heavy	0.27%	0.07%	1.66E-01	3.10E+00	8.72E-01	5.31E-02	7.39E-01	3.15E-01
T6 Instate Small	0.69%	0.19%	3.75E-01	5.42E+00	1.97E+00	1.36E-01	1.86E+00	7.91E-01
T6 OOS Heavy	0.00%	0.00%	6.17E-04	8.31E-03	3.25E-03	2.28E-04	3.22E-03	1.37E-03
T6 OOS Small	0.00%	0.00%	1.78E-03	2.20E-02	9.36E-03	7.18E-04	9.88E-03	4.18E-03
T6 Public	0.03%	0.01%	1.48E-02	5.49E-01	6.92E-02	5.75E-03	7.97E-02	3.45E-02
T6 Utility	0.00%	0.00%	1.95E-03	2.38E-02	1.03E-02	9.52E-04	1.30E-02	5.46E-03
T6TS	0.18%	0.05%	3.88E-02	3.87E-01	1.17E+00	3.47E-02	4.74E-01	1.98E-01
T7 Ag	0.00%	0.00%	6.42E-03	1.51E-01	3.79E-02	1.17E-03	7.95E-03	3.19E-03
T7 CAIRP	0.36%	0.10%	4.76E-01	5.75E+00	2.81E+00	9.27E-02	7.03E-01	2.78E-01
T7 CAIRP Construction	0.03%	0.01%	3.55E-02	4.11E-01	2.10E-01	7.01E-03	5.20E-02	2.06E-02
T7 NNOOS	0.45%	0.12%	5.09E-01	5.24E+00	3.00E+00	1.14E-01	8.64E-01	3.37E-01
T7 NOOS	0.14%	0.04%	1.89E-01	2.29E+00	1.11E+00	3.66E-02	2.78E-01	1.10E-01
T7 Other Port	0.07%	0.02%	9.25E-02	1.04E+00	5.46E-01	1.77E-02	1.32E-01	5.24E-02
T7 POAK	0.21%	0.06%	2.93E-01	3.32E+00	1.73E+00	5.56E-02	4.15E-01	1.65E-01
T7 Public	0.02%	0.01%	2.76E-02	1.86E+00	1.26E-01	5.53E-03	4.42E-02	2.12E-02
T7 Single	0.13%	0.04%	1.53E-01	2.41E+00	9.06E-01	3.62E-02	2.54E-01	9.92E-02
T7 Single Construction	0.07%	0.02%	7.60E-02	1.04E+00	4.48E-01	1.86E-02	1.33E-01	5.18E-02
T7 SWCV	0.04%	0.01%	2.41E-02	2.10E+00	2.84E+00	6.91E-03	7.33E-02	2.86E-02
T7 Tractor	0.68%	0.19%	9.44E-01	1.31E+01	5.57E+00	1.76E-01	1.32E+00	5.25E-01
T7 Tractor Construction	0.05%	0.01%	7.28E-02	1.02E+00	4.29E-01	1.38E-02	1.01E-01	4.01E-02
T7 Utility	0.00%	0.00%	2.40E-03	2.76E-02	1.42E-02	7.59E-04	5.34E-03	2.03E-03
T7IS	0.02%	0.01%	1.08E-01	1.15E+00	1.28E+01	7.14E-03	3.67E-02	1.43E-02
UBUS	0.15%	0.04%	1.97E-01	9.59E+00	3.17E+00	3.24E-02	1.62E+00	7.52E-01
TOTAL	100%	100%	110	300	3,249	13	320	131

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 6 unmitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,082,737,160	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.88E+02	3.84E-04	1.38E-01	0.01	290
LDA	62.15%	70.69%	1.22E+05	1.21E+00	1.73E+01	0.72	122,263
LDT1	3.41%	3.87%	8.59E+03	1.31E-01	1.78E+00	0.07	8,620
LDT2	18.01%	20.49%	5.15E+04	5.57E-01	7.97E+00	0.33	51,632
LHD1	1.19%	0.33%	1.82E+03	1.19E-02	1.73E+00	0.07	1,844
LHD2	0.51%	0.14%	8.15E+02	2.49E-03	2.72E-01	0.01	818
MCY	0.51%	0.58%	9.62E+02	2.48E+00	6.40E+00	0.27	1,097
MDV	10.12%	2.78%	9.49E+03	1.30E-01	1.87E+00	0.08	9,517
MH	0.07%	0.02%	2.00E+02	1.01E-03	1.28E-01	0.01	202
Motor Coach	0.04%	0.01%	1.78E+02	3.44E-04	8.78E-02	0.00	179
OBUS	0.10%	0.03%	3.07E+02	1.11E-03	2.82E-02	0.00	308
SBUS	0.06%	0.02%	1.66E+02	7.98E-04	2.06E-01	0.01	169
T6 Ag	0.00%	0.00%	1.63E+01	2.35E-05	1.19E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	6.63E+00	7.92E-06	2.28E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.08E+01	2.29E-05	6.10E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.27E+02	1.67E-04	6.34E-02	0.00	128
T6 Instate Construction Small	0.09%	0.02%	2.93E+02	3.52E-04	1.07E-01	0.00	294
T6 Instate Heavy	0.27%	0.07%	8.83E+02	1.22E-03	4.93E-01	0.02	889
T6 Instate Small	0.69%	0.19%	2.27E+03	2.76E-03	8.61E-01	0.04	2,280
T6 OOS Heavy	0.00%	0.00%	3.80E+00	4.55E-06	1.32E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.19E+01	1.31E-05	3.50E-03	0.00	12
T6 Public	0.03%	0.01%	9.58E+01	1.09E-04	8.71E-02	0.00	97
T6 Utility	0.00%	0.00%	1.58E+01	1.44E-05	3.78E-03	0.00	16
T6TS	0.18%	0.05%	5.52E+02	2.49E-03	6.15E-02	0.00	553
T7 Ag	0.00%	0.00%	1.95E+01	4.74E-05	2.39E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.54E+03	3.51E-03	9.13E-01	0.04	1,555
T7 CAIRP Construction	0.03%	0.01%	1.17E+02	2.62E-04	6.52E-02	0.00	118
T7 NNOOS	0.45%	0.12%	1.90E+03	3.75E-03	8.33E-01	0.03	1,909
T7 NOOS	0.14%	0.04%	6.10E+02	1.39E-03	3.63E-01	0.02	614
T7 Other Port	0.07%	0.02%	2.95E+02	6.82E-04	1.65E-01	0.01	297
T7 POAK	0.21%	0.06%	9.26E+02	2.16E-03	5.27E-01	0.02	933
T7 Public	0.02%	0.01%	9.21E+01	2.04E-04	2.96E-01	0.01	96
T7 Single	0.13%	0.04%	6.03E+02	1.13E-03	3.82E-01	0.02	608
T7 Single Construction	0.07%	0.02%	3.09E+02	5.61E-04	1.65E-01	0.01	312
T7 SWCV	0.04%	0.01%	3.33E+02	1.31E-01	3.33E-01	0.01	340
T7 Tractor	0.68%	0.19%	2.92E+03	6.96E-03	2.09E+00	0.09	2,950
T7 Tractor Construction	0.05%	0.01%	2.30E+02	5.37E-04	1.62E-01	0.01	232
T7 Utility	0.00%	0.00%	1.26E+01	1.77E-05	4.38E-03	0.00	13
T7IS	0.02%	0.01%	1.10E+02	6.93E-03	1.83E-01	0.01	113
UBUS	0.15%	0.04%	6.01E+02	2.35E-02	1.52E+00	0.06	621
TOTAL	100%	100%	211,271	5	48	2	211,985

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

SCENARIO 6 Mitigated

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,073,378,570	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.86E+02	3.80E-04	1.37E-01	0.01	288
LDA	62.15%	70.69%	1.21E+05	1.20E+00	1.71E+01	0.71	121,206
LDT1	3.41%	3.87%	8.52E+03	1.30E-01	1.76E+00	0.07	8,545
LDT2	18.01%	20.49%	5.11E+04	5.52E-01	7.91E+00	0.33	51,186
LHD1	1.19%	0.33%	1.81E+03	1.18E-02	1.72E+00	0.07	1,828
LHD2	0.51%	0.14%	8.08E+02	2.47E-03	2.70E-01	0.01	811
MCY	0.51%	0.58%	9.54E+02	2.46E+00	6.34E+00	0.26	1,088
MDV	10.12%	2.78%	9.41E+03	1.29E-01	1.86E+00	0.08	9,435
MH	0.07%	0.02%	1.98E+02	1.01E-03	1.27E-01	0.01	200
Motor Coach	0.04%	0.01%	1.77E+02	3.41E-04	8.70E-02	0.00	178
OBUS	0.10%	0.03%	3.05E+02	1.10E-03	2.80E-02	0.00	305
SBUS	0.06%	0.02%	1.65E+02	7.92E-04	2.04E-01	0.01	168
T6 Ag	0.00%	0.00%	1.62E+01	2.33E-05	1.18E-02	0.00	16
T6 CAIRP Heavy	0.00%	0.00%	6.58E+00	7.85E-06	2.26E-03	0.00	7
T6 CAIRP Small	0.01%	0.00%	2.07E+01	2.27E-05	6.05E-03	0.00	21
T6 Instate Construction Heavy	0.04%	0.01%	1.26E+02	1.65E-04	6.29E-02	0.00	126
T6 Instate Construction Small	0.09%	0.02%	2.90E+02	3.49E-04	1.06E-01	0.00	292
T6 Instate Heavy	0.27%	0.07%	8.75E+02	1.21E-03	4.88E-01	0.02	882
T6 Instate Small	0.69%	0.19%	2.25E+03	2.74E-03	8.53E-01	0.04	2,261
T6 OOS Heavy	0.00%	0.00%	3.77E+00	4.51E-06	1.31E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.18E+01	1.30E-05	3.47E-03	0.00	12
T6 Public	0.03%	0.01%	9.49E+01	1.08E-04	8.63E-02	0.00	96
T6 Utility	0.00%	0.00%	1.57E+01	1.43E-05	3.74E-03	0.00	16
T6TS	0.18%	0.05%	5.47E+02	2.47E-03	6.10E-02	0.00	548
T7 Ag	0.00%	0.00%	1.94E+01	4.69E-05	2.37E-02	0.00	20
T7 CAIRP	0.36%	0.10%	1.53E+03	3.48E-03	9.05E-01	0.04	1,541
T7 CAIRP Construction	0.03%	0.01%	1.16E+02	2.60E-04	6.46E-02	0.00	116
T7 NNOOS	0.45%	0.12%	1.88E+03	3.72E-03	8.25E-01	0.03	1,893
T7 NOOS	0.14%	0.04%	6.04E+02	1.38E-03	3.60E-01	0.01	609
T7 Other Port	0.07%	0.02%	2.92E+02	6.76E-04	1.63E-01	0.01	295
T7 POAK	0.21%	0.06%	9.18E+02	2.14E-03	5.23E-01	0.02	925
T7 Public	0.02%	0.01%	9.13E+01	2.02E-04	2.93E-01	0.01	95
T7 Single	0.13%	0.04%	5.98E+02	1.12E-03	3.79E-01	0.02	603
T7 Single Construction	0.07%	0.02%	3.07E+02	5.56E-04	1.63E-01	0.01	309
T7 SWCV	0.04%	0.01%	3.30E+02	1.29E-01	3.31E-01	0.01	337
T7 Tractor	0.68%	0.19%	2.90E+03	6.90E-03	2.07E+00	0.09	2,925
T7 Tractor Construction	0.05%	0.01%	2.28E+02	5.32E-04	1.61E-01	0.01	230
T7 Utility	0.00%	0.00%	1.25E+01	1.75E-05	4.34E-03	0.00	13
T7IS	0.02%	0.01%	1.09E+02	6.87E-03	1.82E-01	0.01	112
UBUS	0.15%	0.04%	5.96E+02	2.33E-02	1.51E+00	0.06	616
TOTAL	100%	100%	209,445	5	47	2	210,152
N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)							
Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.							
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.							

SCENARIO 7 - No Growth

Based on EMFAC2014

Emission year	Daily							
2030	2,950,860	lbs/day						
	Percent of VMT	Adjust % VMT	ROG	NOx	CO	SOx	PM10	PM2.5
All Other Buses	0.09%	0.02%	4.93E-02	8.24E-01	2.59E-01	1.64E-02	2.22E-01	9.47E-02
LDA	62.15%	70.71%	1.83E+01	1.04E+02	1.54E+03	7.34E+00	2.10E+02	8.58E+01
LDT1	3.41%	3.87%	1.95E+00	1.07E+01	1.37E+02	5.18E-01	1.16E+01	4.76E+00
LDT2	18.01%	20.49%	8.31E+00	4.79E+01	6.57E+02	3.10E+00	6.11E+01	2.50E+01
LHD1	1.19%	0.32%	7.01E-01	1.04E+01	6.51E+00	1.06E-01	1.97E+00	8.80E-01
LHD2	0.51%	0.14%	2.35E-01	1.62E+00	1.43E+00	4.72E-02	9.57E-01	4.24E-01
MCY	0.51%	0.58%	6.94E+01	3.85E+01	5.99E+02	6.97E-02	6.67E-01	2.94E-01
MDV	10.12%	2.76%	1.94E+00	1.12E+01	1.21E+02	5.67E-01	8.25E+00	3.38E+00
MH	0.07%	0.02%	2.46E-02	7.66E-01	4.66E-01	1.18E-02	1.76E-01	7.84E-02
Motor Coach	0.04%	0.01%	4.42E-02	5.24E-01	2.61E-01	1.01E-02	9.84E-02	4.26E-02
OBUS	0.10%	0.03%	1.64E-02	1.69E-01	4.58E-01	1.83E-02	2.50E-01	1.04E-01
SBUS	0.06%	0.02%	3.71E-02	1.23E+00	3.94E-01	9.59E-03	8.73E-01	3.76E-01
T6 Ag	0.00%	0.00%	3.03E-03	7.10E-02	1.59E-02	9.30E-04	1.23E-02	5.27E-03
T6 CAIRP Heavy	0.00%	0.00%	1.02E-03	1.36E-02	5.36E-03	3.78E-04	5.33E-03	2.26E-03
T6 CAIRP Small	0.01%	0.00%	2.94E-03	3.64E-02	1.55E-02	1.19E-03	1.63E-02	6.92E-03
T6 Instate Construction Heavy	0.04%	0.01%	2.14E-02	3.79E-01	1.12E-01	7.22E-03	9.78E-02	4.17E-02
T6 Instate Construction Small	0.09%	0.02%	4.52E-02	6.40E-01	2.38E-01	1.67E-02	2.28E-01	9.70E-02
T6 Instate Heavy	0.27%	0.07%	1.57E-01	2.94E+00	8.26E-01	5.03E-02	7.00E-01	2.98E-01
T6 Instate Small	0.69%	0.19%	3.55E-01	5.14E+00	1.87E+00	1.29E-01	1.77E+00	7.50E-01
T6 OOS Heavy	0.00%	0.00%	5.84E-04	7.87E-03	3.08E-03	2.16E-04	3.06E-03	1.30E-03
T6 OOS Small	0.00%	0.00%	1.68E-03	2.09E-02	8.87E-03	6.80E-04	9.37E-03	3.96E-03
T6 Public	0.03%	0.01%	1.41E-02	5.20E-01	6.56E-02	5.45E-03	7.55E-02	3.27E-02
T6 Utility	0.00%	0.00%	1.85E-03	2.25E-02	9.74E-03	9.03E-04	1.23E-02	5.18E-03
T6TS	0.18%	0.05%	3.68E-02	3.67E-01	1.11E+00	3.29E-02	4.50E-01	1.87E-01
T7 Ag	0.00%	0.00%	6.09E-03	1.43E-01	3.59E-02	1.11E-03	7.53E-03	3.03E-03
T7 CAIRP	0.36%	0.10%	4.52E-01	5.45E+00	2.67E+00	8.79E-02	6.67E-01	2.64E-01
T7 CAIRP Construction	0.03%	0.01%	3.37E-02	3.89E-01	1.99E-01	6.64E-03	4.93E-02	1.95E-02
T7 NNOOS	0.45%	0.12%	4.82E-01	4.97E+00	2.85E+00	1.08E-01	8.19E-01	3.19E-01
T7 NOOS	0.14%	0.04%	1.79E-01	2.17E+00	1.06E+00	3.47E-02	2.63E-01	1.04E-01
T7 Other Port	0.07%	0.02%	8.77E-02	9.84E-01	5.18E-01	1.68E-02	1.25E-01	4.97E-02
T7 POAK	0.21%	0.06%	2.77E-01	3.15E+00	1.64E+00	5.27E-02	3.93E-01	1.56E-01
T7 Public	0.02%	0.01%	2.62E-02	1.76E+00	1.20E-01	5.25E-03	4.19E-02	2.01E-02
T7 Single	0.13%	0.04%	1.45E-01	2.28E+00	8.59E-01	3.43E-02	2.41E-01	9.40E-02
T7 Single Construction	0.07%	0.02%	7.21E-02	9.83E-01	4.24E-01	1.76E-02	1.26E-01	4.91E-02
T7 SWCV	0.04%	0.01%	2.29E-02	1.99E+00	2.70E+00	6.55E-03	6.95E-02	2.71E-02
T7 Tractor	0.68%	0.19%	8.95E-01	1.25E+01	5.28E+00	1.66E-01	1.25E+00	4.97E-01
T7 Tractor Construction	0.05%	0.01%	6.90E-02	9.68E-01	4.07E-01	1.31E-02	9.55E-02	3.80E-02
T7 Utility	0.00%	0.00%	2.27E-03	2.61E-02	1.34E-02	7.20E-04	5.06E-03	1.93E-03
T7IS	0.02%	0.01%	1.02E-01	1.09E+00	1.22E+01	6.76E-03	3.48E-02	1.36E-02
UBUS	0.15%	0.04%	1.87E-01	9.09E+00	3.01E+00	3.07E-02	1.54E+00	7.13E-01
TOTAL	100%	100%	105	286	3,100	13	306	125
Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.								

SCENARIO 7 - No Growth

Based on EMFAC2014

	Emission year	Annual VMT	SAR GWP	SAR GWP	SAR GWP		
	2030	1,023,948,420	1	21	310	MTons	
	Percent of VMT	Adjust % VMT	MT CO2	MT CH4	MT NOx	MT N ₂ O	MT CO2e
All Other Buses	0.09%	0.02%	2.71E+02	3.60E-04	1.30E-01	0.01	273
LDA	62.15%	70.71%	1.15E+05	1.15E+00	1.63E+01	0.68	115,659
LDT1	3.41%	3.87%	8.13E+03	1.24E-01	1.68E+00	0.07	8,154
LDT2	18.01%	20.49%	4.87E+04	5.27E-01	7.54E+00	0.31	48,843
LHD1	1.19%	0.32%	1.71E+03	1.11E-02	1.63E+00	0.07	1,733
LHD2	0.51%	0.14%	7.66E+02	2.34E-03	2.55E-01	0.01	769
MCY	0.51%	0.58%	9.10E+02	2.35E+00	6.05E+00	0.25	1,038
MDV	10.12%	2.76%	8.92E+03	1.22E-01	1.76E+00	0.07	8,943
MH	0.07%	0.02%	1.88E+02	9.53E-04	1.21E-01	0.01	190
Motor Coach	0.04%	0.01%	1.67E+02	3.23E-04	8.25E-02	0.00	168
OBUS	0.10%	0.03%	2.89E+02	1.04E-03	2.65E-02	0.00	289
SBUS	0.06%	0.02%	1.56E+02	7.50E-04	1.94E-01	0.01	159
T6 Ag	0.00%	0.00%	1.53E+01	2.21E-05	1.12E-02	0.00	15
T6 CAIRP Heavy	0.00%	0.00%	6.23E+00	7.44E-06	2.15E-03	0.00	6
T6 CAIRP Small	0.01%	0.00%	1.96E+01	2.15E-05	5.73E-03	0.00	20
T6 Instate Construction Heavy	0.04%	0.01%	1.19E+02	1.56E-04	5.96E-02	0.00	120
T6 Instate Construction Small	0.09%	0.02%	2.75E+02	3.30E-04	1.01E-01	0.00	277
T6 Instate Heavy	0.27%	0.07%	8.30E+02	1.15E-03	4.63E-01	0.02	836
T6 Instate Small	0.69%	0.19%	2.13E+03	2.60E-03	8.09E-01	0.03	2,143
T6 OOS Heavy	0.00%	0.00%	3.57E+00	4.27E-06	1.24E-03	0.00	4
T6 OOS Small	0.00%	0.00%	1.12E+01	1.23E-05	3.29E-03	0.00	11
T6 Public	0.03%	0.01%	9.00E+01	1.03E-04	8.18E-02	0.00	91
T6 Utility	0.00%	0.00%	1.49E+01	1.35E-05	3.55E-03	0.00	15
T6TS	0.18%	0.05%	5.18E+02	2.34E-03	5.78E-02	0.00	519
T7 Ag	0.00%	0.00%	1.84E+01	4.45E-05	2.25E-02	0.00	19
T7 CAIRP	0.36%	0.10%	1.45E+03	3.30E-03	8.57E-01	0.04	1,461
T7 CAIRP Construction	0.03%	0.01%	1.10E+02	2.46E-04	6.12E-02	0.00	110
T7 NNOOS	0.45%	0.12%	1.78E+03	3.53E-03	7.82E-01	0.03	1,794
T7 NOOS	0.14%	0.04%	5.73E+02	1.31E-03	3.41E-01	0.01	577
T7 Other Port	0.07%	0.02%	2.77E+02	6.41E-04	1.55E-01	0.01	279
T7 POAK	0.21%	0.06%	8.70E+02	2.03E-03	4.95E-01	0.02	876
T7 Public	0.02%	0.01%	8.65E+01	1.91E-04	2.78E-01	0.01	90
T7 Single	0.13%	0.04%	5.66E+02	1.06E-03	3.59E-01	0.01	571
T7 Single Construction	0.07%	0.02%	2.91E+02	5.27E-04	1.55E-01	0.01	293
T7 SWCV	0.04%	0.01%	3.13E+02	1.23E-01	3.13E-01	0.01	319
T7 Tractor	0.68%	0.19%	2.75E+03	6.54E-03	1.96E+00	0.08	2,772
T7 Tractor Construction	0.05%	0.01%	2.16E+02	5.04E-04	1.52E-01	0.01	218
T7 Utility	0.00%	0.00%	1.19E+01	1.66E-05	4.11E-03	0.00	12
T7IS	0.02%	0.01%	1.04E+02	6.51E-03	1.72E-01	0.01	106
UBUS	0.15%	0.04%	5.65E+02	2.20E-02	1.43E+00	0.06	583
TOTAL	100%	100%	199,680	4	45	2	200,353

N2O emissions were calculated using an off-model adjustment provided by CARB for gas emissions in the 2014 Technical Support Document for California's 2000-2012 GHG Emissions inventory. The off-model adjustment uses for every gram of NOx emitted from gasoline vehicles, an average of 0.0416 grams of N2O are emitted. (N2O = 0.0416 x NOx)

Daily vehicles miles traveled (VMT) multiplied by 347 days/year to account for reduced traffic on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology within the Climate Change Scoping Plan Measure Documentation Supplement.

Based on the emission factors for Santa Clara County - San Francisco Bay Area Air Basin. % VMT based on EMFAC2014-PL for Santa Clara County.

Area Sources – Consumer Products & Offroad Equipment City + SOI

Area Sources - Consumer Products

Source: CalEEMod Users Guide. Version 2013.2.2.

Residential Consumer Product Use

Emissions = EF x Building Area

SCAQMD EF = 2.04E-05 lbs/sqft/day

AVERAGE HOUSING SQFT ASSUMPTIONS

Year Structure was Built	Average Square Feet of New Single Family Homes		
	Percent of Housing Stock ⁽¹⁾	Average Square Feet of New Single Family Homes ⁽²⁾	Average Square Feet (Weighted)
2010 or later	0.4%	2,494	11
2000 to 2009	9.6%	2,404	232
1990 to 1999	5.3%	2,116	111
1980 to 1989	8.5%	1,819	155
1979 or earlier	76.2%	1,699	1,294
			1,803

Sources/Notes:

(1) United States Census Bureau, American FactFinder, City of Palo Alto, Santa Clara County, California, Physical Housing Characteristics for Occupied Housing Units, 2012 American Community Survey 3-Year Estimates, Year structure built.

(2) United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. Obtained from <http://www.census.gov/construction/chars/>

	City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Housing Units	33,070	36,950	36,950	37,780	38,650	37,780	40,235	33,610	36,405
Residential SQFT	59,613,140	69,712,780	69,712,780	71,873,270	74,137,880	71,873,270	78,263,635	61,018,760	68,292,863
lbs VOC per day	1,216	1,422	1,422	1,466	1,512	1,466	1,597	1,245	1,393

Source

1 New housing units constructed post-2014 assumed to be 2,603 square feet.

Area Sources - Criteria Air Pollutants

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM ₁₀ Exhaust	PM _{2.5} Exhaust*
CEQA Baseline 2014		Proportioned Based on:					
		lbs/day					
Construction Equipment	The percentage of building permits issued in Palo Alto compared to Santa Clara County.	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	The percentage of residential units in Palo Alto compared to Santa Clara County.	180	47	2,310	0	6	6
Light Commercial Equipment	The percentage of employment in Palo Alto compared to San Santa Clara County.	144	285	4,171	0	31	31
TOTAL		492	1,444	7,652	2	106	105

* assumes PM2.5 is 99 percent of PM10

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 1		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	201	52	2,579	0	7	7
Light Commercial Equipment	Proportional to employment growth	167	330	4,827	1	36	36
TOTAL		536	1,495	8,577	2	112	110

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 2		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	201	52	2,579	0	7	7
Light Commercial Equipment	Proportional to employment growth	159	314	4,594	1	34	34
TOTAL		528	1,479	8,345	2	110	109

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 3		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	205	53	2,631	0	7	7
Light Commercial Equipment	Proportional to employment growth	163	322	4,714	1	35	35
TOTAL		536	1,488	8,517	2	111	110

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 4		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	209	55	2,689	0	7	7
Light Commercial Equipment	Proportional to employment growth	167	330	4,827	1	36	36
TOTAL		545	1,497	8,688	2	112	111

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 5		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	205	53	2,631	0	7	7
Light Commercial Equipment	Proportional to employment growth	182	360	5,270	1	39	39
TOTAL		555	1,526	9,073	2	115	114

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 6		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	243	63	3,118	0	9	9
Light Commercial Equipment	Proportional to employment growth	173	343	5,016	1	37	37
TOTAL		584	1,518	9,305	2	115	113

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 7		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	208	54	2,672	0	7	7
Light Commercial Equipment	Proportional to employment growth	169	335	4,896	1	37	36
TOTAL		546	1,501	8,739	2	112	111

Sources

Building Permits

Source: U.S. Census Bureau

<http://censtats.census.gov/bldg/bldgprmt.shtml>**Employment**Source. U.S. Census Bureau. Longitudinal Employer-Household Dynamics. <http://lehd.ces.census.gov/>**Population**

Source. U.S. Census Bureau.

Other Emissions Sources - Off-road Equipment

Source: OFFROAD2007. Based on equipment use in Santa Clara.

Year 2014 BAU	Proportioned Based on:	MTCO ₂ e
Construction Equipment	The percentage of building permits issued in Palo Alto compared to Santa Clara County.	21,831
Lawn & Garden Equipment	The percentage of residential units in Palo Alto compared to Santa Clara County.	1,464
Light Commercial Equipment	The percentage of employment in Palo Alto compared to Santa Clara County.	6,278
TOTAL		29,573

		MTCO ₂ e							
	Forecast Adjusted for:	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 2020
Construction Equipment	Annual assumed to be similar to historic	21,831	21,831	21,831	21,831	21,831	21,831	21,831	21,831
Lawn & Garden Equipment	Proportional to population growth	1,634	1,634	1,668	1,704	1,668	1,770	1,486	1,605
Light Commercial Equipment	Proportional to employment growth	7,266	6,915	7,096	7,266	6,854	6,854	6,519	6,877
TOTAL		30,731	30,381	30,595	30,801	30,353	30,455	29,837	30,313

Adjusted Business as Usual - Low Carbon Fuel Standard

		MTCO ₂ e							
	Notes	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 2020
Construction Equipment	With LCFS (10% reduction)	19,648	19,648	19,648	19,648	19,648	19,648	19,648	19,648
Lawn&Garden Equipment	With LCFS (10% reduction)	1,471	1,471	1,501	1,534	1,501	1,593	1,338	1,445
Light Commercial Equipment	With LCFS (10% reduction)	6,539	6,224	6,387	6,539	6,169	6,169	5,867	6,189
TOTAL		27,658	27,343	27,535	27,721	27,317	27,409	26,853	27,282
reduction		3,073	3,038	3,059	3,080	3,035	3,045	2,984	3,031

Note- the newer OFFROAD2011 Model does not provide emissions by County

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Tampers/Rammers	Santa Clara	SF	BA	1.79E+02	8.91E+01	1.80E+01	1.13E-03	8.73E-04	4.86E-02	3.82E-06	7.78E-04	9.28E-02	1.39E-04	7.03E-05	1.37E-01	43
Plate Compactors	Santa Clara	SF	BA	1.53E+01	8.66E+00	1.75E+00	1.10E-04	8.47E-05	4.72E-03	3.71E-07	7.56E-05	9.01E-03	1.34E-05	6.81E-06	1.33E-02	4
Asphalt Pavers	Santa Clara	SF	BA	3.90E+00	4.23E+00	2.49E+00	1.89E-04	1.38E-04	7.23E-03	3.39E-07	9.97E-05	1.19E-02	1.21E-05	1.05E-05	1.59E-02	5
Asphalt Pavers	Santa Clara	SF	BA	6.66E+00	7.23E+00	1.07E+01	8.36E-04	5.34E-04	3.21E-02	1.26E-06	4.17E-04	4.97E-02	3.20E-05	4.62E-05	6.06E-02	19
Asphalt Pavers	Santa Clara	SF	BA	3.31E+00	3.56E+00	8.29E+00	2.58E-04	3.69E-04	8.97E-03	7.89E-07	4.97E-06	6.49E-02	1.74E-05	1.43E-05	7.06E-02	22
Asphalt Pavers	Santa Clara	SF	BA	1.82E+00	1.96E+00	7.59E+00	1.68E-04	4.81E-04	3.44E-03	6.49E-07	5.21E-06	6.72E-02	1.41E-05	9.30E-06	7.18E-02	23
Tampers/Rammers	Santa Clara	SF	BA	8.24E+00	4.11E+00	2.02E+00	1.53E-04	1.10E-04	5.87E-03	2.75E-07	8.08E-05	9.64E-03	1.06E-05	8.46E-06	1.31E-02	4
Plate Compactors	Santa Clara	SF	BA	3.03E+02	1.49E+02	2.74E+01	3.91E-03	1.73E-03	5.99E-02	5.37E-06	5.07E-05	1.56E-01	2.46E-04	2.16E-04	2.36E-01	74
Plate Compactors	Santa Clara	SF	BA	3.21E+02	1.81E+02	7.88E+01	5.94E-03	4.34E-03	2.30E-01	1.08E-05	3.17E-03	3.78E-01	4.39E-04	3.29E-04	5.21E-01	164
Rollers	Santa Clara	SF	BA	3.37E+01	7.67E+00	2.10E+00	2.54E-04	1.12E-04	5.12E-03	3.89E-07	3.67E-06	1.13E-02	1.43E-05	1.41E-05	1.60E-02	5
Rollers	Santa Clara	SF	BA	5.45E+01	4.64E+01	2.56E+01	1.93E-03	1.41E-03	7.44E-02	3.49E-06	1.03E-03	1.22E-01	1.28E-04	1.07E-04	1.64E-01	52
Rollers	Santa Clara	SF	BA	3.68E+01	3.13E+01	3.76E+01	2.90E-03	1.85E-03	1.13E-01	4.42E-06	1.46E-03	1.74E-01	1.23E-04	1.61E-04	2.16E-01	68
Rollers	Santa Clara	SF	BA	2.33E+00	3.97E+00	1.07E+01	4.58E-04	5.60E-04	1.46E-02	9.56E-07	6.03E-06	7.87E-02	2.34E-05	2.53E-05	8.64E-02	27
Rollers	Santa Clara	SF	BA	4.38E+00	7.47E+00	3.46E+01	1.12E-03	2.68E-03	2.13E-02	2.86E-06	2.30E-05	2.96E-01	6.86E-05	6.21E-05	3.19E-01	100
Paving Equipment	Santa Clara	SF	BA	4.23E+02	1.97E+02	3.90E+01	5.50E-03	2.44E-03	8.61E-02	7.62E-06	7.19E-05	2.21E-01	3.36E-04	3.04E-04	3.31E-01	104
Paving Equipment	Santa Clara	SF	BA	7.16E+02	3.93E+02	2.29E+02	1.72E-02	1.26E-02	6.67E-01	3.13E-05	9.20E-03	1.10E+00	1.11E-03	9.53E-04	1.46E+00	460
Paving Equipment	Santa Clara	SF	BA	1.59E+01	8.73E+00	1.15E+01	8.89E-04	5.68E-04	3.46E-02	1.36E-06	4.50E-04	5.36E-02	3.61E-05	4.92E-05	6.59E-02	21
Paving Equipment	Santa Clara	SF	BA	9.05E+00	4.34E+00	9.78E+00	1.66E-04	2.72E-04	7.59E-03	9.95E-07	6.27E-06	8.18E-02	1.63E-05	9.17E-06	8.71E-02	27
Paving Equipment	Santa Clara	SF	BA	2.33E+00	1.12E+00	4.04E+00	4.04E-05	1.33E-04	1.07E-03	3.59E-07	2.88E-06	3.72E-02	5.29E-06	2.24E-06	3.89E-02	12
Surfacing Equipment	Santa Clara	SF	BA	7.77E+01	4.26E+01	8.64E+00	1.26E-03	5.58E-04	1.86E-02	1.71E-06	1.61E-05	4.94E-02	7.49E-05	6.98E-05	7.41E-02	23
Surfacing Equipment	Santa Clara	SF	BA	2.31E+02	3.19E+02	1.24E+02	9.78E-03	7.14E-03	3.60E-01	1.69E-05	4.96E-03	5.91E-01	7.46E-04	5.41E-04	8.34E-01	262
Surfacing Equipment	Santa Clara	SF	BA	3.16E+00	4.36E+00	4.15E+00	3.36E-04	2.14E-04	1.24E-02	4.87E-07	1.61E-04	1.92E-02	1.55E-05	1.86E-05	2.44E-02	8
Signal Boards	Santa Clara	SF	BA	9.60E-01	3.42E-01	1.12E-01	1.45E-05	6.43E-06	2.63E-04	2.13E-08	2.01E-07	6.15E-04	7.28E-07	8.04E-07	8.58E-04	0
Signal Boards	Santa Clara	SF	BA	6.83E+00	5.32E+00	3.20E+00	2.39E-04	1.75E-04	9.31E-03	4.37E-07	1.28E-04	1.53E-02	1.53E-05	1.33E-05	2.03E-02	6
Trenchers	Santa Clara	SF	BA	6.32E+01	7.52E+01	4.91E+01	3.79E-03	2.77E-03	1.43E-01	6.70E-06	1.97E-03	2.35E-01	2.29E-04	2.10E-04	3.10E-01	98
Trenchers	Santa Clara	SF	BA	4.89E+01	5.83E+01	8.24E+01	6.52E-03	4.16E-03	2.47E-01	9.69E-06	3.20E-03	3.82E-01	2.53E-04	3.60E-04	4.68E-01	147
Trenchers	Santa Clara	SF	BA	2.12E+01	2.34E+01	5.20E+01	1.91E-03	2.67E-03	6.04E-02	4.86E-06	3.06E-05	4.00E-01	1.22E-04	1.06E-04	4.40E-01	139
Trenchers	Santa Clara	SF	BA	7.04E+00	7.76E+00	3.30E+01	8.95E-04	2.51E-03	1.70E-02	2.79E-06	2.24E-05	2.89E-01	6.67E-05	4.95E-05	3.10E-01	98
Bore/Drill Rigs	Santa Clara	SF	BA	1.81E+00	6.14E-01	4.80E-01	3.52E-05	2.54E-05	1.40E-03	6.55E-08	1.93E-05	2.30E-03	1.99E-06	1.95E-06	2.96E-03	1
Bore/Drill Rigs	Santa Clara	SF	BA	8.98E+00	3.05E+00	4.42E+00	3.31E-04	2.10E-04	1.33E-02	5.21E-07	1.72E-04	2.05E-02	1.30E-05	1.84E-05	2.50E-02	8
Bore/Drill Rigs	Santa Clara	SF	BA	1.03E+00	3.01E-01	8.02E-01	2.23E-05	3.97E-05	6.89E-04	7.99E-08	5.03E-07	6.57E-03	1.67E-06	1.23E-06	7.12E-03	2
Bore/Drill Rigs	Santa Clara	SF	BA	4.71E+00	1.38E+00	9.12E+00	1.78E-04	6.76E-04	3.39E-03	7.93E-07	6.36E-06	8.20E-02	1.45E-05	9.88E-06	8.67E-02	27
Bore/Drill Rigs	Santa Clara	SF	BA	1.17E+00	3.42E-01	3.10E+00	3.56E-05	2.64E-04	9.36E-04	2.81E-07	2.25E-06	2.83E-02	4.58E-06	1.97E-06	2.97E-02	9
Concrete/Industrial Saws	Santa Clara	SF	BA	3.31E+01	1.18E+01	3.18E+00	4.11E-04	1.82E-04	7.45E-03	6.03E-07	5.69E-06	1.74E-02	2.26E-05	2.28E-05	2.49E-02	8
Concrete/Industrial Saws	Santa Clara	SF	BA	1.49E+02	1.27E+02	8.79E+01	6.63E-03	4.84E-03	2.56E-01	1.20E-05	3.53E-03	4.21E-01	3.94E-04	3.67E-04	5.51E-01	173
Concrete/Industrial Saws	Santa Clara	SF	BA	4.66E+01	3.96E+01	5.36E+01	4.14E-03	2.64E-03	1.61E-01	6.31E-06	2.09E-03	2.49E-01	1.66E-04	2.29E-04	3.05E-01	96
Concrete/Industrial Saws	Santa Clara	SF	BA	3.82E+00	6.40E+00	1.78E+01	1.90E-04	2.74E-04	1.29E-02	1.83E-06	1.16E-05	1.51E-01	2.12E-05	1.05E-05	1.58E-01	50
Concrete/Industrial Saws	Santa Clara	SF	BA	2.19E+00	3.67E+00	1.73E+01	7.79E-05	1.76E-04	3.51E-03	1.56E-06	1.25E-05	1.61E-01	1.28E-05	4.31E-06	1.65E-01	52
Cement and Mortar Mixers	Santa Clara	SF	BA	6.02E+02	1.52E+02	3.91E+01	4.91E-03	2.17E-03	9.31E-02	7.32E-06	6.91E-05	2.12E-01	2.79E-04	2.72E-04	3.04E-01	96
Cement and Mortar Mixers	Santa Clara	SF	BA	1.02E+03	2.57E+02	1.25E+02	1.12E-02	5.93E-03	3.77E-01	1.64E-05	4.76E-03	5.75E-01	6.09E-04	6.20E-04	7.76E-01	244
Cement and Mortar Mixers	Santa Clara	SF	BA	4.29E+00	1.08E+00	1.67E+00	1.45E-04	7.11E-05	5.12E-03	1.92E-07	6.25E-05	7.56E-03	4.47E-06	8.00E-06	9.11E-03	3
Cranes	Santa Clara	SF	BA	1.17E+00	1.33E+00	2.60E+00	9.66E-05	1.33E-04	3.05E-03	2.42E-07	1.53E-06	1.99E-02	6.48E-06	5.34E-06	2.20E-02	7
Cranes	Santa Clara	SF	BA	2.33E+00	2.65E+00	9.03E+00	2.47E-04	6.88E-04	4.70E-03	7.61E-07	6.10E-06	7.88E-02	2.03E-05	1.37E-05	8.54E-02	27
Cranes	Santa Clara	SF	BA	9.33E-02	1.06E-01	5.71E-01	8.03E-06	5.23E-05	1.92E-04	5.14E-08	4.12E-07	5.18E-03	1.14E-06	4.44E-07	5.54E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.64E+00	1.30E+00	9.81E-01	7.36E-05	5.37E-05	2.86E-03	1.34E-07	3.94E-05	4.70E-03	4.21E-06	4.07E-06	6.09E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.07E+00	8.50E-01	1.18E+00	9.05E-05	5.78E-05	3.53E-03	1.39E-07	4.59E-05	5.47E-03	3.60E-06	5.01E-06	6.69E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.35E+00	8.94E-01	7.02E+00	1.62E-04	5.26E-04	3.07E-03	6.02E-07	4.82E-06	6.23E-02	1.05E-05	8.94E-06	6.57E-02	21

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Rough Terrain Forklifts	Santa Clara	SF	BA	4.66E-01	5.28E-01	1.76E+00	6.53E-05	9.03E-05	2.06E-03	1.64E-07	1.03E-06	1.35E-02	3.43E-06	3.61E-06	1.46E-02	5
Rough Terrain Forklifts	Santa Clara	SF	BA	6.62E+00	7.50E+00	3.93E+01	1.07E-03	2.99E-03	2.04E-02	3.31E-06	2.66E-05	3.43E-01	7.21E-05	5.95E-05	3.66E-01	115
Rough Terrain Forklifts	Santa Clara	SF	BA	2.33E-01	2.64E-01	2.16E+00	3.04E-05	1.98E-04	7.26E-04	1.95E-07	1.56E-06	1.96E-02	3.55E-06	1.68E-06	2.08E-02	7
Rubber Tired Loaders	Santa Clara	SF	BA	1.17E+00	1.64E+00	4.03E+00	1.49E-04	1.97E-04	4.94E-03	3.71E-07	2.34E-06	3.05E-02	8.77E-06	8.25E-06	3.34E-02	11
Rubber Tired Loaders	Santa Clara	SF	BA	7.74E+00	1.09E+01	4.15E+01	1.13E-03	2.95E-03	2.22E-02	3.49E-06	2.80E-05	3.61E-01	8.43E-05	6.26E-05	3.88E-01	122
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	4.10E+00	9.79E+00	2.88E+01	4.34E-04	9.97E-04	1.51E-02	2.44E-06	1.96E-05	2.53E-01	4.55E-05	2.39E-05	2.67E-01	84
Skid Steer Loaders	Santa Clara	SF	BA	3.22E+00	2.81E+00	2.26E+00	1.73E-04	1.26E-04	6.58E-03	3.09E-07	9.07E-05	1.08E-02	9.53E-06	9.56E-06	1.40E-02	4
Skid Steer Loaders	Santa Clara	SF	BA	2.15E+02	1.88E+02	2.11E+02	1.66E-02	1.06E-02	6.33E-01	2.49E-05	8.23E-03	9.82E-01	7.19E-04	9.16E-04	1.22E+00	385
Skid Steer Loaders	Santa Clara	SF	BA	3.18E+01	2.70E+01	5.19E+01	6.26E-04	9.35E-04	4.16E-02	5.27E-06	3.32E-05	4.33E-01	7.80E-05	3.46E-05	4.58E-01	144
Skid Steer Loaders	Santa Clara	SF	BA	1.90E+01	1.62E+01	6.92E+01	3.87E-04	1.01E-03	1.64E-02	6.19E-06	4.96E-05	6.41E-01	6.10E-05	2.15E-05	6.60E-01	208
Dumpers/Tenders	Santa Clara	SF	BA	3.07E+01	1.25E+01	1.71E+00	2.47E-04	1.09E-04	3.68E-03	3.36E-07	3.18E-06	9.74E-03	1.77E-05	1.37E-05	1.55E-02	5
Dumpers/Tenders	Santa Clara	SF	BA	6.55E+01	2.68E+01	1.01E+01	8.78E-04	5.11E-04	3.00E-02	1.33E-06	3.88E-04	4.67E-02	5.74E-05	4.86E-05	6.55E-02	21
Dumpers/Tenders	Santa Clara	SF	BA	1.21E+01	4.96E+00	4.02E+00	3.44E-04	1.83E-04	1.22E-02	4.64E-07	1.52E-04	1.83E-02	1.51E-05	1.90E-05	2.34E-02	7
Dumpers/Tenders	Santa Clara	SF	BA	8.40E-01	2.92E-01	7.53E-01	1.51E-05	5.59E-05	2.87E-04	6.53E-08	5.23E-07	6.75E-03	1.86E-06	8.37E-07	7.35E-03	2
Other Construction Equipment	Santa Clara	SF	BA	3.26E+00	3.32E+00	1.82E+01	7.39E-05	2.41E-04	5.66E-03	1.66E-06	1.33E-05	1.67E-01	1.42E-05	4.09E-06	1.71E-01	54
Pavers	Santa Clara	SF	BA	8.90E-01	2.00E+00	1.70E+00	2.39E-05	1.47E-04	7.89E-05	2.37E-07	7.02E-06	1.87E-02	0.00E+00	2.16E-06	1.87E-02	6
Pavers	Santa Clara	SF	BA	5.17E+01	1.18E+02	1.55E+02	7.56E-03	1.69E-02	2.07E-02	2.14E-05	1.71E-03	1.65E+00	0.00E+00	6.82E-04	1.67E+00	525
Pavers	Santa Clara	SF	BA	6.10E+01	1.39E+02	4.42E+02	9.12E-03	5.53E-02	3.49E-02	5.65E-05	4.74E-03	4.82E+00	0.00E+00	8.22E-04	4.83E+00	1,521
Pavers	Santa Clara	SF	BA	3.79E+01	8.66E+01	5.07E+02	7.33E-03	5.66E-02	3.35E-02	6.24E-05	3.11E-03	5.55E+00	0.00E+00	6.61E-04	5.56E+00	1,751
Pavers	Santa Clara	SF	BA	4.57E+00	1.04E+01	9.20E+01	1.02E-03	9.42E-03	3.04E-03	1.14E-05	3.63E-04	1.01E+00	0.00E+00	9.23E-05	1.02E+00	320
Pavers	Santa Clara	SF	BA	4.69E+00	1.07E+01	1.13E+02	1.16E-03	1.05E-02	4.63E-03	1.22E-05	4.04E-04	1.25E+00	0.00E+00	1.04E-04	1.25E+00	393
Plate Compactors	Santa Clara	SF	BA	1.91E+01	3.14E+01	6.19E+00	7.89E-05	4.94E-04	4.14E-04	1.05E-06	1.92E-05	6.77E-02	0.00E+00	7.12E-06	6.79E-02	21
Rollers	Santa Clara	SF	BA	3.59E+01	6.84E+01	1.97E+01	2.51E-04	1.57E-03	1.32E-03	3.36E-06	6.14E-05	2.16E-01	0.00E+00	2.27E-05	2.16E-01	68
Rollers	Santa Clara	SF	BA	1.50E+01	2.86E+01	1.74E+01	2.30E-04	1.46E-03	7.85E-04	2.42E-06	5.68E-05	1.91E-01	0.00E+00	2.08E-05	1.91E-01	60
Rollers	Santa Clara	SF	BA	4.67E+01	8.98E+01	1.08E+02	4.25E-03	1.12E-02	1.27E-02	1.51E-05	1.02E-03	1.17E+00	0.00E+00	3.83E-04	1.17E+00	370
Rollers	Santa Clara	SF	BA	2.51E+02	4.82E+02	1.30E+03	2.22E-02	1.42E-01	9.71E-02	1.67E-04	1.19E-02	1.42E+01	0.00E+00	2.00E-03	1.43E+01	4,488
Rollers	Santa Clara	SF	BA	1.01E+02	1.94E+02	9.56E+02	1.14E-02	9.24E-02	5.99E-02	1.18E-04	4.94E-03	1.05E+01	0.00E+00	1.03E-03	1.05E+01	3,306
Rollers	Santa Clara	SF	BA	1.43E+01	2.75E+01	1.91E+02	1.62E-03	1.65E-02	5.11E-03	2.37E-05	5.60E-04	2.10E+00	0.00E+00	1.46E-04	2.11E+00	663
Rollers	Santa Clara	SF	BA	1.00E+01	1.93E+01	1.92E+02	1.50E-03	1.48E-02	5.71E-03	2.07E-05	5.18E-04	2.11E+00	0.00E+00	1.35E-04	2.11E+00	666
Scrapers	Santa Clara	SF	BA	2.31E+00	7.05E+00	3.04E+01	6.23E-04	3.72E-03	2.42E-03	3.88E-06	3.21E-04	3.31E-01	0.00E+00	5.62E-05	3.32E-01	104
Scrapers	Santa Clara	SF	BA	2.12E+01	6.45E+01	4.36E+02	6.36E-03	4.75E-02	2.92E-02	5.37E-05	2.65E-03	4.77E+00	0.00E+00	5.74E-04	4.79E+00	1,507
Scrapers	Santa Clara	SF	BA	2.07E+01	6.29E+01	5.98E+02	6.71E-03	5.95E-02	1.93E-02	7.41E-05	2.28E-03	6.58E+00	0.00E+00	6.06E-04	6.60E+00	2,076
Scrapers	Santa Clara	SF	BA	5.68E+01	1.73E+02	2.53E+03	2.62E-02	2.26E-01	9.83E-02	2.73E-04	8.76E-03	2.78E+01	0.00E+00	2.37E-03	2.79E+01	8,770
Scrapers	Santa Clara	SF	BA	1.08E+00	3.29E+00	8.30E+01	8.65E-04	7.57E-03	3.23E-03	9.18E-06	2.91E-04	9.13E-01	0.00E+00	7.81E-05	9.15E-01	288
Paving Equipment	Santa Clara	SF	BA	1.54E+00	3.51E+00	2.02E+00	2.67E-05	1.69E-04	9.11E-05	2.81E-07	6.59E-06	2.21E-02	0.00E+00	2.41E-06	2.22E-02	7
Paving Equipment	Santa Clara	SF	BA	1.31E+00	2.99E+00	3.35E+00	1.63E-04	3.65E-04	4.44E-04	4.62E-07	3.69E-05	3.58E-02	0.00E+00	1.47E-05	3.61E-02	11
Paving Equipment	Santa Clara	SF	BA	1.88E+01	4.31E+01	1.08E+02	2.21E-03	1.34E-02	8.45E-03	1.38E-05	1.16E-03	1.17E+00	0.00E+00	2.00E-04	1.18E+00	371
Paving Equipment	Santa Clara	SF	BA	8.84E+00	2.03E+01	9.35E+01	1.34E-03	1.04E-02	6.12E-03	1.15E-05	5.71E-04	1.02E+00	0.00E+00	1.21E-04	1.03E+00	323
Paving Equipment	Santa Clara	SF	BA	2.49E+00	5.71E+00	3.17E+01	3.44E-04	3.23E-03	1.03E-03	3.93E-06	1.23E-04	3.49E-01	0.00E+00	3.11E-05	3.50E-01	110
Surfacing Equipment	Santa Clara	SF	BA	1.19E+00	1.47E+00	9.61E-01	3.25E-05	9.64E-05	1.01E-04	1.34E-07	8.07E-06	1.04E-02	0.00E+00	2.93E-06	1.04E-02	3
Surfacing Equipment	Santa Clara	SF	BA	2.37E-01	2.95E-01	8.59E-01	1.33E-05	9.08E-05	6.15E-05	1.10E-07	7.02E-06	9.38E-03	0.00E+00	1.20E-06	9.41E-03	3
Surfacing Equipment	Santa Clara	SF	BA	1.78E-01	2.21E-01	8.63E-01	9.28E-06	8.07E-05	5.21E-05	1.07E-07	4.00E-06	9.47E-03	0.00E+00	8.38E-07	9.49E-03	3
Surfacing Equipment	Santa Clara	SF	BA	3.56E-01	4.42E-01	2.70E+00	2.11E-05	2.26E-04	7.15E-05	3.35E-07	7.53E-06	2.98E-02	0.00E+00	1.90E-06	2.98E-02	9
Surfacing Equipment	Santa Clara	SF	BA	2.97E+00	3.68E+00	3.69E+01	2.64E-04	2.79E-03	1.12E-03	3.99E-06	9.49E-05	4.07E-01	0.00E+00	2.38E-05	4.07E-01	128
Surfacing Equipment	Santa Clara	SF	BA	2.06E-01	2.56E-01	4.03E+00	2.92E-05	3.11E-04	1.22E-04	4.47E-07	1.05E-05	4.44E-02	0.00E+00	2.64E-06	4.45E-02	14
Signal Boards	Santa Clara	SF	BA	1.67E+02	3.44E+02	9.67E+01	1.23E-03	7.72E-03	6.47E-03	1.65E-05	3.02E-04	1.06E+00	0.00E+00	1.11E-04	1.06E+00	334
Signal Boards	Santa Clara	SF	BA	8.31E-01	1.22E+00	2.04E+00	6.30E-05	1.99E-04	2.03E-04	2.85E-07	1.64E-05	2.20E-02	0.00E+00	5.68E-06	2.22E-02	7

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Signal Boards	Santa Clara	SF	BA	1.36E+01	1.99E+01	7.31E+01	1.07E-03	7.29E-03	5.14E-03	9.37E-06	5.81E-04	7.99E-01	0.00E+00	9.62E-05	8.01E-01	252
Signal Boards	Santa Clara	SF	BA	8.43E+00	1.24E+01	8.70E+01	8.73E-04	7.69E-03	5.14E-03	1.07E-05	3.83E-04	9.54E-01	0.00E+00	7.88E-05	9.56E-01	301
Signal Boards	Santa Clara	SF	BA	1.78E+00	2.61E+00	3.02E+01	1.98E-04	2.35E-03	6.80E-04	3.75E-06	6.85E-05	3.33E-01	0.00E+00	1.79E-05	3.33E-01	105
Trenchers	Santa Clara	SF	BA	4.45E+00	7.54E+00	2.91E+00	3.71E-05	2.32E-04	1.95E-04	4.96E-07	9.08E-06	3.19E-02	0.00E+00	3.35E-06	3.20E-02	10
Trenchers	Santa Clara	SF	BA	4.69E+00	7.94E+00	1.19E+01	1.58E-04	9.96E-04	5.38E-04	1.66E-06	3.78E-05	1.31E-01	0.00E+00	1.42E-05	1.31E-01	41
Trenchers	Santa Clara	SF	BA	1.78E+02	3.08E+02	4.74E+02	2.27E-02	5.13E-02	6.15E-02	6.55E-05	5.13E-03	5.07E+00	0.00E+00	2.05E-03	5.11E+00	1,610
Trenchers	Santa Clara	SF	BA	2.42E+02	4.18E+02	1.24E+03	2.53E-02	1.56E-01	9.68E-02	1.59E-04	1.31E-02	1.35E+01	0.00E+00	2.28E-03	1.36E+01	4,279
Trenchers	Santa Clara	SF	BA	2.65E+01	4.57E+01	3.00E+02	4.26E-03	3.37E-02	1.96E-02	3.70E-05	1.82E-03	3.29E+00	0.00E+00	3.84E-04	3.30E+00	1,037
Trenchers	Santa Clara	SF	BA	2.37E+00	4.10E+00	4.15E+01	4.56E-04	4.29E-03	1.39E-03	5.14E-06	1.67E-04	4.57E-01	0.00E+00	4.11E-05	4.58E-01	144
Trenchers	Santa Clara	SF	BA	3.03E+00	5.23E+00	7.40E+01	7.41E-04	6.91E-03	3.17E-03	7.98E-06	2.68E-04	8.13E-01	0.00E+00	6.68E-05	8.15E-01	256
Trenchers	Santa Clara	SF	BA	4.13E-02	7.13E-02	1.90E+00	1.92E-05	1.81E-04	8.15E-05	2.10E-07	6.94E-06	2.09E-02	0.00E+00	1.73E-06	2.10E-02	7
Bore/Drill Rigs	Santa Clara	SF	BA	5.93E-01	1.32E+00	6.23E-01	7.94E-06	4.97E-05	4.16E-05	1.06E-07	1.94E-06	6.82E-03	0.00E+00	7.16E-07	6.84E-03	2
Bore/Drill Rigs	Santa Clara	SF	BA	1.78E+00	3.96E+00	2.88E+00	3.82E-05	2.42E-04	1.30E-04	4.01E-07	9.42E-06	3.16E-02	0.00E+00	3.45E-06	3.17E-02	10
Bore/Drill Rigs	Santa Clara	SF	BA	7.77E+00	1.79E+01	2.54E+01	2.29E-04	2.15E-03	2.02E-03	3.60E-06	8.55E-05	2.78E-01	0.00E+00	2.06E-05	2.79E-01	88
Bore/Drill Rigs	Santa Clara	SF	BA	2.39E+01	5.51E+01	1.93E+02	1.12E-03	1.17E-02	1.29E-02	2.49E-05	5.60E-04	2.12E+00	0.00E+00	1.01E-04	2.12E+00	669
Bore/Drill Rigs	Santa Clara	SF	BA	5.52E+00	1.27E+01	8.17E+01	4.27E-04	4.15E-03	4.80E-03	1.01E-05	1.57E-04	8.98E-01	0.00E+00	3.85E-05	8.99E-01	283
Bore/Drill Rigs	Santa Clara	SF	BA	4.75E+00	1.10E+01	9.32E+01	4.03E-04	3.36E-03	1.88E-03	1.16E-05	9.83E-05	1.03E+00	0.00E+00	3.64E-05	1.03E+00	324
Bore/Drill Rigs	Santa Clara	SF	BA	1.06E+01	2.44E+01	3.43E+02	1.47E-03	1.16E-02	6.72E-03	3.72E-05	3.58E-04	3.79E+00	0.00E+00	1.33E-04	3.80E+00	1,195
Bore/Drill Rigs	Santa Clara	SF	BA	6.40E-01	1.48E+00	4.11E+01	1.76E-04	1.40E-03	8.04E-04	4.57E-06	4.31E-05	4.54E-01	0.00E+00	1.59E-05	4.54E-01	143
Bore/Drill Rigs	Santa Clara	SF	BA	1.07E+00	2.48E+00	1.04E+02	4.82E-04	6.70E-03	2.05E-03	1.15E-05	1.75E-04	1.15E+00	0.00E+00	4.34E-05	1.15E+00	362
Excavators	Santa Clara	SF	BA	2.20E+00	8.40E+00	6.29E+00	8.33E-05	5.26E-04	2.84E-04	8.76E-07	1.96E-05	6.90E-02	0.00E+00	7.51E-06	6.92E-02	22
Excavators	Santa Clara	SF	BA	8.27E+01	3.22E+02	3.73E+02	1.17E-02	3.79E-02	4.44E-02	5.21E-05	3.04E-03	4.03E+00	0.00E+00	1.06E-03	4.05E+00	1,275
Excavators	Santa Clara	SF	BA	2.24E+02	8.75E+02	2.95E+03	4.36E-02	2.77E-01	2.25E-01	3.78E-04	2.26E-02	3.22E+01	0.00E+00	3.93E-03	3.23E+01	10,159
Excavators	Santa Clara	SF	BA	4.33E+02	1.69E+03	8.64E+03	9.56E-02	7.02E-01	5.62E-01	1.07E-03	3.85E-02	9.47E+01	0.00E+00	8.62E-03	9.48E+01	29,853
Excavators	Santa Clara	SF	BA	1.76E+02	6.87E+02	4.93E+03	4.05E-02	3.46E-01	1.19E-01	6.12E-04	1.14E-02	5.44E+01	0.00E+00	3.65E-03	5.45E+01	17,159
Excavators	Santa Clara	SF	BA	1.27E+02	4.95E+02	5.24E+03	4.10E-02	3.25E-01	1.26E-01	5.68E-04	1.15E-02	5.78E+01	0.00E+00	3.70E-03	5.79E+01	18,231
Excavators	Santa Clara	SF	BA	3.23E-01	1.26E+00	2.21E+01	1.74E-04	1.41E-03	5.33E-04	2.45E-06	4.91E-05	2.44E-01	0.00E+00	1.57E-05	2.44E-01	77
Concrete/Industrial Saws	Santa Clara	SF	BA	2.37E-01	3.85E-01	2.89E-01	3.83E-06	2.42E-05	1.31E-05	4.02E-08	9.18E-07	3.17E-03	0.00E+00	3.45E-07	3.18E-03	1
Concrete/Industrial Saws	Santa Clara	SF	BA	2.08E+00	3.30E+00	4.61E+00	1.42E-04	4.54E-04	4.66E-04	6.44E-07	3.72E-05	4.98E-02	0.00E+00	1.29E-05	5.01E-02	16
Concrete/Industrial Saws	Santa Clara	SF	BA	3.62E+00	5.76E+00	1.95E+01	2.81E-04	1.94E-03	1.38E-03	2.50E-06	1.55E-04	2.13E-01	0.00E+00	2.53E-05	2.14E-01	67
Concrete/Industrial Saws	Santa Clara	SF	BA	1.19E-01	1.89E-01	1.38E+00	1.37E-05	1.20E-04	8.19E-05	1.70E-07	6.07E-06	1.51E-02	0.00E+00	1.24E-06	1.51E-02	5
Cement and Mortar Mixers	Santa Clara	SF	BA	3.03E+01	2.49E+01	7.19E+00	9.23E-05	5.81E-04	4.81E-04	1.23E-06	2.45E-05	7.88E-02	0.00E+00	8.33E-06	7.89E-02	25
Cement and Mortar Mixers	Santa Clara	SF	BA	2.73E+00	2.25E+00	1.80E+00	2.90E-05	1.66E-04	8.91E-05	2.50E-07	8.77E-06	1.97E-02	0.00E+00	2.62E-06	1.97E-02	6
Cranes	Santa Clara	SF	BA	2.02E+00	7.08E+00	7.65E+00	3.30E-04	8.19E-04	9.94E-04	1.06E-06	7.81E-05	8.21E-02	0.00E+00	2.97E-05	8.27E-02	26
Cranes	Santa Clara	SF	BA	2.21E+01	7.77E+01	1.79E+02	3.33E-03	2.01E-02	1.39E-02	2.28E-05	1.76E-03	1.95E+00	0.00E+00	3.01E-04	1.95E+00	615
Cranes	Santa Clara	SF	BA	2.21E+01	7.77E+01	2.85E+02	3.79E-03	2.84E-02	1.87E-02	3.51E-05	1.60E-03	3.12E+00	0.00E+00	3.42E-04	3.13E+00	984
Cranes	Santa Clara	SF	BA	4.29E+01	1.51E+02	7.66E+02	7.37E-03	6.84E-02	2.12E-02	9.50E-05	2.38E-03	8.44E+00	0.00E+00	6.65E-04	8.46E+00	2,662
Cranes	Santa Clara	SF	BA	1.57E+01	5.52E+01	4.51E+02	4.05E-03	3.58E-02	1.37E-02	4.88E-05	1.30E-03	4.97E+00	0.00E+00	3.65E-04	4.98E+00	1,566
Cranes	Santa Clara	SF	BA	1.34E+00	4.71E+00	6.47E+01	5.85E-04	5.27E-03	1.96E-03	7.17E-06	1.89E-04	7.13E-01	0.00E+00	5.27E-05	7.15E-01	225
Cranes	Santa Clara	SF	BA	1.69E+00	5.91E+00	2.61E+02	2.70E-03	2.90E-02	9.18E-03	2.88E-05	8.87E-04	2.87E+00	0.00E+00	2.43E-04	2.87E+00	904
Graders	Santa Clara	SF	BA	8.31E-01	2.16E+00	2.77E+00	1.06E-04	2.88E-04	3.43E-04	3.85E-07	2.58E-05	2.98E-02	0.00E+00	9.60E-06	3.00E-02	9
Graders	Santa Clara	SF	BA	5.54E+01	1.44E+02	4.96E+02	8.41E-03	5.24E-02	3.80E-02	6.34E-05	4.42E-03	5.41E+00	0.00E+00	7.58E-04	5.42E+00	1,708
Graders	Santa Clara	SF	BA	1.89E+02	4.93E+02	2.79E+03	3.41E-02	2.59E-01	1.81E-01	3.44E-04	1.42E-02	3.05E+01	0.00E+00	3.08E-03	3.06E+01	9,636
Graders	Santa Clara	SF	BA	1.17E+02	3.06E+02	2.39E+03	2.15E-02	1.96E-01	6.39E-02	2.96E-04	6.80E-03	2.63E+01	0.00E+00	1.94E-03	2.64E+01	8,300
Graders	Santa Clara	SF	BA	3.32E+00	8.66E+00	9.00E+01	7.61E-04	6.59E-03	2.59E-03	9.74E-06	2.38E-04	9.93E-01	0.00E+00	6.86E-05	9.94E-01	313
Graders	Santa Clara	SF	BA	2.06E-02	5.38E-02	1.18E+00	1.01E-05	8.89E-05	3.41E-05	1.31E-07	3.17E-06	1.31E-02	0.00E+00	9.07E-07	1.31E-02	4
Off-Highway Trucks	Santa Clara	SF	BA	3.86E+00	2.10E+01	1.20E+02	1.42E-03	1.01E-02	7.95E-03	1.48E-05	5.65E-04	1.31E+00	0.00E+00	1.28E-04	1.32E+00	415

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Off-Highway Trucks	Santa Clara	SF	BA	2.85E+01	1.55E+02	1.17E+03	1.03E-02	8.57E-02	2.92E-02	1.45E-04	2.86E-03	1.29E+01	0.00E+00	9.28E-04	1.29E+01	4,073
Off-Highway Trucks	Santa Clara	SF	BA	4.01E+01	2.19E+02	2.70E+03	2.26E-02	1.74E-01	6.70E-02	2.92E-04	6.19E-03	2.98E+01	0.00E+00	2.04E-03	2.98E+01	9,380
Off-Highway Trucks	Santa Clara	SF	BA	4.33E+00	2.36E+01	4.72E+02	3.97E-03	3.14E-02	1.17E-02	5.24E-05	1.10E-03	5.21E+00	0.00E+00	3.58E-04	5.22E+00	1,642
Off-Highway Trucks	Santa Clara	SF	BA	2.03E+00	1.11E+01	3.13E+02	2.87E-03	3.08E-02	8.67E-03	3.47E-05	9.19E-04	3.45E+00	0.00E+00	2.59E-04	3.46E+00	1,088
Crushing/Proc. Equipment	Santa Clara	SF	BA	9.49E+00	2.49E+01	5.08E+01	1.93E-03	5.19E-03	5.97E-03	7.07E-06	4.76E-04	5.47E-01	0.00E+00	1.74E-04	5.50E-01	173
Crushing/Proc. Equipment	Santa Clara	SF	BA	2.68E+01	7.01E+01	2.67E+02	4.49E-03	2.80E-02	2.00E-02	3.41E-05	2.46E-03	2.91E+00	0.00E+00	4.05E-04	2.92E+00	919
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.13E+01	2.97E+01	2.26E+02	2.67E-03	2.10E-02	1.42E-02	2.79E-05	1.16E-03	2.48E+00	0.00E+00	2.41E-04	2.49E+00	782
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.13E+00	2.95E+00	3.27E+01	2.57E-04	2.69E-03	7.80E-04	4.06E-06	8.28E-05	3.61E-01	0.00E+00	2.32E-05	3.61E-01	114
Crushing/Proc. Equipment	Santa Clara	SF	BA	6.35E+00	1.66E+01	2.81E+02	2.06E-03	2.02E-02	6.72E-03	3.05E-05	6.65E-04	3.10E+00	0.00E+00	1.86E-04	3.11E+00	978
Crushing/Proc. Equipment	Santa Clara	SF	BA	3.44E-02	9.01E-02	2.40E+00	1.76E-05	1.79E-04	5.69E-05	2.67E-07	5.76E-06	2.65E-02	0.00E+00	1.59E-06	2.65E-02	8
Crushing/Proc. Equipment	Santa Clara	SF	BA	3.44E-02	9.01E-02	5.34E+00	4.73E-05	5.58E-04	1.51E-04	5.92E-07	1.61E-05	5.89E-02	0.00E+00	4.27E-06	5.90E-02	19
Rough Terrain Forklifts	Santa Clara	SF	BA	6.59E+00	2.05E+01	3.21E+01	1.08E-03	3.25E-03	3.73E-03	4.47E-06	2.77E-04	3.46E-01	0.00E+00	9.71E-05	3.48E-01	110
Rough Terrain Forklifts	Santa Clara	SF	BA	3.15E+02	9.80E+02	2.80E+03	4.29E-02	2.74E-01	2.10E-01	3.58E-04	2.32E-02	3.06E+01	0.00E+00	3.87E-03	3.06E+01	9,645
Rough Terrain Forklifts	Santa Clara	SF	BA	4.04E+01	1.25E+02	7.14E+02	7.92E-03	6.11E-02	4.54E-02	8.81E-05	3.34E-03	7.83E+00	0.00E+00	7.15E-04	7.84E+00	2,469
Rough Terrain Forklifts	Santa Clara	SF	BA	2.25E+00	7.00E+00	5.41E+01	4.30E-04	4.07E-03	1.30E-03	6.72E-06	1.31E-04	5.97E-01	0.00E+00	3.88E-05	5.98E-01	188
Rough Terrain Forklifts	Santa Clara	SF	BA	1.48E+00	4.61E+00	5.35E+01	4.02E-04	3.52E-03	1.27E-03	5.80E-06	1.22E-04	5.90E-01	0.00E+00	3.62E-05	5.91E-01	186
Rubber Tired Loaders	Santa Clara	SF	BA	8.31E-01	2.18E+00	1.68E+00	2.22E-05	1.41E-04	7.59E-05	2.34E-07	5.34E-06	1.84E-02	0.00E+00	2.01E-06	1.85E-02	6
Rubber Tired Loaders	Santa Clara	SF	BA	1.61E+01	4.32E+01	6.24E+01	2.35E-03	6.47E-03	7.62E-03	8.68E-06	5.74E-04	6.72E-01	0.00E+00	2.12E-04	6.76E-01	213
Rubber Tired Loaders	Santa Clara	SF	BA	4.39E+02	1.17E+03	3.16E+03	5.28E-02	3.31E-01	2.41E-01	4.05E-04	2.79E-02	3.45E+01	0.00E+00	4.76E-03	3.46E+01	10,901
Rubber Tired Loaders	Santa Clara	SF	BA	2.47E+02	6.61E+02	3.21E+03	3.86E-02	2.94E-01	2.07E-01	3.95E-04	1.61E-02	3.51E+01	0.00E+00	3.48E-03	3.52E+01	11,079
Rubber Tired Loaders	Santa Clara	SF	BA	2.46E+02	6.58E+02	4.44E+03	3.90E-02	3.60E-01	1.17E-01	5.51E-04	1.23E-02	4.89E+01	0.00E+00	3.51E-03	4.90E+01	15,430
Rubber Tired Loaders	Santa Clara	SF	BA	1.02E+02	2.74E+02	2.94E+03	2.42E-02	2.12E-01	8.32E-02	3.18E-04	7.57E-03	3.24E+01	0.00E+00	2.18E-03	3.24E+01	10,215
Rubber Tired Loaders	Santa Clara	SF	BA	8.33E-01	2.23E+00	4.90E+01	4.05E-04	3.63E-03	1.39E-03	5.43E-06	1.28E-04	5.40E-01	0.00E+00	3.66E-05	5.41E-01	170
Rubber Tired Loaders	Santa Clara	SF	BA	8.95E-02	2.39E-01	6.44E+00	5.88E-05	6.70E-04	2.08E-04	7.13E-07	2.01E-05	7.09E-02	0.00E+00	5.30E-06	7.10E-02	22
Rubber Tired Dozers	Santa Clara	SF	BA	5.93E-01	2.65E+00	1.57E+01	2.69E-04	1.96E-03	1.11E-03	1.93E-06	1.11E-04	1.71E-01	0.00E+00	2.42E-05	1.72E-01	54
Rubber Tired Dozers	Santa Clara	SF	BA	1.45E+01	6.48E+01	5.41E+02	7.52E-03	6.32E-02	2.13E-02	6.69E-05	2.66E-03	5.94E+00	0.00E+00	6.78E-04	5.96E+00	1,875
Rubber Tired Dozers	Santa Clara	SF	BA	2.24E+01	9.97E+01	1.20E+03	1.53E-02	1.28E-01	6.64E-02	1.30E-04	5.27E-03	1.32E+01	0.00E+00	1.38E-03	1.32E+01	4,164
Rubber Tired Dozers	Santa Clara	SF	BA	9.15E-01	4.08E+00	7.41E+01	9.46E-04	7.98E-03	4.09E-03	8.17E-06	3.27E-04	8.13E-01	0.00E+00	8.54E-05	8.15E-01	256
Rubber Tired Dozers	Santa Clara	SF	BA	6.19E-02	2.76E-01	7.45E+00	9.94E-05	9.83E-04	4.45E-04	8.20E-07	3.39E-05	8.16E-02	0.00E+00	8.96E-06	8.18E-02	26
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.67E+01	4.32E+01	3.12E+01	4.17E-04	2.65E-03	1.41E-03	4.35E-06	1.13E-04	3.43E-01	0.00E+00	3.76E-05	3.43E-01	108
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.00E+02	2.65E+02	3.71E+02	1.05E-02	3.66E-02	4.11E-02	5.19E-05	2.79E-03	4.02E+00	0.00E+00	9.45E-04	4.04E+00	1,270
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.34E+03	3.54E+03	8.38E+03	1.12E-01	7.52E-01	6.20E-01	1.07E-03	5.95E-02	9.16E+01	0.00E+00	1.01E-02	9.18E+01	28,890
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	9.98E+01	2.64E+02	1.22E+03	1.22E-02	9.45E-02	7.74E-02	1.51E-04	5.02E-03	1.34E+01	0.00E+00	1.10E-03	1.34E+01	4,223
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	3.23E+01	8.55E+01	6.65E+02	4.88E-03	4.39E-02	1.54E-02	8.26E-05	1.41E-03	7.34E+00	0.00E+00	4.40E-04	7.35E+00	2,313
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	5.21E+01	1.38E+02	2.15E+03	1.51E-02	1.26E-01	5.00E-02	2.68E-04	4.32E-03	2.38E+01	0.00E+00	1.36E-03	2.38E+01	7,495
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	4.16E+00	1.10E+01	2.58E+02	1.82E-03	1.55E-02	5.99E-03	3.21E-05	5.27E-04	2.85E+00	0.00E+00	1.64E-04	2.85E+00	898
Crawler Tractors	Santa Clara	SF	BA	8.31E-01	2.38E+00	2.77E+00	1.30E-04	3.02E-04	3.76E-04	3.82E-07	2.98E-05	2.96E-02	0.00E+00	1.17E-05	2.98E-02	9
Crawler Tractors	Santa Clara	SF	BA	4.71E+02	1.35E+03	4.07E+03	8.20E-02	4.91E-01	3.25E-01	5.21E-04	4.23E-02	4.44E+01	0.00E+00	7.40E-03	4.46E+01	14,026
Crawler Tractors	Santa Clara	SF	BA	1.60E+02	4.57E+02	2.53E+03	3.64E-02	2.71E-01	1.69E-01	3.11E-04	1.51E-02	2.77E+01	0.00E+00	3.28E-03	2.77E+01	8,732
Crawler Tractors	Santa Clara	SF	BA	1.37E+02	3.93E+02	2.96E+03	3.28E-02	2.88E-01	9.42E-02	3.67E-04	1.10E-02	3.26E+01	0.00E+00	2.96E-03	3.27E+01	10,280
Crawler Tractors	Santa Clara	SF	BA	9.39E+01	2.69E+02	3.17E+03	3.25E-02	2.77E-01	1.20E-01	3.42E-04	1.07E-02	3.49E+01	0.00E+00	2.94E-03	3.49E+01	10,991
Crawler Tractors	Santa Clara	SF	BA	5.51E-01	1.58E+00	3.33E+01	3.43E-04	2.97E-03	1.26E-03	3.68E-06	1.14E-04	3.66E-01	0.00E+00	3.10E-05	3.67E-01	115
Crawler Tractors	Santa Clara	SF	BA	5.51E-01	1.58E+00	4.71E+01	5.20E-04	5.51E-03	1.99E-03	5.21E-06	1.75E-04	5.18E-01	0.00E+00	4.69E-05	5.19E-01	163
Skid Steer Loaders	Santa Clara	SF	BA	1.14E+02	2.61E+02	1.64E+02	2.54E-03	1.49E-02	7.94E-03	2.28E-05	7.73E-04	1.80E+00	0.00E+00	2.29E-04	1.80E+00	567
Skid Steer Loaders	Santa Clara	SF	BA	1.03E+03	2.41E+03	2.82E+03	5.33E-02	2.60E-01	2.64E-01	3.96E-04	1.61E-02	3.07E+01	0.00E+00	4.81E-03	3.08E+01	9,687
Skid Steer Loaders	Santa Clara	SF	BA	5.41E+02	1.26E+03	2.46E+03	2.39E-02	1.90E-01	1.72E-01	3.16E-04	1.29E-02	2.69E+01	0.00E+00	2.16E-03	2.70E+01	8,491
Off-Highway Tractors	Santa Clara	SF	BA	5.93E-02	1.81E-01	7.81E-01	1.82E-05	1.07E-04	6.45E-05	9.97E-08	9.19E-06	8.50E-03	0.00E+00	1.64E-06	8.53E-03	3

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Off-Highway Tractors	Santa Clara	SF	BA	7.26E+01	2.22E+02	1.32E+03	2.17E-02	1.62E-01	9.17E-02	1.63E-04	9.09E-03	1.45E+01	0.00E+00	1.96E-03	1.45E+01	4,564
Off-Highway Tractors	Santa Clara	SF	BA	6.86E+01	2.10E+02	1.24E+03	1.64E-02	1.42E-01	4.72E-02	1.54E-04	5.87E-03	1.37E+01	0.00E+00	1.48E-03	1.37E+01	4,311
Off-Highway Tractors	Santa Clara	SF	BA	3.45E+00	1.06E+01	2.73E+02	3.30E-03	2.87E-02	1.43E-02	3.01E-05	1.16E-03	3.00E+00	0.00E+00	2.98E-04	3.00E+00	946
Off-Highway Tractors	Santa Clara	SF	BA	3.65E-01	1.11E+00	4.13E+01	5.25E-04	5.35E-03	2.35E-03	4.56E-06	1.82E-04	4.53E-01	0.00E+00	4.74E-05	4.54E-01	143
Dumpers/Tenders	Santa Clara	SF	BA	1.42E+00	2.59E+00	8.97E-01	1.22E-05	7.68E-05	4.10E-05	1.25E-07	3.48E-06	9.85E-03	0.00E+00	1.10E-06	9.87E-03	3
Other Construction Equipment	Santa Clara	SF	BA	1.96E+01	3.72E+01	1.71E+01	2.18E-04	1.37E-03	1.15E-03	2.92E-06	5.33E-05	1.88E-01	0.00E+00	1.97E-05	1.88E-01	59
Other Construction Equipment	Santa Clara	SF	BA	3.32E+00	6.29E+00	3.78E+00	5.01E-05	3.17E-04	1.71E-04	5.27E-07	1.24E-05	4.15E-02	0.00E+00	4.52E-06	4.16E-02	13
Other Construction Equipment	Santa Clara	SF	BA	5.10E+00	9.82E+00	1.27E+01	3.28E-04	1.21E-03	1.26E-03	1.78E-06	8.97E-05	1.37E-01	0.00E+00	2.96E-05	1.38E-01	43
Other Construction Equipment	Santa Clara	SF	BA	8.43E+00	1.62E+01	5.99E+01	7.40E-04	5.32E-03	4.24E-03	7.68E-06	4.07E-04	6.55E-01	0.00E+00	6.68E-05	6.56E-01	207
Other Construction Equipment	Santa Clara	SF	BA	1.16E+01	2.24E+01	1.09E+02	9.70E-04	8.35E-03	6.56E-03	1.34E-05	4.18E-04	1.19E+00	0.00E+00	8.75E-05	1.19E+00	376
Other Construction Equipment	Santa Clara	SF	BA	2.70E+01	5.20E+01	5.97E+02	3.58E-03	3.49E-02	1.32E-02	6.48E-05	1.14E-03	6.60E+00	0.00E+00	3.23E-04	6.61E+00	2,080
				13,959	27,106	103,169	1.370	9.040	9.520	0.013	0.556	1,122.454	0.007	0.119	1,127	354,822
				Population	Activity	Consumption	lbs/day					Tons/Day				MTons/Year
				859	1,668	6,348	169	1,112	1,171	2	68	69	0	0	69	21,831
										Percent		6.15%				

As a percent of Total Building Permits issued.
SOURCE: U.S. Census Bureau. <http://censtats.census.gov/cgi-bin/bldgprmt/bldgdisp.pl>
Annual GHG emissions (MTons/Year) multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology for transportation within the Climate Change Scoping Plan Measure Documentation Supplement.

Buildings Estimates with Imputation			
	SC	Palo Alto	
2011	1,029	84	8.2%
2012	1,564	98	6.3%
2013	1,944	111	5.7%
2014	1,968	88	4.5%
avg	1,626	95	6.2%

Lawn & Garden												Tons/Day					MTons/Year				
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e					
Lawn Mowers	Santa Clara	SF	BA	2.21E+03	1.38E+03	1.56E+02	1.77E-02	4.69E-03	3.17E-01	3.88E-05	2.97E-03	9.42E-01	1.22E-03	1.10E-03	1.34E+00	445					
Lawn Mowers	Santa Clara	SF	BA	1.66E+04	7.03E+02	9.79E+01	2.04E-02	2.56E-03	2.46E-01	1.97E-05	1.62E-03	4.79E-01	6.14E-04	1.27E-03	6.96E-01	231					
Chainsaws	Santa Clara	SF	BA	3.95E+03	3.13E+03	1.87E+02	1.56E-01	2.45E-03	2.82E-01	3.14E-05	4.44E-04	7.63E-01	1.27E-03	9.70E-03	1.36E+00	450					
Chainsaws	Santa Clara	SF	BA	4.44E+04	5.96E+02	3.22E+01	1.59E-02	4.91E-04	6.67E-02	5.99E-06	2.71E-04	1.45E-01	2.46E-04	9.88E-04	2.42E-01	80					
Chainsaws	Santa Clara	SF	BA	2.78E+03	2.21E+03	3.18E+02	2.66E-01	4.17E-03	4.81E-01	5.35E-05	7.57E-04	1.30E+00	1.43E-03	1.65E-02	2.09E+00	692					
Chainsaws	Santa Clara	SF	BA	3.13E+04	4.20E+02	5.28E+01	2.47E-02	8.25E-04	1.07E-01	1.02E-05	5.05E-04	2.48E-01	2.75E-04	1.53E-03	3.65E-01	121					
Chainsaws Preempt	Santa Clara	SF	BA	3.46E+03	2.74E+03	3.96E+02	3.31E-01	5.19E-03	5.98E-01	6.66E-05	9.42E-04	1.62E+00	1.78E-03	2.06E-02	2.60E+00	861					
Chainsaws Preempt	Santa Clara	SF	BA	3.90E+04	5.23E+02	7.37E+01	4.08E-02	8.64E-04	1.58E-01	1.27E-05	3.77E-04	3.08E-01	3.13E-04	2.53E-03	4.58E-01	152					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.29E+04	4.28E+03	1.90E+02	1.03E-01	2.93E-03	3.38E-01	3.76E-05	5.31E-04	9.12E-01	1.61E-03	6.37E-03	1.55E+00	512					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.44E+05	8.46E+03	3.59E+02	1.62E-01	5.87E-03	6.66E-01	7.42E-05	1.05E-03	1.80E+00	3.20E-03	1.01E-02	3.01E+00	995					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	1.92E+04	1.03E+04	5.52E+02	3.81E-01	7.86E-03	9.06E-01	1.01E-04	1.43E-03	2.45E+00	4.12E-03	2.37E-02	4.22E+00	1,398					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	4.96E+04	6.52E+02	3.42E+01	1.68E-02	5.22E-04	7.08E-02	6.36E-06	2.87E-04	1.54E-01	2.65E-04	1.04E-03	2.58E-01	86					
Shredders	Santa Clara	SF	BA	9.72E+01	3.61E+01	1.59E+01	8.91E-04	6.89E-04	4.30E-02	3.38E-06	6.88E-04	8.21E-02	8.01E-05	5.54E-05	1.08E-01	36					
Shredders	Santa Clara	SF	BA	3.46E+03	8.54E+00	4.18E+00	8.55E-04	1.28E-04	1.13E-02	7.99E-07	1.63E-04	1.94E-02	1.63E-05	5.31E-05	2.56E-02	8					
Commercial Turf Equipment	Santa Clara	SF	BA	5.15E+01	1.13E+02	4.63E+01	2.09E-03	1.57E-03	1.26E-01	9.91E-06	1.12E-04	2.41E-01	2.12E-04	1.30E-04	3.09E-01	102					
Commercial Turf Equipment	Santa Clara	SF	BA	2.54E+01	5.57E+01	4.95E+01	2.16E-03	1.65E-03	1.39E-01	1.03E-05	1.17E-04	2.51E-01	1.56E-04	1.34E-04	3.02E-01	100					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	2.18E+01	4.09E+00	2.29E-01	1.12E-04	3.61E-06	4.16E-04	4.63E-08	6.54E-07	1.12E-03	1.76E-06	6.98E-06	1.82E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	6.68E+02	7.86E+00	4.76E-01	2.31E-04	7.30E-06	9.91E-04	8.89E-08	4.02E-06	2.16E-03	3.46E-06	1.44E-05	3.53E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	9.48E+00	1.78E+00	4.97E-01	2.44E-04	7.85E-06	9.05E-04	1.01E-07	1.42E-06	2.44E-03	1.81E-06	1.52E-05	3.32E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	2.91E+02	3.42E+00	9.99E-01	4.58E-04	1.57E-05	2.03E-03	1.94E-07	9.58E-06	4.70E-03	3.51E-06	2.85E-05	6.39E-03	2					
Lawn Mowers	Santa Clara	SF	BA	1.31E+04	8.18E+03	9.82E+02	1.18E-01	2.96E-02	2.20E+00	1.93E-04	1.76E-02	5.57E+00	7.23E-03	6.50E-03	7.95E+00	2,633					
Lawn Mowers	Santa Clara	SF	BA	2.07E+05	8.79E+03	1.22E+03	1.18E-01	3.23E-02	3.39E+00	2.07E-04	1.44E-02	5.99E+00	7.53E-03	6.52E-03	8.47E+00	2,803					
Tillers	Santa Clara	SF	BA	1.36E+03	2.08E+02	2.96E+01	2.67E-03	6.59E-04	7.54E-02	5.43E-06	4.15E-04	1.57E-01	1.70E-04	1.48E-04	2.13E-01	71					
Tillers	Santa Clara	SF	BA	5.27E+03	2.60E+02	3.97E+01	4.15E-03	1.09E-03	1.09E-01	6.79E-06	4.91E-04	1.97E-01	2.40E-04	2.30E-04	2.76E-01	91					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	2.38E+03	8.86E+02	2.74E+01	3.60E-03	1.60E-03	6.33E-02	5.22E-06	4.92E-05	1.51E-01	5.40E-04	2.00E-04	3.23E-01	107					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.11E+04	6.54E+02	2.29E+01	3.20E-03	1.02E-03	6.21E-02	3.85E-06	1.26E-04	1.11E-01	3.68E-04	1.77E-04	2.29E-01	76					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	6.08E+02	1.03E+02	6.90E+00	5.16E-04	1.26E-04	1.87E-02	1.22E-06	8.27E-05	3.52E-02	5.10E-05	2.86E-05	5.16E-02	17					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	5.22E+02	6.86E+00	5.22E-01	4.76E-05	1.11E-05	1.60E-03	8.08E-08	4.66E-06	2.34E-03	3.83E-06	2.64E-06	3.58E-03	1					
Rear Engine Riding Mowers	Santa Clara	SF	BA	7.15E+03	5.32E+03	1.78E+03	8.34E-02	5.92E-02	5.23E+00	2.45E-04	3.99E-03	8.61E+00	8.57E-03	4.61E-03	1.14E+01	3,762					
Rear Engine Riding Mowers	Santa Clara	SF	BA	6.27E+03	4.84E+02	1.63E+02	7.83E-03	5.27E-03	4.82E-01	2.24E-05	3.13E-04	7.84E-01	7.65E-04	4.33E-04	1.03E+00	341					
Rear Engine Riding Mowers	Santa Clara	SF	BA	3.27E+01	2.43E+01	1.58E+01	7.15E-04	5.17E-04	4.80E-02	1.88E-06	3.45E-05	7.43E-02	5.53E-05	3.96E-05	9.23E-02	31					
Rear Engine Riding Mowers	Santa Clara	SF	BA	2.82E+01	2.18E+00	1.42E+00	6.78E-05	4.22E-05	4.33E-03	1.69E-07	2.66E-06	6.66E-03	4.68E-06	3.75E-06	8.19E-03	3					
Front Mowers	Santa Clara	SF	BA	3.28E+02	2.44E+02	1.30E+02	6.10E-03	4.33E-03	3.83E-01	1.80E-05	2.92E-04	6.30E-01	5.04E-04	3.38E-04	7.93E-01	263					
Front Mowers	Santa Clara	SF	BA	1.06E+04	8.19E+02	4.39E+02	2.11E-02	1.42E-02	1.30E+00	6.03E-05	8.44E-04	2.12E+00	1.66E-03	1.17E-03	2.65E+00	879					
Front Mowers	Santa Clara	SF	BA	2.57E+02	1.91E+02	1.37E+02	6.21E-03	4.48E-03	4.16E-01	1.63E-05	2.99E-04	6.45E-01	4.58E-04	3.44E-04	7.94E-01	263					
Front Mowers	Santa Clara	SF	BA	8.30E+03	6.41E+02	4.63E+02	2.20E-02	1.37E-02	1.41E+00	5.49E-05	8.64E-04	2.17E+00	1.45E-03	1.22E-03	2.64E+00	875					
Shredders	Santa Clara	SF	BA	2.57E+02	9.57E+01	2.63E+01	3.46E-03	1.53E-03	6.08E-02	5.01E-06	4.73E-05	1.45E-01	1.87E-04	1.92E-04	2.07E-01	69					
Shredders	Santa Clara	SF	BA	9.57E+03	2.36E+01	8.14E+00	7.53E-04	2.43E-04	2.54E-02	1.23E-06	6.54E-05	3.57E-02	3.64E-05	4.17E-05	4.79E-02	16					
Lawn & Garden Tractors	Santa Clara	SF	BA	1.31E+03	4.62E+02	2.97E+02	1.17E-02	8.40E-03	8.77E-01	4.11E-05	5.66E-04	1.44E+00	9.67E-04	6.48E-04	1.76E+00	582					
Lawn & Garden Tractors	Santa Clara	SF	BA	8.52E+03	3.41E+02	2.20E+02	9.45E-03	6.57E-03	6.52E-01	3.03E-05	3.87E-04	1.06E+00	7.31E-04	5.23E-04	1.30E+00	431					
Lawn & Garden Tractors	Santa Clara	SF	BA	5.17E+02	1.82E+02	1.86E+02	7.26E-03	4.97E-03	5.67E-01	2.23E-05	3.45E-04	8.79E-01	4.74E-04	4.02E-04	1.03E+00	343					
Lawn & Garden Tractors	Santa Clara	SF	BA	3.36E+03	1.34E+02	1.38E+02	5.95E-03	3.73E-03	4.21E-01	1.64E-05	2.36E-04	6.49E-01	3.50E-04	3.29E-04	7.64E-01	253					
Lawn & Garden Tractors	Santa Clara	SF	BA	7.48E+00	2.13E+00	3.30E+00	5.94E-05	1.15E-04	2.53E-03	3.36E-07	2.11E-06	2.76E-02	7.45E-06	3.29E-06	3.00E-02	10					
Wood Splitters	Santa Clara	SF	BA	4.40E+02	1.55E+02	4.59E+01	4.90E-03	1.22E-03	1.09E-01	8.75E-06	7.44E-04	2.53E-01	2.07E-04	2.71E-04	3.23E-01	107					
Wood Splitters	Santa Clara	SF	BA	1.10E+04	3.32E+01	1.21E+01	9.11E-04	2.37E-04	3.78E-02	1.87E-06	9.67E-05	5.42E-02	4.09E-05	5.05E-05	6.79E-02	22					
Chippers/Stump Grinders	Santa Clara	SF	BA	6.21E+00	2.15E+01	1.84E+01	1.46E-03	1.06E-03	5.39E-02	2.49E-06	7.31E-04	8.72E-02	7.63E-05	7.97E-05	1.12E-01	37					
Chippers/Stump Grinders	Santa Clara	SF	BA	1.11E+01	5.01E-01	4.47E-01	3.31E-05	1.69E-05	1.37E-03	5.80E-08	1.57E-05	2.03E-03	1.46E-06	1.83E-06	2.53E-03	1					
Chippers/Stump Grinders	Santa Clara	SF	BA	3.53E+01	1.22E+02	1.76E+02	1.43E-02	9.10E-03	5.31E-01	2.05E-05	6.79E-03	8.10E-01	5.40E-04	7.82E-04	9.94E-01	329					
Chippers/Stump Grinders	Santa Clara	SF	BA	6.27E+01	2.84E+00	4.21E+00	2.98E-04	1.42E-04	1.31E-02	4.78E-07	1.46E-04	1.88E-02	1.02E-05	1.65E-05	2.23E-02	7					
Commercial Turf Equipment	Santa Clara	SF	BA	4.64E+02	1.02E+03	5.51E+02	3.14E-02	2.20E-02	1.62E+00	7.55E-05	1.48E-03	2.65E+00	2.33E-03	1.73E-03	3.41E+00	1,129					
Commercial Turf Equipment	Santa Clara	SF	BA	2.29E+02	5.01E+02	4.82E+02	2.60E-02	1.96E-02	1.46E+00	5.71E-05	1.26E-03	2.25E+00	1.58E-03	1.43E-03	2.77E+00	918					
Commercial Turf Equipment	Santa Clara	SF	BA	9.22E+01	1.85E+02	3.09E+02	8.17E-03	1.29E-02	4.56E-01	2.72E-05	1.71E-04	2.24E+00	7.63E-04	4.51E-04	2.48E+00	823					
Commercial Turf Equipment	Santa Clara	SF	BA	6.10E-01	1.22E+00	3.00E+00	1.37E-05	8.07E-05	7.48E-04	2.68E-07	2.15E-06	2.77E-02	5.09E-06	7.59E-07	2.93E-02	10					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	4.08E+02	7.66E+01	1.59E+01	1.42E-03	3.51E-04	4.05E-02	2.90E-06	2.21E-04	8.41E-02	7.65E-05	7.87E-05	1.09E-01	36					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	1.25E+04	1.47E+02	3.61E+01	3.21E-03	7.58E-04	1.11E-01	5.58E-06	3.18E-04	1.62E-01	1.52E-04	1.78E-04	2.13E-01	70					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	1.81E+02	3.40E+01	1.54E+01	6.13E-04	4.40E-04	4.54E-02	2.13E-06	2.97E-05	7.47E-02	5.94E-05	3.39E-05	9.38E-02	31					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	5.55E+03	6.54E																

Lawn & Garden				Tons/Day								MTons/Year					
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e	
Lawn & Garden Tractors	Santa Clara	SF	BA	8.37E+02	1.25E+03	8.12E+02	1.08E-02	6.85E-02	3.67E-02	1.13E-04	2.75E-03	8.91E+00	0.00E+00	9.74E-04	8.93E+00	2,957	
Chippers/Stump Grinders	Santa Clara	SF	BA	4.99E-01	6.35E-01	5.82E-01	7.71E-06	4.87E-05	2.63E-05	8.11E-08	1.85E-06	6.39E-03	0.00E+00	6.96E-07	6.41E-03	2	
Chippers/Stump Grinders	Santa Clara	SF	BA	1.37E+01	1.75E+01	6.08E+01	8.58E-04	6.01E-03	4.22E-03	7.80E-06	4.67E-04	6.65E-01	0.00E+00	7.74E-05	6.66E-01	221	
Chippers/Stump Grinders	Santa Clara	SF	BA	9.42E-01	1.20E+00	7.20E+00	7.00E-05	6.31E-04	4.20E-04	8.89E-07	3.09E-05	7.90E-02	0.00E+00	6.32E-06	7.92E-02	26	
Chippers/Stump Grinders	Santa Clara	SF	BA	2.22E-01	2.82E-01	2.84E+00	1.87E-05	2.21E-04	6.58E-05	3.53E-07	6.66E-06	3.14E-02	0.00E+00	1.69E-06	3.14E-02	10	
Chippers/Stump Grinders	Santa Clara	SF	BA	2.05E+00	2.61E+00	2.92E+01	1.75E-04	2.04E-03	6.89E-04	3.17E-06	6.39E-05	3.23E-01	0.00E+00	1.58E-05	3.23E-01	107	
Chippers/Stump Grinders	Santa Clara	SF	BA	2.33E+00	2.97E+00	7.98E+01	4.90E-04	5.74E-03	1.88E-03	8.86E-06	1.77E-04	8.81E-01	0.00E+00	4.42E-05	8.82E-01	292	
Chippers/Stump Grinders	Santa Clara	SF	BA	4.43E+00	5.64E+00	2.16E+02	1.64E-03	2.18E-02	5.98E-03	2.40E-05	5.97E-04	2.39E+00	0.00E+00	1.48E-04	2.39E+00	791	
Commercial Turf Equipment	Santa Clara	SF	BA	2.69E+01	7.88E+01	3.47E+01	3.94E-04	2.77E-03	2.32E-03	5.91E-06	1.08E-04	3.80E-01	0.00E+00	3.56E-05	3.81E-01	126	
Commercial Turf Equipment	Santa Clara	SF	BA	5.06E+02	1.48E+03	9.76E+02	1.29E-02	8.17E-02	4.41E-02	1.36E-04	3.04E-03	1.07E+01	0.00E+00	1.17E-03	1.07E+01	3,557	
Other Lawn & Garden Equipment	Santa Clara	SF	BA	3.88E-01	4.60E-01	2.57E-01	2.91E-06	2.05E-05	1.72E-05	4.37E-08	8.14E-07	2.81E-03	0.00E+00	2.63E-07	2.82E-03	1	
Other Lawn & Garden Equipment	Santa Clara	SF	BA	5.54E-02	6.57E-02	4.88E-02	6.46E-07	4.08E-06	2.20E-06	6.79E-09	1.55E-07	5.35E-04	0.00E+00	5.83E-08	5.37E-04	0	
				705,041	70,522	13,499	2.108	0.549	27.081	0.002	0.075	83.881	0.055	0.128	103.667	34,326	
				Population	Activity	Consumption	lbs/day					Tons/Day				MTons/Year	
				30,070	3,008	576	180	47	2,310	0	6	4	0	0	4	1,464	
As a percent of 2014 Total Population				SC		1,894,605		Palo Alto		80,805		Percent		4%			
SOURCE: U.S. Census Bureau.																	

Light Commercial				Tons/Day									MTons/Year				
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e	
Generator Sets	Santa Clara	SF	BA	1.30E+02	4.78E+01	2.77E+00	5.84E-04	1.12E-04	5.80E-03	6.34E-07	5.76E-05	1.54E-02	3.41E-05	3.63E-05	2.67E-02		9
Generator Sets	Santa Clara	SF	BA	1.02E+02	2.53E+01	1.58E+00	4.07E-04	5.86E-05	3.55E-03	3.35E-07	3.21E-05	8.14E-03	1.78E-05	2.53E-05	1.42E-02		5
Generator Sets	Santa Clara	SF	BA	1.31E+00	4.82E-01	2.72E-01	1.45E-05	1.02E-05	7.43E-04	5.76E-08	6.38E-07	1.40E-03	1.12E-06	9.02E-07	1.77E-03		1
Generator Sets	Santa Clara	SF	BA	9.99E-01	2.47E-01	1.47E-01	1.76E-05	5.16E-06	4.04E-04	2.95E-08	6.92E-07	7.16E-04	5.68E-07	1.09E-06	9.15E-04		0
Pumps	Santa Clara	SF	BA	5.17E+02	3.65E+02	1.92E+01	2.71E-03	7.96E-04	3.52E-02	4.91E-06	4.19E-04	1.19E-01	2.52E-04	1.68E-04	2.01E-01		67
Pumps	Santa Clara	SF	BA	4.06E+02	1.93E+02	1.09E+01	2.04E-03	4.59E-04	2.18E-02	2.59E-06	2.30E-04	6.30E-02	1.39E-04	1.27E-04	1.09E-01		36
Pumps	Santa Clara	SF	BA	1.39E+02	9.85E+01	4.99E+01	3.22E-03	2.47E-03	1.35E-01	1.06E-05	2.16E-03	2.57E-01	2.53E-04	2.00E-04	3.40E-01		113
Pumps	Santa Clara	SF	BA	1.10E+02	5.20E+01	2.67E+01	1.99E-03	1.27E-03	7.28E-02	5.60E-06	1.14E-03	1.36E-01	1.32E-04	1.24E-04	1.79E-01		59
Pumps	Santa Clara	SF	BA	1.69E+00	1.19E+00	1.32E+00	8.68E-05	5.86E-05	3.67E-03	2.73E-07	5.55E-05	6.62E-03	4.38E-06	5.39E-06	8.09E-03		3
Pumps	Santa Clara	SF	BA	1.31E+00	6.23E-01	6.91E-01	4.57E-05	3.02E-05	1.93E-03	1.43E-07	2.90E-05	3.46E-03	2.27E-06	2.84E-06	4.22E-03		1
Generator Sets	Santa Clara	SF	BA	1.71E+03	6.28E+02	1.51E+02	2.58E-02	6.29E-03	3.49E-01	2.79E-05	2.78E-03	8.08E-01	9.42E-04	1.43E-03	1.13E+00		374
Generator Sets	Santa Clara	SF	BA	1.34E+03	3.32E+02	8.47E+01	1.53E-02	3.31E-03	2.11E-01	1.48E-05	1.44E-03	4.27E-01	4.96E-04	8.49E-04	5.99E-01		198
Generator Sets	Santa Clara	SF	BA	4.69E+03	1.72E+03	1.05E+03	6.87E-02	4.41E-02	3.10E+00	1.42E-04	2.63E-03	5.00E+00	4.30E-03	3.80E-03	6.41E+00		2,122
Generator Sets	Santa Clara	SF	BA	3.68E+03	9.11E+02	5.75E+02	4.75E-02	2.30E-02	1.74E+00	7.53E-05	1.37E-03	2.64E+00	2.25E-03	2.63E-03	3.39E+00		1,124
Generator Sets	Santa Clara	SF	BA	2.52E+03	9.27E+02	1.22E+03	7.71E-02	4.91E-02	3.70E+00	1.44E-04	2.98E-03	5.67E+00	3.41E-03	4.27E-03	6.81E+00		2,256
Generator Sets	Santa Clara	SF	BA	1.98E+03	4.90E+02	6.62E+02	5.11E-02	2.47E-02	2.03E+00	7.59E-05	1.55E-03	2.99E+00	1.75E-03	2.83E-03	3.60E+00		1,191
Generator Sets	Santa Clara	SF	BA	8.39E+02	2.64E+02	5.99E+02	1.31E-02	2.46E-02	4.94E-01	6.03E-05	3.80E-04	4.96E+00	1.23E-03	7.23E-04	5.36E+00		1,773
Generator Sets	Santa Clara	SF	BA	1.62E+02	5.10E+01	2.70E+02	3.90E-03	1.65E-02	8.88E-02	2.37E-05	1.90E-04	2.46E+00	4.56E-04	2.16E-04	2.60E+00		862
Generator Sets	Santa Clara	SF	BA	1.53E+01	4.82E+00	4.34E+01	3.69E-04	2.95E-03	1.30E-02	3.94E-06	3.16E-05	3.97E-01	6.03E-05	2.04E-05	4.16E-01		138
Pumps	Santa Clara	SF	BA	6.06E+02	4.28E+02	7.15E+01	1.18E-02	4.99E-03	1.44E-01	1.45E-05	2.27E-04	4.19E-01	7.07E-04	6.52E-04	6.52E-01		216
Pumps	Santa Clara	SF	BA	4.76E+02	2.26E+02	4.08E+01	7.38E-03	2.52E-03	9.19E-02	7.65E-06	2.55E-04	2.21E-01	3.64E-04	4.09E-04	3.43E-01		114
Pumps	Santa Clara	SF	BA	6.56E+02	4.64E+02	2.54E+02	1.97E-02	1.42E-02	7.38E-01	3.45E-05	1.02E-02	1.21E+00	1.28E-03	1.09E-03	1.63E+00		540
Pumps	Santa Clara	SF	BA	5.16E+02	2.45E+02	1.36E+02	1.11E-02	7.25E-03	4.00E-01	1.82E-05	5.35E-03	6.40E-01	6.64E-04	6.16E-04	8.59E-01		284
Pumps	Santa Clara	SF	BA	1.68E+02	1.19E+02	1.42E+02	1.11E-02	7.09E-03	4.25E-01	1.67E-05	5.53E-03	6.59E-01	4.68E-04	6.14E-04	8.18E-01		271
Pumps	Santa Clara	SF	BA	1.32E+02	6.27E+01	7.52E+01	5.92E-03	3.67E-03	2.26E-01	8.83E-06	2.92E-03	3.48E-01	2.44E-04	3.28E-04	4.31E-01		143
Pumps	Santa Clara	SF	BA	6.70E+01	4.05E+01	9.11E+01	1.96E-03	3.13E-03	7.82E-02	9.10E-06	5.73E-05	7.49E-01	1.68E-04	1.08E-04	8.03E-01		266
Pumps	Santa Clara	SF	BA	8.50E+01	5.14E+01	3.09E+02	4.30E-03	1.40E-02	9.91E-02	2.72E-05	2.18E-04	2.81E+00	3.77E-04	2.38E-04	2.94E+00		972
Pumps	Santa Clara	SF	BA	2.56E+00	1.55E+00	1.40E+01	1.13E-04	7.21E-04	4.32E-03	1.27E-06	1.02E-05	1.28E-01	1.51E-05	6.28E-06	1.33E-01		44
Air Compressors	Santa Clara	SF	BA	2.19E+02	3.39E+02	7.52E+01	1.23E-02	5.43E-03	1.46E-01	1.55E-05	1.46E-04	4.49E-01	6.63E-04	6.78E-04	6.68E-01		221
Air Compressors	Santa Clara	SF	BA	1.72E+02	1.79E+02	3.97E+01	6.48E-03	2.87E-03	7.72E-02	8.19E-06	7.73E-05	2.37E-01	3.50E-04	3.58E-04	3.53E-01		117
Air Compressors	Santa Clara	SF	BA	1.11E+02	1.71E+02	6.66E+01	5.26E-03	3.84E-03	1.94E-01	9.07E-06	2.67E-03	3.18E-01	4.01E-04	2.91E-04	4.48E-01		148
Air Compressors	Santa Clara	SF	BA	8.70E+01	9.05E+01	3.51E+01	2.72E-03	1.98E-03	1.02E-01	4.79E-06	1.41E-03	1.68E-01	2.09E-04	1.50E-04	2.36E-01		78
Air Compressors	Santa Clara	SF	BA	1.49E+01	2.31E+01	2.25E+01	1.82E-03	1.16E-03	6.73E-02	2.64E-06	8.73E-04	1.04E-01	8.32E-05	1.01E-04	1.32E-01		44
Air Compressors	Santa Clara	SF	BA	1.17E+01	1.22E+01	1.19E+01	9.44E-04	6.03E-04	3.56E-02	1.40E-06	4.62E-04	5.51E-02	4.36E-05	5.22E-05	6.97E-02		23
Air Compressors	Santa Clara	SF	BA	2.55E+01	3.38E+01	7.43E+01	2.55E-03	3.33E-03	8.64E-02	6.95E-06	4.38E-05	5.71E-01	1.62E-04	1.41E-04	6.24E-01		207
Air Compressors	Santa Clara	SF	BA	8.26E+01	1.09E+02	4.17E+02	1.04E-02	2.69E-02	2.07E-01	3.54E-05	2.84E-04	3.66E+00	7.93E-04	5.73E-04	3.92E+00		1,298
Air Compressors	Santa Clara	SF	BA	5.56E+00	7.36E+00	5.05E+01	6.36E-04	3.90E-03	1.69E-02	4.56E-06	3.65E-05	4.59E-01	8.00E-05	3.52E-05	4.84E-01		160
Welders	Santa Clara	SF	BA	4.28E+02	2.44E+02	1.38E+02	1.17E-02	7.35E-03	4.08E-01	1.84E-05	5.36E-03	6.47E-01	6.67E-04	6.51E-04	8.67E-01		287
Welders	Santa Clara	SF	BA	1.55E+03	8.80E+02	7.83E+02	6.33E-02	3.82E-02	2.35E+00	9.16E-05	3.03E-02	3.61E+00	2.93E-03	3.50E-03	4.59E+00		1,521
Welders	Santa Clara	SF	BA	1.33E+02	7.58E+01	1.85E+02	5.03E-03	8.05E-03	1.67E-01	1.83E-05	1.15E-04	1.50E+00	3.73E-04	2.78E-04	1.62E+00		538
Welders	Santa Clara	SF	BA	1.36E+02	7.74E+01	2.62E+02	4.95E-03	1.64E-02	9.80E-02	2.28E-05	1.83E-04	2.36E+00	5.08E-04	2.74E-04	2.52E+00		835
Welders	Santa Clara	SF	BA	9.37E+00	5.33E+00	3.22E+01	3.38E-04	2.32E-03	9.93E-03	2.92E-06	2.34E-05	2.94E-01	5.13E-05	1.87E-05	3.10E-01		103
Pressure Washers	Santa Clara	SF	BA	4.59E+02	1.69E+02	5.90E+01	8.73E-03	2.44E-03	1.25E-01	1.17E-05	1.16E-03	3.39E-01	3.08E-04	4.84E-04	4.45E-01		147
Pressure Washers	Santa Clara	SF	BA	3.60E+02	8.91E+01	3.47E+01	6.03E-03	1.38E-03	8.41E-02	6.19E-06	6.05E-04	1.79E-01	1.68E-04	3.34E-04	2.39E-01		79
Pressure Washers	Santa Clara	SF	BA	4.09E+02	1.50E+02	8.90E+01	5.83E-03	3.74E-03	2.63E-01	1.21E-05	2.23E-04	4.24E-01	3.70E-04	3.23E-04	5.45E-01		181
Pressure Washers	Santa Clara	SF	BA	3.21E+02	7.95E+01	4.88E+01	4.03E-03	1.95E-03	1.47E-01	6.39E-06	1.16E-04	2.24E-01	1.94E-04	2.23E-04	2.89E-01		96
Pressure Washers	Santa Clara	SF	BA	7.68E+01	2.83E+01	4.39E+01	2.62E-03	1.75E-03	1.33E-01	5.19E-06	1.07E-04	2.05E-01	1.13E-04	1.45E-04	2.43E-01		80
Pressure Washers	Santa Clara	SF	BA	6.03E+01	1.49E+01	2.37E+01	1.74E-03	8.97E-04	7.26E-02	2.74E-06	5.58E-05	1.08E-01	5.86E-05	9.63E-05	1.28E-01		42
Pressure Washers	Santa Clara	SF	BA	7.50E+00	2.36E+00	5.98E+00	1.16E-04	2.01E-04	4.48E-03	6.10E-07	3.85E-06	5.02E-02	1.02E-05	6.42E-06	5.35E-02		18
Generator Sets	Santa Clara	SF	BA	1.21E+01	3.79E+00	2.38E+01	1.52E-05	1.02E-03	4.99E-03	0.00E+00	1.42E-05	1.59E-01	0.00E+00	1.27E-04	1.62E-01		54
Generator Sets	Santa Clara	SF	BA	9.99E+00	3.15E+00	3.44E+01	1.74E-05	1.46E-03	5.98E-03	0.00E+00	2.07E-05	2.32E-01	0.00E+00	1.46E-04	2.35E-01		78
Gas Compressors	Santa Clara	SF	BA	1.87E+00	4.36E+01	1.49E+02	8.49E-05	3.08E-03	1.50E-02	0.00E+00	7.85E-05	1.02E+00	0.00E+00	7.11E-04	1.04E+00		344
Gas Compressors	Santa Clara	SF	BA	3.87E+00	9.02E+01	8.73E+02	4.63E-04	1.82E-02	2.41E-01	0.00E+00	4.46E-04	5.76E+00	0.00E+00	3.88E-03	5.84E+00		1,934
Gas Compressors	Santa Clara	SF	BA	6.25E-01	1.45E+01	2.24E+02	1.29E-04	4.88E-03	4.89E-02	0.00E+00	1.19E-04	1.50E+00	0.00E+00	1.08E-03	1.52E+00		504
Gas Compressors	Santa Clara	SF	BA	5.00E-01	1.16E+01	2.32E+02	9.93E-05	4.72E-03	5.63E-02	0.00E+00	1.37E-04	1.54E+00	0.00E+00	8.32E-04	1.56E+00		517
Gas Compressors	Santa Clara	SF	BA	4.37E-01	1.02E+01	3.27E+02	1.40E-04	6.65E-03	7.93E-02	0.00E+00	1.93E-04	2.18E+00	0.00E+00	1.17E-03	2.20E+00		728
Generator Sets	Santa Clara	SF	BA	3.15E+02	2.91E+02	1.36E+02	2.02E-03	1.38E-02	9.69E-03	2.31E-05	7.61E-04	1.48E+00	0.00E+00	1.82E-04	1.49E+00		493
Generator Sets	Santa Clara	SF	BA	2.30E+02	2.13E+02	1.71E+02	2.68E-03	1.64E-02	9.08E-03	2.38E-05	8.80E-04	1.88E+00	0.00E+00	2.42E-04	1.88E+00		623
Generator Sets	Santa Clara	SF	BA	2.81E+02	2.60E+02	3.66E+02	9.46E-03	3.49E-02	3.21E-02	5.14E-05	2.61E-03	3.98E+00	0.00E+00	8.53E-04	4.00E+00		1,323
Generator Sets	Santa Clara	SF	BA	4.27E+02	3.95E+02	1.41E+03	1.86E-02	1.36E-01	9.50E-02	1.81E-04	1.00E-02	1.54E+01	0.00E+00	1.68E-03	1.54E+01		5,108
Generator Sets	Santa Clara	SF	BA	2.53E+01	2.34E+01	1.51E+02	1.36E-03	1.29E-02	8.56E-03								

Light Commercial				Tons/Day										MTons/Year		
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Pumps	Santa Clara	SF	BA	7.06E+01	7.79E+01	6.93E+01	1.26E-03	6.62E-03	3.67E-03	9.62E-06	3.79E-04	7.58E-01	0.00E+00	1.14E-04	7.61E-01	252
Pumps	Santa Clara	SF	BA	1.23E+02	1.36E+02	2.15E+02	5.97E-03	2.07E-02	1.97E-02	3.01E-05	1.61E-03	2.33E+00	0.00E+00	5.38E-04	2.34E+00	775
Pumps	Santa Clara	SF	BA	2.41E+02	2.66E+02	9.48E+02	1.31E-02	9.27E-02	6.50E-02	1.22E-04	7.04E-03	1.04E+01	0.00E+00	1.18E-03	1.04E+01	3,441
Pumps	Santa Clara	SF	BA	2.61E+01	2.88E+01	1.84E+02	1.73E-03	1.59E-02	1.06E-02	2.27E-05	7.56E-04	2.02E+00	0.00E+00	1.56E-04	2.02E+00	669
Pumps	Santa Clara	SF	BA	1.88E+01	2.08E+01	1.89E+02	1.15E-03	1.44E-02	4.18E-03	2.35E-05	4.05E-04	2.09E+00	0.00E+00	1.04E-04	2.09E+00	692
Pumps	Santa Clara	SF	BA	3.71E-01	4.10E-01	6.39E+00	3.53E-05	4.36E-04	1.45E-04	6.93E-07	1.28E-05	7.06E-02	0.00E+00	3.18E-06	7.07E-02	23
Pumps	Santa Clara	SF	BA	6.19E-02	6.83E-02	1.76E+00	1.00E-05	1.24E-04	4.00E-05	1.96E-07	3.61E-06	1.95E-02	0.00E+00	9.03E-07	1.95E-02	6
Pumps	Santa Clara	SF	BA	1.36E+00	1.50E+00	9.21E+01	6.90E-04	9.05E-03	2.46E-03	1.02E-05	2.45E-04	1.02E+00	0.00E+00	6.23E-05	1.02E+00	337
Air Compressors	Santa Clara	SF	BA	3.22E+00	7.18E+00	2.37E+00	4.00E-05	2.45E-04	1.69E-04	4.03E-07	1.51E-05	2.59E-02	0.00E+00	3.61E-06	2.60E-02	9
Air Compressors	Santa Clara	SF	BA	6.38E+00	1.42E+01	9.37E+00	1.70E-04	8.96E-04	4.97E-04	1.30E-06	5.13E-05	1.03E-01	0.00E+00	1.54E-05	1.03E-01	34
Air Compressors	Santa Clara	SF	BA	5.79E+01	1.29E+02	1.33E+02	4.97E-03	1.35E-02	1.52E-02	1.86E-05	1.22E-03	1.44E+00	0.00E+00	4.49E-04	1.45E+00	479
Air Compressors	Santa Clara	SF	BA	3.86E+02	8.61E+02	1.85E+03	3.05E-02	1.93E-01	1.37E-01	2.37E-04	1.68E-02	2.02E+01	0.00E+00	2.76E-03	2.02E+01	6,703
Air Compressors	Santa Clara	SF	BA	1.46E+01	3.26E+01	1.31E+02	1.51E-03	1.22E-02	8.13E-03	1.62E-05	6.61E-04	1.44E+00	0.00E+00	1.36E-04	1.44E+00	478
Air Compressors	Santa Clara	SF	BA	2.06E+01	4.58E+01	2.72E+02	2.06E-03	2.23E-02	6.46E-03	3.38E-05	6.78E-04	3.00E+00	0.00E+00	1.86E-04	3.01E+00	996
Air Compressors	Santa Clara	SF	BA	2.68E+01	5.98E+01	6.27E+02	4.39E-03	4.51E-02	1.50E-02	6.79E-05	1.46E-03	6.92E+00	0.00E+00	3.96E-04	6.93E+00	2,294
Air Compressors	Santa Clara	SF	BA	1.00E+01	2.24E+01	3.63E+02	2.57E-03	2.70E-02	8.67E-03	4.02E-05	8.60E-04	4.00E+00	0.00E+00	2.32E-04	4.01E+00	1,327
Air Compressors	Santa Clara	SF	BA	2.48E-01	5.52E-01	1.22E+01	1.01E-04	1.26E-03	3.45E-04	1.35E-06	3.59E-05	1.34E-01	0.00E+00	9.13E-06	1.34E-01	44
Welders	Santa Clara	SF	BA	1.07E+02	1.88E+02	5.34E+01	9.00E-04	5.51E-03	3.80E-03	9.08E-06	3.40E-04	5.83E-01	0.00E+00	8.12E-05	5.85E-01	194
Welders	Santa Clara	SF	BA	9.41E+01	1.66E+02	8.53E+01	1.55E-03	8.15E-03	4.52E-03	1.18E-05	4.67E-04	9.33E-01	0.00E+00	1.40E-04	9.36E-01	310
Welders	Santa Clara	SF	BA	2.90E+02	5.10E+02	6.12E+02	2.09E-02	6.09E-02	6.51E-02	8.54E-05	5.26E-03	6.61E+00	0.00E+00	1.89E-03	6.65E+00	2,201
Welders	Santa Clara	SF	BA	2.25E+02	3.96E+02	7.15E+02	1.11E-02	7.31E-02	5.14E-02	9.16E-05	6.09E-03	7.81E+00	0.00E+00	1.00E-03	7.83E+00	2,592
Welders	Santa Clara	SF	BA	1.11E+00	1.96E+00	8.77E+00	9.41E-05	7.97E-04	5.29E-04	1.08E-06	4.14E-05	9.62E-02	0.00E+00	8.49E-06	9.63E-02	32
Welders	Santa Clara	SF	BA	2.48E-01	4.36E-01	2.35E+00	1.65E-05	1.88E-04	5.44E-05	2.92E-07	5.59E-06	2.59E-02	0.00E+00	1.49E-06	2.59E-02	9
Welders	Santa Clara	SF	BA	6.19E-01	1.09E+00	8.26E+00	5.32E-05	5.84E-04	1.94E-04	8.95E-07	1.84E-05	9.12E-02	0.00E+00	4.80E-06	9.13E-02	30
Pressure Washers	Santa Clara	SF	BA	1.46E+01	5.80E+00	1.30E+00	1.92E-05	1.32E-04	9.24E-05	2.20E-07	7.26E-06	1.42E-02	0.00E+00	1.74E-06	1.42E-02	5
Pressure Washers	Santa Clara	SF	BA	3.40E+00	1.35E+00	4.40E-01	6.90E-06	4.21E-05	2.34E-05	6.12E-08	2.26E-06	4.82E-03	0.00E+00	6.22E-07	4.84E-03	2
Pressure Washers	Santa Clara	SF	BA	6.75E+00	2.68E+00	1.75E+00	3.49E-05	1.62E-04	1.31E-04	2.47E-07	1.07E-05	1.91E-02	0.00E+00	3.15E-06	1.92E-02	6
Pressure Washers	Santa Clara	SF	BA	2.79E+00	1.11E+00	1.21E+00	1.41E-05	1.12E-04	7.84E-05	1.56E-07	7.45E-06	1.33E-02	0.00E+00	1.28E-06	1.33E-02	4
				29,098	15,196	20,410	0.693	1.372	20.078	0.002	0.150	172.601	0.029	0.052	182.537	60,442
				Population	Activity	Consumption	lbs/day					Tons/Day	MTons/Year			
				3,022	1,578	2,120	144	285	4,171	0	31	18	0	0	19	6,278

As a percent of 2010 Total Employment SC 970,795 Palo Alto 100,830 Percent 10%

SOURCE: U.S. Census Bureau. Longitudinal Employer-Household Dynamics. <http://lehd.ces.census.gov/> for Santa Clara County. Third Quarter 2012 total employment in Santa Clara County.

Area Sources – Consumer Products & Offroad Equipment

Area Sources - Consumer Products

Source: CalEEMod Users Guide. Version 2013.2.2.

Residential Consumer Product Use

Emissions = EF x Building Area

SCAQMD EF = 2.04E-05 lbs/sqft/day

AVERAGE HOUSING SQFT ASSUMPTIONS

Year Structure was Built	Average Square Feet of New Single Family Homes		
	Percent of Housing Stock ⁽¹⁾	Homes ⁽²⁾	Average Square Feet (Weighted)
2010 or later	0.4%	2,494	11
2000 to 2009	9.6%	2,404	232
1990 to 1999	5.3%	2,116	111
1980 to 1989	8.5%	1,819	155
1979 or earlier	76.2%	1,699	1,294
			1,803

Sources/Notes:

(1) United States Cenus Bureau, American FactFinder, City of Palo Alto, Santa Clara County, California, Physical Housing Characteristics for Occupied Housing Units, 2012 American Community Survey 3-Year Estimates, Year structure built.

(2) United States Census Bureau, Characteristics of New Housing, Characteristics of New Single-Family Houses Completed, Median and Average Square Feet by Location. Obtained from <http://www.census.gov/construction/chars/>

	City	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	2020 (ABAG)
Housing Units	28,545	31,265	31,265	32,090	32,965	32,090	34,545	29,085	29,110
Residential SQFT	51,456,217	58,536,377	58,536,377	60,683,852	62,961,477	60,683,852	67,074,217	52,861,837	52,926,912
lbs VOC per day	1,050	1,194	1,194	1,238	1,284	1,238	1,368	1,078	1,080

Source

1 New housing units constructed post-2014 assumed to be 2,603 square feet.

Area Sources - Criteria Air Pollutants

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM ₁₀ Exhaust	PM _{2.5} Exhaust*
CEQA Baseline 2014		Proportioned Based on: lbs/day					
Construction Equipment	The percentage of building permits issued in Palo Alto compared to Santa Clara County.	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	The percentage of residential units in Palo Alto compared to Santa Clara County.	146	38	1,878	0	5	5
Light Commercial Equipment	The percentage of employment in Palo Alto compared to San Santa Clara County.	136	270	3,949	0	29	29
TOTAL		451	1,420	6,998	2	103	102

* assumes PM2.5 is 99 percent of PM10

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 1		Forecast Adjusted for: lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	161	42	2,066	0	6	6
Light Commercial Equipment	Proportional to employment growth	158	314	4,589	1	34	34
TOTAL		488	1,468	7,827	2	108	107

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 2		Forecast Adjusted for: lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	161	42	2,066	0	6	6
Light Commercial Equipment	Proportional to employment growth	150	298	4,356	0	33	32
TOTAL		480	1,452	7,594	2	107	106

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 3		Forecast Adjusted for: lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	165	43	2,119	0	6	6
Light Commercial Equipment	Proportional to employment growth	155	306	4,476	1	33	33
TOTAL		488	1,461	7,766	2	108	107

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 4		Forecast Adjusted for: lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	169	44	2,177	0	6	6
Light Commercial Equipment	Proportional to employment growth	158	314	4,589	1	34	34
TOTAL		496	1,470	7,937	2	109	108

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 5		Forecast Adjusted for: lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	165	43	2,119	0	6	6
Light Commercial Equipment	Proportional to employment growth	173	343	5,015	1	37	37
TOTAL		507	1,498	8,305	2	112	111

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 6		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	195	51	2,509	0	7	7
Light Commercial Equipment	Proportional to employment growth	164	325	4,760	1	36	35
TOTAL		528	1,489	8,441	2	111	110

		ROG Exhaust	NO _x Exhaust	CO Exhaust	SO ₂ Exhaust	PM10 Exhaust	PM2.5 Exhaust*
Scenario 7		Forecast Adjusted for:					
		lbs/day					
Construction Equipment	Annual assumed to be similar to historic	169	1,112	1,171	2	68	68
Lawn & Garden Equipment	Proportional to population growth	168	44	2,159	0	6	6
Light Commercial Equipment	Proportional to employment growth	161	318	4,658	1	35	34
TOTAL		497	1,474	7,988	2	109	108

Sources

Building Permits

Source: U.S. Census Bureau

<http://censtats.census.gov/bldg/bldgprmt.shtml>**Employment**Source. U.S. Census Bureau. Longitudinal Employer-Household Dynamics. <http://lehd.ces.census.gov/>**Population**

Source. U.S. Census Bureau.

Other Emissions Sources - Off-road Equipment

Source: OFFROAD2007. Based on equipment use in Santa Clara.

Year 2014 BAU	Proportioned Based on:	MTCO ₂ e
Construction Equipment	The percentage of building permits issued in Palo Alto compared to Santa Clara County.	21,831
Lawn & Garden Equipment	The percentage of residential units in Palo Alto compared to Santa Clara County.	1,190
Light Commercial Equipment	The percentage of employment in Palo Alto compared to Santa Clara County.	5,943
TOTAL		28,964

		MTCO ₂ e							
	Forecast Adjusted for:	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 2020
Construction Equipment	Annual assumed to be similar to historic	21,831	21,831	21,831	21,831	21,831	21,831	21,831	21,831
Lawn & Garden Equipment	Proportional to population growth	1,310	1,310	1,343	1,380	1,343	1,445	1,212	1,277
Light Commercial Equipment	Proportional to employment growth	6,907	6,557	6,738	6,907	6,495	6,495	6,185	6,526
TOTAL		30,048	29,697	29,911	30,118	29,669	29,772	29,228	29,634

Adjusted Business as Usual - Low Carbon Fuel Standard

		MTCO ₂ e							
	Notes	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	AB 32 2020
Construction Equipment	With LCFS (10% reduction)	19,648	19,648	19,648	19,648	19,648	19,648	19,648	19,648
Lawn&Garden Equipment	With LCFS (10% reduction)	1,179	1,179	1,209	1,242	1,209	1,301	1,091	1,150
Light Commercial Equipment	With LCFS (10% reduction)	6,216	5,901	6,064	6,216	5,846	5,846	5,566	5,874
TOTAL		27,043	26,728	26,920	27,106	26,702	26,794	26,306	26,671
reduction		3,005	2,970	2,991	3,012	2,967	2,977	2,923	2,963

Note- the newer OFFROAD2011 Model does not provide emissions by County

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Tampers/Rammers	Santa Clara	SF	BA	1.79E+02	8.91E+01	1.80E+01	1.13E-03	8.73E-04	4.86E-02	3.82E-06	7.78E-04	9.28E-02	1.39E-04	7.03E-05	1.37E-01	43
Plate Compactors	Santa Clara	SF	BA	1.53E+01	8.66E+00	1.75E+00	1.10E-04	8.47E-05	4.72E-03	3.71E-07	7.56E-05	9.01E-03	1.34E-05	6.81E-06	1.33E-02	4
Asphalt Pavers	Santa Clara	SF	BA	3.90E+00	4.23E+00	2.49E+00	1.89E-04	1.38E-04	7.23E-03	3.39E-07	9.97E-05	1.19E-02	1.21E-05	1.05E-05	1.59E-02	5
Asphalt Pavers	Santa Clara	SF	BA	6.66E+00	7.23E+00	1.07E+01	8.36E-04	5.34E-04	3.21E-02	1.26E-06	4.17E-04	4.97E-02	3.20E-05	4.62E-05	6.06E-02	19
Asphalt Pavers	Santa Clara	SF	BA	3.31E+00	3.56E+00	8.29E+00	2.58E-04	3.69E-04	8.97E-03	7.89E-07	4.97E-06	6.49E-02	1.74E-05	1.43E-05	7.06E-02	22
Asphalt Pavers	Santa Clara	SF	BA	1.82E+00	1.96E+00	7.59E+00	1.68E-04	4.81E-04	3.44E-03	6.49E-07	5.21E-06	6.72E-02	1.41E-05	9.30E-06	7.18E-02	23
Tampers/Rammers	Santa Clara	SF	BA	8.24E+00	4.11E+00	2.02E+00	1.53E-04	1.10E-04	5.87E-03	2.75E-07	8.08E-05	9.64E-03	1.06E-05	8.46E-06	1.31E-02	4
Plate Compactors	Santa Clara	SF	BA	3.03E+02	1.49E+02	2.74E+01	3.91E-03	1.73E-03	5.99E-02	5.37E-06	5.07E-05	1.56E-01	2.46E-04	2.16E-04	2.36E-01	74
Plate Compactors	Santa Clara	SF	BA	3.21E+02	1.81E+02	7.88E+01	5.94E-03	4.34E-03	2.30E-01	1.08E-05	3.17E-03	3.78E-01	4.39E-04	3.29E-04	5.21E-01	164
Rollers	Santa Clara	SF	BA	3.37E+01	7.67E+00	2.10E+00	2.54E-04	1.12E-04	5.12E-03	3.89E-07	3.67E-06	1.13E-02	1.43E-05	1.41E-05	1.60E-02	5
Rollers	Santa Clara	SF	BA	5.45E+01	4.64E+01	2.56E+01	1.93E-03	1.41E-03	7.44E-02	3.49E-06	1.03E-03	1.22E-01	1.28E-04	1.07E-04	1.64E-01	52
Rollers	Santa Clara	SF	BA	3.68E+01	3.13E+01	3.76E+01	2.90E-03	1.85E-03	1.13E-01	4.42E-06	1.46E-03	1.74E-01	1.23E-04	1.61E-04	2.16E-01	68
Rollers	Santa Clara	SF	BA	2.33E+00	3.97E+00	1.07E+01	4.58E-04	5.60E-04	1.46E-02	9.56E-07	6.03E-06	7.87E-02	2.34E-05	2.53E-05	8.64E-02	27
Rollers	Santa Clara	SF	BA	4.38E+00	7.47E+00	3.46E+01	1.12E-03	2.68E-03	2.13E-02	2.86E-06	2.30E-05	2.96E-01	6.86E-05	6.21E-05	3.19E-01	100
Paving Equipment	Santa Clara	SF	BA	4.23E+02	1.97E+02	3.90E+01	5.50E-03	2.44E-03	8.61E-02	7.62E-06	7.19E-05	2.21E-01	3.36E-04	3.04E-04	3.31E-01	104
Paving Equipment	Santa Clara	SF	BA	7.16E+02	3.93E+02	2.29E+02	1.72E-02	1.26E-02	6.67E-01	3.13E-05	9.20E-03	1.10E+00	1.11E-03	9.53E-04	1.46E+00	460
Paving Equipment	Santa Clara	SF	BA	1.59E+01	8.73E+00	1.15E+01	8.89E-04	5.68E-04	3.46E-02	1.36E-06	4.50E-04	5.36E-02	3.61E-05	4.92E-05	6.59E-02	21
Paving Equipment	Santa Clara	SF	BA	9.05E+00	4.34E+00	9.78E+00	1.66E-04	2.72E-04	7.59E-03	9.95E-07	6.27E-06	8.18E-02	1.63E-05	9.17E-06	8.71E-02	27
Paving Equipment	Santa Clara	SF	BA	2.33E+00	1.12E+00	4.04E+00	4.04E-05	1.33E-04	1.07E-03	3.59E-07	2.88E-06	3.72E-02	5.29E-06	2.24E-06	3.89E-02	12
Surfacing Equipment	Santa Clara	SF	BA	7.77E+01	4.26E+01	8.64E+00	1.26E-03	5.58E-04	1.86E-02	1.71E-06	1.61E-05	4.94E-02	7.49E-05	6.98E-05	7.41E-02	23
Surfacing Equipment	Santa Clara	SF	BA	2.31E+02	3.19E+02	1.24E+02	9.78E-03	7.14E-03	3.60E-01	1.69E-05	4.96E-03	5.91E-01	7.46E-04	5.41E-04	8.34E-01	262
Surfacing Equipment	Santa Clara	SF	BA	3.16E+00	4.36E+00	4.15E+00	3.36E-04	2.14E-04	1.24E-02	4.87E-07	1.61E-04	1.92E-02	1.55E-05	1.86E-05	2.44E-02	8
Signal Boards	Santa Clara	SF	BA	9.60E-01	3.42E-01	1.12E-01	1.45E-05	6.43E-06	2.63E-04	2.13E-08	2.01E-07	6.15E-04	7.28E-07	8.04E-07	8.58E-04	0
Signal Boards	Santa Clara	SF	BA	6.83E+00	5.32E+00	3.20E+00	2.39E-04	1.75E-04	9.31E-03	4.37E-07	1.28E-04	1.53E-02	1.53E-05	1.33E-05	2.03E-02	6
Trenchers	Santa Clara	SF	BA	6.32E+01	7.52E+01	4.91E+01	3.79E-03	2.77E-03	1.43E-01	6.70E-06	1.97E-03	2.35E-01	2.29E-04	2.10E-04	3.10E-01	98
Trenchers	Santa Clara	SF	BA	4.89E+01	5.83E+01	8.24E+01	6.52E-03	4.16E-03	2.47E-01	9.69E-06	3.20E-03	3.82E-01	2.53E-04	3.60E-04	4.68E-01	147
Trenchers	Santa Clara	SF	BA	2.12E+01	2.34E+01	5.20E+01	1.91E-03	2.67E-03	6.04E-02	4.86E-06	3.06E-05	4.00E-01	1.22E-04	1.06E-04	4.40E-01	139
Trenchers	Santa Clara	SF	BA	7.04E+00	7.76E+00	3.30E+01	8.95E-04	2.51E-03	1.70E-02	2.79E-06	2.24E-05	2.89E-01	6.67E-05	4.95E-05	3.10E-01	98
Bore/Drill Rigs	Santa Clara	SF	BA	1.81E+00	6.14E-01	4.80E-01	3.52E-05	2.54E-05	1.40E-03	6.55E-08	1.93E-05	2.30E-03	1.99E-06	1.95E-06	2.96E-03	1
Bore/Drill Rigs	Santa Clara	SF	BA	8.98E+00	3.05E+00	4.42E+00	3.31E-04	2.10E-04	1.33E-02	5.21E-07	1.72E-04	2.05E-02	1.30E-05	1.84E-05	2.50E-02	8
Bore/Drill Rigs	Santa Clara	SF	BA	1.03E+00	3.01E-01	8.02E-01	2.23E-05	3.97E-05	6.89E-04	7.99E-08	5.03E-07	6.57E-03	1.67E-06	1.23E-06	7.12E-03	2
Bore/Drill Rigs	Santa Clara	SF	BA	4.71E+00	1.38E+00	9.12E+00	1.78E-04	6.76E-04	3.39E-03	7.93E-07	6.36E-06	8.20E-02	1.45E-05	9.88E-06	8.67E-02	27
Bore/Drill Rigs	Santa Clara	SF	BA	1.17E+00	3.42E-01	3.10E+00	3.56E-05	2.64E-04	9.36E-04	2.81E-07	2.25E-06	2.83E-02	4.58E-06	1.97E-06	2.97E-02	9
Concrete/Industrial Saws	Santa Clara	SF	BA	3.31E+01	1.18E+01	3.18E+00	4.11E-04	1.82E-04	7.45E-03	6.03E-07	5.69E-06	1.74E-02	2.26E-05	2.28E-05	2.49E-02	8
Concrete/Industrial Saws	Santa Clara	SF	BA	1.49E+02	1.27E+02	8.79E+01	6.63E-03	4.84E-03	2.56E-01	1.20E-05	3.53E-03	4.21E-01	3.94E-04	3.67E-04	5.51E-01	173
Concrete/Industrial Saws	Santa Clara	SF	BA	4.66E+01	3.96E+01	5.36E+01	4.14E-03	2.64E-03	1.61E-01	6.31E-06	2.09E-03	2.49E-01	1.66E-04	2.29E-04	3.05E-01	96
Concrete/Industrial Saws	Santa Clara	SF	BA	3.82E+00	6.40E+00	1.78E+01	1.90E-04	2.74E-04	1.29E-02	1.83E-06	1.16E-05	1.51E-01	2.12E-05	1.05E-05	1.58E-01	50
Concrete/Industrial Saws	Santa Clara	SF	BA	2.19E+00	3.67E+00	1.73E+01	7.79E-05	1.76E-04	3.51E-03	1.56E-06	1.25E-05	1.61E-01	1.28E-05	4.31E-06	1.65E-01	52
Cement and Mortar Mixers	Santa Clara	SF	BA	6.02E+02	1.52E+02	3.91E+01	4.91E-03	2.17E-03	9.31E-02	7.32E-06	6.91E-05	2.12E-01	2.79E-04	2.72E-04	3.04E-01	96
Cement and Mortar Mixers	Santa Clara	SF	BA	1.02E+03	2.57E+02	1.25E+02	1.12E-02	5.93E-03	3.77E-01	1.64E-05	4.76E-03	5.75E-01	6.09E-04	6.20E-04	7.76E-01	244
Cement and Mortar Mixers	Santa Clara	SF	BA	4.29E+00	1.08E+00	1.67E+00	1.45E-04	7.11E-05	5.12E-03	1.92E-07	6.25E-05	7.56E-03	4.47E-06	8.00E-06	9.11E-03	3
Cranes	Santa Clara	SF	BA	1.17E+00	1.33E+00	2.60E+00	9.66E-05	1.33E-04	3.05E-03	2.42E-07	1.53E-06	1.99E-02	6.48E-06	5.34E-06	2.20E-02	7
Cranes	Santa Clara	SF	BA	2.33E+00	2.65E+00	9.03E+00	2.47E-04	6.88E-04	4.70E-03	7.61E-07	6.10E-06	7.88E-02	2.03E-05	1.37E-05	8.54E-02	27
Cranes	Santa Clara	SF	BA	9.33E-02	1.06E-01	5.71E-01	8.03E-06	5.23E-05	1.92E-04	5.14E-08	4.12E-07	5.18E-03	1.14E-06	4.44E-07	5.54E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.64E+00	1.30E+00	9.81E-01	7.36E-05	5.37E-05	2.86E-03	1.34E-07	3.94E-05	4.70E-03	4.21E-06	4.07E-06	6.09E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.07E+00	8.50E-01	1.18E+00	9.05E-05	5.78E-05	3.53E-03	1.39E-07	4.59E-05	5.47E-03	3.60E-06	5.01E-06	6.69E-03	2
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.35E+00	8.94E-01	7.02E+00	1.62E-04	5.26E-04	3.07E-03	6.02E-07	4.82E-06	6.23E-02	1.05E-05	8.94E-06	6.57E-02	21

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Rough Terrain Forklifts	Santa Clara	SF	BA	4.66E-01	5.28E-01	1.76E+00	6.53E-05	9.03E-05	2.06E-03	1.64E-07	1.03E-06	1.35E-02	3.43E-06	3.61E-06	1.46E-02	5
Rough Terrain Forklifts	Santa Clara	SF	BA	6.62E+00	7.50E+00	3.93E+01	1.07E-03	2.99E-03	2.04E-02	3.31E-06	2.66E-05	3.43E-01	7.21E-05	5.95E-05	3.66E-01	115
Rough Terrain Forklifts	Santa Clara	SF	BA	2.33E-01	2.64E-01	2.16E+00	3.04E-05	1.98E-04	7.26E-04	1.95E-07	1.56E-06	1.96E-02	3.55E-06	1.68E-06	2.08E-02	7
Rubber Tired Loaders	Santa Clara	SF	BA	1.17E+00	1.64E+00	4.03E+00	1.49E-04	1.97E-04	4.94E-03	3.71E-07	2.34E-06	3.05E-02	8.77E-06	8.25E-06	3.34E-02	11
Rubber Tired Loaders	Santa Clara	SF	BA	7.74E+00	1.09E+01	4.15E+01	1.13E-03	2.95E-03	2.22E-02	3.49E-06	2.80E-05	3.61E-01	8.43E-05	6.26E-05	3.88E-01	122
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	4.10E+00	9.79E+00	2.88E+01	4.34E-04	9.97E-04	1.51E-02	2.44E-06	1.96E-05	2.53E-01	4.55E-05	2.39E-05	2.67E-01	84
Skid Steer Loaders	Santa Clara	SF	BA	3.22E+00	2.81E+00	2.26E+00	1.73E-04	1.26E-04	6.58E-03	3.09E-07	9.07E-05	1.08E-02	9.53E-06	9.56E-06	1.40E-02	4
Skid Steer Loaders	Santa Clara	SF	BA	2.15E+02	1.88E+02	2.11E+02	1.66E-02	1.06E-02	6.33E-01	2.49E-05	8.23E-03	9.82E-01	7.19E-04	9.16E-04	1.22E+00	385
Skid Steer Loaders	Santa Clara	SF	BA	3.18E+01	2.70E+01	5.19E+01	6.26E-04	9.35E-04	4.16E-02	5.27E-06	3.32E-05	4.33E-01	7.80E-05	3.46E-05	4.58E-01	144
Skid Steer Loaders	Santa Clara	SF	BA	1.90E+01	1.62E+01	6.92E+01	3.87E-04	1.01E-03	1.64E-02	6.19E-06	4.96E-05	6.41E-01	6.10E-05	2.15E-05	6.60E-01	208
Dumpers/Tenders	Santa Clara	SF	BA	3.07E+01	1.25E+01	1.71E+00	2.47E-04	1.09E-04	3.68E-03	3.36E-07	3.18E-06	9.74E-03	1.77E-05	1.37E-05	1.55E-02	5
Dumpers/Tenders	Santa Clara	SF	BA	6.55E+01	2.68E+01	1.01E+01	8.78E-04	5.11E-04	3.00E-02	1.33E-06	3.88E-04	4.67E-02	5.74E-05	4.86E-05	6.55E-02	21
Dumpers/Tenders	Santa Clara	SF	BA	1.21E+01	4.96E+00	4.02E+00	3.44E-04	1.83E-04	1.22E-02	4.64E-07	1.52E-04	1.83E-02	1.51E-05	1.90E-05	2.34E-02	7
Dumpers/Tenders	Santa Clara	SF	BA	8.40E-01	2.92E-01	7.53E-01	1.51E-05	5.59E-05	2.87E-04	6.53E-08	5.23E-07	6.75E-03	1.86E-06	8.37E-07	7.35E-03	2
Other Construction Equipment	Santa Clara	SF	BA	3.26E+00	3.32E+00	1.82E+01	7.39E-05	2.41E-04	5.66E-03	1.66E-06	1.33E-05	1.67E-01	1.42E-05	4.09E-06	1.71E-01	54
Pavers	Santa Clara	SF	BA	8.90E-01	2.00E+00	1.70E+00	2.39E-05	1.47E-04	7.89E-05	2.37E-07	7.02E-06	1.87E-02	0.00E+00	2.16E-06	1.87E-02	6
Pavers	Santa Clara	SF	BA	5.17E+01	1.18E+02	1.55E+02	7.56E-03	1.69E-02	2.07E-02	2.14E-05	1.71E-03	1.65E+00	0.00E+00	6.82E-04	1.67E+00	525
Pavers	Santa Clara	SF	BA	6.10E+01	1.39E+02	4.42E+02	9.12E-03	5.53E-02	3.49E-02	5.65E-05	4.74E-03	4.82E+00	0.00E+00	8.22E-04	4.83E+00	1,521
Pavers	Santa Clara	SF	BA	3.79E+01	8.66E+01	5.07E+02	7.33E-03	5.66E-02	3.35E-02	6.24E-05	3.11E-03	5.55E+00	0.00E+00	6.61E-04	5.56E+00	1,751
Pavers	Santa Clara	SF	BA	4.57E+00	1.04E+01	9.20E+01	1.02E-03	9.42E-03	3.04E-03	1.14E-05	3.63E-04	1.01E+00	0.00E+00	9.23E-05	1.02E+00	320
Pavers	Santa Clara	SF	BA	4.69E+00	1.07E+01	1.13E+02	1.16E-03	1.05E-02	4.63E-03	1.22E-05	4.04E-04	1.25E+00	0.00E+00	1.04E-04	1.25E+00	393
Plate Compactors	Santa Clara	SF	BA	1.91E+01	3.14E+01	6.19E+00	7.89E-05	4.94E-04	4.14E-04	1.05E-06	1.92E-05	6.77E-02	0.00E+00	7.12E-06	6.79E-02	21
Rollers	Santa Clara	SF	BA	3.59E+01	6.84E+01	1.97E+01	2.51E-04	1.57E-03	1.32E-03	3.36E-06	6.14E-05	2.16E-01	0.00E+00	2.27E-05	2.16E-01	68
Rollers	Santa Clara	SF	BA	1.50E+01	2.86E+01	1.74E+01	2.30E-04	1.46E-03	7.85E-04	2.42E-06	5.68E-05	1.91E-01	0.00E+00	2.08E-05	1.91E-01	60
Rollers	Santa Clara	SF	BA	4.67E+01	8.98E+01	1.08E+02	4.25E-03	1.12E-02	1.27E-02	1.51E-05	1.02E-03	1.17E+00	0.00E+00	3.83E-04	1.17E+00	370
Rollers	Santa Clara	SF	BA	2.51E+02	4.82E+02	1.30E+03	2.22E-02	1.42E-01	9.71E-02	1.67E-04	1.19E-02	1.42E+01	0.00E+00	2.00E-03	1.43E+01	4,488
Rollers	Santa Clara	SF	BA	1.01E+02	1.94E+02	9.56E+02	1.14E-02	9.24E-02	5.99E-02	1.18E-04	4.94E-03	1.05E+01	0.00E+00	1.03E-03	1.05E+01	3,306
Rollers	Santa Clara	SF	BA	1.43E+01	2.75E+01	1.91E+02	1.62E-03	1.65E-02	5.11E-03	2.37E-05	5.60E-04	2.10E+00	0.00E+00	1.46E-04	2.11E+00	663
Rollers	Santa Clara	SF	BA	1.00E+01	1.93E+01	1.92E+02	1.50E-03	1.48E-02	5.71E-03	2.07E-05	5.18E-04	2.11E+00	0.00E+00	1.35E-04	2.11E+00	666
Scrapers	Santa Clara	SF	BA	2.31E+00	7.05E+00	3.04E+01	6.23E-04	3.72E-03	2.42E-03	3.88E-06	3.21E-04	3.31E-01	0.00E+00	5.62E-05	3.32E-01	104
Scrapers	Santa Clara	SF	BA	2.12E+01	6.45E+01	4.36E+02	6.36E-03	4.75E-02	2.92E-02	5.37E-05	2.65E-03	4.77E+00	0.00E+00	5.74E-04	4.79E+00	1,507
Scrapers	Santa Clara	SF	BA	2.07E+01	6.29E+01	5.98E+02	6.71E-03	5.95E-02	1.93E-02	7.41E-05	2.28E-03	6.58E+00	0.00E+00	6.06E-04	6.60E+00	2,076
Scrapers	Santa Clara	SF	BA	5.68E+01	1.73E+02	2.53E+03	2.62E-02	2.26E-01	9.83E-02	2.73E-04	8.76E-03	2.78E+01	0.00E+00	2.37E-03	2.79E+01	8,770
Scrapers	Santa Clara	SF	BA	1.08E+00	3.29E+00	8.30E+01	8.65E-04	7.57E-03	3.23E-03	9.18E-06	2.91E-04	9.13E-01	0.00E+00	7.81E-05	9.15E-01	288
Paving Equipment	Santa Clara	SF	BA	1.54E+00	3.51E+00	2.02E+00	2.67E-05	1.69E-04	9.11E-05	2.81E-07	6.59E-06	2.21E-02	0.00E+00	2.41E-06	2.22E-02	7
Paving Equipment	Santa Clara	SF	BA	1.31E+00	2.99E+00	3.35E+00	1.63E-04	3.65E-04	4.44E-04	4.62E-07	3.69E-05	3.58E-02	0.00E+00	1.47E-05	3.61E-02	11
Paving Equipment	Santa Clara	SF	BA	1.88E+01	4.31E+01	1.08E+02	2.21E-03	1.34E-02	8.45E-03	1.38E-05	1.16E-03	1.17E+00	0.00E+00	2.00E-04	1.18E+00	371
Paving Equipment	Santa Clara	SF	BA	8.84E+00	2.03E+01	9.35E+01	1.34E-03	1.04E-02	6.12E-03	1.15E-05	5.71E-04	1.02E+00	0.00E+00	1.21E-04	1.03E+00	323
Paving Equipment	Santa Clara	SF	BA	2.49E+00	5.71E+00	3.17E+01	3.44E-04	3.23E-03	1.03E-03	3.93E-06	1.23E-04	3.49E-01	0.00E+00	3.11E-05	3.50E-01	110
Surfacing Equipment	Santa Clara	SF	BA	1.19E+00	1.47E+00	9.61E-01	3.25E-05	9.64E-05	1.01E-04	1.34E-07	8.07E-06	1.04E-02	0.00E+00	2.93E-06	1.04E-02	3
Surfacing Equipment	Santa Clara	SF	BA	2.37E-01	2.95E-01	8.59E-01	1.33E-05	9.08E-05	6.15E-05	1.10E-07	7.02E-06	9.38E-03	0.00E+00	1.20E-06	9.41E-03	3
Surfacing Equipment	Santa Clara	SF	BA	1.78E-01	2.21E-01	8.63E-01	9.28E-06	8.07E-05	5.21E-05	1.07E-07	4.00E-06	9.47E-03	0.00E+00	8.38E-07	9.49E-03	3
Surfacing Equipment	Santa Clara	SF	BA	3.56E-01	4.42E-01	2.70E+00	2.11E-05	2.26E-04	7.15E-05	3.35E-07	7.53E-06	2.98E-02	0.00E+00	1.90E-06	2.98E-02	9
Surfacing Equipment	Santa Clara	SF	BA	2.97E+00	3.68E+00	3.69E+01	2.64E-04	2.79E-03	1.12E-03	3.99E-06	9.49E-05	4.07E-01	0.00E+00	2.38E-05	4.07E-01	128
Surfacing Equipment	Santa Clara	SF	BA	2.06E-01	2.56E-01	4.03E+00	2.92E-05	3.11E-04	1.22E-04	4.47E-07	1.05E-05	4.44E-02	0.00E+00	2.64E-06	4.45E-02	14
Signal Boards	Santa Clara	SF	BA	1.67E+02	3.44E+02	9.67E+01	1.23E-03	7.72E-03	6.47E-03	1.65E-05	3.02E-04	1.06E+00	0.00E+00	1.11E-04	1.06E+00	334
Signal Boards	Santa Clara	SF	BA	8.31E-01	1.22E+00	2.04E+00	6.30E-05	1.99E-04	2.03E-04	2.85E-07	1.64E-05	2.20E-02	0.00E+00	5.68E-06	2.22E-02	7

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Signal Boards	Santa Clara	SF	BA	1.36E+01	1.99E+01	7.31E+01	1.07E-03	7.29E-03	5.14E-03	9.37E-06	5.81E-04	7.99E-01	0.00E+00	9.62E-05	8.01E-01	252
Signal Boards	Santa Clara	SF	BA	8.43E+00	1.24E+01	8.70E+01	8.73E-04	7.69E-03	5.14E-03	1.07E-05	3.83E-04	9.54E-01	0.00E+00	7.88E-05	9.56E-01	301
Signal Boards	Santa Clara	SF	BA	1.78E+00	2.61E+00	3.02E+01	1.98E-04	2.35E-03	6.80E-04	3.75E-06	6.85E-05	3.33E-01	0.00E+00	1.79E-05	3.33E-01	105
Trenchers	Santa Clara	SF	BA	4.45E+00	7.54E+00	2.91E+00	3.71E-05	2.32E-04	1.95E-04	4.96E-07	9.08E-06	3.19E-02	0.00E+00	3.35E-06	3.20E-02	10
Trenchers	Santa Clara	SF	BA	4.69E+00	7.94E+00	1.19E+01	1.58E-04	9.96E-04	5.38E-04	1.66E-06	3.78E-05	1.31E-01	0.00E+00	1.42E-05	1.31E-01	41
Trenchers	Santa Clara	SF	BA	1.78E+02	3.08E+02	4.74E+02	2.27E-02	5.13E-02	6.15E-02	6.55E-05	5.13E-03	5.07E+00	0.00E+00	2.05E-03	5.11E+00	1,610
Trenchers	Santa Clara	SF	BA	2.42E+02	4.18E+02	1.24E+03	2.53E-02	1.56E-01	9.68E-02	1.59E-04	1.31E-02	1.35E+01	0.00E+00	2.28E-03	1.36E+01	4,279
Trenchers	Santa Clara	SF	BA	2.65E+01	4.57E+01	3.00E+02	4.26E-03	3.37E-02	1.96E-02	3.70E-05	1.82E-03	3.29E+00	0.00E+00	3.84E-04	3.30E+00	1,037
Trenchers	Santa Clara	SF	BA	2.37E+00	4.10E+00	4.15E+01	4.56E-04	4.29E-03	1.39E-03	5.14E-06	1.67E-04	4.57E-01	0.00E+00	4.11E-05	4.58E-01	144
Trenchers	Santa Clara	SF	BA	3.03E+00	5.23E+00	7.40E+01	7.41E-04	6.91E-03	3.17E-03	7.98E-06	2.68E-04	8.13E-01	0.00E+00	6.68E-05	8.15E-01	256
Trenchers	Santa Clara	SF	BA	4.13E-02	7.13E-02	1.90E+00	1.92E-05	1.81E-04	8.15E-05	2.10E-07	6.94E-06	2.09E-02	0.00E+00	1.73E-06	2.10E-02	7
Bore/Drill Rigs	Santa Clara	SF	BA	5.93E-01	1.32E+00	6.23E-01	7.94E-06	4.97E-05	4.16E-05	1.06E-07	1.94E-06	6.82E-03	0.00E+00	7.16E-07	6.84E-03	2
Bore/Drill Rigs	Santa Clara	SF	BA	1.78E+00	3.96E+00	2.88E+00	3.82E-05	2.42E-04	1.30E-04	4.01E-07	9.42E-06	3.16E-02	0.00E+00	3.45E-06	3.17E-02	10
Bore/Drill Rigs	Santa Clara	SF	BA	7.77E+00	1.79E+01	2.54E+01	2.29E-04	2.15E-03	2.02E-03	3.60E-06	8.55E-05	2.78E-01	0.00E+00	2.06E-05	2.79E-01	88
Bore/Drill Rigs	Santa Clara	SF	BA	2.39E+01	5.51E+01	1.93E+02	1.12E-03	1.17E-02	1.29E-02	2.49E-05	5.60E-04	2.12E+00	0.00E+00	1.01E-04	2.12E+00	669
Bore/Drill Rigs	Santa Clara	SF	BA	5.52E+00	1.27E+01	8.17E+01	4.27E-04	4.15E-03	4.80E-03	1.01E-05	1.57E-04	8.98E-01	0.00E+00	3.85E-05	8.99E-01	283
Bore/Drill Rigs	Santa Clara	SF	BA	4.75E+00	1.10E+01	9.32E+01	4.03E-04	3.36E-03	1.88E-03	1.16E-05	9.83E-05	1.03E+00	0.00E+00	3.64E-05	1.03E+00	324
Bore/Drill Rigs	Santa Clara	SF	BA	1.06E+01	2.44E+01	3.43E+02	1.47E-03	1.16E-02	6.72E-03	3.72E-05	3.58E-04	3.79E+00	0.00E+00	1.33E-04	3.80E+00	1,195
Bore/Drill Rigs	Santa Clara	SF	BA	6.40E-01	1.48E+00	4.11E+01	1.76E-04	1.40E-03	8.04E-04	4.57E-06	4.31E-05	4.54E-01	0.00E+00	1.59E-05	4.54E-01	143
Bore/Drill Rigs	Santa Clara	SF	BA	1.07E+00	2.48E+00	1.04E+02	4.82E-04	6.70E-03	2.05E-03	1.15E-05	1.75E-04	1.15E+00	0.00E+00	4.34E-05	1.15E+00	362
Excavators	Santa Clara	SF	BA	2.20E+00	8.40E+00	6.29E+00	8.33E-05	5.26E-04	2.84E-04	8.76E-07	1.96E-05	6.90E-02	0.00E+00	7.51E-06	6.92E-02	22
Excavators	Santa Clara	SF	BA	8.27E+01	3.22E+02	3.73E+02	1.17E-02	3.79E-02	4.44E-02	5.21E-05	3.04E-03	4.03E+00	0.00E+00	1.06E-03	4.05E+00	1,275
Excavators	Santa Clara	SF	BA	2.24E+02	8.75E+02	2.95E+03	4.36E-02	2.77E-01	2.25E-01	3.78E-04	2.26E-02	3.22E+01	0.00E+00	3.93E-03	3.23E+01	10,159
Excavators	Santa Clara	SF	BA	4.33E+02	1.69E+03	8.64E+03	9.56E-02	7.02E-01	5.62E-01	1.07E-03	3.85E-02	9.47E+01	0.00E+00	8.62E-03	9.48E+01	29,853
Excavators	Santa Clara	SF	BA	1.76E+02	6.87E+02	4.93E+03	4.05E-02	3.46E-01	1.19E-01	6.12E-04	1.14E-02	5.44E+01	0.00E+00	3.65E-03	5.45E+01	17,159
Excavators	Santa Clara	SF	BA	1.27E+02	4.95E+02	5.24E+03	4.10E-02	3.25E-01	1.26E-01	5.68E-04	1.15E-02	5.78E+01	0.00E+00	3.70E-03	5.79E+01	18,231
Excavators	Santa Clara	SF	BA	3.23E-01	1.26E+00	2.21E+01	1.74E-04	1.41E-03	5.33E-04	2.45E-06	4.91E-05	2.44E-01	0.00E+00	1.57E-05	2.44E-01	77
Concrete/Industrial Saws	Santa Clara	SF	BA	2.37E-01	3.85E-01	2.89E-01	3.83E-06	2.42E-05	1.31E-05	4.02E-08	9.18E-07	3.17E-03	0.00E+00	3.45E-07	3.18E-03	1
Concrete/Industrial Saws	Santa Clara	SF	BA	2.08E+00	3.30E+00	4.61E+00	1.42E-04	4.54E-04	4.66E-04	6.44E-07	3.72E-05	4.98E-02	0.00E+00	1.29E-05	5.01E-02	16
Concrete/Industrial Saws	Santa Clara	SF	BA	3.62E+00	5.76E+00	1.95E+01	2.81E-04	1.94E-03	1.38E-03	2.50E-06	1.55E-04	2.13E-01	0.00E+00	2.53E-05	2.14E-01	67
Concrete/Industrial Saws	Santa Clara	SF	BA	1.19E-01	1.89E-01	1.38E+00	1.37E-05	1.20E-04	8.19E-05	1.70E-07	6.07E-06	1.51E-02	0.00E+00	1.24E-06	1.51E-02	5
Cement and Mortar Mixers	Santa Clara	SF	BA	3.03E+01	2.49E+01	7.19E+00	9.23E-05	5.81E-04	4.81E-04	1.23E-06	2.45E-05	7.88E-02	0.00E+00	8.33E-06	7.89E-02	25
Cement and Mortar Mixers	Santa Clara	SF	BA	2.73E+00	2.25E+00	1.80E+00	2.90E-05	1.66E-04	8.91E-05	2.50E-07	8.77E-06	1.97E-02	0.00E+00	2.62E-06	1.97E-02	6
Cranes	Santa Clara	SF	BA	2.02E+00	7.08E+00	7.65E+00	3.30E-04	8.19E-04	9.94E-04	1.06E-06	7.81E-05	8.21E-02	0.00E+00	2.97E-05	8.27E-02	26
Cranes	Santa Clara	SF	BA	2.21E+01	7.77E+01	1.79E+02	3.33E-03	2.01E-02	1.39E-02	2.28E-05	1.76E-03	1.95E+00	0.00E+00	3.01E-04	1.95E+00	615
Cranes	Santa Clara	SF	BA	2.21E+01	7.77E+01	2.85E+02	3.79E-03	2.84E-02	1.87E-02	3.51E-05	1.60E-03	3.12E+00	0.00E+00	3.42E-04	3.13E+00	984
Cranes	Santa Clara	SF	BA	4.29E+01	1.51E+02	7.66E+02	7.37E-03	6.84E-02	2.12E-02	9.50E-05	2.38E-03	8.44E+00	0.00E+00	6.65E-04	8.46E+00	2,662
Cranes	Santa Clara	SF	BA	1.57E+01	5.52E+01	4.51E+02	4.05E-03	3.58E-02	1.37E-02	4.88E-05	1.30E-03	4.97E+00	0.00E+00	3.65E-04	4.98E+00	1,566
Cranes	Santa Clara	SF	BA	1.34E+00	4.71E+00	6.47E+01	5.85E-04	5.27E-03	1.96E-03	7.17E-06	1.89E-04	7.13E-01	0.00E+00	5.27E-05	7.15E-01	225
Cranes	Santa Clara	SF	BA	1.69E+00	5.91E+00	2.61E+02	2.70E-03	2.90E-02	9.18E-03	2.88E-05	8.87E-04	2.87E+00	0.00E+00	2.43E-04	2.87E+00	904
Graders	Santa Clara	SF	BA	8.31E-01	2.16E+00	2.77E+00	1.06E-04	2.88E-04	3.43E-04	3.85E-07	2.58E-05	2.98E-02	0.00E+00	9.60E-06	3.00E-02	9
Graders	Santa Clara	SF	BA	5.54E+01	1.44E+02	4.96E+02	8.41E-03	5.24E-02	3.80E-02	6.34E-05	4.42E-03	5.41E+00	0.00E+00	7.58E-04	5.42E+00	1,708
Graders	Santa Clara	SF	BA	1.89E+02	4.93E+02	2.79E+03	3.41E-02	2.59E-01	1.81E-01	3.44E-04	1.42E-02	3.05E+01	0.00E+00	3.08E-03	3.06E+01	9,636
Graders	Santa Clara	SF	BA	1.17E+02	3.06E+02	2.39E+03	2.15E-02	1.96E-01	6.39E-02	2.96E-04	6.80E-03	2.63E+01	0.00E+00	1.94E-03	2.64E+01	8,300
Graders	Santa Clara	SF	BA	3.32E+00	8.66E+00	9.00E+01	7.61E-04	6.59E-03	2.59E-03	9.74E-06	2.38E-04	9.93E-01	0.00E+00	6.86E-05	9.94E-01	313
Graders	Santa Clara	SF	BA	2.06E-02	5.38E-02	1.18E+00	1.01E-05	8.89E-05	3.41E-05	1.31E-07	3.17E-06	1.31E-02	0.00E+00	9.07E-07	1.31E-02	4
Off-Highway Trucks	Santa Clara	SF	BA	3.86E+00	2.10E+01	1.20E+02	1.42E-03	1.01E-02	7.95E-03	1.48E-05	5.65E-04	1.31E+00	0.00E+00	1.28E-04	1.32E+00	415

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Off-Highway Trucks	Santa Clara	SF	BA	2.85E+01	1.55E+02	1.17E+03	1.03E-02	8.57E-02	2.92E-02	1.45E-04	2.86E-03	1.29E+01	0.00E+00	9.28E-04	1.29E+01	4,073
Off-Highway Trucks	Santa Clara	SF	BA	4.01E+01	2.19E+02	2.70E+03	2.26E-02	1.74E-01	6.70E-02	2.92E-04	6.19E-03	2.98E+01	0.00E+00	2.04E-03	2.98E+01	9,380
Off-Highway Trucks	Santa Clara	SF	BA	4.33E+00	2.36E+01	4.72E+02	3.97E-03	3.14E-02	1.17E-02	5.24E-05	1.10E-03	5.21E+00	0.00E+00	3.58E-04	5.22E+00	1,642
Off-Highway Trucks	Santa Clara	SF	BA	2.03E+00	1.11E+01	3.13E+02	2.87E-03	3.08E-02	8.67E-03	3.47E-05	9.19E-04	3.45E+00	0.00E+00	2.59E-04	3.46E+00	1,088
Crushing/Proc. Equipment	Santa Clara	SF	BA	9.49E+00	2.49E+01	5.08E+01	1.93E-03	5.19E-03	5.97E-03	7.07E-06	4.76E-04	5.47E-01	0.00E+00	1.74E-04	5.50E-01	173
Crushing/Proc. Equipment	Santa Clara	SF	BA	2.68E+01	7.01E+01	2.67E+02	4.49E-03	2.80E-02	2.00E-02	3.41E-05	2.46E-03	2.91E+00	0.00E+00	4.05E-04	2.92E+00	919
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.13E+01	2.97E+01	2.26E+02	2.67E-03	2.10E-02	1.42E-02	2.79E-05	1.16E-03	2.48E+00	0.00E+00	2.41E-04	2.49E+00	782
Crushing/Proc. Equipment	Santa Clara	SF	BA	1.13E+00	2.95E+00	3.27E+01	2.57E-04	2.69E-03	7.80E-04	4.06E-06	8.28E-05	3.61E-01	0.00E+00	2.32E-05	3.61E-01	114
Crushing/Proc. Equipment	Santa Clara	SF	BA	6.35E+00	1.66E+01	2.81E+02	2.06E-03	2.02E-02	6.72E-03	3.05E-05	6.65E-04	3.10E+00	0.00E+00	1.86E-04	3.11E+00	978
Crushing/Proc. Equipment	Santa Clara	SF	BA	3.44E-02	9.01E-02	2.40E+00	1.76E-05	1.79E-04	5.69E-05	2.67E-07	5.76E-06	2.65E-02	0.00E+00	1.59E-06	2.65E-02	8
Crushing/Proc. Equipment	Santa Clara	SF	BA	3.44E-02	9.01E-02	5.34E+00	4.73E-05	5.58E-04	1.51E-04	5.92E-07	1.61E-05	5.89E-02	0.00E+00	4.27E-06	5.90E-02	19
Rough Terrain Forklifts	Santa Clara	SF	BA	6.59E+00	2.05E+01	3.21E+01	1.08E-03	3.25E-03	3.73E-03	4.47E-06	2.77E-04	3.46E-01	0.00E+00	9.71E-05	3.48E-01	110
Rough Terrain Forklifts	Santa Clara	SF	BA	3.15E+02	9.80E+02	2.80E+03	4.29E-02	2.74E-01	2.10E-01	3.58E-04	2.32E-02	3.06E+01	0.00E+00	3.87E-03	3.06E+01	9,645
Rough Terrain Forklifts	Santa Clara	SF	BA	4.04E+01	1.25E+02	7.14E+02	7.92E-03	6.11E-02	4.54E-02	8.81E-05	3.34E-03	7.83E+00	0.00E+00	7.15E-04	7.84E+00	2,469
Rough Terrain Forklifts	Santa Clara	SF	BA	2.25E+00	7.00E+00	5.41E+01	4.30E-04	4.07E-03	1.30E-03	6.72E-06	1.31E-04	5.97E-01	0.00E+00	3.88E-05	5.98E-01	188
Rough Terrain Forklifts	Santa Clara	SF	BA	1.48E+00	4.61E+00	5.35E+01	4.02E-04	3.52E-03	1.27E-03	5.80E-06	1.22E-04	5.90E-01	0.00E+00	3.62E-05	5.91E-01	186
Rubber Tired Loaders	Santa Clara	SF	BA	8.31E-01	2.18E+00	1.68E+00	2.22E-05	1.41E-04	7.59E-05	2.34E-07	5.34E-06	1.84E-02	0.00E+00	2.01E-06	1.85E-02	6
Rubber Tired Loaders	Santa Clara	SF	BA	1.61E+01	4.32E+01	6.24E+01	2.35E-03	6.47E-03	7.62E-03	8.68E-06	5.74E-04	6.72E-01	0.00E+00	2.12E-04	6.76E-01	213
Rubber Tired Loaders	Santa Clara	SF	BA	4.39E+02	1.17E+03	3.16E+03	5.28E-02	3.31E-01	2.41E-01	4.05E-04	2.79E-02	3.45E+01	0.00E+00	4.76E-03	3.46E+01	10,901
Rubber Tired Loaders	Santa Clara	SF	BA	2.47E+02	6.61E+02	3.21E+03	3.86E-02	2.94E-01	2.07E-01	3.95E-04	1.61E-02	3.51E+01	0.00E+00	3.48E-03	3.52E+01	11,079
Rubber Tired Loaders	Santa Clara	SF	BA	2.46E+02	6.58E+02	4.44E+03	3.90E-02	3.60E-01	1.17E-01	5.51E-04	1.23E-02	4.89E+01	0.00E+00	3.51E-03	4.90E+01	15,430
Rubber Tired Loaders	Santa Clara	SF	BA	1.02E+02	2.74E+02	2.94E+03	2.42E-02	2.12E-01	8.32E-02	3.18E-04	7.57E-03	3.24E+01	0.00E+00	2.18E-03	3.24E+01	10,215
Rubber Tired Loaders	Santa Clara	SF	BA	8.33E-01	2.23E+00	4.90E+01	4.05E-04	3.63E-03	1.39E-03	5.43E-06	1.28E-04	5.40E-01	0.00E+00	3.66E-05	5.41E-01	170
Rubber Tired Loaders	Santa Clara	SF	BA	8.95E-02	2.39E-01	6.44E+00	5.88E-05	6.70E-04	2.08E-04	7.13E-07	2.01E-05	7.09E-02	0.00E+00	5.30E-06	7.10E-02	22
Rubber Tired Dozers	Santa Clara	SF	BA	5.93E-01	2.65E+00	1.57E+01	2.69E-04	1.96E-03	1.11E-03	1.93E-06	1.11E-04	1.71E-01	0.00E+00	2.42E-05	1.72E-01	54
Rubber Tired Dozers	Santa Clara	SF	BA	1.45E+01	6.48E+01	5.41E+02	7.52E-03	6.32E-02	2.13E-02	6.69E-05	2.66E-03	5.94E+00	0.00E+00	6.78E-04	5.96E+00	1,875
Rubber Tired Dozers	Santa Clara	SF	BA	2.24E+01	9.97E+01	1.20E+03	1.53E-02	1.28E-01	6.64E-02	1.30E-04	5.27E-03	1.32E+01	0.00E+00	1.38E-03	1.32E+01	4,164
Rubber Tired Dozers	Santa Clara	SF	BA	9.15E-01	4.08E+00	7.41E+01	9.46E-04	7.98E-03	4.09E-03	8.17E-06	3.27E-04	8.13E-01	0.00E+00	8.54E-05	8.15E-01	256
Rubber Tired Dozers	Santa Clara	SF	BA	6.19E-02	2.76E-01	7.45E+00	9.94E-05	9.83E-04	4.45E-04	8.20E-07	3.39E-05	8.16E-02	0.00E+00	8.96E-06	8.18E-02	26
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.67E+01	4.32E+01	3.12E+01	4.17E-04	2.65E-03	1.41E-03	4.35E-06	1.13E-04	3.43E-01	0.00E+00	3.76E-05	3.43E-01	108
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.00E+02	2.65E+02	3.71E+02	1.05E-02	3.66E-02	4.11E-02	5.19E-05	2.79E-03	4.02E+00	0.00E+00	9.45E-04	4.04E+00	1,270
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	1.34E+03	3.54E+03	8.38E+03	1.12E-01	7.52E-01	6.20E-01	1.07E-03	5.95E-02	9.16E+01	0.00E+00	1.01E-02	9.18E+01	28,890
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	9.98E+01	2.64E+02	1.22E+03	1.22E-02	9.45E-02	7.74E-02	1.51E-04	5.02E-03	1.34E+01	0.00E+00	1.10E-03	1.34E+01	4,223
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	3.23E+01	8.55E+01	6.65E+02	4.88E-03	4.39E-02	1.54E-02	8.26E-05	1.41E-03	7.34E+00	0.00E+00	4.40E-04	7.35E+00	2,313
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	5.21E+01	1.38E+02	2.15E+03	1.51E-02	1.26E-01	5.00E-02	2.68E-04	4.32E-03	2.38E+01	0.00E+00	1.36E-03	2.38E+01	7,495
Tractors/Loaders/Backhoes	Santa Clara	SF	BA	4.16E+00	1.10E+01	2.58E+02	1.82E-03	1.55E-02	5.99E-03	3.21E-05	5.27E-04	2.85E+00	0.00E+00	1.64E-04	2.85E+00	898
Crawler Tractors	Santa Clara	SF	BA	8.31E-01	2.38E+00	2.77E+00	1.30E-04	3.02E-04	3.76E-04	3.82E-07	2.98E-05	2.96E-02	0.00E+00	1.17E-05	2.98E-02	9
Crawler Tractors	Santa Clara	SF	BA	4.71E+02	1.35E+03	4.07E+03	8.20E-02	4.91E-01	3.25E-01	5.21E-04	4.23E-02	4.44E+01	0.00E+00	7.40E-03	4.46E+01	14,026
Crawler Tractors	Santa Clara	SF	BA	1.60E+02	4.57E+02	2.53E+03	3.64E-02	2.71E-01	1.69E-01	3.11E-04	1.51E-02	2.77E+01	0.00E+00	3.28E-03	2.77E+01	8,732
Crawler Tractors	Santa Clara	SF	BA	1.37E+02	3.93E+02	2.96E+03	3.28E-02	2.88E-01	9.42E-02	3.67E-04	1.10E-02	3.26E+01	0.00E+00	2.96E-03	3.27E+01	10,280
Crawler Tractors	Santa Clara	SF	BA	9.39E+01	2.69E+02	3.17E+03	3.25E-02	2.77E-01	1.20E-01	3.42E-04	1.07E-02	3.49E+01	0.00E+00	2.94E-03	3.49E+01	10,991
Crawler Tractors	Santa Clara	SF	BA	5.51E-01	1.58E+00	3.33E+01	3.43E-04	2.97E-03	1.26E-03	3.68E-06	1.14E-04	3.66E-01	0.00E+00	3.10E-05	3.67E-01	115
Crawler Tractors	Santa Clara	SF	BA	5.51E-01	1.58E+00	4.71E+01	5.20E-04	5.51E-03	1.99E-03	5.21E-06	1.75E-04	5.18E-01	0.00E+00	4.69E-05	5.19E-01	163
Skid Steer Loaders	Santa Clara	SF	BA	1.14E+02	2.61E+02	1.64E+02	2.54E-03	1.49E-02	7.94E-03	2.28E-05	7.73E-04	1.80E+00	0.00E+00	2.29E-04	1.80E+00	567
Skid Steer Loaders	Santa Clara	SF	BA	1.03E+03	2.41E+03	2.82E+03	5.33E-02	2.60E-01	2.64E-01	3.96E-04	1.61E-02	3.07E+01	0.00E+00	4.81E-03	3.08E+01	9,687
Skid Steer Loaders	Santa Clara	SF	BA	5.41E+02	1.26E+03	2.46E+03	2.39E-02	1.90E-01	1.72E-01	3.16E-04	1.29E-02	2.69E+01	0.00E+00	2.16E-03	2.70E+01	8,491
Off-Highway Tractors	Santa Clara	SF	BA	5.93E-02	1.81E-01	7.81E-01	1.82E-05	1.07E-04	6.45E-05	9.97E-08	9.19E-06	8.50E-03	0.00E+00	1.64E-06	8.53E-03	3

Construction

Tons/Day																MTons/ Year
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Off-Highway Tractors	Santa Clara	SF	BA	7.26E+01	2.22E+02	1.32E+03	2.17E-02	1.62E-01	9.17E-02	1.63E-04	9.09E-03	1.45E+01	0.00E+00	1.96E-03	1.45E+01	4,564
Off-Highway Tractors	Santa Clara	SF	BA	6.86E+01	2.10E+02	1.24E+03	1.64E-02	1.42E-01	4.72E-02	1.54E-04	5.87E-03	1.37E+01	0.00E+00	1.48E-03	1.37E+01	4,311
Off-Highway Tractors	Santa Clara	SF	BA	3.45E+00	1.06E+01	2.73E+02	3.30E-03	2.87E-02	1.43E-02	3.01E-05	1.16E-03	3.00E+00	0.00E+00	2.98E-04	3.00E+00	946
Off-Highway Tractors	Santa Clara	SF	BA	3.65E-01	1.11E+00	4.13E+01	5.25E-04	5.35E-03	2.35E-03	4.56E-06	1.82E-04	4.53E-01	0.00E+00	4.74E-05	4.54E-01	143
Dumpers/Tenders	Santa Clara	SF	BA	1.42E+00	2.59E+00	8.97E-01	1.22E-05	7.68E-05	4.10E-05	1.25E-07	3.48E-06	9.85E-03	0.00E+00	1.10E-06	9.87E-03	3
Other Construction Equipment	Santa Clara	SF	BA	1.96E+01	3.72E+01	1.71E+01	2.18E-04	1.37E-03	1.15E-03	2.92E-06	5.33E-05	1.88E-01	0.00E+00	1.97E-05	1.88E-01	59
Other Construction Equipment	Santa Clara	SF	BA	3.32E+00	6.29E+00	3.78E+00	5.01E-05	3.17E-04	1.71E-04	5.27E-07	1.24E-05	4.15E-02	0.00E+00	4.52E-06	4.16E-02	13
Other Construction Equipment	Santa Clara	SF	BA	5.10E+00	9.82E+00	1.27E+01	3.28E-04	1.21E-03	1.26E-03	1.78E-06	8.97E-05	1.37E-01	0.00E+00	2.96E-05	1.38E-01	43
Other Construction Equipment	Santa Clara	SF	BA	8.43E+00	1.62E+01	5.99E+01	7.40E-04	5.32E-03	4.24E-03	7.68E-06	4.07E-04	6.55E-01	0.00E+00	6.68E-05	6.56E-01	207
Other Construction Equipment	Santa Clara	SF	BA	1.16E+01	2.24E+01	1.09E+02	9.70E-04	8.35E-03	6.56E-03	1.34E-05	4.18E-04	1.19E+00	0.00E+00	8.75E-05	1.19E+00	376
Other Construction Equipment	Santa Clara	SF	BA	2.70E+01	5.20E+01	5.97E+02	3.58E-03	3.49E-02	1.32E-02	6.48E-05	1.14E-03	6.60E+00	0.00E+00	3.23E-04	6.61E+00	2,080
				13,959	27,106	103,169	1.370	9.040	9.520	0.013	0.556	1,122.454	0.007	0.119	1,127	354,822
				Population	Activity	Consumption	lbs/day					Tons/Day				MTons/Year
				859	1,668	6,348	169	1,112	1,171	2	68	69	0	0	69	21,831
										Percent		6.15%				

As a percent of Total Building Permits issued.
SOURCE: U.S. Census Bureau. <http://censtats.census.gov/cgi-bin/bldgprmt/bldgdisp.pl>
Annual GHG emissions (MTons/Year) multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. This assumption is consistent with the California Air Resources Board's (CARB) methodology for transportation within the Climate Change Scoping Plan Measure Documentation Supplement.

Buildings Estimates with Imputation			
SC	Palo Alto		
2011	1,029	84	8.2%
2012	1,564	98	6.3%
2013	1,944	111	5.7%
2014	1,968	88	4.5%
avg	1,626	95	6.2%

Lawn & Garden												Tons/Day					MTons/Year				
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e					
Lawn Mowers	Santa Clara	SF	BA	2.21E+03	1.38E+03	1.56E+02	1.77E-02	4.69E-03	3.17E-01	3.88E-05	2.97E-03	9.42E-01	1.22E-03	1.10E-03	1.34E+00	445					
Lawn Mowers	Santa Clara	SF	BA	1.66E+04	7.03E+02	9.79E+01	2.04E-02	2.56E-03	2.46E-01	1.97E-05	1.62E-03	4.79E-01	6.14E-04	1.27E-03	6.96E-01	231					
Chainsaws	Santa Clara	SF	BA	3.95E+03	3.13E+03	1.87E+02	1.56E-01	2.45E-03	2.82E-01	3.14E-05	4.44E-04	7.63E-01	1.27E-03	9.70E-03	1.36E+00	450					
Chainsaws	Santa Clara	SF	BA	4.44E+04	5.96E+02	3.22E+01	1.59E-02	4.91E-04	6.67E-02	5.99E-06	2.71E-04	1.45E-01	2.46E-04	9.88E-04	2.42E-01	80					
Chainsaws	Santa Clara	SF	BA	2.78E+03	2.21E+03	3.18E+02	2.66E-01	4.17E-03	4.81E-01	5.35E-05	7.57E-04	1.30E+00	1.43E-03	1.65E-02	2.09E+00	692					
Chainsaws	Santa Clara	SF	BA	3.13E+04	4.20E+02	5.28E+01	2.47E-02	8.25E-04	1.07E-01	1.02E-05	5.05E-04	2.48E-01	2.75E-04	1.53E-03	3.65E-01	121					
Chainsaws Preempt	Santa Clara	SF	BA	3.46E+03	2.74E+03	3.96E+02	3.31E-01	5.19E-03	5.98E-01	6.66E-05	9.42E-04	1.62E+00	1.78E-03	2.06E-02	2.60E+00	861					
Chainsaws Preempt	Santa Clara	SF	BA	3.90E+04	5.23E+02	7.37E+01	4.08E-02	8.64E-04	1.58E-01	1.27E-05	3.77E-04	3.08E-01	3.13E-04	2.53E-03	4.58E-01	152					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.29E+04	4.28E+03	1.90E+02	1.03E-01	2.93E-03	3.38E-01	3.76E-05	5.31E-04	9.12E-01	1.61E-03	6.37E-03	1.55E+00	512					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.44E+05	8.46E+03	3.59E+02	1.62E-01	5.87E-03	6.66E-01	7.42E-05	1.05E-03	1.80E+00	3.20E-03	1.01E-02	3.01E+00	995					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	1.92E+04	1.03E+04	5.52E+02	3.81E-01	7.86E-03	9.06E-01	1.01E-04	1.43E-03	2.45E+00	4.12E-03	2.37E-02	4.22E+00	1,398					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	4.96E+04	6.52E+02	3.42E+01	1.68E-02	5.22E-04	7.08E-02	6.36E-06	2.87E-04	1.54E-01	2.65E-04	1.04E-03	2.58E-01	86					
Shredders	Santa Clara	SF	BA	9.72E+01	3.61E+01	1.59E+01	8.91E-04	6.89E-04	4.30E-02	3.38E-06	6.88E-04	8.21E-02	8.01E-05	5.54E-05	1.08E-01	36					
Shredders	Santa Clara	SF	BA	3.46E+03	8.54E+00	4.18E+00	8.55E-04	1.28E-04	1.13E-02	7.99E-07	1.63E-04	1.94E-02	1.63E-05	5.31E-05	2.56E-02	8					
Commercial Turf Equipment	Santa Clara	SF	BA	5.15E+01	1.13E+02	4.63E+01	2.09E-03	1.57E-03	1.26E-01	9.91E-06	1.12E-04	2.41E-01	2.12E-04	1.30E-04	3.09E-01	102					
Commercial Turf Equipment	Santa Clara	SF	BA	2.54E+01	5.57E+01	4.95E+01	2.16E-03	1.65E-03	1.39E-01	1.03E-05	1.17E-04	2.51E-01	1.56E-04	1.34E-04	3.02E-01	100					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	2.18E+01	4.09E+00	2.29E-01	1.12E-04	3.61E-06	4.16E-04	4.63E-08	6.54E-07	1.12E-03	1.76E-06	6.98E-06	1.82E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	6.68E+02	7.86E+00	4.76E-01	2.31E-04	7.30E-06	9.91E-04	8.89E-08	4.02E-06	2.16E-03	3.46E-06	1.44E-05	3.53E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	9.48E+00	1.78E+00	4.97E-01	2.44E-04	7.85E-06	9.05E-04	1.01E-07	1.42E-06	2.44E-03	1.81E-06	1.52E-05	3.32E-03	1					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	2.91E+02	3.42E+00	9.99E-01	4.58E-04	1.57E-05	2.03E-03	1.94E-07	9.58E-06	4.70E-03	3.51E-06	2.85E-05	6.39E-03	2					
Lawn Mowers	Santa Clara	SF	BA	1.31E+04	8.18E+03	9.82E+02	1.18E-01	2.96E-02	2.20E+00	1.93E-04	1.76E-02	5.57E+00	7.23E-03	6.50E-03	7.95E+00	2,633					
Lawn Mowers	Santa Clara	SF	BA	2.07E+05	8.79E+03	1.22E+03	1.18E-01	3.23E-02	3.39E+00	2.07E-04	1.44E-02	5.99E+00	7.53E-03	6.52E-03	8.47E+00	2,803					
Tillers	Santa Clara	SF	BA	1.36E+03	2.08E+02	2.96E+01	2.67E-03	6.59E-04	7.54E-02	5.43E-06	4.15E-04	1.57E-01	1.70E-04	1.48E-04	2.13E-01	71					
Tillers	Santa Clara	SF	BA	5.27E+03	2.60E+02	3.97E+01	4.15E-03	1.09E-03	1.09E-01	6.79E-06	4.91E-04	1.97E-01	2.40E-04	2.30E-04	2.76E-01	91					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	2.38E+03	8.86E+02	2.74E+01	3.60E-03	1.60E-03	6.33E-02	5.22E-06	4.92E-05	1.51E-01	5.40E-04	2.00E-04	3.23E-01	107					
Trimmers/Edgers/Brush Cutters	Santa Clara	SF	BA	1.11E+04	6.54E+02	2.29E+01	3.20E-03	1.02E-03	6.21E-02	3.85E-06	1.26E-04	1.11E-01	3.68E-04	1.77E-04	2.29E-01	76					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	6.08E+02	1.03E+02	6.90E+00	5.16E-04	1.26E-04	1.87E-02	1.22E-06	8.27E-05	3.52E-02	5.10E-05	2.86E-05	5.16E-02	17					
Leaf Blowers/Vacuums	Santa Clara	SF	BA	5.22E+02	6.86E+00	5.22E-01	4.76E-05	1.11E-05	1.60E-03	8.08E-08	4.66E-06	2.34E-03	3.83E-06	2.64E-06	3.58E-03	1					
Rear Engine Riding Mowers	Santa Clara	SF	BA	7.15E+03	5.32E+03	1.78E+03	8.34E-02	5.92E-02	5.23E+00	2.45E-04	3.99E-03	8.61E+00	8.57E-03	4.61E-03	1.14E+01	3,762					
Rear Engine Riding Mowers	Santa Clara	SF	BA	6.27E+03	4.84E+02	1.63E+02	7.83E-03	5.27E-03	4.82E-01	2.24E-05	3.13E-04	7.84E-01	7.65E-04	4.33E-04	1.03E+00	341					
Rear Engine Riding Mowers	Santa Clara	SF	BA	3.27E+01	2.43E+01	1.58E+01	7.15E-04	5.17E-04	4.80E-02	1.88E-06	3.45E-05	7.43E-02	5.53E-05	3.96E-05	9.23E-02	31					
Rear Engine Riding Mowers	Santa Clara	SF	BA	2.82E+01	2.18E+00	1.42E+00	6.78E-05	4.22E-05	4.33E-03	1.69E-07	2.66E-06	6.66E-03	4.68E-06	3.75E-06	8.19E-03	3					
Front Mowers	Santa Clara	SF	BA	3.28E+02	2.44E+02	1.30E+02	6.10E-03	4.33E-03	3.83E-01	1.80E-05	2.92E-04	6.30E-01	5.04E-04	3.38E-04	7.93E-01	263					
Front Mowers	Santa Clara	SF	BA	1.06E+04	8.19E+02	4.39E+02	2.11E-02	1.42E-02	1.30E+00	6.03E-05	8.44E-04	2.12E+00	1.66E-03	1.17E-03	2.65E+00	879					
Front Mowers	Santa Clara	SF	BA	2.57E+02	1.91E+02	1.37E+02	6.21E-03	4.48E-03	4.16E-01	1.63E-05	2.99E-04	6.45E-01	4.58E-04	3.44E-04	7.94E-01	263					
Front Mowers	Santa Clara	SF	BA	8.30E+03	6.41E+02	4.63E+02	2.20E-02	1.37E-02	1.41E+00	5.49E-05	8.64E-04	2.17E+00	1.45E-03	1.22E-03	2.64E+00	875					
Shredders	Santa Clara	SF	BA	2.57E+02	9.57E+01	2.63E+01	3.46E-03	1.53E-03	6.08E-02	5.01E-06	4.73E-05	1.45E-01	1.87E-04	1.92E-04	2.07E-01	69					
Shredders	Santa Clara	SF	BA	9.57E+03	2.36E+01	8.14E+00	7.53E-04	2.43E-04	2.54E-02	1.23E-06	6.54E-05	3.57E-02	3.64E-05	4.17E-05	4.79E-02	16					
Lawn & Garden Tractors	Santa Clara	SF	BA	1.31E+03	4.62E+02	2.97E+02	1.17E-02	8.40E-03	8.77E-01	4.11E-05	5.66E-04	1.44E+00	9.67E-04	6.48E-04	1.76E+00	582					
Lawn & Garden Tractors	Santa Clara	SF	BA	8.52E+03	3.41E+02	2.20E+02	9.45E-03	6.57E-03	6.52E-01	3.03E-05	3.87E-04	1.06E+00	7.31E-04	5.23E-04	1.30E+00	431					
Lawn & Garden Tractors	Santa Clara	SF	BA	5.17E+02	1.82E+02	1.86E+02	7.26E-03	4.97E-03	5.67E-01	2.23E-05	3.45E-04	8.79E-01	4.74E-04	4.02E-04	1.03E+00	343					
Lawn & Garden Tractors	Santa Clara	SF	BA	3.36E+03	1.34E+02	1.38E+02	5.95E-03	3.73E-03	4.21E-01	1.64E-05	2.36E-04	6.49E-01	3.50E-04	3.29E-04	7.64E-01	253					
Lawn & Garden Tractors	Santa Clara	SF	BA	7.48E+00	2.13E+00	3.30E+00	5.94E-05	1.15E-04	2.53E-03	3.36E-07	2.11E-06	2.76E-02	7.45E-06	3.29E-06	3.00E-02	10					
Wood Splitters	Santa Clara	SF	BA	4.40E+02	1.55E+02	4.59E+01	4.90E-03	1.22E-03	1.09E-01	8.75E-06	7.44E-04	2.53E-01	2.07E-04	2.71E-04	3.23E-01	107					
Wood Splitters	Santa Clara	SF	BA	1.10E+04	3.32E+01	1.21E+01	9.11E-04	2.37E-04	3.78E-02	1.87E-06	9.67E-05	5.42E-02	4.09E-05	5.05E-05	6.79E-02	22					
Chippers/Stump Grinders	Santa Clara	SF	BA	6.21E+00	2.15E+01	1.84E+01	1.46E-03	1.06E-03	5.39E-02	2.49E-06	7.31E-04	8.72E-02	7.63E-05	7.97E-05	1.12E-01	37					
Chippers/Stump Grinders	Santa Clara	SF	BA	1.11E+01	5.01E-01	4.47E-01	3.31E-05	1.69E-05	1.37E-03	5.80E-08	1.57E-05	2.03E-03	1.46E-06	1.83E-06	2.53E-03	1					
Chippers/Stump Grinders	Santa Clara	SF	BA	3.53E+01	1.22E+02	1.76E+02	1.43E-02	9.10E-03	5.31E-01	2.05E-05	6.79E-03	8.10E-01	5.40E-04	7.82E-04	9.94E-01	329					
Chippers/Stump Grinders	Santa Clara	SF	BA	6.27E+01	2.84E+00	4.21E+00	2.98E-04	1.42E-04	1.31E-02	4.78E-07	1.46E-04	1.88E-02	1.02E-05	1.65E-05	2.23E-02	7					
Commercial Turf Equipment	Santa Clara	SF	BA	4.64E+02	1.02E+03	5.51E+02	3.14E-02	2.20E-02	1.62E+00	7.55E-05	1.48E-03	2.65E+00	2.33E-03	1.73E-03	3.41E+00	1,129					
Commercial Turf Equipment	Santa Clara	SF	BA	2.29E+02	5.01E+02	4.82E+02	2.60E-02	1.96E-02	1.46E+00	5.71E-05	1.26E-03	2.25E+00	1.58E-03	1.43E-03	2.77E+00	918					
Commercial Turf Equipment	Santa Clara	SF	BA	9.22E+01	1.85E+02	3.09E+02	8.17E-03	1.29E-02	4.56E-01	2.72E-05	1.71E-04	2.24E+00	7.63E-04	4.51E-04	2.48E+00	823					
Commercial Turf Equipment	Santa Clara	SF	BA	6.10E-01	1.22E+00	3.00E+00	1.37E-05	8.07E-05	7.48E-04	2.68E-07	2.15E-06	2.77E-02	5.09E-06	7.59E-07	2.93E-02	10					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	4.08E+02	7.66E+01	1.59E+01	1.42E-03	3.51E-04	4.05E-02	2.90E-06	2.21E-04	8.41E-02	7.65E-05	7.87E-05	1.09E-01	36					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	1.25E+04	1.47E+02	3.61E+01	3.21E-03	7.58E-04	1.11E-01	5.58E-06	3.18E-04	1.62E-01	1.52E-04	1.78E-04	2.13E-01	70					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	1.81E+02	3.40E+01	1.54E+01	6.13E-04	4.40E-04	4.54E-02	2.13E-06	2.97E-05	7.47E-02	5.94E-05	3.39E-05	9.38E-02	31					
Other Lawn & Garden Equipment	Santa Clara	SF	BA	5.55E+03	6.54E																

Lawn & Garden				Tons/Day								MTons/Year				
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Lawn & Garden Tractors	Santa Clara	SF	BA	8.37E+02	1.25E+03	8.12E+02	1.08E-02	6.85E-02	3.67E-02	1.13E-04	2.75E-03	8.91E+00	0.00E+00	9.74E-04	8.93E+00	2,957
Chippers/Stump Grinders	Santa Clara	SF	BA	4.99E-01	6.35E-01	5.82E-01	7.71E-06	4.87E-05	2.63E-05	8.11E-08	1.85E-06	6.39E-03	0.00E+00	6.96E-07	6.41E-03	2
Chippers/Stump Grinders	Santa Clara	SF	BA	1.37E+01	1.75E+01	6.08E+01	8.58E-04	6.01E-03	4.22E-03	7.80E-06	4.67E-04	6.65E-01	0.00E+00	7.74E-05	6.66E-01	221
Chippers/Stump Grinders	Santa Clara	SF	BA	9.42E-01	1.20E+00	7.20E+00	7.00E-05	6.31E-04	4.20E-04	8.89E-07	3.09E-05	7.90E-02	0.00E+00	6.32E-06	7.92E-02	26
Chippers/Stump Grinders	Santa Clara	SF	BA	2.22E-01	2.82E-01	2.84E+00	1.87E-05	2.21E-04	6.58E-05	3.53E-07	6.66E-06	3.14E-02	0.00E+00	1.69E-06	3.14E-02	10
Chippers/Stump Grinders	Santa Clara	SF	BA	2.05E+00	2.61E+00	2.92E+01	1.75E-04	2.04E-03	6.89E-04	3.17E-06	6.39E-05	3.23E-01	0.00E+00	1.58E-05	3.23E-01	107
Chippers/Stump Grinders	Santa Clara	SF	BA	2.33E+00	2.97E+00	7.98E+01	4.90E-04	5.74E-03	1.88E-03	8.86E-06	1.77E-04	8.81E-01	0.00E+00	4.42E-05	8.82E-01	292
Chippers/Stump Grinders	Santa Clara	SF	BA	4.43E+00	5.64E+00	2.16E+02	1.64E-03	2.18E-02	5.98E-03	2.40E-05	5.97E-04	2.39E+00	0.00E+00	1.48E-04	2.39E+00	791
Commercial Turf Equipment	Santa Clara	SF	BA	2.69E+01	7.88E+01	3.47E+01	3.94E-04	2.77E-03	2.32E-03	5.91E-06	1.08E-04	3.80E-01	0.00E+00	3.56E-05	3.81E-01	126
Commercial Turf Equipment	Santa Clara	SF	BA	5.06E+02	1.48E+03	9.76E+02	1.29E-02	8.17E-02	4.41E-02	1.36E-04	3.04E-03	1.07E+01	0.00E+00	1.17E-03	1.07E+01	3,557
Other Lawn & Garden Equipment	Santa Clara	SF	BA	3.88E-01	4.60E-01	2.57E-01	2.91E-06	2.05E-05	1.72E-05	4.37E-08	8.14E-07	2.81E-03	0.00E+00	2.63E-07	2.82E-03	1
Other Lawn & Garden Equipment	Santa Clara	SF	BA	5.54E-02	6.57E-02	4.88E-02	6.46E-07	4.08E-06	2.20E-06	6.79E-09	1.55E-07	5.35E-04	0.00E+00	5.83E-08	5.37E-04	0
				705,041	70,522	13,499	2.108	0.549	27.081	0.002	0.075	83.881	0.055	0.128	103.667	34,326
				Population	Activity	Consumption	lbs/day					Tons/Day			MTons/Year	
				24,443	2,445	468	146	38	1,878	0	5	3	0	0	4	1,190
As a percent of 2014 Total Population				SC		1,894,605		Palo Alto		65,685		Percent		3%		
SOURCE: U.S. Census Bureau.																

Light Commercial				Tons/Day										MTons/Year				
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e		
Generator Sets	Santa Clara	SF	BA	1.30E+02	4.78E+01	2.77E+00	5.84E-04	1.12E-04	5.80E-03	6.34E-07	5.76E-05	1.54E-02	3.41E-05	3.63E-05	2.67E-02		9	
Generator Sets	Santa Clara	SF	BA	1.02E+02	2.53E+01	1.58E+00	4.07E-04	5.86E-05	3.55E-03	3.35E-07	3.21E-05	8.14E-03	1.78E-05	2.53E-05	1.42E-02		5	
Generator Sets	Santa Clara	SF	BA	1.31E+00	4.82E-01	2.72E-01	1.45E-05	1.02E-05	7.43E-04	5.76E-08	6.38E-07	1.40E-03	1.12E-06	9.02E-07	1.77E-03		1	
Generator Sets	Santa Clara	SF	BA	9.99E-01	2.47E-01	1.47E-01	1.76E-05	5.16E-06	4.04E-04	2.95E-08	6.92E-07	7.16E-04	5.68E-07	1.09E-06	9.15E-04		0	
Pumps	Santa Clara	SF	BA	5.17E+02	3.65E+02	1.92E+01	2.71E-03	7.96E-04	3.52E-02	4.91E-06	4.19E-04	1.19E-01	2.52E-04	1.68E-04	2.01E-01		67	
Pumps	Santa Clara	SF	BA	4.06E+02	1.93E+02	1.09E+01	2.04E-03	4.59E-04	2.18E-02	2.59E-06	2.30E-04	6.30E-02	1.39E-04	1.27E-04	1.09E-01		36	
Pumps	Santa Clara	SF	BA	1.39E+02	9.85E+01	4.99E+01	3.22E-03	2.47E-03	1.35E-01	1.06E-05	2.16E-03	2.57E-01	2.53E-04	2.00E-04	3.40E-01		113	
Pumps	Santa Clara	SF	BA	1.10E+02	5.20E+01	2.67E+01	1.99E-03	1.27E-03	7.28E-02	5.60E-06	1.14E-03	1.36E-01	1.32E-04	1.24E-04	1.79E-01		59	
Pumps	Santa Clara	SF	BA	1.69E+00	1.19E+00	1.32E+00	8.68E-05	5.86E-05	3.67E-03	2.73E-07	5.55E-05	6.62E-03	4.38E-06	5.39E-06	8.09E-03		3	
Pumps	Santa Clara	SF	BA	1.31E+00	6.23E-01	6.91E-01	4.57E-05	3.02E-05	1.93E-03	1.43E-07	2.90E-05	3.46E-03	2.27E-06	2.84E-06	4.22E-03		1	
Generator Sets	Santa Clara	SF	BA	1.71E+03	6.28E+02	1.51E+02	2.58E-02	6.29E-03	3.49E-01	2.79E-05	2.78E-03	8.08E-01	9.42E-04	1.43E-03	1.13E+00		374	
Generator Sets	Santa Clara	SF	BA	1.34E+03	3.32E+02	8.47E+01	1.53E-02	3.31E-03	2.11E-01	1.48E-05	1.44E-03	4.27E-01	4.96E-04	8.49E-04	5.99E-01		198	
Generator Sets	Santa Clara	SF	BA	4.69E+03	1.72E+03	1.05E+03	6.87E-02	4.41E-02	3.10E+00	1.42E-04	2.63E-03	5.00E+00	4.30E-03	3.80E-03	6.41E+00		2,122	
Generator Sets	Santa Clara	SF	BA	3.68E+03	9.11E+02	5.75E+02	4.75E-02	2.30E-02	1.74E+00	7.53E-05	1.37E-03	2.64E+00	2.25E-03	2.63E-03	3.39E+00		1,124	
Generator Sets	Santa Clara	SF	BA	2.52E+03	9.27E+02	1.22E+03	7.71E-02	4.91E-02	3.70E+00	1.44E-04	2.98E-03	5.67E+00	3.41E-03	4.27E-03	6.81E+00		2,256	
Generator Sets	Santa Clara	SF	BA	1.98E+03	4.90E+02	6.62E+02	5.11E-02	2.47E-02	2.03E+00	7.59E-05	1.55E-03	2.99E+00	1.75E-03	2.83E-03	3.60E+00		1,191	
Generator Sets	Santa Clara	SF	BA	8.39E+02	2.64E+02	5.99E+02	1.31E-02	2.46E-02	4.94E-01	6.03E-05	3.80E-04	4.96E+00	1.23E-03	7.23E-04	5.36E+00		1,773	
Generator Sets	Santa Clara	SF	BA	1.62E+02	5.10E+01	2.70E+02	3.90E-03	1.65E-02	8.88E-02	2.37E-05	1.90E-04	2.46E+00	4.56E-04	2.16E-04	2.60E+00		862	
Generator Sets	Santa Clara	SF	BA	1.53E+01	4.82E+00	4.34E+01	3.69E-04	2.95E-03	1.30E-02	3.94E-06	3.16E-05	3.97E-01	6.03E-05	2.04E-05	4.16E-01		138	
Pumps	Santa Clara	SF	BA	6.06E+02	4.28E+02	7.15E+01	1.18E-02	4.99E-03	1.44E-01	1.45E-05	2.27E-04	4.19E-01	7.07E-04	6.52E-04	6.52E-01		216	
Pumps	Santa Clara	SF	BA	4.76E+02	2.26E+02	4.08E+01	7.38E-03	2.52E-03	9.19E-02	7.65E-06	2.55E-04	2.21E-01	3.64E-04	4.09E-04	3.43E-01		114	
Pumps	Santa Clara	SF	BA	6.56E+02	4.64E+02	2.54E+02	1.97E-02	1.42E-02	7.38E-01	3.45E-05	1.02E-02	1.21E+00	1.28E-03	1.09E-03	1.63E+00		540	
Pumps	Santa Clara	SF	BA	5.16E+02	2.45E+02	1.36E+02	1.11E-02	7.25E-03	4.00E-01	1.82E-05	5.35E-03	6.40E-01	6.64E-04	6.16E-04	8.59E-01		284	
Pumps	Santa Clara	SF	BA	1.68E+02	1.19E+02	1.42E+02	1.11E-02	7.09E-03	4.25E-01	1.67E-05	5.53E-03	6.59E-01	4.68E-04	6.14E-04	8.18E-01		271	
Pumps	Santa Clara	SF	BA	1.32E+02	6.27E+01	7.52E+01	5.92E-03	3.67E-03	2.26E-01	8.83E-06	2.92E-03	3.48E-01	2.44E-04	3.28E-04	4.31E-01		143	
Pumps	Santa Clara	SF	BA	6.70E+01	4.05E+01	9.11E+01	1.96E-03	3.13E-03	7.82E-02	9.10E-06	5.73E-05	7.49E-01	1.68E-04	1.08E-04	8.03E-01		266	
Pumps	Santa Clara	SF	BA	8.50E+01	5.14E+01	3.09E+02	4.30E-03	1.40E-02	9.91E-02	2.72E-05	2.18E-04	2.81E+00	3.77E-04	2.38E-04	2.94E+00		972	
Pumps	Santa Clara	SF	BA	2.56E+00	1.55E+00	1.40E+01	1.13E-04	7.21E-04	4.32E-03	1.27E-06	1.02E-05	1.28E-01	1.51E-05	6.28E-06	1.33E-01		44	
Air Compressors	Santa Clara	SF	BA	2.19E+02	3.39E+02	7.52E+01	1.23E-02	5.43E-03	1.46E-01	1.55E-05	1.46E-04	4.49E-01	6.63E-04	6.78E-04	6.68E-01		221	
Air Compressors	Santa Clara	SF	BA	1.72E+02	1.79E+02	3.97E+01	6.48E-03	2.87E-03	7.72E-02	8.19E-06	7.73E-05	2.37E-01	3.50E-04	3.58E-04	3.53E-01		117	
Air Compressors	Santa Clara	SF	BA	1.11E+02	1.71E+02	6.66E+01	5.26E-03	3.84E-03	1.94E-01	9.07E-06	2.67E-03	3.18E-01	4.01E-04	2.91E-04	4.48E-01		148	
Air Compressors	Santa Clara	SF	BA	8.70E+01	9.05E+01	3.51E+01	2.72E-03	1.98E-03	1.02E-01	4.79E-06	1.41E-03	1.68E-01	2.09E-04	1.50E-04	2.36E-01		78	
Air Compressors	Santa Clara	SF	BA	1.49E+01	2.31E+01	2.25E+01	1.82E-03	1.16E-03	6.73E-02	2.64E-06	8.73E-04	1.04E-01	8.32E-05	1.01E-04	1.32E-01		44	
Air Compressors	Santa Clara	SF	BA	1.17E+01	1.22E+01	1.19E+01	9.44E-04	6.03E-04	3.56E-02	1.40E-06	4.62E-04	5.51E-02	4.36E-05	5.22E-05	6.97E-02		23	
Air Compressors	Santa Clara	SF	BA	2.55E+01	3.38E+01	7.43E+01	2.55E-03	3.33E-03	8.64E-02	6.95E-06	4.38E-05	5.71E-01	1.62E-04	1.41E-04	6.24E-01		207	
Air Compressors	Santa Clara	SF	BA	8.26E+01	1.09E+02	4.17E+02	1.04E-02	2.69E-02	3.54E-05	2.84E-04		3.66E+00	7.93E-04	5.73E-04	3.92E+00		1,298	
Air Compressors	Santa Clara	SF	BA	5.56E+00	7.36E+00	5.05E+01	6.36E-04	3.90E-03	1.69E-02	4.56E-06	3.65E-05	4.59E-01	8.00E-05	3.52E-05	4.84E-01		160	
Welders	Santa Clara	SF	BA	4.28E+02	2.44E+02	1.38E+02	1.17E-02	7.35E-03	4.08E-01	1.84E-05	5.36E-03	6.47E-01	6.67E-04	6.51E-04	8.67E-01		287	
Welders	Santa Clara	SF	BA	1.55E+03	8.80E+02	7.83E+02	6.33E-02	3.82E-02	2.35E+00	9.16E-05	3.03E-02	3.61E+00	2.93E-03	3.50E-03	4.59E+00		1,521	
Welders	Santa Clara	SF	BA	1.33E+02	7.58E+01	1.85E+02	5.03E-03	8.05E-03	1.67E-01	1.83E-05	1.15E-04	1.50E+00	3.73E-04	2.78E-04	1.62E+00		538	
Welders	Santa Clara	SF	BA	1.36E+02	7.74E+01	2.62E+02	4.95E-03	1.64E-02	9.80E-02	2.28E-05	1.83E-04	2.36E+00	5.08E-04	2.74E-04	2.52E+00		835	
Welders	Santa Clara	SF	BA	9.37E+00	5.33E+00	3.22E+01	3.38E-04	2.32E-03	9.93E-03	2.92E-06	2.34E-05	2.94E-01	5.13E-05	1.87E-05	3.10E-01		103	
Pressure Washers	Santa Clara	SF	BA	4.59E+02	1.69E+02	5.90E+01	8.73E-03	2.44E-03	1.25E-01	1.17E-05	1.16E-03	3.39E-01	3.08E-04	4.84E-04	4.45E-01		147	
Pressure Washers	Santa Clara	SF	BA	3.60E+02	8.91E+01	3.47E+01	6.03E-03	1.38E-03	8.41E-02	6.19E-06	6.05E-04	1.79E-01	1.68E-04	3.34E-04	2.39E-01		79	
Pressure Washers	Santa Clara	SF	BA	4.09E+02	1.50E+02	8.90E+01	5.83E-03	3.74E-03	2.63E-01	1.21E-05	2.23E-04	4.24E-01	3.70E-04	3.23E-04	5.45E-01		181	
Pressure Washers	Santa Clara	SF	BA	3.21E+02	7.95E+01	4.88E+01	4.03E-03	1.95E-03	1.47E-01	6.39E-06	1.16E-04	2.24E-01	1.94E-04	2.23E-04	2.89E-01		96	
Pressure Washers	Santa Clara	SF	BA	7.68E+01	2.83E+01	4.39E+01	2.62E-03	1.75E-03	1.33E-01	5.19E-06	1.07E-04	2.05E-01	1.13E-04	1.45E-04	2.43E-01		80	
Pressure Washers	Santa Clara	SF	BA	6.03E+01	1.49E+01	2.37E+01	1.74E-03	8.97E-04	7.26E-02	2.74E-06	5.58E-05	1.08E-01	5.86E-05	9.63E-05	1.28E-01		42	
Pressure Washers	Santa Clara	SF	BA	7.50E+00	2.36E+00	5.98E+00	1.16E-04	2.01E-04	4.48E-03	6.10E-07	3.85E-06	5.02E-02	1.02E-05	6.42E-06	5.35E-02		18	
Generator Sets	Santa Clara	SF	BA	1.21E+01	3.79E+00	2.38E+01	1.52E-05	1.02E-03	4.99E-03	0.00E+00	1.42E-05	1.59E-01	0.00E+00	1.27E-04	1.62E-01		54	
Generator Sets	Santa Clara	SF	BA	9.99E+00	3.15E+00	3.44E+01	1.74E-05	1.46E-03	5.98E-03	0.00E+00	2.07E-05	2.32E-01	0.00E+00	1.46E-04	2.35E-01		78	
Gas Compressors	Santa Clara	SF	BA	1.87E+00	4.36E+01	1.49E+02	8.49E-05	3.08E-03	1.50E-02	0.00E+00	7.85E-05	1.02E+00	0.00E+00	7.11E-04	1.04E+00		344	
Gas Compressors	Santa Clara	SF	BA	3.87E+00	9.02E+01	8.73E+02	4.63E-04	1.82E-02	2.41E-01	0.00E+00	4.46E-04	5.76E+00	0.00E+00	3.88E-03	5.84E+00		1,934	
Gas Compressors	Santa Clara	SF	BA	6.25E-01	1.45E+01	2.24E+02	1.29E-04	4.88E-03	4.89E-02	0.00E+00	1.19E-04	1.50E+00	0.00E+00	1.08E-03	1.52E+00		504	
Gas Compressors	Santa Clara	SF	BA	5.00E-01	1.16E+01	2.32E+02	9.93E-05	4.72E-03	5.63E-02	0.00E+00	1.37E-04	1.54E+00	0.00E+00	8.32E-04	1.56E+00		517	
Gas Compressors	Santa Clara	SF	BA	4.37E-01	1.02E+01	3.27E+02	1.40E-04	6.65E-03	7.93E-02	0.00E+00	1.93E-04	2.18E+00	0.00E+00	1.17E-03	2.20E+00		728	
Generator Sets	Santa Clara	SF	BA	3.15E+02	2.91E+02	1.36E+02	2.02E-03	1.38E-02	9.69E-03	2.31E-05	7.61E-04	1.48E+00	0.00E+00	1.82E-04	1.49E+00		493	
Generator Sets	Santa Clara	SF	BA	2.30E+02	2.13E+02	1.71E+02	2.68E-03	1.64E-02	9.08E-03	2.38E-05	8.80E-04	1.88E+00	0.00E+00	2.42E-04	1.88E+00		623	
Generator Sets	Santa Clara	SF	BA	2.81E+02	2.60E+02	3.66E+02	9.46E-03	3.49E-02	3.21E-02	5.14E-05	2.61E-03	3.98E+00	0.00E+00	8.53E-04	4.00E+00		1,323	
Generator Sets	Santa Clara	SF	BA	4.27E+02	3.95E+02	1.41E+03												

Light Commercial				Tons/Day										MTons/Year		
Equipment	County	Air Basin	Air Dist.	Population	Activity	Consumption	ROG Exhaust	NOX Exhaust	CO Exhaust	SO2 Exhaust	PM Exhaust	CO2 Exhaust	N2O Exhaust	CH4 Exhaust	CO2e	CO2e
Pumps	Santa Clara	SF	BA	7.06E+01	7.79E+01	6.93E+01	1.26E-03	6.62E-03	3.67E-03	9.62E-06	3.79E-04	7.58E-01	0.00E+00	1.14E-04	7.61E-01	252
Pumps	Santa Clara	SF	BA	1.23E+02	1.36E+02	2.15E+02	5.97E-03	2.07E-02	1.97E-02	3.01E-05	1.61E-03	2.33E+00	0.00E+00	5.38E-04	2.34E+00	775
Pumps	Santa Clara	SF	BA	2.41E+02	2.66E+02	9.48E+02	1.31E-02	9.27E-02	6.50E-02	1.22E-04	7.04E-03	1.04E+01	0.00E+00	1.18E-03	1.04E+01	3,441
Pumps	Santa Clara	SF	BA	2.61E+01	2.88E+01	1.84E+02	1.73E-03	1.59E-02	1.06E-02	2.27E-05	7.56E-04	2.02E+00	0.00E+00	1.56E-04	2.02E+00	669
Pumps	Santa Clara	SF	BA	1.88E+01	2.08E+01	1.89E+02	1.15E-03	1.44E-02	4.18E-03	2.35E-05	4.05E-04	2.09E+00	0.00E+00	1.04E-04	2.09E+00	692
Pumps	Santa Clara	SF	BA	3.71E-01	4.10E-01	6.39E+00	3.53E-05	4.36E-04	1.45E-04	6.93E-07	1.28E-05	7.06E-02	0.00E+00	3.18E-06	7.07E-02	23
Pumps	Santa Clara	SF	BA	6.19E-02	6.83E-02	1.76E+00	1.00E-05	1.24E-04	4.00E-05	1.96E-07	3.61E-06	1.95E-02	0.00E+00	9.03E-07	1.95E-02	6
Pumps	Santa Clara	SF	BA	1.36E+00	1.50E+00	9.21E+01	6.90E-04	9.05E-03	2.46E-03	1.02E-05	2.45E-04	1.02E+00	0.00E+00	6.23E-05	1.02E+00	337
Air Compressors	Santa Clara	SF	BA	3.22E+00	7.18E+00	2.37E+00	4.00E-05	2.45E-04	1.69E-04	4.03E-07	1.51E-05	2.59E-02	0.00E+00	3.61E-06	2.60E-02	9
Air Compressors	Santa Clara	SF	BA	6.38E+00	1.42E+01	9.37E+00	1.70E-04	8.96E-04	4.97E-04	1.30E-06	5.13E-05	1.03E-01	0.00E+00	1.54E-05	1.03E-01	34
Air Compressors	Santa Clara	SF	BA	5.79E+01	1.29E+02	1.33E+02	4.97E-03	1.35E-02	1.52E-02	1.86E-05	1.22E-03	1.44E+00	0.00E+00	4.49E-04	1.45E+00	479
Air Compressors	Santa Clara	SF	BA	3.86E+02	8.61E+02	1.85E+03	3.05E-02	1.93E-01	1.37E-01	2.37E-04	1.68E-02	2.02E+01	0.00E+00	2.76E-03	2.02E+01	6,703
Air Compressors	Santa Clara	SF	BA	1.46E+01	3.26E+01	1.31E+02	1.51E-03	1.22E-02	8.13E-03	1.62E-05	6.61E-04	1.44E+00	0.00E+00	1.36E-04	1.44E+00	478
Air Compressors	Santa Clara	SF	BA	2.06E+01	4.58E+01	2.72E+02	2.06E-03	2.23E-02	6.46E-03	3.38E-05	6.78E-04	3.00E+00	0.00E+00	1.86E-04	3.01E+00	996
Air Compressors	Santa Clara	SF	BA	2.68E+01	5.98E+01	6.27E+02	4.39E-03	4.51E-02	1.50E-02	6.79E-05	1.46E-03	6.92E+00	0.00E+00	3.96E-04	6.93E+00	2,294
Air Compressors	Santa Clara	SF	BA	1.00E+01	2.24E+01	3.63E+02	2.57E-03	2.70E-02	8.67E-03	4.02E-05	8.60E-04	4.00E+00	0.00E+00	2.32E-04	4.01E+00	1,327
Air Compressors	Santa Clara	SF	BA	2.48E-01	5.52E-01	1.22E+01	1.01E-04	1.26E-03	3.45E-04	1.35E-06	3.59E-05	1.34E-01	0.00E+00	9.13E-06	1.34E-01	44
Welders	Santa Clara	SF	BA	1.07E+02	1.88E+02	5.34E+01	9.00E-04	5.51E-03	3.80E-03	9.08E-06	3.40E-04	5.83E-01	0.00E+00	8.12E-05	5.85E-01	194
Welders	Santa Clara	SF	BA	9.41E+01	1.66E+02	8.53E+01	1.55E-03	8.15E-03	4.52E-03	1.18E-05	4.67E-04	9.33E-01	0.00E+00	1.40E-04	9.36E-01	310
Welders	Santa Clara	SF	BA	2.90E+02	5.10E+02	6.12E+02	2.09E-02	6.09E-02	6.51E-02	8.54E-05	5.26E-03	6.61E+00	0.00E+00	1.89E-03	6.65E+00	2,201
Welders	Santa Clara	SF	BA	2.25E+02	3.96E+02	7.15E+02	1.11E-02	7.31E-02	5.14E-02	9.16E-05	6.09E-03	7.81E+00	0.00E+00	1.00E-03	7.83E+00	2,592
Welders	Santa Clara	SF	BA	1.11E+00	1.96E+00	8.77E+00	9.41E-05	7.97E-04	5.29E-04	1.08E-06	4.14E-05	9.62E-02	0.00E+00	8.49E-06	9.63E-02	32
Welders	Santa Clara	SF	BA	2.48E-01	4.36E-01	2.35E+00	1.65E-05	1.88E-04	5.44E-05	2.92E-07	5.59E-06	2.59E-02	0.00E+00	1.49E-06	2.59E-02	9
Welders	Santa Clara	SF	BA	6.19E-01	1.09E+00	8.26E+00	5.32E-05	5.84E-04	1.94E-04	8.95E-07	1.84E-05	9.12E-02	0.00E+00	4.80E-06	9.13E-02	30
Pressure Washers	Santa Clara	SF	BA	1.46E+01	5.80E+00	1.30E+00	1.92E-05	1.32E-04	9.24E-05	2.20E-07	7.26E-06	1.42E-02	0.00E+00	1.74E-06	1.42E-02	5
Pressure Washers	Santa Clara	SF	BA	3.40E+00	1.35E+00	4.40E-01	6.90E-06	4.21E-05	2.34E-05	6.12E-08	2.26E-06	4.82E-03	0.00E+00	6.22E-07	4.84E-03	2
Pressure Washers	Santa Clara	SF	BA	6.75E+00	2.68E+00	1.75E+00	3.49E-05	1.62E-04	1.31E-04	2.47E-07	1.07E-05	1.91E-02	0.00E+00	3.15E-06	1.92E-02	6
Pressure Washers	Santa Clara	SF	BA	2.79E+00	1.11E+00	1.21E+00	1.41E-05	1.12E-04	7.84E-05	1.56E-07	7.45E-06	1.33E-02	0.00E+00	1.28E-06	1.33E-02	4
				29,098	15,196	20,410	0.693	1.372	20.078	0.002	0.150	172.601	0.029	0.052	182.537	60,442
				Population	Activity	Consumption	lbs/day					Tons/Day				MTons/Year
				2,861	1,494	2,007	136	270	3,949	0	29	17	0	0	18	5,943

As a percent of 2010 Total Employment SC 970,795 Palo Alto 95,460 Percent 10%

SOURCE: U.S. Census Bureau. Longitudinal Employer-Household Dynamics. <http://lehd.ces.census.gov/> for Santa Clara County. Third Quarter 2012 total employment in Santa Clara County.

A P P E N D I X G

**T R A N S P O R T A T I O N I M P A C T
A N A L Y S I S**



HEXAGON TRANSPORTATION CONSULTANTS, INC.



Palo Alto Comprehensive Plan Update: Analysis of Additional Scenarios

Supplemental Transportation Impact Analysis



Prepared for:

Placeworks, Inc.



January 23, 2017



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Executive Summary

Introduction

This report presents a Supplemental Transportation Impact Analysis (TIA) of the City of Palo Alto Comprehensive Plan Update and the six hypothetical planning scenarios that were developed in order to capture the range of possible outcomes to the Comprehensive Plan Update planning process. This TIA is intended to inform decision-makers about the potential transportation impacts of the policy choices inherent in the six scenarios.

Four such scenarios were originally developed and analyzed in a TIA that was incorporated into a Draft Environmental Impact Report (DEIR) for the Comprehensive Plan Update, which was published on February 5, 2016. After reviewing the analysis of the four proposed scenarios, the Palo Alto City Council requested that two additional scenarios be developed and analyzed prior to proceeding to a Final EIR. The City Council also requested that Scenarios 5 and 6 be analyzed with all proposed mitigation measures implemented, in order to evaluate the effectiveness of the proposed mitigation measures in reducing or eliminating the projected transportation impacts of the two new scenarios. In addition, a “No Growth” scenario was developed for comparative purposes, although it is not considered a viable policy option for the Comprehensive Plan Update.

This Supplemental TIA includes the analysis of the original four scenarios and the additional scenarios, and will be incorporated into a Supplement to the Draft Environmental Impact Report (SuppDEIR) for the Comprehensive Plan Update. As explained in the DEIR, the proposed “project”, for purposes of this TIA, is the adoption and implementation of an updated Comprehensive Plan, along with associated amendments to the City of Palo Alto Zoning Code.

The Planning Scenarios

The primary purpose of this report is to assess the impacts of growth during the life of the Comprehensive Plan Update by comparing and contrasting the different transportation-related outcomes that would occur under each of the hypothetical planning scenarios. Each of the scenarios makes different land use assumptions regarding household growth and job growth. All of the scenarios assume that the City’s *Bicycle + Pedestrian Transportation Plan* and the Caltrain Modernization/Electrification Project will be implemented, but include different assumptions regarding other transportation investments and policies. Table ES-1 presents a brief summary of the land use and transportation assumptions in the four scenarios; each of these assumptions will be described in more detail in later chapters.

Some of the key differences in transportation investments and land use assumptions among the scenarios may be summarized as follows:

- Scenario 1:** The “Business As Usual” scenario assumes the continuation of existing plans and policies, with regard to both land use and transportation. This scenario uses a local forecast of housing growth based on the City’s past performance (a long-term average of about 150-160 new

dwelling units per year) and ABAG's 2013 projection of job growth.. Only currently funded transportation infrastructure projects and network changes are included.

- Scenario 2:** The “Slowing Growth” scenario assumes the same number of new housing units and new population as Scenario 1, but the lowest number of new jobs of the original four scenarios. It assumes that the improvements proposed by Santa Clara County in the *2040 County Expressway Plan* and the *Page Mill Road Expressway Corridor Study Report* will be constructed on Page Mill Road and Foothill Expressway. It includes employer incentives for bicycling.
- Scenario 3:** The “Housing Tested I” scenario assumes more new housing units and population than Scenarios 1 and 2, but less than Scenario 4. Housing densities on housing sites downtown, near California Avenue, and in other locations in the City close to transit and services are increased, but housing sites along San Antonio Road and South El Camino Real are eliminated. It also assumes fewer new jobs than Scenario 1, but more than Scenario 2. This scenario assumes that the Caltrain tracks will be trenched under Meadow Drive and Charleston Road. This scenario includes employer incentives for bicycling and unbundled parking costs for multi-family housing units.
- Scenario 4:** The “Sustainability Tested I” scenario assumes the greatest number of new housing units and new population of the four scenarios (consistent with ABAG projections), and the same number of new jobs as Scenario 1. This scenario assumes that Bus Rapid Transit (BRT) will be implemented on El Camino Real, with queue-jumping lanes and signal prioritization at intersections, but not a dedicated lane for buses. It also assumes that other measures, such as free transit passes for Palo Alto residents in transit-accessible areas and parking charges in the Downtown and California Avenue areas, will be implemented to maximize the use of transit. Like Scenario 3, this scenario assumes that the Caltrain tracks will be trenched under Meadow Drive and Charleston Road. It includes employer incentives for bicycling, unbundled parking costs for multi-family housing units, and exploring the option of putting in place a parking charge program for all workplaces with over 50 employees.
- Scenario 5:** The “Sustainability Tested II” scenario assumes the same increase in housing units as Scenario 3 (Housing Tested I) and the same sustainability measures as Scenario 4 (Sustainability Tested I), but it would reduce the number of jobs 10% lower than Scenario 2 (Slowing Growth). It is designed to test the efficacy of sustainability measures when applied to relatively slow growth over the planning period. This scenario includes grade separation of all Caltrain crossings and implementation of some of the County's *2040 Expressway Plan* improvements. Whereas Scenario 2 includes the addition of two mixed-flow lanes on Page Mill Road between I-280 and Porter Drive, Scenario 5 assumes those additional lanes will be HOV lanes. Scenario 2 assumed that the intersection of Page Mill Road and Foothill Expressway would be grade separated, as proposed by the County, but Scenario 5 assumes that the intersection would include the new HOV lanes, but would not be grade separated. Unlike Scenario 2, Scenario 5 does not include grade separation of the intersection of Foothill Expressway and Arastradero Road.
- Scenario 6:** The “Housing Tested II” scenario proposes the same number of jobs as Scenario 5 (10% fewer than Scenario 2, “Slowing Growth”), but increases the amount of housing by 36% over Scenario 4, which is the scenario with housing assumptions consistent with ABAG projections. Like Scenarios 4 and 5, Scenario 6 includes sustainability measures such as free transit passes for Palo Alto residents in transit-accessible areas and parking charges in the Downtown and California Avenue areas. Also like Scenario 4, it assumes that Bus Rapid Transit (BRT) will be implemented on El Camino Real, with queue-jumping lanes and signal prioritization at intersections (but not a dedicated lane for buses) and that the Caltrain tracks would be grade separated.

No Growth: This scenario includes only the additional housing units and non-residential square footage that have already been approved by the City, but not yet built and occupied. The additional population and jobs in this scenario are the result of those previously approved projects, but this scenario assumes that no additional development within the city limits would occur. This scenario is provided only as an informational item to illustrate the degree to which growth in the rest of the region, as opposed to growth in Palo Alto, contributes to potential impacts.

The number of new housing units, new population, and new jobs assumed under each of the scenarios are presented in Table ES-1. The different transportation investments and transportation-related sustainability assumptions under each of the scenarios is also presented in the table.

Table ES- 1
Summary of Scenario Assumptions

Scenario Assumptions	2030						
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	No Growth
Land Use - City of Palo Alto (excluding Sphere of Influence)							
New Housing Units	2,720	2,720	3,545	4,420	3,545	6,000	540
New Population ^a	6,600	6,600	8,435	10,455	8,435	13,737	1,235
New Jobs	15,480	9,850	12,755	15,480	8,868	8,868	3,880
Transportation Investments and Sustainability Measures							
Bicycle & Pedestrian Master Plan Improvements	✓	✓	✓	✓	✓	✓	✓
CalTrain Modernization/Electrification	✓	✓	✓	✓	✓	✓	✓
CalTrain Trench at grade crossings ^b			✓	✓	✓	✓	
Expressway Plan Improvements on Page Mill Road ^c		✓			✓		
Bus Rapid Transit on El Camino Real ^d				✓		✓	
Paid transit passes in workplaces with >50 employees	✓	✓	✓	✓	✓	✓	✓
Employer incentives for carpooling & bicycling		✓	✓	✓	✓	✓	
Unbundled parking costs for multi-family units			✓	✓	✓	✓	
Parking charges at workplaces with >50 employees				✓	✓	✓	
Paid parking in Downtown and California Ave areas				✓	✓	✓	
Free transit passes for Palo Alto residents in transit-accessible areas				✓	✓	✓	
Notes:							
(a) Population is calculated based on a housing unit vacancy rate of 5 percent and an average household size of 2.41 persons per household in 2030.							
(b) Scenarios 3 and 4 include a Caltrain trench only at the Meadow and Charleston crossings. Scenarios 5 and 6 include grade separation at all crossings.							
(c) Scenario 2 includes two new lanes on a portion of Page Mill Road and grade separation at Foothill & Page Mill and at Foothill & Arastradero. Scenario 5 includes new HOV lanes on that portion of Page Mill Road and no grade separation at those two intersections.							
(d) All scenarios include curbside bulbouts and signal priority for buses. Scenarios 4 and 6 also include curbside queue jump lanes for buses and bicycles.							

Source: Placeworks and the City of Palo Alto, 2016.

The Mitigation Measures

As noted above, the Palo Alto City Council requested that this TIA also include analyses of both Scenarios 5 and 6 assuming implementation of all proposed mitigation measures. These are not separate scenarios with different land use projections, but are the same Scenarios 5 and 6 under post-mitigation conditions. Their purpose is to evaluate the effectiveness of the proposed mitigation measures in reducing or eliminating the projected transportation impacts of the two new scenarios. These mitigation measures were developed in response to identified significant impacts under Scenarios 1-4 in the DEIR and would also apply to Scenarios 5 and 6. The proposed mitigation measures, as applied to Scenarios 5 and 6 for analysis in this TIA, are as follows. The numbering of the measures used in the DEIR is shown here for ease of reference; it is not sequential because some potential impacts were less than significant and did not require mitigation measures to be developed.

TRANS-1: Mitigation for Impacted Intersections

- a) Adopt a programmatic approach to reducing traffic with the goal of achieving no net increase in peak period motor vehicle trips from new development, with an exception for uses that directly contribute to the neighborhood character and diversity of Palo Alto (such as ground floor retail and below market rate housing). The program should at a minimum:
 - o Require new development projects to prepare and implement a Transportation Demand Management (TDM) Plan to achieve the following reduction in peak period motor vehicle trips from the rates included in the Institute of Transportation Engineers' *Trip Generation Manual* for the appropriate land use category. These reductions are deemed aggressive, yet feasible, for the districts indicated.
 - i. 45 percent reduction in the Downtown district
 - ii. 35 percent reduction in the California Avenue area
 - iii. 30 percent reduction in the Stanford Research Park
 - iv. 30 percent reduction in the El Camino Real corridor
 - v. 20 percent reduction in other areas of the city.
 - o TDM Plans must be approved by the City and monitored by the property owner on an annual basis. The TDM Plans must contain enforcement mechanisms or penalties that accrue if targets are not met.
 - o Require new development projects to pay a Transportation Impact Fee which will be partially used to reduce peak period motor vehicle trips citywide.
- b) Study the feasibility of unbundled parking for office, commercial, and multi-family residential development (including senior housing developments) that are well-served by transit and by existing walking and biking connections.
- c) Include policies in the Comprehensive Plan to ensure collaboration with regional agencies and neighboring jurisdictions, and identification and pursuit of funding for rail corridor improvements and grade separations. Policies shall support grade separation of rail crossings along the rail corridor as a City priority, and encourage studies and outreach necessary to advance grade separation of Caltrain to become a "shovel ready" project.
- d) Engage in regional transportation planning and advocate for specific transit improvements and investments, such as Caltrain service enhancements and grade separations, Dumbarton Express service, enhanced bus service on El Camino Real with queue jumping and curbside platforms, and additional VTA bus service.
- e) Encourage the Palo Alto Unified School District (PAUSD) to analyze decisions regarding school assignments to reduce peak period motor vehicle trips to and from school sites.

TRANS-3: Mitigation for Impacted Freeway Segments

- a) The City shall require new development projects to prepare and implement TDM programs, as described in TRANS-1a. TDM programs for worksites may include measures such as private bus service and free shuttle services to transit stations geared towards commuters.
- b) Include policies in the Comprehensive Plan that advocate for efforts by Caltrans and VTA to reduce congestion and improve traffic flow on existing area freeway facilities consistent with Statewide GHG emissions reduction initiatives. Policies shall support the application of emerging freeway information, monitoring, and control systems that provide non-intrusive driver assistance and reduce congestion. Policies shall support, where appropriate, the conversion of existing traffic lanes to exclusive bus and high-occupancy vehicle (HOV) lanes on freeways and expressways, including the Dumbarton Bridge and the continuation of an HOV lane from Redwood City to San Francisco.

TRANS-6: Mitigation for Impacts on Transit Due to Increased Congestion

Include policies in the Comprehensive Plan Update that address transit access and give priority to buses and to transit facilities. Examples include queue jump lanes, signal priority for buses, and bulb-outs at bus stops. Also, advocate for bus service improvements on El Camino Real such as queue jump lanes and curbside platforms. .

TRANS-8: Mitigation for Impacts on Local Residential Streets

Include policies in the Comprehensive Plan to identify specific improvements that can be used to discourage drivers from using local neighborhood streets to bypass traffic congestion on arterials.

Methodology and Model

All scenarios have been compared using the Palo Alto 2030 travel demand forecasting model, which is based on the Santa Clara Valley Transportation Authority's (VTA) countywide travel demand forecasting model. Palo Alto's citywide model calculates output variables (such as mode share, transit boardings, Average Daily Traffic (ADT), and peak hour traffic volumes) projected to occur in the year 2030 based on the different input assumptions related to each of the scenarios. The model was calibrated to 2013 conditions, based on 2013 traffic counts, and the 2030 volumes were calculated as an increment of growth over 2013 volumes in order to provide a consistent means of comparison for all of the scenarios.

This TIA has been prepared in accordance with the standards and methodologies set forth by the City of Palo Alto, by the VTA Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). The VTA administers the Congestion Management Program (CMP) for Santa Clara County.

The metrics used to conduct the comparison among scenarios are the same as those used to describe the current conditions in the *Transportation and Traffic Existing Conditions Report*, prepared earlier in the Comprehensive Plan Update process. These metrics include mode split, transit ridership, Average Daily Traffic (ADT) and Motor Vehicle Level of Service on roadway segments, vehicle miles traveled (VMT), and Motor Vehicle Level of Service (LOS) at key intersections, freeway segments, and freeway ramps. In addition, the analysis includes an assessment of transit operations, the potential for through traffic to use local residential streets, and safety.

Summary of Findings

Each of the scenarios has different transportation-related outcomes, which are briefly summarized below. Table ES-2 presents some of the topics discussed in this TIA that have quantitative metrics associated with them and for which the evaluation showed differences among the scenarios.

Scenario 1, the Business As Usual scenario, results in the second highest mode share for drive-alone automobiles of the six Comp Plan scenarios, the highest Vehicle Miles Traveled (VMT), and the highest number of intersections with a significant impact (tied with Scenario 4 at seven out of 18 intersections). These results are consistent with the fact that Scenario 1 has the second highest combined total of new housing units and new jobs, but includes no specific measures to shift those trips out of automobiles. Also, Scenario 1 does not include the costly improvements included in some of the other scenarios, such as grade separations on the expressways or constructing a trench for the Caltrain tracks, which mitigate impacts in some locations.

Scenario 2, the Slowing Growth scenario, has the lowest VMT of the original four scenarios because it has the lowest growth assumptions among those scenarios, but its VMT is higher than Scenarios 5 and 6, both of which include even fewer new jobs than Scenario 2. Scenario 2 results in the fewest number of impacted intersections, partly because it includes the least intense land use assumptions and partly because of the expressway improvements that are included for Page Mill Road and Foothill Expressway. However, because it includes few specific measures to shift trips out of automobiles, Scenario 2 has the highest auto mode share and the fewest trips by transit of the six scenarios.

Table ES- 2
Summary of Metrics

Comparative Metric	Existing Conditions	2030								
		Scen 1	Scen 2	Scen 3	Scen 4	Scen 5	Scen 5M	Scen 6	Scen 6M	No Growth
<u>Mode Share</u>										
% Drive Alone	61.5%	59.9%	60.0%	59.7%	58.5%	58.9%	58.0%	58.5%	57.6%	60.4%
<u>Transit Use</u>										
Number of Transit Trips	29,494	44,503	41,659	43,820	51,975	48,203	50,416	50,560	52,965	39,361
<u>Vehicle Miles Travelled (VMT)</u>										
Total Palo Alto VMT	5,320,931	5,914,158	5,741,373	5,853,201	5,788,497	5,511,446	5,469,258	5,663,040	5,618,277	5,349,838
<u>VMT Per Capita</u>										
Palo Alto VMT per capita	33.0	32.5	32.3	32.1	30.9	30.9	30.6	30.8	30.5	32.2
<u>Intersection Level of Service^a</u>										
Number of Impacted Intersections		7	4	5	7	4	4	6	5	6
Notes:										
(a) There were 18 study intersctions for all scenarios.										

Source: Hexagon Transportation Consultants, Inc., February 2017.

Scenario 3 represents a middle ground among all six scenarios in terms of land use assumptions, and also is the middle ground in terms of transportation outcomes. It is neither the highest nor the lowest in terms of any of the transportation metrics examined. Under Scenario 3, there would be five impacted intersections, which is less than the Business As Usual scenario, partly because it assumes that a trench would be constructed for the Caltrain tracks, which mitigates one impacted study intersection.

Scenario 4, which has the most intense land use assumptions of the original four scenarios, attempts to mitigate some of the transportation outcomes of more housing units and jobs through policies that promote transit, bicycling, and walking. It succeeds by some metrics, in that it results in the lowest mode share for Drive-Alone Auto, the highest mode share for walking, and the most transit trips of the original four scenarios. As a result of these mode shifts, VMT is lower for Scenario 4 than the Business As Usual scenario, but not as low as Scenario 2. However, Scenario 4 results in seven impacted intersections, indicating that the policies to promote alternative modes do not fully mitigate the additional vehicular trips generated by the additional number of housing units and jobs included in this scenario.

Scenario 5, which includes 10% fewer new jobs than Scenario 2, is projected to have the lowest VMT of all six scenarios, partly due to its land use assumptions and partly due to its sustainability assumptions. As a result of its pro-transit measures, it would result in a lower auto mode share and more transit trips than Scenarios 1 – 3, but a higher auto mode share than Scenario 4, which includes far more new jobs than Scenario 5, because work trips are generally more likely to be made on transit than non-work trips. Scenario 5 is tied with Scenario 2 for the lowest number of impacted intersections (four) of the 18 study intersections. This is because it includes a trench for Caltrain (unlike Scenario 2) which eliminates one impact, but does not include grade separation at the intersection of Foothill and Arastradero (included in Scenario 2).

Scenario 5M includes the same assumptions as Scenario 5, plus the implementation of the proposed mitigation measures. It would result in an even lower auto mode share, higher number of transit trips, lower VMT, and lower VMT per capita than Scenario 5.

Scenario 6, which includes more new housing and population than any of the other scenarios, would result in the lowest auto mode share and the lowest VMT of the six scenarios. The reduced auto mode share, compared with Scenario 5, is likely due to the inclusion of queue jump lanes for buses on El Camino Real and the addition of more housing, which reduces the jobs-housing imbalance and facilitates more trips to be made by biking and walking. Scenario 6's low VMT per capita also suggests that the additional housing would help address the jobs-housing imbalance, since work trips tend to be longer than non-work trips. The growth in population, compared with Scenario 5, accounts for Scenario 6's higher number of transit trips and higher VMT. Of the 18 study intersections, Scenario 6 has two more impacted study intersections than Scenario 5. One of these intersection impacts is because Scenario 6 does not include the addition of two HOV lanes on Page Mill Road (intersection of Foothill and Page Mill).

Scenario 6M includes the same assumptions as Scenario 6, plus the implementation of the proposed mitigation measures. It would result in an even lower auto mode share, higher number of transit trips, lower VMT, and lower VMT per capita than Scenario 6.

The **No Growth Scenario**, which includes the new housing and commercial square footage already approved in Palo Alto but no additional development, results in lower VMT than any of the six scenarios and would be only 0.5% higher than existing conditions. The number of transit trips, however, would be 33% higher than existing conditions, as more trips are made on transit due to increased congestion on the region's streets and freeways. The No Growth scenario would result in almost as many impacted intersections as the Business As Usual scenario and more than Scenarios 2, 3 and 5, because it does not include any of their transportation investment and sustainability assumptions. Also, these intersections would still experience increased traffic volumes due to regional growth, even if no additional development is approved in Palo Alto.

In terms of the potential CEQA impacts that must be evaluated as input to the EIR for this Comprehensive Plan Update, the following summarizes the findings of this TIA. Would any of the six scenarios:

- Cause an intersection to drop below its level of service standard, or if it is already operating at a substandard level of service, deteriorate by more than a specified amount? Yes, all six scenarios would result in at least one impacted intersection during the AM or PM peak hour. The table above shows the number of impacted intersections under each scenario. The implementation of additional TDM-related policies and other measures to mitigate those impacts would reduce the intersection impact to a less than

significant level at Middlefield Road and Charleston Road under Scenarios 1 and 4 and at Embarcadero Road and E. Bayshore Road under Scenarios 4 and 6. However, all scenarios would still result in a significant and unavoidable impact at at least one intersection.

- Cause a freeway segment or ramp to operate at LOS F or contribute traffic in excess of 1% of segment capacity to a freeway segment or ramp already operating at LOS F? Yes, all six scenarios would result in significant impacts on six freeway segments during at least one peak hour. Scenarios 1 – 5 would result in a significant impact on a seventh freeway segment. With implementation of a TDM mitigation program and other measures, the projected impact would be eliminated on three freeway segments. The TDM measures would reduce but not eliminate the impact on four of the freeway segments. These impacts are considered significant and unavoidable. None of the scenarios would cause an impact on any of the freeway ramps.
- Impede the development or function of planned pedestrian or bicycle facilities? No. Scenarios 2 and 5 include the expansion of Page Mill Road from four to six lanes between I-280 and Porter Drive, and wider roadways can generally be considered detrimental to pedestrians. (The additional lanes would be restricted to transit and HOV use under Scenario 5.) However, Scenarios 2 and 5 also include construction of improved bicycle and pedestrian facilities along that segment of Page Mill Road. There are currently no pedestrian facilities at all between I-280 and Deer Creek Road. Thus, on balance, those scenarios would enhance rather than degrade the bicycle and pedestrian facilities. None of the other scenarios include components that would impede the function of planned bicycle or pedestrian facilities.
- Increase demand for pedestrian and bicycle facilities that cannot be met by existing or planned facilities? No.
- Impede the operation of a transit system as a result of congestion? Yes, but with implementation of additional TDM policies, signal prioritization for buses at intersections, and queue jump lanes and curbside platforms along El Camino Real, this impact would be reduced. However, because the congestion at all intersections and roadway segments where buses operate would not be eliminated, all six scenarios would have a significant and unavoidable impact on transit operations by increasing congestion.
- Create demand for transit services that cannot be met by current or planned services? No.
- Create the potential demand for through traffic to use local residential streets? Yes, all six scenarios would result in additional traffic on arterials that could result in additional traffic being diverted from those arterials onto local residential streets. As mitigation for those impacts, the City would adopt a traffic calming program. With implementation of traffic calming measures, it can be assumed that any impacts from traffic that may be diverted from arterials onto local residential streets could be reduced to less than significant.
- Create an operational safety hazard? No.
- Result in inadequate emergency access? No.

1.

Introduction

Hexagon Transportation Consultants, Inc. prepared a Transportation Impact Analysis (TIA), which was finalized on January 22, 2016, of the four hypothetical planning scenarios that were developed as part of the City of Palo Alto's Comprehensive Plan Update planning process. That TIA was intended to inform decision-makers about the potential transportation impacts of the policy choices inherent in the four scenarios. The results of that TIA were incorporated into a Draft Environmental Impact Report (DEIR) for the Comprehensive Plan Update, which was published on February 5, 2016.

The primary purpose of that previous TIA (referred to as the "Scenarios 1-4 TIA" herein) was to assess the impacts of growth during the life of the Comprehensive Plan Update by comparing and contrasting the different transportation-related outcomes that would occur under each of the four hypothetical planning scenarios. Each of the scenarios made different land use assumptions regarding household growth and job growth. Different assumptions were also made in each of the scenarios about transportation infrastructure investments and sustainability measures to be implemented.

After reviewing the analysis of the four proposed scenarios, the Palo Alto City Council requested that two additional scenarios be developed and analyzed prior to proceeding to a Final EIR. The City Council also requested that Scenarios 5 and 6 be analyzed with all proposed mitigation measures implemented, in order to evaluate the effectiveness of the proposed mitigation measures in reducing or eliminating the projected transportation impacts of the two new scenarios. In addition, a "No Growth" scenario was developed for comparative purposes, although it is not considered a viable policy option for the Comprehensive Plan Update.

The purpose of this Supplemental TIA (also referred to herein as the "Scenarios 1-6 TIA") is to evaluate these additional scenarios. As with the original four scenarios, the horizon year for all scenarios is 2030. The new scenarios included in this TIA are shown in **bold** below and are described further in the next section:

- Scenario 1: Business as Usual
- Scenario 2: Slowing Growth
- Scenario 3: Housing Tested I
- Scenario 4: Sustainability Tested I
- **Scenario 5 (NEW):** Sustainability Tested II without implementation of mitigation measures
- **Scenario 5M (NEW):** Sustainability Tested II with implementation of mitigation measures
- **Scenario 6 (NEW):** Housing Tested II without implementation of mitigation measures
- **Scenario 6M (NEW):** Housing Tested II with implementation of mitigation measures
- **No Growth scenario (NEW):** for comparative purposes only

The results of this Scenarios 1-6 TIA will be incorporated into a Supplement to the DEIR document. All tables include the existing conditions from the Existing Conditions Report, published on August 29, 2014 as part of the Comprehensive Plan Update process, which serve as a baseline for comparison of all of the planning scenarios.

The Planning Scenarios

As explained in the Comp Plan Update DEIR, the proposed “project”, for purposes of this TIA, is the adoption and implementation of an updated Comprehensive Plan, along with associated amendments to the City of Palo Alto Zoning Code. A full description of all the differences among all the planning scenarios, including changes to the City's housing-related policies and zoning code amendments, will be included in the Supplemental DEIR and are not included here. For purposes of this TIA, only a brief summary of the population and employment assumptions in each of the scenarios, as well as the transportation investments and sustainability measures included, is provided.

All six scenarios assume that the network enhancements from the City's *Bicycle + Pedestrian Transportation Plan* (2012) will be implemented. These include adding 7.06 miles to the City's Class I multi-use paths, 18.77 miles to the existing network of Class II bike lanes and enhanced bikeways, 9.15 miles to the City's Class III bike routes on shared roadways, and 18.2 miles of additional Bicycle Boulevards. Each scenario also includes an increase in the number of trains serving Palo Alto in accordance with the Caltrain Modernization/Electrification Project. Aside from these common elements, the scenarios include different assumptions regarding other transportation investments and policies.

Some of the key differences in land use assumptions and transportation investments among the scenarios may be summarized as follows:

- Scenario 1:** The “Business As Usual” scenario assumes the continuation of existing plans and policies, with regard to both land use and transportation. This scenario uses a local forecast of housing growth based on the City's past performance (a long-term average of about 150-160 new dwelling units per year) and ABAG's 2013 projection of job growth. Only currently funded transportation infrastructure projects and network changes are included.
- Scenario 2:** The “Slowing Growth” scenario assumes the same number of new housing units and new population as Scenario 1, but the lowest number of new jobs of the original four scenarios. It also assumes that all the improvements proposed by Santa Clara County in the *2040 County Expressway Plan* and the *Page Mill Road Expressway Corridor Study Report* will be constructed on Page Mill Road and Foothill Expressway. It includes employer incentives for bicycling.
- Scenario 3:** The “Housing Tested I” scenario assumes more new housing units and population than Scenarios 1 and 2, but less than Scenario 4. Housing densities on housing sites downtown, near California Avenue, and in other locations in the City close to transit and services are increased, but housing sites along San Antonio Road and South El Camino Real are eliminated. It also assumes fewer new jobs than Scenario 1, but more than Scenario 2. This scenario assumes that the Caltrain tracks will be trenched under Meadow Drive and Charleston Road. This scenario includes employer incentives for bicycling and unbundled parking costs for multi-family housing units.
- Scenario 4:** The “Sustainability Tested I” scenario assumes the greatest number of new housing units and new population of the four scenarios (consistent with ABAG projections), and the same number of new jobs as Scenario 1. It assumes that Bus Rapid Transit (BRT) will be implemented on El Camino Real, with queue-jumping lanes and signal prioritization at intersections, but not a dedicated lane for buses. It also assumes that other measures, such as free transit passes for Palo Alto residents in transit-accessible areas and parking charges in the Downtown and California Avenue areas, will be implemented to maximize the use of transit. Like Scenario 3, assumes that the Caltrain tracks will be trenched under Meadow Drive and Charleston Road. It includes employer incentives for bicycling, unbundled parking costs for multi-family housing

units, and exploring the option of putting in place a parking charge program for all workplaces with over 50 employees.

Scenario 5: The “Sustainability Tested II” scenario assumes the same increase in housing units as Scenario 3 (Housing Tested I) and the same sustainability measures as Scenario 4 (Sustainability Tested I), but it would reduce the number of jobs 10% lower than Scenario 2 (Slowing Growth). It is designed to test the efficacy of sustainability measures when applied to relatively slow growth over the planning period. This scenario includes grade separation of all Caltrain crossings and implementation of some of the County’s *2040 Expressway Plan* improvements. Whereas Scenario 2 includes the addition of two mixed-flow lanes on Page Mill Road between I-280 and Porter Drive, Scenario 5 assumes those additional lanes will be HOV lanes. Scenario 2 assumed that the intersection of Page Mill Road and Foothill Expressway would be grade separated, as proposed by the County, but Scenario 5 assumes that the intersection would include the new HOV lanes, but would not be grade separated. Unlike Scenario 2, Scenario 5 does not include grade separation of the intersection of Foothill Expressway and Arastradero Road.

Scenario 6: The “Housing Tested II” scenario proposes the same number of jobs as Scenario 5 (10% fewer than Scenario 2, “Slowing Growth”), but increases the amount of housing by 36% over Scenario 4, which is the scenario with housing assumptions consistent with ABAG projections. Like Scenarios 4 and 5, Scenario 6 includes sustainability measures such as free transit passes for Palo Alto residents in transit-accessible areas and parking charges in the Downtown and California Avenue areas. Also like Scenario 4, it assumes that Bus Rapid Transit (BRT) will be implemented on El Camino Real, with queue-jumping lanes and signal prioritization at intersections (but not a dedicated lane for buses) and that the Caltrain tracks would be grade separated.

No Growth: This scenario includes only the additional housing units and non-residential square footage that have already been approved by the City, but not yet built and occupied. The additional population and jobs in this scenario are the result of those previously approved projects, but this scenario assumes that no additional development within the city limits would occur. This scenario is provided only as an informational item to illustrate the degree to which growth in the rest of the region, as opposed to growth in Palo Alto, contributes to potential impacts.

The number of new housing units, new population, and new jobs assumed under each of the six scenarios are presented in Table 1 for both the City of Palo Alto and the City plus its sphere of influence (SOI). The area of Palo Alto’s sphere of influence extends beyond the city limits and includes nearby unincorporated areas, including much of the land owned by Stanford University. For more details regarding the differences among the six scenarios, please refer to the Project Description chapter of the Supplemental DEIR.

Table 1
Summary of Land Use Projections

Land Use Assumption	2030						
	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	No Growth
<i>City of Palo Alto</i>							
New Housing Units	2,720	2,720	3,545	4,420	3,545	6,000	540
New Population ^a	6,600	6,600	8,435	10,455	8,435	14,080	1,235
New Jobs	15,480	9,850	12,755	15,480	8,870	8,870	3,880
Jobs/Employed Resident Ratio	3.20	3.04	3.04	3.04	2.93	2.72	3.09
<i>City of Palo Alto and its Sphere of Influence (SOI)</i>							
New Housing Units	3,880	3,880	4,710	5,580	4,710	7,160	540
New Population ^b	9,405	9,405	11,240	13,260	11,240	16,885	1,235
New Jobs	15,870	10,240	13,145	15,870	9,260	9,260	3,880
Jobs/Employed Resident Ratio	2.87	2.74	2.75	2.76	2.66	2.50	2.84
(a) Population is calculated based on a housing unit vacancy rate of 5 percent and an average household size of 2.41 persons per household in 2030 within the city limit for all scenarios.							
(b) In the SOI, the population numbers in this table assume there are 2.0 persons per household in 2030. Scenarios 1-4 were analyzed in the original TIA using an assumption of an average household size of 2.41 persons per household in the SOI, but the revised assumption better reflects household characteristics.							

Source: PlaceWorks and City of Palo Alto, 2016.

Table 2 presents the transportation investments and policies that are assumed under each of the six planning scenarios. Key differences are as follows:

- Whereas Scenarios 3 and 4 assume that Caltrain would be grade separated only at Charleston and at Meadow, Scenarios 5 and 6 assume grade separation of Caltrain at all grade crossings.
- Scenario 2 assumes that all of the improvements in the County Expressway Plan on both Page Mill Road and Foothill Expressway will be implemented, including additional lanes on a portion of Page Mill Road and grade separations at the intersections of Foothill Expressway and Page Mill Road and at Foothill Expressway and Arastradero Road. Scenario 5 assumes that the two new lanes on Page Mill Road between I-280 and Porter Drive would be HOV lanes, not mixed-flow lanes. Also, Scenario 5 does not assume that the intersections of Foothill Expressway and Page Mill Road or Foothill Expressway and Arastradero Road would be grade separated.
- The Bus Rapid Transit measure of curbside queue jumping lanes for buses and bikes along El Camino Real is included in both Scenarios 4 and 6.
- All of the sustainability measures that were included in Scenario 4 are also included in Scenarios 5 and 6.
- The No Growth Scenario uses the same assumptions as Scenario 1, the Business as Usual scenario.

Table 2
Transportation and Sustainability Assumptions

Transportation and Sustainability Assumptions	2030						
	Scen 1	Scen 2	Scen 3	Scen 4	Scen 5	Scen 6	No Growth
Bicycle/Pedestrian Transportation Plan Improvements	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CalTrain Modernization/Electrification	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CalTrain trench only at Meadow and Charleston	No	No	Yes	Yes	No	No	No
CalTrain trench at all grade crossings	No	No	No	No	Yes	Yes	No
County Expressway Plan Implementation	No	Yes	No	No	No	No	No
County Expressway Plan Implementation, with HOV lanes on Page Mill Rd.	No	No	No	No	Yes	No	No
Bus Rapid Transit on El Camino Real in mixed-flow lanes with queue jumping & curbside stations	No	No	No	Yes	No	Yes	No
Paid transit passes for employees in workplaces with >50 employees	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Employer incentives for carpooling & bicycling	No	Yes	Yes	Yes	Yes	Yes	No
Unbundled parking costs for multi-family units	No	No	Yes	Yes	Yes	Yes	No
Parking charges for workplaces with >50 employees	No	No	No	Yes	Yes	Yes	No
Paid parking in Downtown and California Ave areas	No	No	No	Yes	Yes	Yes	No
Free transit passes for Palo Alto residents in transit-accessible areas	No	No	No	Yes	Yes	Yes	No

Source: Placeworks and the City of Palo Alto, 2016.

The Mitigation Measures

As noted above, the Palo Alto City Council requested that this TIA also include analyses of both Scenarios 5 and 6 after all proposed mitigation measures have been implemented. These are not separate scenarios with different land use projections, but are the same Scenarios 5 and 6 under post-mitigation conditions. Their purpose is to evaluate the effectiveness of the proposed mitigation measures in reducing or eliminating the projected transportation impacts of the two new scenarios. These mitigation measures were developed in response to identified significant impacts under Scenarios 1-4 in the DEIR and would also apply to Scenarios 5 and 6.

The proposed mitigation measures, as presented in the Supplement to the DEIR and applied to Scenarios 5 and 6 for analysis in this TIA as Scenarios 5M and 6M, are as follows. The numbering of the measures used in the DEIR is shown here for ease of reference; it is not sequential because some potential impacts were less than significant and did not require mitigation measures to be developed.

TRANS-1: Mitigation for Impacted Intersections

- a) Adopt a programmatic approach to reducing traffic with the goal of achieving no net increase in peak period motor vehicle trips from new development, with an exception for uses that directly contribute to the neighborhood character and diversity of Palo Alto (such as ground floor retail and below market rate housing). The program should at a minimum:
 - o Require new development projects to prepare and implement a Transportation Demand Management (TDM) Plan to achieve the following reduction in peak period motor vehicle trips from the rates included in the Institute of Transportation Engineers' *Trip Generation Manual* for the appropriate land use category. These reductions are deemed aggressive, yet feasible, for the districts indicated.
 - i. 45 percent reduction in the Downtown district
 - ii. 35 percent reduction in the California Avenue area

- iii. 30 percent reduction in the Stanford Research Park
- iv. 30 percent reduction in the El Camino Real corridor
- v. 20 percent reduction in other areas of the city.
- o TDM Plans must be approved by the City and monitored by the property owner on an annual basis. The TDM Plans must contain enforcement mechanisms or penalties that accrue if targets are not met.
- o Require new development projects to pay a Transportation Impact Fee which will be partially used to reduce peak period motor vehicle trips citywide.
- b) Study the feasibility of unbundled parking for office, commercial, and multi-family residential development (including senior housing developments) that are well-served by transit and by existing walking and biking connections.
- c) Include policies in the Comprehensive Plan to ensure collaboration with regional agencies and neighboring jurisdictions, and identification and pursuit of funding for rail corridor improvements and grade separation. Policies shall support grade separation of rail crossings along the rail corridor as a City priority, and encourage studies and outreach necessary to advance grade separation of Caltrain to become a “shovel ready” project.
- d) Engage in regional transportation planning and advocate for specific transit improvements and investments, such as Caltrain service enhancements and grade separations, Dumbarton Express service, enhanced bus service on El Camino Real with queue jumping and curbside platforms, and additional VTA bus service.
- e) Encourage the Palo Alto Unified School District (PAUSD) to analyze decisions regarding school assignments to reduce peak period motor vehicle trips to and from school sites.

TRANS-3: Mitigation for Impacted Freeway Segments

- a) The City shall require new development projects to prepare and implement TDM programs, as described in TRANS-1a. TDM programs for worksites may include measures such as private bus service and free shuttle services to transit stations geared towards commuters.
- b) Include policies in the Comprehensive Plan that advocate for efforts by Caltrans and VTA to reduce congestion and improve traffic flow on existing area freeway facilities consistent with Statewide GHG emissions reduction initiatives. Policies shall support the application of emerging freeway information, monitoring, and control systems that provide non-intrusive driver assistance and reduce congestion. Policies shall support, where appropriate, the conversion of existing traffic lanes to exclusive bus and high-occupancy vehicle (HOV) lanes on freeways and expressways, including the Dumbarton Bridge and the continuation of an HOV lane from Redwood City to San Francisco.

TRANS-6: Mitigation for Impacts on Transit Due to Increased Congestion

Include policies in the Comprehensive Plan Update that address transit access and give priority to buses and to transit facilities. Examples include queue jump lanes, signal priority for buses, and bulb-outs at bus stops. Also, advocate for bus service improvements on El Camino Real such as queue jump lanes and curbside platforms.

TRANS-8: Mitigation for Impacts on Local Residential Streets

Include policies in the Comprehensive Plan to identify specific improvements that can be used to discourage drivers from using local neighborhood streets to bypass traffic congestion on arterials.

Palo Alto Travel Demand Forecasting Model

All of the planning scenarios have been compared using the Palo Alto 2030 travel demand forecasting model, which is based on VTA's countywide travel demand forecasting model. VTA's model, in turn, is based on the

Metropolitan Transportation Commission's (MTC's) regional model for the entire Bay Area. Land use assumptions for the zones outside of Palo Alto are based on ABAG 2030 land use data, in this case Projections 2013. The model includes a certain number of households and jobs for every TAZ (traffic analysis zone) in every city for 2013 and for 2030. VTA gives every city the opportunity to update/revise the land use assumptions used in the ABAG/MTC model.

Palo Alto's citywide model calculates output variables (such as transit boardings, Average Daily Traffic (ADT), and peak hour traffic volumes) projected to occur in the year 2030 based on the different input assumptions related to each of the scenarios. Palo Alto's citywide model, like the VTA and MTC models, is a traditional four-step model that includes trip generation, trip distribution, mode choice, and transit and highway assignment.

The trip generation step is based on the model's land use assumptions, which are consistent with those in the VTA model, except that the growth in population, households, and employment within Palo Alto for each of the scenarios was specified in accordance with each scenario's different assumptions for those variables. The mode choice step distributes all the person trips to different travel modes, including Drive-Alone Auto, Shared-Ride Auto, Transit, Bicycle, and Walk. Mode choice is based on such variables as travel times, trip purpose, trip distance, auto ownership, the cost of using transit versus auto, household income, proximity to transit, employment density, and residential development density. Most of the new population and household growth under all of the scenarios is high-density multi-family housing in or near transit corridors (e.g., El Camino Real). The model does not assign all trips made by transit-oriented development (TOD) residents onto the transit mode, but it does assign a higher percentage of those trips to transit than those made by residents who live in low-density housing far from a transit stop.

The transit assignment step results in boardings on different transit services. The highway trip assignment step results in traffic volumes on each roadway link within the model. These volumes are then later used as inputs to calculate the level of service at the study intersections, on the study roadway segments, and on freeway segments and ramps under each of the scenarios.

The model was calibrated to 2013 conditions, based on 2013 traffic counts, and the 2030 volumes were calculated as an increment of growth over 2013 volumes in order to provide a consistent means of comparison for all of the scenarios.

For purposes of modeling the mitigation measures in Scenarios 5M and 6M, it is assumed that new development projects will meet the TDM targets in TRANS-1a for the TAZ where the development is located. Even though the goal of the mitigation measures is to achieve "no net increase in peak period motor vehicle trips from new development," it is not assumed that all remaining trips will be eliminated. The model results for Scenarios 5M and 6M indicate that the mitigation measures will reduce but not eliminate additional motor vehicle trips.

Guidelines and Metrics Used in this TIA

This TIA has been prepared in accordance with the standards and methodologies set forth by the City of Palo Alto, by the Santa Clara Valley Transportation Authority (VTA) Congestion Management Program's *Transportation Impact Guidelines* (October 2014), and by the California Environmental Quality Act (CEQA). The VTA administers the Congestion Management Program (CMP) for Santa Clara County. For detailed information about the regulatory framework that would apply to this Comprehensive Plan Update, please refer to the Transportation and Traffic Existing Conditions Report.

Based on guidance from the City, VTA, and CEQA, the preparation of Transportation Impact Analyses in the past has relied to a great extent on evaluation of Level of Service (LOS) at intersections and on freeways to determine whether a proposed project would have any significant traffic impacts. However, recent trends in the transportation planning field have expanded the range of metrics to be evaluated beyond Level of Service, in order to better capture the potential impacts of a project on other modes of transportation and on the greenhouse gases associated with vehicular travel.

To further the state's commitment to the climate change goals of recent legislation (Senate Bill 375, Assembly Bill 32, and Assembly Bill 1358), Governor Brown signed Senate Bill 743 on September 27, 2013. SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines (Title 14 of the California Code of Regulations, Division 6, Chapter 3, Sections 15000-15387) to provide an alternative to LOS for

evaluating transportation impacts. Once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA. Measurements of transportation impacts may include “vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated.”

Pursuant to SB 743, OPR released a *Draft of Updates to the CEQA Guidelines* in August 2014. In response to significant public input, OPR released a *Summary of Feedback* in May 2015 and a *Revised Proposal on Updates to the CEQA Guidelines* in January 2016. OPR’s *Draft of Updates* proposes VMT as the replacement metric for LOS in the context of CEQA. While OPR emphasizes that a lead agency has the discretionary authority to establish thresholds of significance, the *Draft of Updates* and the *Revised Proposal on Updates* suggest criteria that indicate when a project may have a significant, or less than significant, transportation impact on the environment. For instance, a project that results in VMT greater than the regional average for the land use type (e.g. residential, employment, commercial) may indicate a significant impact. Alternatively, a project may have a less than significant impact if it is located within 0.5 mile of an existing major transit stop, or results in a net decrease in VMT compared to existing conditions.

Since OPR has not yet adopted new CEQA Guidelines for the alternative criteria to LOS, the adopted significance criteria for study intersections in the City of Palo Alto, the City of Menlo Park, the City of Mountain View, and VTA’s CMP still remain applicable to the proposed scenarios. It is anticipated that local agencies will revisit the adopted significance criteria once new CEQA guidelines are adopted by the State.

Another example of the recent trend to expand the range of metrics beyond motor vehicle Level of Service is included in VTA’s 2014 revision to the *TIA Guidelines*, which increased the focus on evaluating a project’s impacts on pedestrian, bicycle, and transit facilities. VTA is continuing to review and update evaluation methods for those modes.

Thus, this TIA looks at a broad suite of metrics to evaluate potential project impacts, in order to be in step with evolving trends in the transportation planning field, as well as to comply with existing guidelines and legal requirements regarding TIA preparation.

The metrics used to conduct the comparison among scenarios are the same as those used to describe the current conditions in the *Transportation and Traffic Existing Conditions Report*, prepared earlier in the Comprehensive Plan Update process. These metrics include mode split, transit ridership, Average Daily Traffic (ADT) and motor vehicle Level of Service (LOS) on roadway segments, vehicle miles traveled (VMT), and motor vehicle LOS at key intersections, freeway segments, and freeway ramps. In addition, the analysis includes an assessment of transit operations, the potential for through traffic to use local residential streets, and safety. Motor vehicle travel time on several routes and a Multi-Modal Level of Service analysis on two roadway segments are presented for Scenarios 1 – 4, but not Scenarios 5 and 6.

Each of the scenarios in this TIA makes different assumptions about the growth in households and jobs due to new development and the changes to the City’s transportation infrastructure by the year 2030. The growth in households and jobs would be the result of new development projects, which would generate site-specific construction-related traffic during the time period that each project is under construction. Changes to the City’s transportation infrastructure would also generate construction-related traffic. All construction-related traffic impacts would be temporary, even if significant, and are therefore not included in the forecasting model assumptions for the year 2030. In some cases, such as building a trench for Caltrain, the construction-related traffic impacts would likely be substantial, but would be addressed through project-specific review and mitigation, not as part of the Comprehensive Plan Update. The City, VTA, and CEQA require major projects to address construction traffic impacts prior to approval.

In addition to serving as a decision-making tool for comparing and contrasting the six scenarios, this report also identifies any significant impacts under any of the scenarios, in accordance with current CEQA guidelines and as input to the EIR being prepared for the Comprehensive Plan Update. Based on the City of Palo Alto’s policies, VTA’s policies, and CEQA guidelines, a project may be said to result in a significant transportation impact if it:

- Causes an intersection to drop below its motor vehicle level of service standard, or if it is already operating at a substandard motor vehicle level of service, deteriorate by more than a specified amount.

The precise definitions of significant impact thresholds at local and Congestion Management Program (CMP) intersections are provided in Chapter 6.

- Causes a freeway segment or ramp to operate at LOS F or contribute traffic in excess of 1% of segment capacity to a freeway segment or ramp already operating at LOS F.
- Impedes the development or function of planned pedestrian or bicycle facilities.
- Increases demand for pedestrian and bicycle facilities that cannot be met by existing or planned facilities.
- Impedes the operation of a transit system as a result of congestion.
- Creates demand for transit services that cannot be met by current or planned services.
- Creates the potential demand for through traffic to use local residential streets.
- Creates an operational safety hazard.
- Results in inadequate emergency access.

Each of these potential impacts will be addressed in the section related to its respective travel mode or topic area. The planning scenarios will be compared to Existing Conditions in order to determine if a significant impact under CEQA would occur. Impacts associated with Scenario 1, the Business as Usual scenario, would occur if the Comprehensive Plan were not updated and no additional investments (beyond currently funded projects) were made to the transportation network.

For each topic or metric examined, the report will state whether it relates to one of the potential impacts currently defined by CEQA or not. Those that do not (e.g., Mode Share, Average Daily Traffic, Vehicle Miles Travelled) are presented for informational purposes to better understand the transportation-related outcomes associated with each of the scenarios analyzed.

2. Mode Share

Mode share refers to the percentage of trips made by each of the primary modes of transportation: Driving Alone, Shared Ride, Taking Transit, Bicycling, and Walking. The 2030 travel demand forecasting model calculates the mode split based on input factors taken from survey data or other sources that have been validated. For example, the factors for calculating the transit mode share include residential development density, proximity to transit, household income, the cost of using transit versus auto, and travel times for transit versus auto. By analyzing the mode split under each of the six scenarios, one can see to what extent each of the scenarios results in increased usage of Ridesharing, Transit, Biking, and Walking.

Tables 3a and 3b present the total number of daily person-trips made in Palo Alto under existing conditions and under each of the planning scenarios. Table 3a includes existing conditions and the first four scenarios and is the same table that was provided in the *Scenarios 1-4 TIA*. Table 3b repeats the existing conditions and includes Scenarios 5, 5M, 6, 6M, and No Growth. Throughout this TIA, “5M” and “6M” are the abbreviations used for “Post-Mitigation Conditions under Scenarios 5 and 6”, respectively.

The tables include all trips beginning and/or ending in Palo Alto, i.e., trips that begin and end in Palo Alto, trips that begin in Palo Alto and end in another jurisdiction, and trips that begin in another jurisdiction and end in Palo Alto.

Both the “Drive Alone” and “Shared Ride” modes are made by automobile. The shared ride mode includes all person-trips with more than one occupant in the vehicle. For example, both a parent with a child in the car and two employees who carpool to work together will be shown in the table as two person-trips made by ridesharing. (Recent years have seen the growth of services such as Uber, Lyft, and other alternative taxicab services which are referred to as Transportation Networking Companies (TNCs) by the California Public Utilities Commission. The model treats TNC trips as single-occupant trips.)

Tables 3a and 3b
Mode Share for Palo Alto Daily Person Trips

Mode	2030									
	Existing		Scenario 1		Scenario 2		Scenario 3		Scenario 4	
	Sum	% Share	Sum	% Share	Sum	% Share	Sum	% Share	Sum	% Share
Drive Alone	353,779	61.5%	391,591	59.9%	380,518	60.0%	387,366	59.7%	390,389	58.5%
Shared Ride	130,651	22.7%	145,087	22.2%	141,393	22.3%	143,894	22.2%	145,901	21.9%
Transit	29,494	5.1%	44,503	6.8%	41,659	6.6%	43,820	6.8%	51,975	7.8%
Bike	15,875	2.8%	20,177	3.1%	19,553	3.1%	20,316	3.1%	21,406	3.2%
Walk	45,470	7.9%	52,655	8.1%	51,317	8.1%	53,143	8.2%	57,303	8.6%
TOTAL	575,269	100.0%	654,012	100.0%	634,440	100.0%	648,538	100.0%	666,974	100.0%

Source: Hexagon Transportation Consultants, Inc., November 2016.

Mode	2030											
	Existing		Scenario 5		Scenario 5M		Scenario 6		Scenario 6M		No-Growth	
	Sum	% Share	Sum	% Share	Sum	% Share	Sum	% Share	Sum	% Share	Sum	% Share
Drive Alone	353,779	61.5%	373,933	58.9%	368,432	58.0%	379,739	58.5%	373,828	57.6%	360,831	60.4%
Shared Ride	130,651	22.7%	139,368	21.9%	138,758	21.9%	142,710	22.0%	141,980	21.9%	133,245	22.3%
Transit	29,494	5.1%	48,203	7.6%	50,416	7.9%	50,560	7.8%	52,965	8.2%	39,361	6.6%
Bike	15,875	2.8%	20,065	3.2%	20,553	3.2%	20,927	3.2%	21,456	3.3%	17,945	3.0%
Walk	45,470	7.9%	53,364	8.4%	56,774	8.9%	55,537	8.6%	59,244	9.1%	46,053	7.7%
TOTAL	575,269	100.0%	634,933	100.0%	634,933	100.0%	649,474	100.0%	649,474	100.0%	597,435	100.0%

Source: Hexagon Transportation Consultants, Inc., November 2016.

Scenarios 1-4

Table 3a indicates that all four originally proposed scenarios are projected to result in a lower mode share for both of the Automobile modes (Drive Alone and Ridesharing) in comparison to Existing Conditions. Under Existing Conditions, the alternative modes of travel (Transit, Bikes, and Walking) account for 15.8% of person-trips. Scenarios 1 and 2 would result in the least change, with those modes totaling 18.0% and 17.8% of person-trips in 2030, respectively. The slightly lower mode share for transit in Scenario 2, compared with Scenario 1, is due to the fact that Scenario 2 includes fewer new jobs, and transit generally has a higher mode share for work trips than for other trip purposes. The ridesharing mode for Scenarios 1 and 2 follows the same pattern as the drive alone mode, in that as more people take transit, ride bikes, or walk, fewer people use cars -- whether as single-occupant or multiple-occupant vehicles.

Of the first four scenarios, Scenario 4 would result in the greatest increase in the non-auto modes, with a total of 19.6% of travelers choosing to use transit, ride a bike, or walk. The significant increase in transit's mode share under Scenario 4 is consistent with that scenario's pro-transit policies, such as implementing queue jump lanes for buses on El Camino Real, providing free transit passes to Palo Alto residents who live near transit, and charging for parking in the Downtown and California Avenue business districts.

Each of the scenarios would result in about 3% of all trips being made by bicycle. This represents an increase in bicycling compared to existing conditions. The increase would be due to increased development density and implementation of the *Bicycle and Pedestrian Transportation Plan*, both of which would make bicycling a more attractive travel option. The goals of the *Bicycle and Pedestrian Transportation Plan* are to increase bicycling mode share to 15% of local work trips and 5% of total work trips. It is important to note that these are goals and were not assumed in the travel demand model. Also, the 3% citywide mode share calculated by the model is for all trip purposes, not just work trips.

All scenarios would see increases in the total number of trips by each mode over existing conditions. Of the four original scenarios, Scenario 2 results in the lowest number of total daily trips, which is consistent with the fact that it includes the lowest projections of new housing units and new jobs. Scenario 4 results in the greatest number of total daily person trips, which is consistent with the fact that it includes the greatest combined number of new housing units and new jobs.

The combined auto mode share (drive alone and shared ride) under Scenarios 1 and 4 are 82.1% and 80.4%, respectively. The total number of auto trips (drive alone and shared ride) under Scenarios 1 and 4 are 536,678 and 536,290, respectively. Thus, even though the two auto modes have a declining mode share under Scenario 4 (compared with Scenario 1), the total number of auto trips remains nearly the same as under the Business As Usual scenario, due to the additional housing units and population in Scenario 4.

Scenarios 5 and 6

Table 3b presents the mode split for Scenarios 5 and 6, both with and without implementation of the proposed mitigation measures. The total number of trips by all modes is the same for Scenarios 5 and 5M and for Scenarios 6 and 6M, but the mode split changes when mitigation measures are included..

Scenario 5 results in only slightly more total trips than Scenario 2 (Slowing Growth), which is consistent with the fact that Scenario 5 includes more new housing than Scenario 2 but fewer new jobs. However, because Scenario 5 includes all the pro-transit policies of Scenario 4, the transit mode share is higher than Scenario 2 (7.6% versus 6.6%), even before the mitigation measures are taken into account. The reason that the transit mode share is lower under Scenario 5 than under Scenario 4 (7.6% versus 7.8%) is likely because, as noted above, transit typically has a higher mode share for work trips than for other trip purposes, and Scenario 4 includes far more new jobs than Scenario 5.

Scenario 6 results in more total trips than Scenario 5, which is consistent with the fact that it includes the same number of new jobs as Scenario 5, but more housing than any of the other scenarios. Scenario 6 without mitigation results in a mode split that is almost identical to the mode split under Scenario 4, which is consistent with their underlying sustainability assumptions.

Both Scenarios 5M and 6M have lower Drive Alone mode shares than their pre-mitigation counterparts and higher mode shares for the alternative modes. Of all six scenarios, Scenario 6M would result in the greatest increase in

the non-auto modes, with a total of 20.6% of travelers choosing to use transit, ride a bike, or walk. However, because 6M includes more total trips than 5M, even with this shift in mode share, 6M results in more cars on the road (515,808 trips by Drive Alone and Shared Ride modes) than Scenario 5M (507,190 trips by Drive Alone and Shared Ride modes). It is important to note that both Scenarios 5M and 6M assume that all new development projects would meet the goals set for their location in the proposed TDM mitigation measure (e.g., a 45% trip reduction in the Downtown area, a 30% reduction in Stanford Research Park), but this table presents all Palo Alto trips, not just the trips from new development. Because most trips to, from, or within Palo Alto would not be subject to the assumptions and mitigation measures included in these scenarios, the mode shift for the entire city changes only slightly even when new development achieves a large reduction in motor vehicle trips.

3.

Bicycle and Pedestrian Usage and Impacts

The Palo Alto travel demand forecasting model estimates that the existing mode share for bicycling is 2.8%, as shown in Tables 3a and 3b in the preceding chapter. To provide context for that estimate, a typical Bay Area city currently has a 1 to 2% bike mode share in the Metropolitan Transportation Commission (MTC)'s regional model, so 2.8% is double the bike share in most other cities in the region. Both the Palo Alto model and the regional model include both home-based trips (trips that begin or end at the traveler's home) and non-home-based trips, and they both include all common trip purposes, including work, school, shopping, and social/recreational trips. At the state level, Caltrans has recently adopted goals to double the mode share for walking and triple the mode share for bicycling statewide.¹

Because the census data for Palo Alto shows a bike mode share of 8.6% as the means of transportation to work, it is important to understand the differences between these two data sources. Census data for Palo Alto reports the mode choice of Palo Alto residents, and only for their journey to work. The travel demand forecasting model includes all trips to, from, and within Palo Alto, regardless of the traveler's residence and regardless of trip purpose. Because of the jobs – housing imbalance in Palo Alto, many commute trips are made into and out of the city every day by non-Palo Alto residents, and very few of those trips are made by bicycle. In addition to those journey-to-work trips, Palo Alto is a destination for non-Palo Alto residents for many other trip purposes (e.g., shopping at Stanford Shopping Center, restaurants downtown, etc.) and relatively few of those trips will be made by bicycling, simply because they are longer than most trips that are entirely within Palo Alto. In short, it is primarily the relatively longer distance trips into and out of Palo Alto by non-residents that likely account for the 2.8% bike mode share estimated by the model.

All six 2030 scenarios assume that Palo Alto's adopted *Bicycle + Pedestrian Transportation Plan* will be implemented. The increase in mode share for bicycling from 2.8% under Existing Conditions to 3.1% or 3.2% under all six pre-mitigation future scenarios is primarily the result of the improvement in bicycle facilities resulting from implementation of that plan. In addition, since virtually all the new housing units in all six scenarios are assumed to be multi-family housing located in mixed use corridors, the resulting increase in development density also serves to increase the proportion of people choosing to bike to some nearby destinations. Scenario 6M achieves the highest mode share for bicycling (3.3%) of any of the scenarios, which is consistent with its underlying assumptions of the greatest increase in housing and the smallest increase in jobs and the implementation of mitigation measures to further reduce vehicle trips.

Similarly, the increase in mode share for walking, from 7.9% under Existing Conditions to 8.1 % or 8.2% under Scenarios 1, 2, and 3, is also attributable to improved pedestrian facilities resulting from implementing the *Bicycle + Pedestrian Transportation Plan*. The substantial increase to 8.4% or 8.6% in the walking mode share under Scenarios 4, 5, and 6 is due to the fact that these scenarios include the greatest development density, due to the inclusion of multi-family housing on corridors that include other land uses, so that people may walk to more destinations. The policy of charging for parking in the Downtown and California Avenue areas also increases the

¹ Caltrans, *Strategic Management Plan 2015 – 2020*, March 2015. Page 11.

attractiveness of walking instead of driving. Both Scenarios 5M and 6M result in substantially higher walking mode shares (8.9% and 9.1%, respectively) than their pre-mitigation counterparts.

Potential Impacts Related to Bicycles and Pedestrians

The CEQA guidelines include two potential impacts related to walking and biking:

- Would the project impede the development or function of planned pedestrian or bicycle facilities?
- Would the project increase demand for pedestrian and bicycle facilities that cannot be met by existing or planned facilities?

None of the six scenarios would impede the development or function of planned pedestrian or bicycle facilities. In fact, all six scenarios assume the implementation of all improvements included in the City's *Bicycle + Pedestrian Transportation Plan*. In addition, all six scenarios would include upgrades to existing grade-separated Caltrain crossings at California Avenue and University Avenue to improve pedestrian and bicycle facilities, as well as a new pedestrian/bicycle grade-separated Caltrain crossing in South Palo Alto. Scenarios 5 and 6 include grade separation of all Caltrain crossings. These grade separations would improve the bicycle and pedestrian crossings significantly at these locations.

The Comprehensive Plan Update includes a policy to bring all signalized intersections up to current pedestrian design standards. This includes the installation of count-down pedestrian signal heads. Other proposed projects, such as improvements to enhance mobility and safety in the downtown area, a Pedestrian Safety and Streetscape Project on El Camino Real, and corridor improvements on Middlefield Road in the midtown area, would also have a beneficial impact on pedestrian and bicycle facilities.

All six scenarios would increase demand for pedestrian and bicycle facilities in that they each assume (to varying degrees) an increase in population and employment, and any increase in population and employment would also increase the number of bicyclists and pedestrians in the City. Scenarios 2 - 6 also include specific improvements or other policies that would increase demand for pedestrian and bicycle facilities, beyond the level that would occur under the Business as Usual scenario. None of the scenarios would create more demand than could be met by existing or planned facilities. The specific assumptions of each scenario that would increase demand for pedestrian and bicycle facilities are as follows:

- **Expressway Improvements:** The expressway improvements included in Scenarios 2 and 5/5M include enhancements to the bicycle and pedestrian facilities on Page Mill Road and on Foothill Expressway. For example, on Page Mill Road between Foothill Expressway and I-280, a new Class I bike and pedestrian trail would be provided on one side, in addition to adding another travel lane in each direction to the roadway. (This travel lane is assumed to be mixed-flow under Scenario 2 and for transit and HOV use under Scenarios 5 and 5M.) Although the addition of travel lanes generally degrades the pedestrian environment, at this specific location where there are currently no pedestrian facilities at all between Deer Creek Road and I-280, the addition of a new Class I bike and pedestrian trail would result, on balance, in an improved pedestrian environment.
- **Caltrain Trench:** The trench for the Caltrain tracks at the Meadow Drive and Charleston Road crossings, included in both Scenarios 3 and 4, would improve the bicycle and pedestrian crossings significantly at these locations. The grade separation of the Caltrain tracks at all four existing grade crossings, included in both Scenarios 5/5M and 6/6M, would improve bicycle and pedestrian crossings significantly along the entire rail corridor within Palo Alto.
- **Employer Incentives for bicycling:** This measure is included in all scenarios, except Scenario 1.
- **Unbundled parking costs for multi-family housing units.** This measure, which is included in Scenarios 3, 4, 5/5M and 6/6M, has the effect of increasing the cost of auto ownership (as compared to not owning a car) and making alternative modes relatively more attractive.
- **A parking charge program for existing businesses with more than 50 employees.** For employees who live within reasonable walking or biking distance of their workplace, paying for parking at their workplace,

included in Scenarios 4, 5/5M, and 6/6M, make walking or biking to work more attractive, by increasing the relative cost of driving.

- Paid parking in Downtown and California Avenue business districts. By increasing the total cost of driving to the Downtown or California Avenue business districts, this measure, included in Scenarios 4, 5/5M, and 6/6M, would also make walking or biking more attractive.

All of these measures would increase the number of trips made by walking and biking, but they would not increase demand beyond the capacity of the planned pedestrian and bicycle facilities. In fact, two of the measures (expressway improvements and Caltrain trench) would increase the capacity and connectivity of the City's pedestrian and bicycle facilities. Under all scenarios, the City would continue to implement its adopted *Bicycle + Pedestrian Transportation Plan*. In addition, under all scenarios except Scenario 1, new bicycle and pedestrian improvements would be guided by concept area plans in the California Avenue area.

Even though the demand for bicycle and pedestrian facilities would not exceed their capacity, and thus there would not be a significant impact under CEQA, the community is likely to want to increase the capacity of its bicycle facilities even further (i.e., beyond the level envisioned in the current *Bicycle + Pedestrian Transportation Plan*), as cycling increases in both absolute numbers and mode share. In addition, bicycle and pedestrian facilities will continue to be upgraded to current accessibility and design standards, in accordance with policies in the *Bicycle + Pedestrian Transportation Plan* and this Comprehensive Plan Update.

4.

Transit Ridership and Impacts

The Palo Alto travel demand forecasting model estimates that 29,494 person trips per day were made by transit in 2013 (Existing Conditions), as presented in Tables 3a and 3b in the chapter on Mode Share. Table 4 breaks down that total number of transit trips into the number of boardings made on different transit service providers. For example, if someone boards Caltrain in Palo Alto and then transfers to a Caltrain shuttle in San Mateo to reach their final destination, the table presents that as two boardings for one transit trip. As another example, if someone boards a BART train in Oakland and then transfers to Caltrain in Millbrae and rides to Palo Alto, and then takes a Stanford Marguerite shuttle to the Stanford campus, all three boardings of that transit trip are shown in the table. The primary reason why it is important to consider boardings by transit operator in addition to the total number of daily transit trips is to highlight which services would receive the greatest increases in ridership in the future.

Table 4 presents the number of boardings and the number of transit trips for each of the six Comprehensive Plan scenarios, plus the No Growth Scenario. Like the mode share data, Table 4 includes all transit trips that begin and/or end in Palo Alto, i.e., trips entirely within Palo Alto, trips that begin in Palo Alto and end in another jurisdiction, and trips that begin in another jurisdiction and end in Palo Alto. Note that changes in Palo Alto under each of the future scenarios have very little influence on transit providers that are farther away, such as the Muni system in San Francisco.

The future transit services assumed by the Palo Alto travel demand forecasting model and the scenarios in this TIA are based on and consistent with VTA's countywide forecasting model and MTC's regional forecasting model. The VTA model assumes that the only difference between the existing and 2030 capacity of Palo Alto's transit services would be the El Camino Bus Rapid Transit (BRT) and Caltrain electrification projects.

The following two improvements are included in the model's 2030 transit assumptions:

- The increased Caltrain service level included in the *Peninsula Corridor Electrification Project Environmental Impact Report* (February 2014). This includes shorter headways and increased travel speeds in 2030, as well as electrification of the trains. All six scenarios in this TIA include the same assumption regarding future Caltrain service levels.²
- Implementation of Bus Rapid Transit (BRT) on El Camino Real within the existing six mixed-flow lanes, with 14 curbside bulbout stations along the 17.6 mile El Camino corridor between the Palo Alto Transit Center and downtown San Jose, and bus signal priority at all signalized intersections that don't currently

² The projected 2030 Caltrain boardings presented in Table 4 are not directly comparable to the ridership estimates in the *Peninsula Corridor Electrification Project Environmental Impact Report*, which presents only boardings that occur at each station (i.e., trips originating from the Palo Alto and California Avenue stations), but not boardings that occur at other stations for trips to Palo Alto. Also, whereas the Palo Alto Comprehensive Plan Update and this TIA focus on the year 2030 for the future scenarios, the Caltrain Electrification EIR focuses on the years 2020 and 2040. However, the general Caltrain ridership trend presented in Table 4 is consistent with the trend presented in the Caltrain Electrification EIR.

have it. Scenarios 1, 2, 3, and 5/5M include this assumption regarding BRT, which corresponds to Alternative 2 in VTA's *El Camino Real Bus Rapid Transit Project Environmental Impact Report/Environment Assessment* (August 2014). Scenarios 4 and 6/6M include a different assumption as described below.³

Scenarios 4, 5/5M and 6/6M were designed to be the most “pro-transit” of the six planning scenarios. Accordingly, they include several specific assumptions that are different from the other scenarios, as follows:

- **Bus Rapid Transit (BRT).** Scenarios 4 and 6/6M (but not 5/5M) assume the improvements included in the other scenarios as described above, plus a dedicated lane for transit in Santa Clara and bus queue jump lanes at intersections in Palo Alto, where possible. Scenarios 4 and 6/6M correspond to Alternative 3b in VTA's BRT EIR, with the addition of queue jump lanes in Palo Alto. The bus queue jump lanes would be created by removing on-street parking and narrowing the existing mixed-flow traffic lanes close to the intersection, but not eliminating any mixed-flow traffic lanes. The lane would be used by both bicycles and buses. Queue jump lanes allow buses to proceed through congested intersections more quickly than they otherwise would.
- **Free transit passes** for all Palo Alto residents in transit-accessible areas. This measure would clearly generate greater transit demand. However, partly because household income is so high in Palo Alto, many residents are more sensitive to travel time than to the cost differential between using transit and other modes of travel.
- **A parking charge program** for existing businesses with more than 50 employees. Any parking charges implemented would make transit more attractive by increasing the relative cost of driving.
- **Paid parking in Downtown and California Avenue business districts.** By increasing the total cost of driving to the Downtown or California Avenue business districts, this measure would make transit more attractive, especially in combination with free transit passes.
- **Unbundled parking costs for multi-family housing units.** This measure, which is included in Scenarios 3, 4, 5/5M, and 6/6M would have the effect of increasing the cost of auto ownership (as compared to not owning a car) and making alternative modes relatively more attractive.

Table 4 shows that Scenario 1, the Business As Usual scenario, results in 62,177 transit boardings in the year 2030, which is 18,124 more boardings than the existing level, a 41% increase. Most of the new boardings are on Caltrain and the Caltrain shuttles, which is a reflection of increased Caltrain service in 2030, plus the travel time advantage that Caltrain would provide, as compared with driving, as street and freeway congestion increases. With Caltrain's electrification project, there would be more trains scheduled, so wait times for passengers would decrease, reducing their total travel time.

While it is not possible to separate out the influence of each transit priority policy, the results indicate that Scenario 4, which includes the greatest number of policies and actions to increase transit ridership of the original four scenarios and the greatest increase in employment growth, results in 70,045 total boardings, which is 25,992 more than existing conditions (a 59% increase) and 7,868 more than the Business As Usual scenario (a 13% increase). Under Scenario 4, VTA bus ridership would be substantially higher than under Scenarios 1 - 3, due to the combination of the BRT project and other pro-transit policies. Compared with the Business As Usual scenario, Scenario 4 would result in an additional 2,589 VTA bus boardings per day.

³ The projected VTA bus boardings presented in Table 4 are not comparable to the ridership figures in VTA's *El Camino Real Bus Rapid Transit Project Environmental Impact Report/Environment Assessment* (August 2014) for a number of reasons. That EIR presents ridership data for Routes 22 and 522 only (not all of the VTA routes serving Palo Alto) for the entire BRT corridor (not for specific cities) in 2040 (not 2030). Further, the BRT definition included in Scenarios 4 and 6/6M does not correspond precisely to any of the alternatives studied in the *BRT EIR*, as explained in the first bullet point under “Scenarios 4 and 6/6M.”

Table 4
Existing and 2030 Daily Transit Boardings – Trips To, From, and Within Palo Alto

Transit Service	Existing	2030								
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 5M	Scenario 6	Scenario 6M	No Growth
CalTrain	13,883	23,930	21,947	23,571	25,269	22,749	23,756	22,964	24,020	21,238
VTA Bus	8,177	8,739	8,473	8,719	11,328	10,820	11,366	11,399	11,986	7,829
VTA LRT	762	1,445	1,361	1,421	1,582	1,435	1,483	1,489	1,545	1,303
SamTrans	2,636	3,130	2,934	3,115	3,918	3,452	3,656	3,745	3,974	2,702
Stanford Shuttles	6,197	8,913	8,041	8,496	10,640	10,420	10,800	10,628	11,057	8,495
CalTrain Shuttles	4,376	6,971	6,472	6,886	7,178	6,741	7,345	7,031	7,674	6,035
Palo Alto Shuttles	2,114	3,424	2,849	3,397	4,179	3,471	3,635	3,519	3,697	2,737
BART, Muni and Other	5,908	5,625	5,210	5,408	5,951	5,287	5,507	5,540	5,779	5,625
Total	44,053	62,177	57,287	61,013	70,045	64,375	67,548	66,315	69,732	55,964
Transit Trips	29,494	44,503	41,659	43,820	51,975	48,203	50,416	50,560	52,965	39,361
Boardings/Trip	1.49	1.40	1.38	1.39	1.35	1.34	1.34	1.31	1.32	1.42

Source: Hexagon Transportation Consultants, Inc., November 2016.

Scenario 4 also includes more boardings than Scenarios 5M and 6M, even though they include the same pro-transit policies as Scenario 4 plus the implementation of the TDM mitigation program. This is because Scenario 4 includes 15,480 new jobs and Scenarios 5M and 6M include only 8,868 new jobs. Because transit is generally more likely to be used for work trips than other trip purposes, the employment increase in Scenario 4 likely accounts for the high number of boardings.

Scenarios 5M and 6M include more transit boardings than their pre-mitigation counterparts, reflecting the implementation of TDM programs to encourage more transit use. In absolute numbers the greatest increase between Scenario 5 and Scenario 5M is on Caltrain (1,007 more Caltrain boardings on 5M than on 5). By percentage increase, the greatest increase between Scenario 5 and Scenario 5M is on the Caltrain shuttles, an increase of 9.0 percent. The same pattern holds for the differences between Scenario 6 and Scenario 6M.

The No Growth Scenario would result in 11,911 more transit boardings than occur under Existing Conditions, an increase of 27%, and 6,213 fewer transit boardings than under the Business As Usual scenario, a 10% decrease. The primary reason why transit boardings would increase so much compared to Existing Conditions is that as street and freeway congestion increases throughout the region, more trips would be made on transit, even under No Growth conditions in Palo Alto. Also, even the No Growth scenario includes some new residents and jobs, due to previously approved projects.

The total number of transit trips (as opposed to transit boardings) increases the least under Scenario 2 (which includes the least growth in housing and jobs and no specific pro-transit measures) and increases the most under Scenario 6M, (which includes the most growth in housing as well as pro-transit assumptions and implementation of the mitigation measures to encourage transit use). Transit trips under Scenario 6M would increase by 23,471 (80%) compared with Existing Conditions and by 8,462 trips (19%) over the Business as Usual scenario.

The decrease in the number of boardings per transit trip for all the scenarios, compared with Existing Conditions, indicates that there are projected to be more transit trips in the future that would be made with a single boarding, i.e., fewer transfers would be made. This metric suggests a slightly greater level of convenience in using transit in 2030, since transfers add to a passenger's total travel time and frequently reduce the reliability of the transit option.

Potential Impacts Related to Transit Services

The CEQA guidelines include two potential impacts related to transit:

- Would the project impede the operation of a transit system as a result of congestion?
- Would the project create demand for transit services that cannot be met by current or planned services?

The first question can only be answered after the level of congestion associated with each of the six scenarios has been analyzed, so it will be addressed later in Chapter 8 of this TIA.

All six scenarios would increase demand for transit services, since all six scenarios include, to varying degrees, increased population and increased employment in 2030, compared with existing conditions in 2013. In addition, as discussed above, Scenarios 3, 4, 5/5M and 6/6M include a policy of unbundled parking costs for multi-family housing, which would make transit more attractive by increasing the cost of car ownership for those residents who own cars, as compared to those who do not own cars. Scenarios 4, 5/5M, and 6/6M include several additional policies that would increase demand for transit, as noted above.

However, none of the scenarios would increase demand beyond the current or planned capacity of the transit network. Hexagon has not conducted a detailed quantitative analysis of each scenario's demand versus the capacity of each transit service, but local knowledge suggests that the only service that is likely to approach full capacity is Caltrain. The EIR for the Caltrain electrification project, which projects increased ridership consistent with the 2030 forecasts herein, includes a detailed capacity analysis for the ridership estimated for 2040. That EIR concludes that all peak period trains would operate at 97% of capacity in 2040, but that demand would not exceed capacity.

5.

Traffic Conditions on Selected Roadway Segments

This chapter presents Average Daily Traffic (ADT) and Level of Service (LOS) on selected roadway segments in Palo Alto and neighboring jurisdictions. In addition, Vehicle Miles Traveled (VMT) and VMT Per Capita are presented for the entire City of Palo Alto and for the City and its Sphere of Influence.

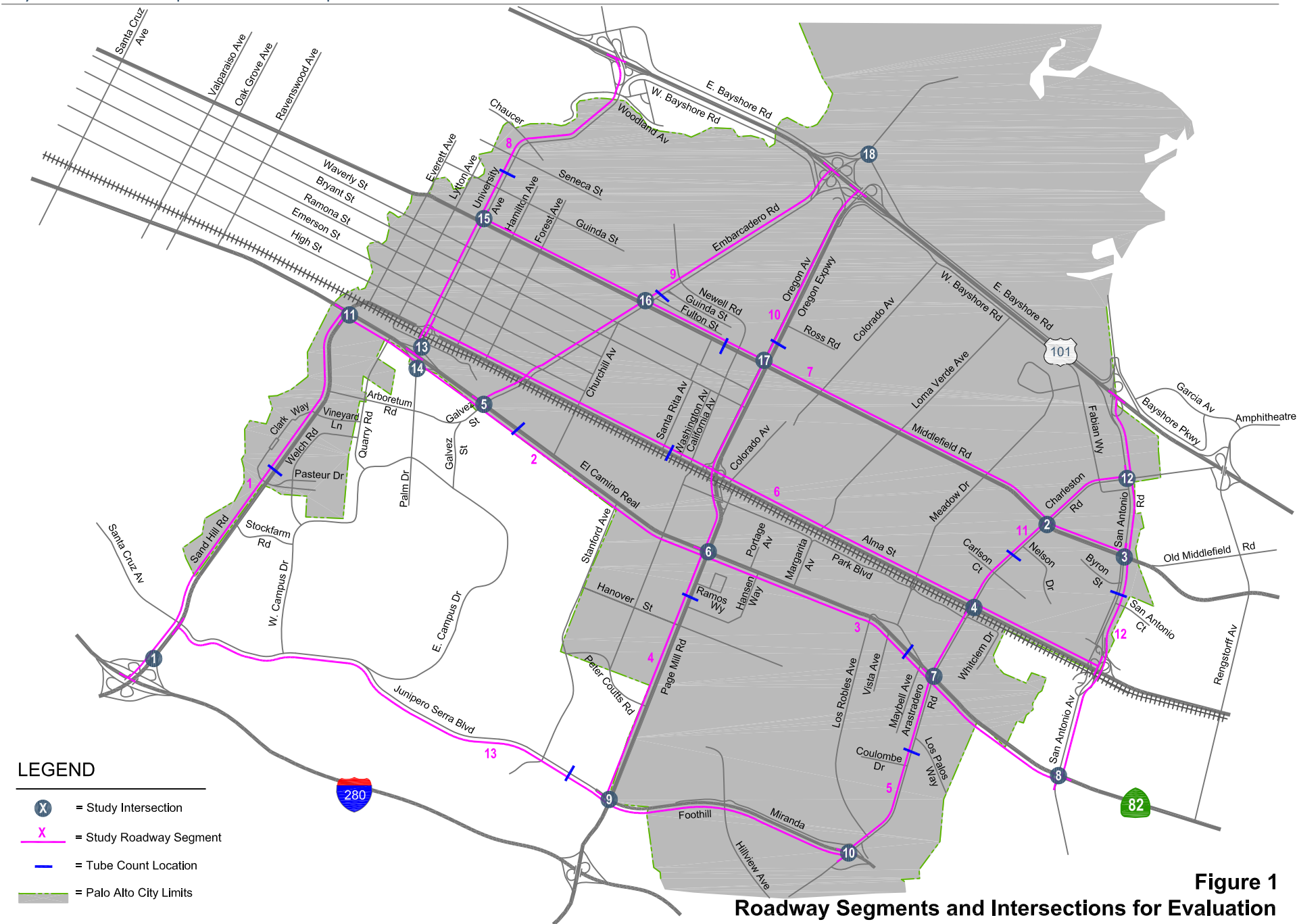
As discussed in Chapter 1, upcoming changes to the CEQA Guidelines are expected to include VMT as a basis for findings of significant impact in the future. The Governor's Office of Planning and Research (OPR) has released a *Draft of Updates to the CEQA Guidelines* and a *Revised Proposal on Updates to the CEQA Guidelines* that propose VMT and/or VMT Per Capita as the replacement metric for Motor Vehicle Level of Service in the context of CEQA. Thus, the examination of VMT and VMT Per Capita is consistent with the anticipated changes to the CEQA Guidelines.

Study Roadway Segments

Traffic conditions were analyzed under the six planning scenarios for the same roadway segments that were studied in the Existing Conditions report. As in the Existing Conditions report, the following segments are evaluated in terms of ADT and Level of Service.

1. Sand Hill Road between I-280 and El Camino Real (SR 82)
2. El Camino Real (SR 82) between Sand Hill Road and Page Mill Road (CMP)
3. El Camino Real (SR 82) between Page Mill Road and San Antonio Road (CMP)
4. Page Mill Road between I-280 and El Camino Real (SR 82) (CMP)
5. Arastradero Road between I-280 and El Camino Real (SR 82)
6. Alma Street between University Avenue and San Antonio Road
7. Middlefield Road between University Avenue and San Antonio Road
8. University Avenue between El Camino Real (SR 82) and US 101
9. Embarcadero Road between El Camino Real (SR 82) and US 101
10. Oregon Expressway between El Camino Real (SR 82) and US 101 (CMP)
11. Charleston Road between El Camino Real (SR 82) and San Antonio Road
12. San Antonio Road between El Camino Real (SR 82) and US 101 (CMP)
13. Foothill Expressway/Junipero Serra Blvd between Sand Hill Road and Arastradero Road (CMP)

Six of the study roadway segments are part of the VTA Congestion Management Program (CMP) system roadway network, as indicated above. The locations on each segment where tubes were placed to collect traffic counts under Existing Conditions are shown on Figure 1.



Average Daily Traffic and Segment Levels of Service

Average Daily Traffic (ADT) is the number of vehicles travelling along a street segment in both directions during a 24-hour period on an average weekday. ADT and roadway segment Level of Service (LOS) provide a rough guide to the overall capacity and operations of the road system throughout the city.

The ADT counts for Existing Conditions are based on 24-hour tube counts collected on each roadway segment on a typical weekday, as presented in the Existing Conditions Report prepared in August 2014. The table also presents ADT, as calculated by the 2030 travel demand forecasting model, and the level of service for each roadway segment under each of the six Comprehensive Plan scenarios and the No Growth scenario.

The level of service (LOS) for each segment is determined by comparing the traffic volume on the roadway to its capacity, as determined by the type of roadway and the number of lanes available for vehicular traffic. The capacities used in this analysis are based on the *2000 Highway Capacity Manual* (HCM) calculations and are consistent with local policies in Palo Alto and throughout Santa Clara County. It should be noted that the roadway segment LOS is based on daily volumes and provides a general representation of traffic operations on the specified segment. Intersection levels of service during peak hours, which present a more detailed picture of traffic operations, are analyzed in Chapter 6. Table 5 presents the roadway segment Level of Service definitions for motor vehicles based on Volume-to-Capacity ratios.

Table 5
Motor Vehicle Level of Service Definitions for Roadway Segments

Level of Service	Description	Volume-to-Capacity Ratio
A	LOS A describes primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.	$0 \leq V/C < 0.3$
B	LOS B describes reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted.	$0.3 \leq V/C < 0.5$
C	LOS C describes stable operation. The ability to maneuver within the traffic stream is only slightly restricted.	$0.5 \leq V/C < 0.7$
D	LOS D indicates a less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D is typical in urban areas.	$0.7 \leq V/C < 0.9$
E	LOS E is characterized by unstable operation and significant delay. Such operations may be due to some combination of adverse progression, high volume, and inappropriate signal timing. LOS E is typical in urban areas.	$0.9 \leq V/C < 1.0$
F	LOS F is characterized by flow at extremely low speed and is considered unacceptable by most drivers. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing.	$1.0 \leq V/C$

Source: Hexagon Transportation Consultants, Inc., October 2015.

The two roadway segments on El Camino Real, Segments #2 and #3, are under the jurisdiction of Caltrans (see Table 6) because El Camino Real is a state highway (State Route 82). Two segments, Page Mill Road (#4) and Oregon Expressway (#10) are under the jurisdiction of the Santa Clara County Department of Roads and Airports because they are part of the County Expressway system. Segment #13, includes a portion that is named Foothill Expressway and is part of the County Expressway system. At Page Mill Road, this segment changes names to Junipero Serra Boulevard, which is not part of the County Expressway system.

It should be noted that whereas the mode share data presented in Chapter 2 and the VMT data presented below include only trips that begin and/or end in Palo Alto, the ADT data includes all trips on a given roadway segment, including trips that do not have a trip end in Palo Alto (i.e., “external-external” trips). Thus, the ADT data captures the trips related to regional growth. As shown in Table 6, ADT on nearly all roadway segments would be higher in the year 2030 than today under all six of the Comp Plan scenarios and the No Growth scenario. The fact that the No Growth ADT would be higher than existing ADT on 11 out of 13 segments indicates that the overall level of traffic in 2030 would increase due to previously approved development in Palo Alto and due to regional growth.

When compared with Existing Conditions, none of the scenarios would cause a significant impact on any street segments. The only segment with an LOS of F (University Avenue), is already at LOS F under Existing Conditions. That is, the only segment on which the Average Daily Traffic volume exceeds its capacity is University Avenue.

In general, the differences in ADT under the six scenarios are fairly small and do not result in a change in level of service when the six scenarios are compared with each other. The only segments that would experience a different level of service under one or more of the scenarios are as follows:

- Arastradero Road (Segment #5) improves to LOS B under Scenarios 5/5M and 6/6M, compared with LOS C under the first four scenarios. This improvement is likely due to the lower number of jobs included in these scenarios, as well as their sustainability assumptions.
- Embarcadero Road (Segment #9) would operate at LOS D under Scenarios 2, 5/5M and 6/6M, compared with LOS E under Scenarios 1, 3, and 4. This difference is primarily attributable to the lower number of new jobs under Scenarios 2, 5/5M and 6/6M.

Scenario 2 includes an expansion from four to six mixed-flow lanes on Page Mill Road between I-280 and Porter Drive (a portion of segment #4), as proposed in the County of Santa Clara’s *Page Mill Road Expressway Corridor Study Report* (June 2015).⁴ The level of service on the portion between I-280 and Porter Drive would be expected to improve if the capacity expansion from four to six mixed-flow lanes were built as assumed in Scenario 2. Scenario 5 also includes an expansion from four to six lanes on Page Mill Road between I-280 and Porter Drive, but assumes that the new lanes would be restricted to transit and High Occupancy Vehicles (HOVs) only. Creation of HOV lanes on that portion of Page Mill Road would incentivize transit and carpooling, but somewhat reduce the benefit of the additional lanes in terms of their effect on motor vehicle level of service.

Page Mill Road between Porter Drive and El Camino Real would remain four lanes under both Scenarios 2 and 5, with several intersection improvements. Because the ADT count was conducted between Hansen Way and Ramos Way, where Page Mill Road would remain at four lanes, Table 6 shows this segment with four lanes and that the level of service would remain at LOS E under both Scenarios 2 and 5.

The County’s *Page Mill Road Expressway Corridor Study Report* also proposes a grade separation at the intersection of Foothill Expressway and Page Mill Road, which is assumed in Scenario 2, but not Scenario 5. The key to improving the motor vehicle level of service on this segment would be the proposed grade separation of through traffic on Page Mill Road at this intersection, since it is the critical constraint where capacity is less than vehicular volume.

⁴ The *Page Mill Road Expressway Corridor Study Report* gives peak hour volumes on very short portions of Page Mill Road, so the data are not directly comparable to the ADT volume for segment #4. Because the County’s 2040 Expressway Plan has not yet been published, no comparison with that data is possible at this time.

Table 6
Average Daily Traffic (ADT) and Roadway Segment Level of Service (LOS)

#	Street	From	To	Jurisdiction	# of Lanes	Capacity	Existing ADT	LOS	Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 5M		Scenario 6		Scenario 6M		No Growth		
									ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS	ADT
1	Sand Hill Road	I-280	El Camino Real	City	4	38,200	29,035	D	37,075	E	37,523	E	37,619	E	37,166	E	36,622	E	36,619	E	36,630	E	36,617	E	35,473	E	
2	El Camino Real ¹	Sand Hil Road	Page Mill Road	CalTrans	6	59,300	35,862	C	43,581	D	42,866	D	43,384	D	44,176	D	42,860	D	42,463	D	43,480	D	43,167	D	41,213	D	
3	El Camino Real ¹	Page Mill Road	San Antonio Rd	CalTrans	6	59,300	30,443	B	38,209	C	37,415	C	37,972	C	38,347	C	36,850	C	36,595	C	37,776	C	37,472	C	34,934	C	
4	Page Mill Road ^{1 3}	I-280	El Camino Real	County	4	39,888	34,204	E	38,995	E	37,656	E	38,477	E	39,372	E	38,836	E	38,251	E	39,682	E	39,055	E	35,860	E	
5	Arastradero Rd	I-280	El Camino Real	City	4	38,200	15,144	A	21,605	C	20,852	C	21,200	C	21,022	C	20,053	B	20,016	B	20,092	B	20,040	B	20,183	B	
6	Alma Street	University Ave	San Antonio Rd	City	4	38,200	28,475	D	34,596	E	34,222	E	34,535	E	34,415	E	34,160	E	33,875	E	34,139	E	34,011	E	32,894	E	
7	Middlefield Road	University Ave	San Antonio Rd	City	2	17,300	12,492	D	13,513	D	12,543	D	12,601	D	13,047	D	12,492	D	12,492	D	12,572	D	12,492	D	12,492	D	
8	University Ave ²	El Camino Real	Route 101	City	2	17,300	19,022	F	20,226	F	20,146	F	20,220	F	20,301	F	20,385	F	19,849	F	20,613	F	20,188	F	19,719	F	
9	Embarcadero Rd	El Camino Real	Route 101	City	4	38,200	24,859	C	32,646	E	31,984	D	32,794	E	32,862	E	32,241	D	30,476	D	32,352	D	31,277	D	31,429	D	
10	Oregon Expwy ¹	El Camino Real	Route 101	County	4	39,888	30,925	D	30,940	D	31,025	D	31,720	D	32,454	D	30,925	D	30,922	D	30,925	D	30,923	D	30,925	D	
11	Charleston Road	El Camino Real	San Antonio Rd	City	2	17,300	12,371	D	16,625	E	15,663	E	16,035	E	16,440	E	15,514	E	15,501	E	15,574	E	15,564	E	14,699	D	
12	San Antonio Rd ¹	El Camino Real	Route 101	City	4	38,200	35,885	E	37,745	E	37,996	E	37,669	E	37,437	E	37,177	E	37,181	E	37,130	E	36,945	E	37,436	E	
13	Foothill Expwy / Junipero Serra ^{1 4}	Sand Hil Road	Arastradero Rd	County/ City	4, 2	23,000	15,580	C	21,592	E	20,928	E	21,213	E	21,489	E	21,336	E	21,077	E	20,845	E	20,855	E	19,447	D	
Notes:																											
¹ These roadway segments are part of the VTA CMP System Roadway Network																											
² Segment LOS bolded in red represents LOS below acceptable standards																											
³ According to the "Page Mill Road Expressway Corridor Study Report", Santa Clara Roads and Airports Department, June 2015, the portion of Page Mill Road between I-280 and Porter Drive would be expanded from 4 to 6 lanes. However, the location where the ADT volume was counted (between Hansen Way and Ramos Way) would still have 4 lanes, so the capacity is based on 4 lanes under all scenarios.																											
⁴ The portion of this segment south of Page Mill Road is called Foothill Expressway, has 4 lanes, and is a County Expressway. The portion of this segment north of Page Mill Road is called Junipero Serra Boulevard, has 2 lanes, and is not a County Expressway. The location where the ADT volume was counted (on Junipero Serra Blvd, between Stanford Ave and Page Mill Road) has 2 lanes. The capacity has been estimated as 23,000 because of the longer green time for Junipero Serra at signals.																											

Source: Hexagon Transportation Consultants, Inc., November 2016.

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Of the original four scenarios, on 11 out of 13 segments, the scenario with the lowest amount of ADT growth compared with Existing Conditions is Scenario 2. This is consistent with the fact that Scenario 2 assumes the lowest growth in housing units and jobs of the first four scenarios. However, even under Scenario 2, the level of service declines from the existing level of service on 8 out of 13 segments.

Scenario 5 results in the lowest ADT on seven of the 13 segments, which is consistent with its land use and sustainability assumptions. Scenario 2 and Scenario 6 each have three segments with the lowest ADT. Scenario 6 includes much more housing growth than Scenario 2, but it also includes sustainability assumptions that would reduce vehicular travel.

When mitigation measures are considered, Scenarios 5M and 6M result in lower ADT than their pre-mitigation counterparts on all segments, although in a few cases the reduction in ADT resulting from implementation of the mitigation measures is small. In fact, the differences among the scenarios (both with and without mitigation) are small in many cases. This reflects the fact that when the forecasting model predicts fewer vehicles on a roadway segment due to less growth in Palo Alto or a stronger TDM program, that “space” is immediately taken by other trips. Because most roadways would be more congested in 2030 than today, when one trip is eliminated from a roadway, the forecasting model assigns a different trip to it.

The following indicates the scenarios that would result in the lowest ADT in 2030 on each segment (excluding the No Growth scenario):

Lowest ADT under Scenario 2

- Page Mill Road (#4) between I-280 and El Camino Real
- University Avenue (#8) between El Camino Real and US 101 (After mitigation is taken into account, Scenario 5M would have lower ADT than Scenario 2, but it can be assumed that if mitigation measures were implemented under Scenario 2, it would remain the lowest ADT on this segment.)
- Embarcadero Road (#9) between El Camino Real and US 101 (After mitigation is taken into account, Scenarios 5M and 6M have lower ADT than Scenario 2, but it can be assumed that if mitigation measures were implemented under Scenario 2, it would remain the lowest ADT on this segment.)

Lowest ADT under Scenario 5

- Sand Hill Road (#1) between I-280 and El Camino Real
- El Camino Real (#2) between Sand Hill Road and Page Mill Road
- El Camino Real (#3) between Page Mill Road and San Antonio Road
- Arastradero Road (#5) between I-280 and El Camino Real
- Middlefield Road (#7) between University Avenue and San Antonio Road
- Oregon Expressway (#10) between El Camino Real and US 101 (*Same ADT as Scenario 6*)
- Charleston Road (#11) between El Camino Real and San Antonio Road

Lowest ADT under Scenario 6

- Alma Street (#6) between University Avenue and San Antonio Road
- Oregon Expressway (#10) between El Camino Real and US 101 (*Same ADT as Scenario 5*)
- San Antonio Road (#12) between El Camino Real and US 101
- Foothill Expressway/Junipero Serra Blvd. (#13) between Sand Hill Road and Arastradero Road

The scenarios that would result in the highest ADT are Scenarios 1 and 4. Scenario 1 would result in the highest ADT on five segments, which is consistent with its increase in jobs and its lack of sustainability measures. Scenario 4 would have the highest ADT on four segments, which is consistent with the combined growth in

housing and jobs that it includes. Scenarios 2 and 3 would have the highest ADT on only one segment each and Scenario 6 would have the highest ADT on two segments.

Vehicle Miles Traveled

For purposes of looking at additional characteristics of trip making, vehicle miles traveled (VMT) by trip orientation and vehicle miles traveled (VMT) per capita were analyzed. VMT is a metric that is used in noise, air quality, and greenhouse gas emissions analyses because it provides an indication of the usage level of the automobile and truck transportation system within the city. A greater number of vehicle miles traveled generally means more noise and more air pollution. As noted above, VMT has also been proposed as a replacement metric for motor vehicle Level of Service by the Governor's Office of Planning and Research in its *Draft of Updates to the CEQA Guidelines* and *Revised Proposal on Updates to the CEQA Guidelines*, prepared pursuant to SB 743. It is anticipated that VMT will become a basis for findings of significant impact under CEQA in the future.

Vehicle miles traveled refers to daily Palo Alto trips multiplied by the trip distances. Palo Alto trips were defined as all trips that begin and/or end in Palo Alto. In Tables 7 and 8, this is referred to as Directional Orientation, as follows:

- Internal-External: trips that begin in Palo Alto and end at a location outside the city;
- External-Internal: trips that begin outside the city and end in Palo Alto;
- Internal-Internal: trips that begin and end entirely within Palo Alto.

It is important to note that the trip orientations shown in the VMT tables are not an indicator of residency. For someone who lives in Palo Alto and works outside Palo Alto, their morning commute to work would be an Internal-External trip and their homebound evening commute would be an External-Internal trip. For someone who lives outside Palo Alto and works in Palo Alto, their morning commute to work would be an External-Internal trip and their homebound evening commute would be an Internal-External trip. For someone who lives and works in Palo Alto, both their morning and evening commutes would be Internal-Internal trips.

All data provided in Tables 7 and 8, including VMT, number of motor vehicle trips, average trip length, and the directional orientation of the trips, were calculated by the 2030 travel demand forecasting model. Average trip length was derived by dividing the total VMT by the total number of motor vehicle trips. We note that the VMT data presented in this TIA differs from the data presented in the Existing Conditions Report; which was corrected after further review. For this TIA, trips with both trip ends in Palo Alto (Internal-Internal) were counted as two trips, while trips with only one trip end in Palo Alto (Internal-External and External-Internal) were counted as one trip. This is standard practice, because, for trips with an origin or destination outside Palo Alto, half of the "responsibility" for the trip lies outside Palo Alto for purposes of air quality and greenhouse gas analyses.⁵ An alternative method for calculating VMT within a City's boundaries is currently being developed by the Office of Planning and Research, as part of SB 743's new focus on VMT as a key metric, but it has not yet been adopted or incorporated into the travel demand forecasting models in use today.

Tables 7 and 8 present the total number of motor vehicle trips, the total daily VMT, and the average trip lengths for non-commercial traffic and for commercial truck traffic separately. The data for commercial truck traffic are reported separately because it is used as an input for air quality and GHG analyses. Table 7 presents data for the City of Palo Alto and Table 8 presents data for the City of Palo Alto and its sphere of influence (SOI).

As can be seen in Table 7, under Existing Conditions approximately 19% of all vehicle trips are Internal-Internal trips – that is, they both begin and end in Palo Alto – and under all six scenarios Internal-Internal trips would represent approximately 17% to 19% of all vehicle trips. Since Internal-Internal trips are shorter than most trips coming from or going to locations outside the city, the VMT for Internal-Internal trips is only about 5% to 6% of the total vehicle miles traveled. Conversely, Internal-External and External-Internal trips represent approximately 81%

⁵ Recommendations of the Regional Targets Advisory Committee (RTAC) Pursuant to Senate Bill 375: A Report to the California Air Resources Board. September 2009. Accessed online October 21, 2015 at <http://www.arb.ca.gov/cc/sb375/rtac/report/092909/finalreport.pdf>.

Table 7
Daily Vehicle Miles Traveled by Directional Orientation – City of Palo Alto

	Existing		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 5M		Scenario 6		Scenario 6M		No Growth	
Total Palo Alto VMT¹	5,320,931	100.0%	5,947,158	100.0%	5,741,373	100.0%	5,853,201	100.0%	5,788,497	100.0%	5,511,446	100.0%	5,469,258	100.0%	5,663,040	100.0%	5,618,277	100.0%	5,349,838	100.0%
Internal-External ²	2,410,604	45.3%	2,708,446	45.5%	2,618,931	45.6%	2,668,290	45.6%	2,638,651	45.6%	2,518,470	45.7%	2,503,513	45.8%	2,593,324	45.8%	2,577,601	45.9%	2,441,769	45.6%
External-Internal ³	2,600,249	48.9%	2,903,127	48.8%	2,797,144	48.7%	2,851,560	48.7%	2,839,746	49.1%	2,701,390	49.0%	2,682,509	49.0%	2,762,374	48.8%	2,742,522	48.8%	2,612,275	48.8%
Internal-Internal ⁴	310,078	5.8%	335,585	5.6%	325,298	5.7%	333,351	5.7%	310,100	5.4%	291,587	5.3%	283,236	5.2%	307,342	5.4%	298,154	5.3%	295,793	5.5%
Total Vehicles¹	432,122	100.0%	479,198	100.0%	467,567	100.0%	475,362	100.0%	463,255	100.0%	444,204	100.0%	438,354	100.0%	457,633	100.0%	451,335	100.0%	436,018	100.0%
Internal-External ²	171,108	39.6%	191,317	39.9%	186,833	40.0%	189,489	39.9%	187,202	40.4%	180,029	40.5%	179,038	40.8%	184,887	40.4%	183,843	40.7%	175,604	40.3%
External-Internal ³	177,227	41.0%	197,070	41.1%	191,907	41.0%	194,718	41.0%	193,740	41.8%	185,836	41.8%	184,324	42.0%	189,839	41.5%	188,252	41.7%	180,501	41.4%
Internal-Internal ⁴	83,786	19.4%	90,811	19.0%	88,827	19.0%	91,156	19.2%	82,313	17.8%	78,339	17.6%	74,992	17.1%	82,907	18.1%	79,240	17.6%	79,912	18.3%
Average Trip Length [Miles]	12.31		12.41		12.28		12.31		12.50		12.41		12.48		12.37		12.45		12.27	
Internal-External	14.09		14.16		14.02		14.08		14.10		13.99		13.98		14.03		14.02		13.90	
External-Internal	14.67		14.73		14.58		14.64		14.66		14.54		14.55		14.55		14.57		14.47	
Internal-Internal	3.70		3.70		3.66		3.66		3.77		3.72		3.78		3.71		3.76		3.70	
Total Palo Alto Commercial VMT⁵	240,869	100.0%	288,129	100.0%	268,859	100.0%	278,078	100.0%	286,510	100.0%	266,811	100.0%	266,811	100.0%	267,190	100.0%	267,190	100.0%	253,343	100.0%
Internal-External ²	111,444	46.3%	133,641	46.4%	124,865	46.4%	129,092	46.4%	132,907	46.4%	123,927	46.4%	123,927	46.4%	124,243	46.5%	124,243	46.5%	117,612	46.4%
External-Internal ³	126,369	52.5%	151,092	52.4%	140,948	52.4%	145,752	52.4%	150,202	52.4%	139,897	52.4%	139,897	52.4%	139,955	52.4%	139,955	52.4%	132,991	52.5%
Internal-Internal ⁴	3,056	1.3%	3,396	1.2%	3,045	1.1%	3,234	1.2%	3,401	1.2%	2,988	1.1%	2,988	1.1%	2,992	1.1%	2,992	1.1%	2,740	1.1%
Total Commercial Vehicles¹	9,182	100.0%	10,816	100.0%	10,195	100.0%	10,526	100.0%	10,816	100.0%	10,177	100.0%	10,177	100.0%	10,177	100.0%	10,177	100.0%	9,671	100.0%
Internal-External ²	4,222	46.0%	5,015	46.4%	4,743	46.5%	4,890	46.5%	5,015	46.4%	4,733	46.5%	4,733	46.5%	4,733	46.5%	4,733	46.5%	4,508	46.6%
External-Internal ³	4,327	47.1%	5,113	47.3%	4,833	47.4%	4,982	47.3%	5,113	47.3%	4,825	47.4%	4,825	47.4%	4,825	47.4%	4,825	47.4%	4,603	47.6%
Internal-Internal ⁴	634	6.9%	688	6.4%	619	6.1%	654	6.2%	688	6.4%	619	6.1%	619	6.1%	620	6.1%	620	6.1%	561	5.8%
Average Trip Length [Miles]	26.23		26.64		26.37		26.42		26.49		26.22		26.22		26.25		26.25		26.20	
Internal-External	26.40		26.65		26.33		26.40		26.50		26.19		26.19		26.25		26.25		26.09	
External-Internal	29.21		29.55		29.16		29.26		29.38		28.99		28.99		29.01		29.01		28.90	
Internal-Internal	4.82		4.94		4.92		4.94		4.94		4.82		4.82		4.83		4.83		4.89	
Numbers may not add up to 100% due to rounding																				
Footnotes:																				
¹ Trips with one trip end outside Palo Alto were counted as one trip, whereas trips with both ends in Palo Alto were counted as two trips.																				
² "Internal-External" refers to VMT generated by vehicle trips that start in Palo Alto and end outside Palo Alto																				
³ "External-Internal" refers to VMT generated by vehicle trips that start outside Palo Alto and end in Palo Alto																				
⁴ "Internal-Internal" refers to VMT generated by vehicle trips that start and end in Palo Alto																				
⁵ Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto VMT" shown in the table.																				

Source: Hexagon Transportation Consultants, Inc., November 2016.

Table 8
Daily Vehicle Miles Traveled by Directional Orientation – City of Palo Alto and Sphere of Influence

	Existing		Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 5M		Scenario 6		Scenario 6M		No Growth	
Total Palo Alto+SOI VMT ¹	6,391,293	100.0%	7,110,437	100.0%	6,897,508	100.0%	7,000,886	100.0%	6,932,573	100.0%	6,651,773	100.0%	6,608,870	100.0%	6,792,095	100.0%	6,746,591	100.0%	6,477,788	100.0%
Internal-External ²	2,828,732	44.3%	3,162,070	44.5%	3,071,606	44.5%	3,117,386	44.5%	3,087,179	44.5%	2,967,533	44.6%	2,952,748	44.7%	3,037,248	44.7%	3,021,701	44.8%	2,883,120	44.5%
External-Internal ³	3,132,854	49.0%	3,488,759	49.1%	3,377,815	49.0%	3,426,597	48.9%	3,413,825	49.2%	3,274,601	49.2%	3,256,263	49.3%	3,328,678	49.0%	3,309,391	49.1%	3,186,869	49.2%
Internal-Internal ⁴	429,707	6.7%	459,608	6.5%	448,088	6.5%	456,903	6.5%	431,569	6.2%	409,640	6.2%	399,859	6.1%	426,168	6.3%	415,499	6.2%	407,800	6.3%
Total Vehicles ¹	499,013	100.0%	549,691	100.0%	538,480	100.0%	545,826	100.0%	533,336	100.0%	514,665	100.0%	508,816	100.0%	527,293	100.0%	520,996	100.0%	504,725	100.0%
Internal-External ²	190,992	38.3%	213,188	38.8%	209,021	38.8%	211,452	38.7%	209,350	39.3%	202,645	39.4%	201,731	39.6%	207,001	39.3%	206,036	39.5%	197,633	39.2%
External-Internal ³	200,982	40.3%	222,636	40.5%	217,782	40.4%	220,289	40.4%	219,275	41.1%	211,820	41.2%	210,549	41.4%	215,335	40.8%	213,999	41.1%	206,448	40.9%
Internal-Internal ⁴	107,039	21.5%	113,867	20.7%	111,677	20.7%	114,085	20.9%	104,711	19.6%	100,200	19.5%	96,535	19.0%	104,957	19.9%	100,960	19.4%	100,644	19.9%
Average Trip Length [Miles]	12.81		12.94		12.81		12.83		13.00		12.92		12.99		12.88		12.95		12.83	
Internal-External	14.81		14.83		14.70		14.74		14.75		14.64		14.64		14.67		14.67		14.59	
External-Internal	15.59		15.67		15.51		15.55		15.57		15.46		15.47		15.46		15.46		15.44	
Internal-Internal	4.01		4.04		4.01		4.00		4.12		4.09		4.14		4.06		4.12		4.05	
Total Palo Alto+SOI Commercial VMT ⁵	258,293	100.0%	306,896	100.0%	287,470	100.0%	296,665	100.0%	305,083	100.0%	285,327	100.0%	285,327	100.0%	285,654	100.0%	285,654	100.0%	270,804	100.0%
Internal-External ²	119,252	46.2%	141,948	46.3%	133,138	46.3%	137,335	46.3%	141,134	46.3%	132,122	46.3%	132,122	46.3%	132,423	46.4%	132,423	46.4%	125,436	46.3%
External-Internal ³	135,372	52.4%	160,941	52.4%	150,709	52.4%	155,496	52.4%	159,936	52.4%	149,634	52.4%	149,634	52.4%	149,657	52.4%	149,657	52.4%	142,099	52.5%
Internal-Internal ⁴	3,670	1.4%	4,007	1.3%	3,623	1.3%	3,834	1.3%	4,013	1.3%	3,572	1.3%	3,572	1.3%	3,574	1.3%	3,574	1.3%	3,269	1.2%
Total Commercial Vehicles ¹	9,776	100.0%	11,448	100.0%	10,833	100.0%	11,160	100.0%	11,448	100.0%	10,811	100.0%	10,811	100.0%	10,812	100.0%	10,812	100.0%	10,275	100.0%
Internal-External ²	4,464	45.7%	5,274	46.1%	5,008	46.2%	5,152	46.2%	5,274	46.1%	4,993	46.2%	4,993	46.2%	4,994	46.2%	4,994	46.2%	4,761	46.3%
External-Internal ³	4,572	46.8%	5,382	47.0%	5,107	47.1%	5,252	47.1%	5,382	47.0%	5,098	47.2%	5,098	47.2%	5,098	47.2%	5,098	47.2%	4,862	47.3%
Internal-Internal ⁴	739	7.6%	793	6.9%	718	6.6%	756	6.8%	793	6.9%	720	6.7%	720	6.7%	720	6.7%	720	6.7%	652	6.3%
Average Trip Length [Miles]	26.42		26.81		26.54		26.58		26.65		26.39		26.39		26.42		26.42		26.36	
Internal-External	26.71		26.92		26.58		26.66		26.76		26.46		26.46		26.52		26.52		26.34	
External-Internal	29.61		29.91		29.51		29.60		29.72		29.35		29.35		29.35		29.35		29.23	
Internal-Internal	4.96		5.05		5.05		5.07		5.06		4.96		4.96		4.96		4.96		5.02	
Numbers may not add up to 100% due to rounding																				
Footnotes:																				
¹ Trips with one trip end outside Palo Alto +SOI were counted as one trip, whereas trips with both ends in Palo Alto+SOI were counted as two trips.																				
² "Internal-External" refers to VMT generated by vehicle trips that start in Palo Alto+SOI and end outside Palo Alto+SOI																				
³ "External-Internal" refers to VMT generated by vehicle trips that start outside Palo Alto+SOI and end in Palo Alto+SOI																				
⁴ "Internal-Internal" refers to VMT generated by vehicle trips that start and end in Palo Alto+SOI																				
⁵ Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto+SOI VMT" shown in the table.																				

Source: Hexagon Transportation Consultants, Inc., November 2016.

to 83% of the vehicle trips per day, but over 95% of the total VMT, because most of these trips are longer than trips entirely within Palo Alto.

As seen in Table 7, Scenario 1, the Business As Usual scenario, leads to the highest VMT projection (5,947,158) and the greatest number of motor vehicle trips (479,198) of the six scenarios, which is consistent with its land use and other assumptions. Scenario 5 results in the lowest VMT projection (5,511,446) and the lowest number of motor vehicle trips (444,204) of the six pre-mitigation scenarios. Scenario 5M has an even lower VMT projection (5,469,258) and vehicle trips projection (438,354). This result indicates that even though Scenario 5 includes more housing units than Scenario 2, its lower job growth and pro-transit policies succeed in reducing VMT and vehicle trips to a level below that of Scenario 2 (the Slowing Growth scenario).

As shown on both Table 7 and Table 8, the average trip length for all trips and for Internal-Internal trips (trips entirely within Palo Alto) is longer under Scenarios 4, 5, and 6 than under Scenarios 1, 2, and 3 because more of the shorter trips are being made by bicycling, walking or transit. This mode shift for shorter trips under Scenarios 4, 5, and 6 is also evidenced by the fact that the percentage of total vehicle trips that are Internal-Internal (entirely within Palo Alto) is lower under Scenarios 4-6 than under Scenarios 1-3. In Table 7, only 17.6% of the total motor vehicle trips are Internal-Internal under Scenario 5, but are 19% or more for the first three scenarios.

The No Growth Scenario would result in a substantially lower number of Palo Alto-related vehicle trips and VMT than any of the six planning scenarios and only 0.5% higher VMT than Existing Conditions. However, the No Growth Scenario would result in ADT on many roadways that is substantially higher than Existing Conditions and similar to several of the planning scenarios on some roadways. These results indicate that traffic volumes would increase on those roadways due to regional growth, even though Palo Alto-related VMT (VMT with at least one trip end in Palo Alto) would increase only slightly under the No Growth Scenario.

Vehicle Miles Traveled Per Capita

VMT per capita is a metric that utilizes total VMT, as shown in Tables 9 and 10, divided by the total residents and jobs. Table 9 presents information for the City of Palo Alto only and Table 10 presents information for the City of Palo and its sphere of influence (SOI).

VMT per capita is projected to decrease under all six of the 2030 scenarios compared with Existing Conditions. As shown in Table 9, of the six scenarios, Scenario 1 results in the highest projection, at 32.5 VMT per capita, and Scenario 6 results in the lowest projection, at 30.8 VMT per capita. Scenario 6M further reduces VMT per capita to 30.5. The fact that Scenario 6/6M results in the lowest VMT per capita projection suggests that the additional housing in this scenario may lead to more short vehicle trips than the other scenarios. The same pattern holds for Table 9, with the sphere of influence included.

Table 9
VMT Per Capita – City of Palo Alto

	Existing	2030								
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 5M	Scenario 6	Scenario 6M	No Growth
Daily VMT	5,320,931	5,947,158	5,741,373	5,853,201	5,788,497	5,511,446	5,469,258	5,663,040	5,618,277	5,349,838
Households	27,119	29,703	29,703	30,465	31,303	30,465	30,465	32,807	32,807	27,633
Total Population	65,686	72,284	72,284	74,121	76,141	74,121	74,121	79,764	79,764	66,919
Total Jobs	95,458	110,940	105,311	108,216	110,940	104,327	104,327	104,327	104,327	99,340
VMT per Capita	33.0	32.5	32.3	32.1	30.9	30.9	30.6	30.8	30.5	32.2
Notes: Source of Demographic data: Land use spreadsheet from Placeworks, "PACP_Buildout_5h6thScen-FINAL_WithNoGrowthScen.xlsx", Households and Total Jobs from "Total Allocation of all TAZ's within City Jurisdiction", Total Population from "Total in City" in Summary worksheet.										

Source: Hexagon Transportation Consultants, Inc., November 2016.

Table 10
VMT Per Capita – City of Palo Alto and Sphere of Influence

	Existing	2030								
		Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 5M	Scenario 6	Scenario 6M	No Growth
Daily VMT	6,391,293	7,110,437	6,897,508	7,000,886	6,932,573	6,651,773	6,608,870	6,792,095	6,746,591	6,477,788
Households	31,546	35,266	35,266	36,028	36,866	36,028	36,028	38,370	38,370	32,060
Total Population	80,806	90,210	90,210	92,047	94,067	92,047	92,047	97,690	97,690	82,039
Total Jobs	100,829	116,700	111,071	113,977	116,700	110,087	110,087	110,087	110,087	104,711
VMT per Capita	35.2	34.4	34.3	34.0	32.9	32.9	32.7	32.7	32.5	34.7
Notes: Source of Demographic data: Land use spreadsheet from Placeworks, "PACP_Buildout_5h6thScen-FINAL_WithNoGrowthScen.xlsx", Households and Total Jobs from "TOTAL CITY AND SOI", Total Population from "Total in City and SOI" in "Summary" worksheet.										

Source: Hexagon Transportation Consultants, Inc., November 2016.

6.

Motor Vehicle Level of Service at Intersections

Intersections are critical to the operation of a community's circulation network because they control the capacity of the local street system. Travel delays and congestion typically occur at intersections, and insufficient capacity to handle traffic volumes is most noticeable at intersections. Thus, one of the best ways to characterize how well a city's circulation system is functioning for the motor vehicle drivers using it is to evaluate key intersections.

Study Intersections

The intersections included in the analysis of the planning scenarios are identified below and were shown on Figure 1 above. Fourteen intersections were originally selected by City staff as a reasonable representation of Palo Alto's road network by incorporating major streets in different parts of the city. These are the same 14 intersections that were included in the Existing Conditions Report prepared as a previous part of the Comprehensive Plan Update process and were included in the analysis of the original four scenarios. Of those 14 intersections, 12 are located in the City and two are gateway intersections outside of the City (#1 and #8).

In response to comments received on the DEIR, an additional four intersections (#15 - #18, shown below in **bold**) were added to the list of study intersections. These four intersections have been analyzed for all of the scenarios as part of this Supplemental TIA.

1. I-280 Northbound Off-Ramp and Sand Hill Road (Menlo Park)
2. Middlefield Road and Charleston Road
3. Middlefield Road and San Antonio Road (CMP)
4. Alma Street and Charleston Road
5. El Camino Real (SR 82) and Embarcadero Road/Galvez Road (CMP)
6. El Camino Real (SR 82) and Page Mill Road/Oregon Expressway (CMP)
7. El Camino Real (SR 82) and Arastradero Road/Charleston Road (CMP)
8. El Camino Real (SR 82) and San Antonio Road (CMP; Mountain View)
9. Foothill Expressway/Junipero Serra Boulevard and Page Mill Road (CMP)
10. Foothill Expressway and Arastradero Road (CMP)
11. El Camino Real (SR 82) and Sand Hill Road/Alma Street (CMP)
12. Charleston Road and San Antonio Avenue (CMP)
13. University Avenue & El Camino Real, northbound ramps (CMP)

14. University Avenue/Palm Drive & El Camino Real, southbound ramps (CMP)

15. Middlefield Road and University Avenue

16. Middlefield Road and Embarcadero Road

17. Middlefield Road and Oregon Expressway (CMP)

18. Embarcadero Road and East Bayshore Road

For the three non-CMP intersections added to this Supplemental TIA (#15, #16, and #18), recent counts, conducted on March 29 and March 31, 2016, were provided by the City of Palo Alto. For the CMP intersection of Middlefield Road and Oregon Expressway, existing volumes for the PM peak hour were obtained from the CMP database. A new turning movement count was conducted at that intersection for the AM peak hour on Wednesday, September 28, 2016.

Twelve of the 18 study intersections are included in the County's Congestion Management Program (CMP), which means that they are intersections of Countywide importance, and they are regularly monitored for performance. All study intersections are signalized intersections.

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of traffic. The AM peak hour of traffic is generally between 7:00 and 9:00 AM, and the PM peak hour is typically between 4:00 and 6:00 PM. It is during these periods that the most congested traffic conditions occur on an average day.

Motor Vehicle Level of Service Methodology and Standards

Motor vehicle Level of Service (LOS) is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The VTA CMP guidelines dictate the use of *the 2000 Highway Capacity Manual* (HCM) methodology to analyze intersections. Palo Alto uses the same methodology for its intersections. The 2000 HCM operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. This method is applied using the TRAFFIX software. Since TRAFFIX is also the CMP-designated intersection level of service evaluation software, the City of Palo Alto employs the CMP default values for the analysis parameters.

The City of Palo Alto LOS standard for signalized non-CMP intersections is LOS D or better. For CMP intersections, the City's LOS standard is LOS E or better, meaning that only LOS F is considered unacceptable. Although VTA's CMP program considers LOS F to be acceptable at Intersection #9, Foothill Expressway and Page Mill Road, because it operated at LOS F in the 1991 Baseline condition, the City of Palo Alto has not adopted that standard for that intersection and adheres to the standard of LOS E or better at all CMP intersections.

Intersection #1, I-280 northbound off-ramp and Sand Hill Road, is located in the City of Menlo Park. Menlo Park's level of service standard for this intersection is LOS D or better.

Intersection #8, El Camino Real and San Antonio Road, is partially located in the City of Mountain View and partially located in the City of Los Altos, but Mountain View is considered the responsible jurisdiction under the CMP program. Mountain View's level of service standard for this intersection, since it is a CMP intersection, is LOS E or better.

The LOS definitions for signalized intersections are shown in Table 11. Motor Vehicle Level of Service D and E are typical at intersections in many urban areas where a high volume of vehicles pass through an intersection physically constrained by adjacent existing structures.

The descriptions of each level of service in Table 11 are framed entirely from the point of view of motor vehicle drivers and their passengers. In many situations, there can be trade-offs between a better level of service for motor vehicles and the safety and comfort of pedestrians and bicyclists. For example, adding travel lanes at an intersection may improve the volume-to-capacity ratio for vehicles, but make it more dangerous and less convenient for pedestrians to cross a wider street. Adding lanes may also allow more vehicles to proceed through

an intersection without stopping at a signal, but the increased vehicular travel speeds may reduce the safety for bikes on that roadway. As a third example of this kind of trade-off, at intersections where a minor street has relatively low vehicle volumes but high pedestrian and bicycle volumes, a longer green time for the vehicles on the major street would improve the level of service for the vehicles at the intersection (by reducing the average delay per vehicle), but increase the delay for pedestrians and bicyclists waiting to cross the major street. Thus, it is important to also consider an intersection's operation from the point of view of pedestrians, bicyclists, and transit riders. VTA's *TIA Guidelines* require consideration of other modes of travel when recommending changes to improve an intersection's motor vehicle level of service.

Table 11
Signalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000), p.10-16.

Significant Impact Criteria

Significance criteria are used to establish what constitutes an impact at an intersection. The City of Palo Alto uses the same impact criteria as the CMP, as follows. A project (or scenario, in this TIA) is said to create a significant adverse impact on traffic conditions at a signalized intersection in the City of Palo Alto if for either peak hour:

1. The level of service at the intersection degrades from an acceptable level of service (LOS D or better for non-CMP intersections and LOS E or better for CMP intersections) to an unacceptable level of service.
2. The intersection is already operating at an unacceptable level of service (LOS E or F for non-CMP intersections and LOS F for CMP intersections), and the project causes both the average control delay for the critical movements at the intersection to increase by four or more seconds and the critical volume-to-capacity ratio (V/C) to increase by one percent (0.01) or more.

For both CMP and non-CMP intersections, if an intersection is operating at an unacceptable level of service and the change in critical delay is negative (i.e., decreases), a significant impact is said to occur if the project causes the V/C ratio to increase by 0.01 or more. This can occur if the critical movements at an intersection change.

Intersection #1, at the I-280 NB ramps and Sand Hill Road, is located in the City of Menlo Park. Menlo Park's criteria for determining a significant traffic impact on arterial streets or local approaches to State-controlled signalized intersections is:

1. The level of service at the intersection degrades from an acceptable LOS D or better to an unacceptable level (LOS E or F) or the project causes the intersection to have an increase of 23 seconds greater in average vehicle delay, whichever comes first.
2. The intersection is already operating at LOS E or F, and the project causes an increase of more than 0.8 seconds of average delay to vehicles on all critical movements at the intersection.

Menlo Park's impact criteria are much more stringent than Palo Alto's. However, in the case of Intersection #1 all six scenarios would have an impact during the AM peak hour using Palo Alto's criteria as well as Menlo Park's. During the PM peak hour, under Scenarios 2 and 6 and the No Growth Scenario, there would not be an impact using Palo Alto's criteria because the level of service would be an acceptable LOS D, but there would be an impact under Menlo Park's criteria because the average delay would increase by more than 23 seconds.

Intersection #8, at El Camino Real and San Antonio Road, is a CMP intersection under the jurisdiction of the City of Mountain View. Mountain View uses the same significance criteria as the City of Palo Alto for CMP intersections.

Motor Vehicle Level of Service Results By Scenario

The 18 study intersections were evaluated by generating turning movement counts for each intersection under each of the scenarios with the 2030 Travel Demand Forecasting Model, and then using those volumes in the TRAFFIX software to determine each intersection's motor vehicle level of service under each scenario. Like the ADT data in Chapter 5, the volumes used to calculate level of service include trips related to regional growth (External-External trips) as well as trips that begin and/or end in Palo Alto. The results of the LOS analysis under Existing Conditions (as documented in the Existing Conditions Report) and under the first four scenarios are summarized in Table 12a. Table 12b includes the results for Scenarios 5/5M, 6/6M and the No Growth Scenario..

As shown in the tables, all intersections are projected to have longer average delays under most of the scenarios than under Existing Conditions, which is consistent with the ADT results presented above. In general, there are more intersections with a substandard level of service in the PM peak hour than in the AM peak hour

The following summarizes the different lane configurations and other intersection improvements assumed under different scenarios at the study intersections. For Scenario 2, to reflect the implementation of expressway improvements, lane configuration changes were made to the following three intersections:

- At El Camino Road and Page Mill Road (#6), the County plans to add a right-turn lane and realign the left-turn lanes on the east approach to the intersection. Also, parking would be removed from the south side of Page Mill Road. Although the LOS would remain at E, the average delay would be shorter in the AM and PM peak hours with this change.
- At Foothill Expressway and Page Mill Road (#9), the County Expressway Plan proposes a grade separation where the through traffic on Page Mill Road would cross over or under Foothill Expressway. This proposed grade separation, would result in an improvement from LOS E under the other scenarios to LOS C under Scenario 2 in the AM peak hour, and from LOS F (with over 5 minutes of average delay time) to LOS D under Scenario 2 in the PM peak hour.
- At Foothill Expressway and Arastradero Road (#10), the County Expressway Plan proposes a grade separation, with Foothill Expressway passing under Arastradero Road, and the construction of a roundabout east of Foothill Expressway at Miranda Avenue. The only signalized intersection would be a

3-legged (tee) intersection west of Foothill Expressway, at the Foothill Expressway southbound ramp and Arastradero Road. This newly constructed tee intersection would operate at LOS A in both the AM and PM peak hours.

Scenario 5 includes some but not all of the proposed expressway improvements that were included in Scenario 2, as follows:

- At El Camino Road and Page Mill Road (#6), the same changes as in Scenario 2 were included in Scenario 5. The County plans to add a right-turn lane and realign the left-turn lanes on the east approach to the intersection. Also, parking would be removed from the south side of Page Mill Road. Although the LOS would remain at E, the average delay would be shorter in the AM and PM peak hours with this change.
- At Foothill Expressway and Page Mill Road (#9), Scenario 5 is different from Scenario 2 and does not include grade separation at this intersection. Under Scenario 5, it was assumed that the additional lanes added to Page Mill Road would be HOV lanes and would extend through this intersection. This change would reduce the average delay at the intersection, although the level of service would remain at LOS E in the AM peak hour and LOS F in the PM peak hour. Under Scenario 5M, the level of service would improve to LOS D in the AM peak hour with the implementation of the proposed mitigation measures.
- At Foothill Expressway and Arastradero Road (#10), Scenario 5 does not include the grade separation included in Scenario 2. The lane geometry of this intersection under Scenario 5 is the same as under Scenarios 1, 3, 4, and 6.

For Scenarios 3, 4, 5, and 6, the following change was made to Intersection #4 for the LOS analysis:

- At the intersection of Alma Street and Charleston Road (#4), these scenarios assume that Caltrain would be in a trench. Removing the train pre-emption from the intersection means that the signal timing could be changed to run much more efficiently. With that change, the level of service is projected to improve from LOS D in the AM peak hour under Scenarios 1 and 2 to LOS C under Scenarios 3 - 6. In the PM peak hour, the intersection would improve from LOS F (and a significant impact) under Scenarios 1 and 2 to LOS D under Scenarios 3 - 6.

For Scenarios 4 and 6, queue jump lanes would be provided on El Camino Real to reflect the implementation of BRT at the intersections along El Camino. However, because the queue jump lanes would be added closest to the right curb and no changes would be made to the mixed-flow lanes, the level of service at the intersections along El Camino Real is not affected.

For the No Growth scenario, all intersections were assumed to have the same lane geometry as under Scenario 1, the Business As Usual scenario, which includes only improvements that are already planned and funded.

The following summarizes the number of intersections that would have a substandard LOS in at least one of the peak hours and where there would be a significant impact:

- Scenario 1: 7 intersections
- Scenario 2: 4 intersections
- Scenario 3: 5 intersections
- Scenario 4: 7 intersections
- Scenario 5: 4 intersections
- Scenario 6: 6 intersections
- No Growth Scenario: 6 intersections

Scenarios 5 and 5M both result in a substandard level of service and a significant impact at only four of the 18 study intersections; this is the same number of impacts as under Scenario 2. Scenarios 5 and 5M also result in improved average delay at the intersection of El Camino Real and Page Mill Road, although it still operates at LOS E in both peak hours.

Scenario 6 would result in a substandard level of service and a significant impact at six of the 18 study intersections. Scenario 6M would mitigate the impact to a less than significant level at one of those intersections (Embarcadero Road and E. Bayshore Road (#18)). One of the intersections that would be impacted under 6/6M but not under 5/5M is Foothill Expressway and Page Mill Road.

Under the No Growth scenario, six of the 18 study intersections would have a substandard level of service and would experience a significant impact. Thus, under No Growth conditions there would be nearly as many intersections where the level of service would be substandard as under the Business As Usual scenario. As discussed under the ADT section, this reflects the fact that when one trip is removed from a roadway (due to the No Growth assumption), the travel demand forecasting model replaces it with another trip made by another driver because of the regional growth in travel demand in the year 2030..

Similarly, with the exception of only one intersection (Embarcadero and E. Bayshore Road, #18), Scenarios 5M and 6M do not reduce the significant impacts under Scenarios 5 and 6 to a less than significant level. Scenarios 5M and 6M do reduce the average delay at all intersections, compared with their pre-mitigation counterparts. But, the reduction in delay achieved by the mitigation measures is not sufficient to eliminate the impact. This is also a reflection of the fact that when some motor vehicle trips are eliminated through implementation of the mitigation measures, the modeling process assigns other trips to any “freed-up” spaces at the intersection.

Table 12a (Scenarios 1-4)**AM and PM Peak Hour Level of Service Results at Study Intersections, By Planning Scenario**

# Intersection	Peak Hour	Existing			Scenario 1			Scenario 2			Scenario 3			Scenario 4		
		Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C
1 I-280 NB Off-Ramp & Sand Hill Rd (Menlo Park)	AM	114.5	F	1.269	164.6	F	1.459	162.9	F	1.454	163.0	F	1.455	164.0	F	1.458
	PM	27.0	C	0.939	57.1	E	1.086	53.8	D	1.076	55.5	E	1.081	55.7	E	1.083
2 Middlefield Rd & Charleston Rd	AM	47.6	D	0.660	50.9	D	0.727	49.7	D	0.702	50.5	D	0.719	50.8	D	0.727
	PM	39.8	D	0.695	56.1	E	0.949	53.2	D	0.930	54.7	D	0.945	55.9	E	0.952
3 Middlefield Rd & San Antonio Rd *	AM	48.9	D	0.668	50.3	D	0.761	49.4	D	0.740	49.7	D	0.750	49.7	D	0.750
	PM	39.0	D	0.789	41.9	D	0.857	44.2	D	0.906	44.3	D	0.904	44.0	D	0.901
4 Alma St & Charleston Rd	AM	33.2	C	0.642	38.7	D	0.824	37.2	D	0.802	27.2	C	0.657	28.2	C	0.679
	PM	48.6	D	0.743	88.9	F	1.063	81.4	F	1.036	41.2	D	0.794	41.5	D	0.797
5 El Camino Real (SR 82) & Embarcadero Rd/Galvez St *	AM	46.1	D	0.729	58.5	E	0.928	58.4	E	0.914	58.1	E	0.914	59.6	E	0.929
	PM	42.5	D	0.824	69.0	E	1.049	68.8	E	1.043	73.2	E	1.061	72.8	E	1.061
6 El Camino Real (SR 82) & Page Mill Rd/Oregon Expy *	AM	62.7	E	0.819	67.3	E	0.882	63.4	E	0.815	66.9	E	0.876	67.4	E	0.878
	PM	52.4	D	0.910	74.2	E	1.056	61.4	E	0.970	74.6	E	1.062	78.5	E	1.082
7 El Camino Real (SR 82) & Arastradero Rd/Charleston Rd *	AM	35.3	D	0.663	38.8	D	0.791	38.2	D	0.771	38.3	D	0.777	38.2	D	0.772
	PM	47.7	D	0.841	68.6	E	1.016	64.1	E	0.992	65.8	E	1.002	66.0	E	1.003
8 El Camino Real (SR 82) & San Antonio Rd (Mtn View)*	AM	40.5	D	0.768	51.9	D	0.942	50.7	D	0.930	50.9	D	0.933	51.4	D	0.936
	PM	54.0	D	0.816	97.9	F	1.069	93.9	F	1.057	96.0	F	1.066	97.7	F	1.077
9 Foothill Expy/Junipero Serra Blvd & Page Mill Rd *	AM	55.7	E	0.909	72.6	E	1.007	27.5	C	0.538	71.4	E	0.999	73.2	E	1.011
	PM	189.7	F	1.064	306.1	F	1.185	43.9	D	0.895	300.1	F	1.160	309.7	F	1.185
10 Foothill Expy & Arastradero Rd *	AM	48.7	D	0.276	52.1	D	0.540	7.1	A	0.190	51.8	D	0.524	52.0	D	0.535
	PM	57.0	E	0.849	147.3	F	1.330	9.4	A	0.468	139.1	F	1.299	144.8	F	1.322
11 El Camino Real (SR 82) & Alma St/Sand Hill Rd *	AM	22.7	C	0.452	22.9	C	0.567	22.8	C	0.547	22.8	C	0.551	23.1	C	0.572
	PM	36.5	D	0.651	39.3	D	0.848	39.0	D	0.847	38.8	D	0.850	38.7	D	0.850
12 San Antonio Rd & Charleston Rd *	AM	48.4	D	0.729	50.9	D	0.812	51.9	D	0.823	51.7	D	0.824	51.8	D	0.830
	PM	42.0	D	0.844	45.5	D	0.878	44.0	D	0.857	43.9	D	0.855	43.7	D	0.851
13 El Camino Real (SR 82) NB Ramps & University Ave *	AM	22.5	C	0.666	35.4	D	0.902	34.2	C	0.891	33.9	C	0.888	35.8	D	0.903
	PM	32.4	C	0.619	32.1	C	0.805	32.3	C	0.807	32.5	C	0.803	32.4	C	0.804
14 El Camino Real (SR 82) SB Ramp & University Ave/Palm Dr *	AM	20.9	C	0.424	19.5	B	0.553	19.1	B	0.534	19.2	B	0.535	19.6	B	0.557
	PM	24.9	C	0.487	23.8	C	0.594	22.3	C	0.562	22.2	C	0.571	23.4	C	0.576
15 Middlefield Rd & University Ave	AM	27.0	C	0.609	28.7	C	0.688	30.4	C	0.761	28.6	C	0.691	29.6	C	0.663
	PM	27.5	C	0.512	28.5	C	0.670	28.2	C	0.654	28.2	C	0.664	28.4	C	0.666
16 Middlefield Rd & Embarcadero Rd	AM	50.3	D	0.583	61.0	E	0.821	58.9	E	0.804	61.6	E	0.813	73.3	E	0.964
	PM	36.6	D	0.607	40.8	D	0.783	39.8	D	0.763	40.1	D	0.777	40.2	D	0.785
17 Middlefield Rd & Oregon Expressway *	AM	42.8	D	0.754	56.3	E	0.889	54.3	D	0.870	56.4	E	0.890	57.3	E	0.931
	PM	42.9	D	0.688	68.0	E	0.923	64.5	E	0.898	67.0	E	0.933	64.4	E	0.917
18 Embarcadero Rd & E. Bayshore Rd	AM	31.6	C	0.682	40.0	D	0.850	43.9	D	0.875	40.2	D	0.852	51.0	D	0.948
	PM	40.3	D	0.702	54.0	D	0.908	53.2	D	0.902	54.4	D	0.913	55.7	E	0.924

Notes:
 * Denotes CMP intersection
BOLD indicates a level of service worse than the standard for that intersection.
 A box indicates a significant impact.

Source: Hexagon Transportation Consultants, Inc., January 2017

Table 12b (Scenarios 5/5M, 6/6M, and No Growth)
AM and PM Peak Hour Level of Service Results at Study Intersections, By Planning Scenario

#	Intersection	Peak Hour	Existing			Scenario 5			Scenario 5M			Scenario 6			Scenario 6M			No Growth		
			Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C	Avg. Delay (sec)	LOS	Crit. V/C
1	I-280 NB Off-Ramp & Sand Hill Rd (Menlo Park)	AM	114.5	F	1.269	163.6	F	1.456	162.7	F	1.454	162.4	F	1.454	161.7	F	1.451	159.1	F	1.441
		PM	27.0	C	0.939	55.6	E	1.088	56.4	E	1.090	54.5	D	1.078	55.0	E	1.081	53.2	D	1.069
2	Middlefield Rd & Charleston Rd	AM	47.6	D	0.660	49.6	D	0.701	49.2	D	0.696	49.0	D	0.701	48.6	D	0.699	48.5	D	0.694
		PM	39.8	D	0.695	52.3	D	0.917	54.6	D	0.941	53.9	D	0.932	53.4	D	0.929	49.4	D	0.881
3	Middlefield Rd & San Antonio Rd *	AM	48.9	D	0.668	49.5	D	0.732	49.3	D	0.733	49.1	D	0.727	49.2	D	0.729	49.3	D	0.733
		PM	39.0	D	0.789	41.0	D	0.839	43.3	D	0.890	42.6	D	0.879	42.8	D	0.881	43.0	D	0.885
4	Alma St & Charleston Rd	AM	33.2	C	0.642	27.0	C	0.657	27.0	C	0.656	27.4	C	0.667	27.6	C	0.671	34.9	C	0.752
		PM	48.6	D	0.743	40.5	D	0.792	40.4	D	0.785	40.8	D	0.799	40.2	D	0.785	74.3	E	1.006
5	El Camino Real & Embarcadero Rd/Galvez St *	AM	46.1	D	0.729	56.1	E	0.903	57.0	E	0.899	57.7	E	0.908	58.0	E	0.913	56.4	E	0.892
		PM	42.5	D	0.824	65.1	E	1.027	66.2	E	1.033	70.9	E	1.055	69.7	E	1.052	64.9	E	1.016
6	El Camino Real & Page Mill Rd/Oregon Expy *	AM	62.7	E	0.819	63.7	E	0.814	63.4	E	0.811	67.6	E	0.880	66.5	E	0.866	65.0	E	0.852
		PM	52.4	D	0.910	64.1	E	0.990	62.4	E	0.977	77.8	E	1.078	75.5	E	1.067	65.1	E	1.014
7	El Camino Real & Arastradero Rd/Charleston Rd *	AM	35.3	D	0.663	37.4	D	0.751	37.4	D	0.747	37.5	D	0.756	37.5	D	0.753	37.5	D	0.739
		PM	47.7	D	0.841	64.8	E	1.001	63.4	E	0.990	63.3	E	0.993	63.8	E	0.995	62.2	E	0.986
8	El Camino Real & San Antonio Rd (Mtn View)*	AM	40.5	D	0.768	49.1	D	0.908	49.0	D	0.908	48.9	D	0.905	48.7	D	0.902	47.6	D	0.887
		PM	54.0	D	0.816	93.9	F	1.072	92.7	F	1.062	94.2	F	1.077	93.4	F	1.078	87.3	F	1.028
9	Foothill Expy/Junipero Serra Blvd & Page Mill Rd *	AM	55.7	E	0.909	55.6	E	1.042	52.6	D	1.024	69.7	E	0.993	69.8	E	0.992	66.9	E	0.973
		PM	189.7	F	1.064	87.4	F	1.166	90.7	F	1.162	306.4	F	1.182	304.5	F	1.182	288.5	F	1.123
10	Foothill Expy & Arastradero Rd *	AM	48.7	D	0.276	51.5	D	0.490	51.3	D	0.481	51.1	D	0.481	51.2	D	0.482	50.5	D	0.452
		PM	57.0	E	0.849	113.8	F	1.205	111.8	F	1.201	133.5	F	1.280	130.7	F	1.271	125.1	F	1.245
11	El Camino Real & Alma St/Sand Hill Rd *	AM	22.7	C	0.452	22.8	C	0.535	22.8	C	0.534	23.0	C	0.534	23.1	C	0.548	22.6	C	0.507
		PM	36.5	D	0.651	39.3	D	0.847	38.4	D	0.837	38.3	D	0.836	38.6	D	0.842	38.5	D	0.834
12	San Antonio Rd & Charleston Rd *	AM	48.4	D	0.729	50.6	D	0.813	51.2	D	0.818	51.3	D	0.814	51.4	D	0.817	51.1	D	0.815
		PM	42.0	D	0.844	43.7	D	0.854	43.0	D	0.847	44.0	D	0.859	44.0	D	0.851	43.5	D	0.864
13	El Camino Real NB Ramps & University Ave *	AM	22.5	C	0.666	33.9	C	0.888	33.5	C	0.882	34.0	C	0.887	33.7	C	0.884	31.9	C	0.871
		PM	32.4	C	0.619	32.5	C	0.802	32.6	C	0.800	33.6	C	0.815	32.0	C	0.792	31.5	C	0.769
14	El Camino Real SB Ramp & University Ave/Palm Dr *	AM	20.9	C	0.424	19.4	B	0.545	19.3	B	0.538	19.2	B	0.534	19.2	B	0.528	19.0	B	0.516
		PM	24.9	C	0.487	22.3	C	0.565	22.2	C	0.556	22.3	C	0.566	22.3	C	0.565	23.5	C	0.553
15	Middlefield Rd & University Ave	AM	27.0	C	0.609	27.9	C	0.684	29.1	C	0.740	29.5	C	0.746	28.8	C	0.729	28.1	C	0.690
		PM	27.5	C	0.512	28.3	C	0.663	28.3	C	0.665	28.2	C	0.670	28.2	C	0.668	27.7	C	0.638
16	Middlefield Rd & Embarcadero Rd	AM	50.3	D	0.583	59.9	E	0.799	58.1	E	0.796	62.9	E	0.828	60.1	E	0.814	58.1	E	0.792
		PM	36.6	D	0.607	39.3	D	0.752	39.3	D	0.747	40.0	D	0.758	39.6	D	0.753	39.5	D	0.758
17	Middlefield Rd & Oregon Expressway *	AM	42.8	D	0.754	53.5	D	0.862	50.5	D	0.831	57.9	E	0.899	53.4	D	0.859	52.2	D	0.849
		PM	42.9	D	0.688	62.0	E	0.878	63.8	E	0.900	64.5	E	0.907	62.8	E	0.887	62.6	E	0.876
18	Embarcadero Rd & E. Bayshore Rd	AM	31.6	C	0.682	43.8	D	0.873	41.9	D	0.860	56.4	E	0.929	41.0	D	0.854	42.3	D	0.865
		PM	40.3	D	0.702	52.4	D	0.895	51.7	D	0.888	52.3	D	0.892	53.0	D	0.900	52.4	D	0.894

Notes:
 * Denotes CMP intersection
BOLD indicates a level of service worse than the standard for that intersection.
 A box indicates a significant impact.

Source: Hexagon Transportation Consultants, Inc., November 2016

Intersection Impacts

A significant traffic impact is projected at eight out of the 18 study intersections during at least one of the peak hours under at least one of the planning scenarios. The eight impacted intersections are as follows:

- Both of the gateway intersections outside of the Palo Alto city limits that were included in this study:
 - o I-280 NB Off-Ramp and Sand Hill Road (#1) in Menlo Park
 - o El Camino Real and San Antonio Road (#8) in Mountain View and Los Altos
- Two of the intersections on Charleston Road:
 - o Middlefield Road and Charleston Road (#2)
 - o Alma Street and Charleston Road (#4)
- Both of the intersections on Foothill Expressway:
 - o Foothill Expressway and Page Mill Road (#9)
 - o Foothill Expressway and Arastradero Road (#10)
- Middlefield Road and Embarcadero Road (#16)
- Embarcadero Road and E. Bayshore Road (#18)

The following intersections are projected to operate at a substandard level of service during at least one peak hour and to experience a significant impact under at least one of the scenarios.

I-280 Northbound Off-Ramp and Sand Hill Road (#1). This intersection is projected to operate at LOS F under all six scenarios, during the AM peak hour, largely due to the very high volume of traffic coming from southbound I-280 to the west approach of this intersection, combined with the volume of vehicles exiting the northbound off-ramp from I-280. The intersection is projected to operate at LOS D or E in the PM peak hour. The intersection would be significantly impacted under all six scenarios in both the AM and PM peak hours under Menlo Park's impact criteria. Expanding Sand Hill Road from four lanes to six lanes would mitigate the significant impact. Expansion to six lanes would require widening the curb-to-curb street width and modifying the traffic signals. However, this intersection is located in Menlo Park and is under the control of Caltrans. Due to the extremely stringent impact criteria used by Menlo Park, virtually all of the additional trips generated in the year 2030 at this intersection would need to be eliminated through implementation of the mitigation measures in order to avoid the significant impact. The results of Scenarios 5M and 6M indicate that the critical movement delay would not be reduced sufficiently to avoid an impact. Even the No Growth scenario results in a significant impact at this location. Furthermore, it is not considered feasible to expand capacity on Alpine Road, a parallel route, in order to serve as mitigation for the impact on Sand Hill Road. For these reasons, and because the intersection is outside the control of Palo Alto, the impact is *significant and unavoidable* under all six scenarios.

Middlefield Road and East Charleston Road (#2). This intersection is projected to operate at LOS E during the PM peak hour and to be significantly impacted under Scenarios 1 and 4, but not under Scenarios 2, 3, 5, and 6, suggesting that the more intense land use assumptions included in Scenarios 1 and 4 are the reason for the impact. The Charleston-Arastradero Corridor Plan Line indicates that new bike lanes through this intersection will be added in the future, but they would not be expected to mitigate the motor vehicle level of service. In order to avoid the significant impact under Scenarios 1 and 4 through TDM measures, the added traffic would need to be reduced by approximately 9%, so that the intersection would remain at an acceptable level of service. A decrease of 9% would be feasible with implementation of the TDM mitigation program described below. Therefore, with implementation of the mitigation measures described below, under Scenarios 1 and 4, this impact would be *less than significant*.

Alma Street and East/West Charleston Road (#4). This intersection is projected to operate at LOS F in the PM peak hour and would be significantly impacted under Scenarios 1 and 2, but would operate at LOS D under Scenarios 3 - 6, due to placing the Caltrain tracks in a trench. Even under the No Growth Scenario, the intersection would operate at LOS E in PM peak hour and be significantly impacted. Thus, trenching the Caltrain tracks would provide substantial congestion relief at this intersection. The Charleston-Arastradero Corridor Plan Line indicates that new bike lanes through this intersection will be added in the future, but they would not be expected to mitigate the motor vehicle level of service. In order to avoid the significant impact under Scenarios 1 and 2 through implementation of a TDM mitigation program, the additional traffic would need to be reduced by over 80 percent so that the intersection would remain at LOS D during the PM peak hour.. Such a large reduction is not generally considered feasible, even with an extremely aggressive TDM program. Therefore, under Scenarios 1 and 2, this impact is *significant and unavoidable*.

El Camino Real and San Antonio Road (#8). This intersection is projected to operate at LOS F during the PM peak period and would be significantly impacted under all six scenarios and the No Growth scenario. This intersection includes a total of five lanes on its north, east, and south approaches, but only three lanes on the west approach, which is in the City of Los Altos. Although adding lanes on the west approach of the intersection would likely mitigate the substandard level of service, such a measure would require consideration of secondary impacts on the safety of bicyclists and pedestrians. In addition, this intersection is under the control of Caltrans (since El Camino Real is a state highway), VTA (since it is a CMP intersection), the City of Mountain View, and the City of Los Altos, so changes to the intersection are outside Palo Alto's jurisdiction. . In order to eliminate the significant impact through TDM mitigation measures under Scenarios 1 – 4, the traffic would need to be reduced by 38% - 43%, so that the intersection remained at LOS E during the PM peak hour. A reduction of that magnitude is considered feasible for aggressive TDM programs that are applied to worksites. However, it is unlikely that such a substantial reduction could be achieved under Scenarios 1 – 4 within new housing projects in the El Camino Real corridor or the southern portion of the City near this intersection. As indicated by the results of Scenarios 5M and 6M, under which the intersection would continue to operate at LOS F, it would not be possible under Scenarios 5 and 6 to reduce the impact to a less than significant level through implementation of trip reduction measures. Therefore, this impact is *significant and unavoidable* under all six scenarios.

Foothill Expressway/Junipero Serra Boulevard and Page Mill Road (#9). This intersection is projected to operate at LOS F during the PM peak hour and would be significantly impacted under Scenarios 1, 3, 4, 6, and the No Growth Scenario. Scenario 2 includes a grade separation for this intersection, which would result in an acceptable level of service. The County has proposed to widen Page Mill Road from four to six lanes between Porter Drive and I-280, in addition to the grade separation proposal. Scenario 5 assumes the two new lanes would be restricted to transit and HOV use and would extend through the intersection. Although the intersection is still projected to operate at LOS F under Scenario 5, the average delay would be much improved. Thus, widening as included in Scenario 5 would mitigate the impact at this intersection under Scenarios 1, 3, 4, and 6, even if the grade separation were not constructed. All of the proposed expressway improvements would be implemented by the Santa Clara County Department of Roads and Airports, and therefore are outside the control of the City of Palo Alto. The County is currently working with both the City of Palo Alto and the Town of Los Altos Hills to develop a plan for Page Mill Road, and VTA has included the widening of Page Mill Road in Measure B, the recently approved sales tax measure for transportation projects in Santa Clara County.. If the City of Palo Alto ends up being supportive of the grade separation project, it should be included in the City's traffic impact fee. Because this intersection is already operating at LOS F, the increase in average delay in order to avoid an impact under Scenarios 1, 3, and 4 would have to be less than 4 seconds. Since these scenarios are projected to result in 110-120 seconds in increased delay, a TDM mitigation program would need to reduce added traffic by over 96%. Such a large reduction would not be feasible, even with an extremely aggressive TDM program. The level of service results under Scenario 6M confirm that a TDM mitigation program by itself (i.e., without roadway widening or grade separation) would not be sufficient to reduce the impact to a less than significant level. Therefore, under Scenarios 1, 3, 4, and 6, the impacts would be *significant and unavoidable*.

Foothill Expressway and Arastradero Road (#10). This intersection is projected to operate at LOS F during the PM peak hour and would be significantly impacted under all scenarios except Scenario 2. Scenario 2 includes a re-design of this intersection to include a roundabout east of Foothill Expressway and a grade separation. However, the intersection is fully built out and no other physical improvements short of grade separation are feasible to mitigate the impact.. If the City of Palo Alto ends up being supportive of the grade separation project, it should be included in the City's traffic impact fee. The grade separation and roundabout are part of the proposed

expressway improvements that would be implemented by the Santa Clara County Department of Roads and Airports, and therefore are outside the control of the City of Palo Alto. For Scenarios 1, 3, and 4, in order to eliminate the significant impact through a TDM mitigation program, such a program would need to reduce the additional traffic at this intersection by approximately 75%, so that it would remain at LOS E during the PM peak hour. Such a large reduction would not be feasible, even with an extremely aggressive TDM program. For Scenarios 5 and 6, the continued operation at LOS F under 5M and 6M indicates that the mitigation measures alone (i.e., without grade separation and a roundabout) would not be sufficient to reduce the impact to a less than significant level. Therefore, under Scenarios 1, 3, 4, 5, and 6, the impacts would be *significant and unavoidable*.

Middlefield Road and Embarcadero Road (#16). This intersection is projected to operate at LOS E during the AM peak hour and would be significantly impacted under all six scenarios and the No Growth Scenario. This intersection operates with an all-way pedestrian phase, also called a “scramble” phase, during the AM peak hour, during which no vehicular movements are allowed and pedestrians and bicyclists may use any of the four crosswalks or cross the intersection diagonally. There is an elementary school on the northeast corner of the intersection, and a crossing guard is present before and after school. Inclusion of a scramble signal phase increases the motor vehicle delay at the intersection, but facilitates safe travel by large numbers of students during the AM peak hour. The increased level of traffic in 2030 (even under the No Growth Scenario) would be sufficient that the intersection would drop to LOS E. Although eliminating the all-way pedestrian phase would likely mitigate the impact, this is not considered a feasible alternative. Because a significant impact is still projected under both Scenarios 5M and 6M, a TDM mitigation program would not be sufficient to reduce the impact to a less than significant level. Therefore, under all six scenarios, the impacts would be *significant and unavoidable*.

Embarcadero Road and East Bayshore Road (# 18). This intersection is projected to operate at LOS E during PM peak hour under Scenario 4 and at LOS E during the AM peak hour under Scenarios 6 and would be significantly impacted under both those scenarios. Implementation of the mitigation measures included in Scenario 6M would improve intersection operation to LOS D in the AM peak hour and successfully mitigate this impact. In addition, the City has proposed an extension to Geng Road that would allow some traffic to bypass this intersection. The City also has proposed signal and striping improvements. Therefore, with implementation of the mitigation measures described below, this impact would be *less than significant* under Scenarios 4 and 6.

Mitigation Measures for Impacted Intersections

In order to partially mitigate the impacts at the impacted intersections, the City could implement additional policies in order to further reduce reliance on driving alone (Single-Occupant Vehicles) and to further encourage ridesharing, taking transit, bicycling, and walking. These mitigation measures were included in Scenarios 5M and 6M and were introduced in Chapter 1. However, for ease of reference, they are included again below.

TRANS-1: Mitigation for Impacted Intersections

- a) Adopt a programmatic approach to reducing traffic with the goal of achieving no net increase in peak period motor vehicle trips from new development, with an exception for uses that directly contribute to the neighborhood character and diversity of Palo Alto (such as ground floor retail and below market rate housing). The program should at a minimum:
 - o Require new development projects to prepare and implement a Transportation Demand Management (TDM) Plan to achieve the following reduction in peak period motor vehicle trips from the rates included in the Institute of Transportation Engineers' *Trip Generation Manual* for the appropriate land use category. These reductions are deemed aggressive, yet feasible, for the districts indicated.
 - i. 45 percent reduction in the Downtown district
 - ii. 35 percent reduction in the California Avenue area
 - iii. 30 percent reduction in the Stanford Research Park
 - iv. 30 percent reduction in the El Camino Real corridor

- v. 20 percent reduction in other areas of the city.
 - o TDM Plans must be approved by the City and monitored by the property owner on an annual basis. The TDM Plans must contain enforcement mechanisms or penalties that accrue if targets are not met.
 - o Require new development projects to pay a Transportation Impact Fee which will be partially used to reduce peak period motor vehicle trips citywide.
- b) Study the feasibility of unbundled parking for office, commercial, and multi-family residential development (including senior housing developments) that are well-served by transit and by existing walking and biking connections.
- c) Include policies in the Comprehensive Plan to ensure collaboration with regional agencies and neighboring jurisdictions, and identification and pursuit of funding for rail corridor improvements and grade separation. Policies shall support grade separation of rail crossings along the rail corridor as a City priority, and encourage studies and outreach necessary to advance grade separation of Caltrain to become a “shovel ready” project.
- d) Engage in regional transportation planning and advocate for specific transit improvements and investments, such as Caltrain service enhancements and grade separations, Dumbarton Express service, enhanced bus service on El Camino Real with queue jumping and curbside platforms, and additional VTA bus service.
- e) Encourage the Palo Alto Unified School District (PAUSD) to analyze decisions regarding school assignments to reduce peak period motor vehicle trips to and from school sites.

To implement the TDM Plans included in Measure (a) above, all new development projects (residential, commercial, office/R&D, etc.) over a certain size could be required to join and help fund a Transportation Management Agency (TMA). A TMA can assist with the logistics and administrative responsibilities associated with implementation of the TDM Plans for the projects in its area. A TMA for the Downtown business district of Palo Alto has recently been established, and many of the employers in the Stanford Research Park cooperate in a TDM program that leverages their efforts in a single comprehensive program. The intention of these mitigation measures is to encourage such cooperation. Other TMAs may be created over the time horizon of this Comprehensive Plan Update. A TMA may also be created to cover the entire City of Palo Alto.

Utilization of the above mitigation measures would reduce but not eliminate the projected impacts at six of the eight impacted intersections. At the intersections of Middlefield Road and Charleston Road (#2) and Embarcadero Road and E. Bayshore Road (#18), implementation of these measures would mitigate the projected impact to a less-than-significant level. However, assuming that the “no net new trips” policy in measure (a) would not be applied to new affordable housing projects or some other land uses that the City chooses to encourage, all of the scenarios would still generate some additional vehicle trips. Further, even with the achievement of the TDM goals for the projects to which this measure would apply and the efforts of a TMA to further reduce motor vehicle trips, there is no guarantee that all such additional trips would be eliminated. Also, as the modeling results of Scenarios 5M and 6M indicate, even if the measures are successful in reducing motor vehicle trips from new development, other trips related to regional growth may replace those eliminated trips such that the level of service at an impacted intersection does not actually improve. Therefore, all of the above traffic mitigation measures would reduce, but not eliminate the projected impacts at six of the eight impacted intersections, and the impact is considered significant and unavoidable.

All of the above traffic mitigation measures would benefit bicyclists and pedestrians, and would not cause any secondary impacts to them.

7.

Motor Vehicle Level of Service on Freeway Segments and Ramps

Palo Alto is served by both U.S. 101 and Interstate 280 (I-280). In order to determine whether any of the scenarios would have a significant impact on any of the freeway segments or freeway ramps in Palo Alto, an analysis of the following six interchanges and the freeway segments north and south of them was conducted:

- U.S. 101 at University Avenue
- U.S. 101 at Embarcadero Road/Oregon Expressway
- U.S. 101 at San Antonio Road
- I-280 at Sand Hill Road
- I-280 at Alpine Road
- I-280 at Page Mill Road

Motor vehicle Level of Service standards and definitions of significant impact for freeways in Santa Clara County have been established by VTA as part of the Congestion Management Program. A scenario would cause a freeway segment impact if it caused the segment to operate at LOS F, or, if it is already operating at LOS F, if the scenario would add traffic in excess of 1% of segment capacity. Although not explicitly stated in the CMP TIA guidelines, freeway ramps can be analyzed in the same fashion as freeway segments.

The City/County Association of Governments of San Mateo County (C/CAG) administers the Congestion Management Program for San Mateo County and has established a motor vehicle Level of Service standard of LOS F for the segment of US 101 between Whipple Avenue and the Santa Clara County line and a motor vehicle Level of Service standard of LOS D for the segment of I-280 between Woodside Road (SR 84) and the Santa Clara County line, according to C/CAG's 2013 Congestion Management Program report. C/CAG has traditionally used the same definition of significant impact as VTA.

The VTA Congestion Management Program specifies that a capacity of 2,300 vehicles per hour per lane (vphpl) be used for mixed-flow lane segments that are three lanes or wider in one direction, and a capacity of 2,200 vphpl be used for mixed-flow lane segments that are two lanes wide in one direction. A capacity of 1,650 vphpl was used for high occupancy vehicle (HOV) lanes. For auxiliary lanes (an extra lane that is added between interchanges), which are planned for US 101 in the future, a capacity of one-half of a mixed-flow lane, which is 1,150 vphpl, is used. In the year 2030, US 101 will have three mixed-flow lanes with a total capacity of 6,900 vph, one HOV lane, and one auxiliary lane on all of the segments examined, so the total capacity of all lanes is 9,700 vehicles per hour ($6,900 + 1,650 + 1,150 = 9,700$).

In analyzing the freeway segments and ramps, the 2030 travel demand forecasting model was used to project the increase in traffic volumes under all six scenarios. The volumes shown in Table 13 represent the increase (or decrease) in the number of trips made to and/or from Palo Alto on each freeway segment under each scenario in 2030. That is, the table excludes 2030 volumes related to regional traffic growth and shows only the increase or decrease in trips that begin and/or end in Palo Alto. Because trips that begin outside Palo Alto and end outside Palo Alto, due to regional traffic growth, are not included in the table, it is possible to identify freeway segments where one or more of the planning scenarios would have a significant impact.

Several freeway segments on US 101 and I-280 show a decrease in the number of Palo Alto-related trips under all six scenarios (see Table 13). This model result is primarily because the model projects a 25-30% increase in regional freeway volumes in 2030. Because the freeways would become so much more congested by 2030, the model's trip assignment process assumes that many people will seek alternate routes in order to avoid the freeways. Thus, the negative number of trips shown in Table 13 for some segments indicates that there would be so much more regional traffic on that freeway segment that fewer Palo Alto-related trips would use the freeway than under existing conditions. Those trips would presumably be made by taking a different mode (i.e., Caltrain instead of the freeway) or a different route (i.e., Foothill Expressway, El Camino Real, Alma Street, Middlefield Road, etc.). However, a reduction in Palo Alto-related trips on a freeway segment does not necessarily mean that traffic volumes on that segment would decrease, since the forecasting model will usually replace Palo Alto trips with trips generated by regional growth.

For segments that are operating at LOS F, the increased volume for each scenario was compared to 1% of the segment's capacity to determine if there would be a significant impact. For example, for all segments on US 101 for which the existing LOS is F, if a scenario would result in more than 97 additional trips (1% of capacity is 97), then the scenario would result in a significant impact. For segments that are not operating at LOS F, the volume of additional trips was examined to see if they would cause the level of service to become LOS F.

As shown on Table 13, all six pre-mitigation scenarios would have a significant impact on the following six freeway segments:

- Northbound US 101, between Rengstorff Avenue and San Antonio Road, both AM and PM peak hours
- Northbound US 101, between San Antonio Road and Oregon Expressway, AM peak hour
- Northbound US 101, between Embarcadero Road and University Avenue, PM peak hour
- Southbound US 101, between Oregon Expressway and San Antonio Road, PM peak hour
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84), PM peak hour
- Southbound I-280, between Woodside Road (SR 84) and Sand Hill Road, PM peak hour

One additional segment would be impacted by Scenarios 1 – 5, but not Scenario 6:

- Southbound US 101, between San Antonio Road and Rengstorff Avenue, PM peak hour

Caltrans has no plans to widen the freeways beyond what is already assumed in the capacities shown in the table, and improvements to the freeways are outside the City of Palo Alto's jurisdiction. Implementation of the following freeway segment mitigation measures would reduce but not eliminate the freeway impacts on most of the freeway segments.

TRANS-3: Mitigation for Impacted Freeway Segments

- a) The City shall require new development projects to prepare and implement TDM programs, as described in TRANS-1a. TDM programs for worksites may include measures such as private bus service and free shuttle services to transit stations geared towards commuters.
- b) Include policies in the Comprehensive Plan that advocate for efforts by Caltrans and VTA to reduce congestion and improve traffic flow on existing area freeway facilities consistent with Statewide GHG emissions reduction initiatives. Policies shall support the application of emerging freeway information, monitoring, and control systems that provide non-intrusive driver assistance and reduce congestion. Policies shall support, where appropriate, the conversion of existing traffic lanes to exclusive bus and high-occupancy vehicle (HOV) lanes on freeways and expressways, including the Dumbarton Bridge and the continuation of an HOV lane from Redwood City to San Francisco.

Table 13 shows the percentage by which a TDM mitigation program would need to reduce the increased trip volume in order to avoid an impact under Scenarios 1 - 4. Based on recent experience in Bay Area communities, trip reductions of up to 40% are feasible with implementation of TDM programs that include such measures as private bus services and free shuttle services to transit stations. Provision of additional public transit services, especially express bus routes geared towards commuters, would also help mitigate freeway impacts, but is beyond the control of the City. Although trip reductions of over 40 percent may be achieved by employers in dense areas that are extremely well-served by transit, trip reductions of more than 40% are generally not considered feasible for a more geographically dispersed program that includes residential uses, even with very aggressive TDM programs. Based on that rough guideline, implementation of TDM mitigation measures would reduce the projected impact to a *less than significant* level on the following three freeway segments where the reduction needed is less than approximately 40%,

- Southbound US 101, between Oregon Expressway and San Antonio Road, PM peak hour (All four original scenarios)
- Southbound US 101, between San Antonio Road and Rengstorff Avenue, PM peak hour (All four original scenarios)
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84), PM peak hour (Scenarios 2, 3, and 4)

For Scenarios 5 and 6, as indicated by the model results of Scenarios 5M and 6M, the proposed mitigation measures would reduce the impact to a *less than significant* level on the same three freeway segments as discussed above for Scenarios 1 – 4:

- Southbound US 101, between Oregon Expressway and San Antonio Road, PM peak hour (Scenario 6)
- Southbound US 101, between San Antonio Road and Rengstorff Avenue, PM peak hour (Scenario 5)
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84), PM peak hour (Scenarios 5 and 6).

On the other impacted freeway segments under Scenarios 1 – 4, the trip reduction needed to avoid an impact is greater than 40% and therefore the TDM mitigation measure would reduce but not eliminate the impact. For Scenarios 5 and 6, the evaluation of 5M and 6M indicate that the mitigation measures would reduce but not eliminate the impact. Thus, these impacts are considered *significant and unavoidable* under the following scenarios:

Scenarios 1 - 6

- Northbound US 101, between Rengstorff Avenue and San Antonio Road
- Northbound US 101, between San Antonio Road and Oregon Expressway
- Northbound US 101, between Embarcadero Road and University Avenue
- Southbound I-280, between Woodside Road (SR 84) and Sand Hill Road

Scenarios 1 - 5

- Southbound US 101, between Oregon Expressway and San Antonio Road

Scenarios 1 – 4

- Southbound US 101, between San Antonio Road and Rengstorff Avenue
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84)

To analyze potential impacts on ramps, the additional volume generated by each of the scenarios was added to the existing ramp volume. Existing ramp volumes were obtained from Caltrans. The total volume under each scenario was compared to the ramp capacity. A significant impact would occur if the volume-to-capacity ratio for a given ramp would exceed 1.0. As shown on Table 14, none of the scenarios would have a significant impact on any of the ramps, because the volume-to-capacity ratio would remain less than 1.0 at all of the ramps.

Table 13
Freeway Segment Evaluation

Freeway	Segment	Dir	Total # of Lanes	Capacity (vph) ¹	1% of Capacity	Peak Hour	Existing LOS ²	Increase in Palo Alto Volumes										Trip Reduction Required to Avoid Impact ³			
								Scen 1	Scen 2	Scen 3	Scen 4	Scen 5	Scen 5M	Scen 6	Scen 6M	No Growth	Scen 1	Scen 2	Scen 3	Scen 4	
US 101	Rengstorff to San Antonio Road	NB	4.5	9700	97	AM PM	F F	265 244	232 174	257 185	258 249	195 213	179 173	188 188	194 169	156 143	63% 60%	58% 44%	62% 48%	62% 61%	
US 101	San Antonio Road to Oregon Expwy	NB	4.5	9700	97	AM PM	F E	277 379	265 299	264 296	266 360	244 310	225 273	244 300	250 280	213 254	65%	63%	63%	64%	
US 101	Oregon Expwy to Embarcadero Rd	NB	4.5	9700	97	AM PM	D D	110 414	101 228	104 268	116 402	78 306	68 273	100 219	102 210	32 186					
US 101	Embarcadero Rd to University Ave	NB	4.5	9700	97	AM PM	F F	15 312	4 170	6 218	16 281	1 219	-5 221	17 112	25 126	-37 136	69%	43%	56%	65%	
US 101	University Ave to Willow Road	NB	4.5	9700	97	AM PM	F F	-63 -57	-109 -171	-66 -129	-71 -93	-83 -138	-78 -171	-85 -167	-62 -186	-102 -209					
US 101	Willow Road to University Ave	SB	4.5	9700	97	AM PM	F F	-340 -61	-367 -87	-342 -72	-263 -43	-438 -76	-392 -77	-497 -67	-432 -75	-444 -91					
US 101	University Ave to Embarcadero Rd	SB	4.5	9700	97	AM PM	F F	-436 -90	-481 -109	-450 -101	-380 -70	-507 -117	-444 -123	-584 -90	-498 -87	-501 -149					
US 101	Embarcadero Rd to Oregon Expwy	SB	4.5	9700	97	AM PM	E F	-130 -209	-138 -204	-107 -199	-155 -237	-139 -235	-177 -270	-114 -253	-176 -276	-141 -284					
US 101	Oregon Expwy to San Antonio Ave	SB	4.5	9700	97	AM PM	E F	242 156	227 151	268 164	220 134	232 128	198 105	235 110	225 86	204 59	38%	36%	41%	28%	
US 101	San Antonio Ave to Rengstorff Ave	SB	4.5	9700	97	AM PM	D F	182 114	182 107	219 131	173 99	218 102	167 81	218 75	213 51	171 33	15%	9%	26%	2%	
I-280	El Monte to Page Mill Road	NB	4	9200	92	AM PM	D C	-259 -40	-324 -53	-296 -40	-262 -26	-357 -67	-373 -69	-297 -16	-316 -9	-376 -68					
I-280	Page Mill Road to Alpine Road	NB	4	9200	92	AM PM	C D	-11 -25	-18 -69	-13 -36	3 -49	3 -55	13 -79	20 -65	7 -83	-34 -125					
I-280	Alpine Road to Sand Hill Road	NB	4	9200	92	AM PM	A F	-61 -50	-52 -109	-50 -73	-36 -75	-48 -101	-27 -127	-9 -75	-23 -104	-67 -164					
I-280	Sand Hill Road to Woodside Rd (84)	NB	4	9200	92	AM PM	A F	323 180	305 106	323 128	354 130	318 105	319 71	365 101	364 67	265 34	49%	13%	28%	29%	
I-280	Woodside Rd (84) to Sand Hill Road	SB	4	9200	92	AM PM	A F	222 264	145 248	180 263	221 285	119 244	110 233	146 276	125 279	90 178	65%	63%	65%	68%	
I-280	Sand Hill Road to Alpine Road	SB	4	9200	92	AM PM	A F	-17 9	-76 31	-40 10	-32 31	-143 -40	-139 -42	-62 43	-80 58	-104 -28					
I-280	Alpine Road to Page Mill Road	SB	4	9200	92	AM PM	D C	-17 -153	-79 -158	-42 -158	-38 -134	-150 -223	-146 -229	-64 -153	-81 -144	-112 -190					
I-280	Page Mill Road to El Monte Avenue	SB	4	9200	92	AM PM	C F	-3 -397	-15 -439	-7 -434	-4 -364	-8 -378	-8 -358	12 -381	10 -434	-33 -437					
Notes:																					
¹ Capacity is based on the capacities cited in VTA's <i>Transportation Impact Guidelines</i> , October 2014.																					
² Sources for Existing LOS: Santa Clara County LOS levels taken from VTA CMP Monitoring Report, 2013. San Mateo County LOS levels for US 101 taken from a recent TIA prepared for a proposed project. San Mateo County LOS levels for I-280 taken from C/CAG 2013 Monitoring Report.																					
³ For impacted intersections under Scenarios 1 - 4, this is the amount by which the increased volume is in excess of the segment capacity as a percentage of the total increased volume.																					
Bold and boxed indicates a significant impact. For segments already operating at LOS F, an impact occurs if the additional trips generated by a scenario are greater than 1% of the segment's capacity. For segments <i>not</i> already operating at LOS F, an impact occurs if the scenario would cause the LOS to drop to F. It was assumed that if the additional trips generated by a scenario were greater than 10% of capacity, the level of service would drop by one grade level. If additional trips were greater than 20% of capacity, the level of service would drop by two grade levels.																					

Source: Hexagon Transportation Consultants, Inc., November 2016

Table 14
Freeway Ramp Evaluation

Interchange	Code	Ramp	Capacity	Existing			Scenario 1		Scenario 2		Scenario 3		Scenario 4		Scenario 5		Scenario 5M		Scenario 6		Scenario 6M		No Growth	
				Model	Count	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c	Adj. Vol.	v/c
US 101/University	1	NB on	20,000	6,430	8,800	0.44	9,455	0.47	9,085	0.45	9,255	0.46	9,135	0.46	9,045	0.45	9,090	0.45	9,235	0.46	8,885	0.44	9,105	0.46
	2	NB off	40,000	8,185	10,500	0.26	17,295	0.43	16,880	0.42	17,135	0.43	16,995	0.42	16,935	0.42	16,800	0.42	17,535	0.44	17,130	0.43	16,755	0.42
	3	SB off	36,000	4,415	12,400	0.34	14,855	0.41	14,055	0.39	14,750	0.41	14,455	0.40	13,955	0.39	14,515	0.40	14,220	0.40	14,290	0.40	14,305	0.40
	4	SB on	40,000	9,940	15,000	0.38	16,065	0.40	15,645	0.39	15,070	0.38	15,270	0.38	15,290	0.38	15,285	0.38	15,160	0.38	15,210	0.38	15,550	0.39
US 101/ Embarcadero /Oregon Xway	5	NB on fr. Embarcadero WB	20,000	1,155	1,950	0.10	3,015	0.15	2,860	0.14	2,990	0.15	3,035	0.15	2,870	0.14	2,755	0.14	2,765	0.14	2,800	0.14	2,815	0.14
	6	NB off to Embarcadero EB	20,000	3,735	5,800	0.29	7,100	0.36	7,030	0.35	7,210	0.36	7,280	0.36	7,090	0.35	7,070	0.35	6,970	0.35	7,025	0.35	7,195	0.36
	7	NB on fr. Embarcadero EB (loop)	18,000	60	3,850	0.21	4,100	0.23	4,085	0.23	4,095	0.23	4,090	0.23	4,085	0.23	4,085	0.23	4,080	0.23	4,075	0.23	4,200	0.23
	8	NB off to Embarcadero WB (loop)	18,000	9,895	6,800	0.38	10,195	0.57	9,670	0.54	9,880	0.55	9,825	0.55	9,590	0.53	9,670	0.54	9,815	0.55	9,525	0.53	9,550	0.53
	9	SB off to Oregon Xway	20,000	10,070	12,900	0.65	11,800	0.59	11,695	0.58	12,430	0.62	12,315	0.62	11,970	0.60	11,995	0.60	11,860	0.59	11,650	0.58	11,325	0.57
	10	SB off to Embarcadero EB (loop)	18,000	1,545	2,750	0.15	2,255	0.13	2,250	0.13	2,365	0.13	2,360	0.13	2,190	0.12	2,205	0.12	2,250	0.13	2,195	0.12	2,270	0.13
	11	WB Embarcadero to WB Oregon Xway (loop)	18,000	1,255	6,600	0.37	7,620	0.42	7,715	0.43	7,685	0.43	7,825	0.43	7,740	0.43	7,225	0.40	8,125	0.45	7,715	0.43	7,650	0.43
	12	SB off to Embarcadero WB	20,000	2,410	2,750	0.14	1,765	0.09	1,540	0.08	1,275	0.06	1,895	0.09	1,655	0.08	1,705	0.09	1,220	0.06	2,090	0.10	1,410	0.07
	13	SB on fr. Oregon Xway EB	40,000	3,065	8,000	0.20	14,915	0.37	14,450	0.36	14,625	0.37	14,400	0.36	14,555	0.36	14,560	0.36	14,130	0.35	14,595	0.36	14,445	0.36
	14	NB on fr. Oregon Xway EB (loop)	18,000	7,525	16,000	0.89	15,805	0.88	15,655	0.87	16,365	0.91	16,500	0.92	15,620	0.87	15,940	0.89	15,985	0.89	15,860	0.88	15,600	0.87
	15	NB off to Oregon Xway WB	20,000	2,010	7,200	0.36	7,930	0.40	7,765	0.39	8,030	0.40	8,035	0.40	7,875	0.39	7,820	0.39	7,880	0.39	7,925	0.40	7,725	0.39
US 101/San Antonio	16	NB on	18,000	440	1,800	0.10	4,890	0.27	4,890	0.27	4,695	0.26	4,745	0.26	4,670	0.26	4,700	0.26	4,710	0.26	4,495	0.25	4,615	0.26
	17	NB off	20,000	5,410	8,200	0.41	9,215	0.46	8,745	0.44	8,805	0.44	8,790	0.44	8,420	0.42	8,400	0.42	8,500	0.43	8,500	0.43	8,515	0.43
	18	NB on (loop)	18,000	8,705	10,900	0.61	11,800	0.66	11,430	0.64	11,465	0.64	11,430	0.64	11,390	0.63	11,320	0.63	11,405	0.63	11,550	0.64	11,575	0.64
	19	SB off (loop)	18,000	540	1,500	0.08	2,000	0.11	1,960	0.11	1,910	0.11	1,980	0.11	1,845	0.10	1,865	0.10	1,945	0.11	1,980	0.11	2,005	0.11
	20	SB off	20,000	7,970	10,300	0.52	12,690	0.63	12,210	0.61	12,085	0.60	12,035	0.60	11,860	0.59	12,210	0.61	11,880	0.59	11,945	0.60	12,270	0.61
I-280/Sandhill	21	NB on fr. Sandhill WB	20,000	11,975	9,000	0.45	11,340	0.57	10,890	0.54	10,965	0.55	10,920	0.55	10,785	0.54	10,830	0.54	10,895	0.54	10,865	0.54	10,740	0.54
	22	NB off to Sandhill	20,000	8,260	5,300	0.27	2,460	0.12	2,505	0.13	2,540	0.13	2,285	0.11	2,395	0.12	2,560	0.13	2,580	0.13	2,490	0.12	2,555	0.13
	23	SB on fr. Sandhill EB	20,000	275	1,050	0.05	1,295	0.06	1,225	0.06	1,235	0.06	1,255	0.06	1,255	0.06	1,230	0.06	1,235	0.06	1,260	0.06	1,210	0.06
	24	SB off to Sandhill WB	20,000	0	910	0.05	915	0.05	915	0.05	915	0.05	915	0.05	915	0.05	915	0.05	915	0.05	915	0.05	915	0.05
	25	SB on fr. Sandhill WB (loop)	18,000	2,855	4,200	0.23	4,210	0.23	4,145	0.23	4,130	0.23	4,120	0.23	4,145	0.23	4,140	0.23	4,130	0.23	4,125	0.23	4,160	0.23
	26	NB off to Sandhill WB (loop)	18,000	215	1,100	0.06	1,580	0.09	1,495	0.08	1,490	0.08	1,520	0.08	1,475	0.08	1,415	0.08	1,425	0.08	1,475	0.08	1,475	0.08
	27	NB on fr. Sandhill EB (loop)	18,000	0	1,000	0.06	1,025	0.06	1,000	0.06	1,015	0.06	1,015	0.06	1,000	0.06	1,000	0.06	1,000	0.06	1,000	0.06	1,000	0.06
	28	SB off to Sandhill EB (loop)	18,000	13,480	9,100	0.51	11,895	0.66	11,210	0.62	11,170	0.62	11,310	0.63	11,540	0.64	11,465	0.64	11,195	0.62	11,210	0.62	10,970	0.61
I-280/Page Mill	29	NB off	40,000	13,320	12,000	0.30	12,510	0.31	11,510	0.29	11,615	0.29	11,860	0.30	10,920	0.27	10,830	0.27	11,715	0.29	11,680	0.29	11,125	0.28
	30	SB on	20,000	1,285	1,900	0.10	2,770	0.14	2,635	0.13	2,665	0.13	2,710	0.14	2,635	0.13	2,610	0.13	2,635	0.13	2,640	0.13	2,560	0.13
	31	SB off	20,000	12,700	7,900	0.40	10,005	0.50	9,240	0.46	9,360	0.47	9,480	0.47	8,690	0.43	8,730	0.44	9,385	0.47	9,330	0.47	9,070	0.45
	32	NB on	20,000	6,340	6,300	0.32	11,125	0.56	10,665	0.53	10,725	0.54	10,995	0.55	10,815	0.54	10,690	0.53	10,820	0.54	10,780	0.54	10,415	0.52
	33	NB on (loop)	18,000	2,740	2,000	0.11	1,550	0.09	1,450	0.08	1,460	0.08	1,515	0.08	1,510	0.08	1,530	0.09	1,410	0.08	1,625	0.09	1,615	0.09
	34	SB on (loop)	36,000	6,760	8,900	0.25	7,370	0.20	7,055	0.20	7,160	0.20	7,040	0.20	7,235	0.20	7,305	0.20	7,220	0.20	7,065	0.20	6,675	0.19
I-280/Alpine	35	NB off	20,000	1,905	8,600	0.43	10,605	0.53	10,330	0.52	10,360	0.52	10,470	0.52	10,670	0.53	10,530	0.53	10,230	0.51	10,155	0.51	10,185	0.51
	36	SB on	20,000	2,185	2,250	0.11	1,500	0.08	1,445	0.07	1,440	0.07	1,440	0.07	1,440	0.07	1,445	0.07	1,440	0.07	1,435	0.07	1,440	0.07
	37	SB off	20,000	2,225	4,000	0.20	3,890	0.19	3,945	0.20	3,880	0.19	3,885	0.19	3,950	0.20	3,990	0.20	3,970	0.20	3,960	0.20	3,990	0.20
	38	NB on	20,000	2,255	4,300	0.22	3,020	0.15	3,090	0.15	3,025	0.15	3,045	0.15	3,105	0.16	3,070	0.15	3,010	0.15	3,005	0.15	3,060	0.15
	39	SB on (loop)	18,000	3,890	5,300	0.29	5,070	0.28	4,900	0.27	4,925	0.27	4,875	0.27	4,890	0.27	4,840	0.27	4,825	0.27	4,835	0.27	4,760	0.26
Note: Existing counts for all ramps were obtained from the Caltrans website. Http://traffic-counts.dot.ca.gov/docs/2013-ramp-vol-district04.pdf .																								

Source: Hexagon Transportation Consultants, Inc., November 2016.

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8.

Other Potential Impacts

This chapter addresses other potential impacts of the Comprehensive Plan scenarios on the City's transportation network that were not addressed in the preceding chapters. These other potential impacts are divided into two sub-categories: those that are related to the CEQA guidelines and must be addressed as part of an EIR and those that are not CEQA-related and are presented only for informational purposes. The latter category includes an evaluation of travel times on street segments and a Multimodal Level of Service analysis comparable to the analysis included in the Existing Conditions Report. These two non-CEQA-related evaluations were conducted only for Scenarios 1 – 4, but not for Scenarios 5 and 6.

Additional CEQA-Related Potential Impacts

Would any of the scenarios impede the operation of a transit system as a result of congestion?

Although this is a transit-related impact, it can only be evaluated in light of the projected levels of congestion at the intersections and on the roadway segments where bus and shuttle services operate. Additional roadway congestion would not impact Caltrain operations. Buses are subject to the same delays caused by roadway congestion as other vehicles. In fact, travel times for buses are even more sensitive to congestion than other vehicular traffic as it becomes more difficult for bus drivers to merge back into a traffic lane after pulling over into a bus stop. Thus, if a segment or intersection becomes more congested in the future, buses would experience longer travel times.

The exception to this congestion impact on transit would be an exclusive lane for buses, as proposed by VTA in some of the alternatives in its *El Camino Real Bus Rapid Transit (BRT) Traffic Operations Analysis Report*, but none of the scenarios included in this TIA incorporate a dedicated lane for buses within Palo Alto. Scenarios 4 and 6 include queue jump lanes for buses on El Camino Real to allow them to proceed more quickly through congested intersections than they otherwise would. Queue jump lanes could also be included in other scenarios as a mitigation measure.

All six scenarios would cause an increase in ADT on nearly all roadway segments, some degradation in level of service on at least one roadway segment (see Table 6, ADTs and Segment Level of Service) and have a significant impact on multiple intersections (see Table 12, Intersection Level of Service). Transit services that travel on those roadway segments and use those impacted intersections would be slowed down by the increased congestion. Thus, all six scenarios would have a significant impact on transit operations by increasing congestion.

The No Growth Scenario would also result in an increase in ADT on nearly all roadway segments (compared to Existing Conditions) and would result in significant impacts at six of the 18 study intersections. These results indicate that the overall level of traffic would increase due to previously approved development in Palo Alto and to regional growth outside of Palo Alto, regardless of whether any further development is approved in Palo Alto. Thus, transit would be delayed by congestion even under the No Growth Scenario.

The implementation of the mitigation measures discussed under intersection impacts and included in Scenarios 5M and 6M would reduce but not eliminate the congestion and its impact on transit. An additional appropriate mitigation would be as follows:

TRANS-6: Mitigation for Impacts on Transit Due to Increased Congestion

Include policies in the Comprehensive Plan Update that address transit access and give priority to buses and to transit facilities. Examples include queue jump lanes, signal priority for buses, and bulb-outs at bus stops. Also, advocate for bus service improvements on El Camino Real such as queue jump lanes and curbside platforms.

Providing signal priority for buses would be sufficient mitigation to eliminate the impact on transit at the following study intersections, which are projected to operate at a substandard level of service and are used by at least one bus route:

- Middlefield Road and Charleston Road (#2) under Scenarios 1 and 4
- Alma Street and Charleston Avenue (#4) under Scenarios 1 and 2
- El Camino Real and San Antonio Road (#8) under all six scenarios
- Foothill Expressway/Junipero Serra Blvd. and Page Mill Road (#9) under all scenarios except Scenario 2
- Foothill Expressway and Arastradero Road (#10) under all scenarios except Scenario 2
- Middlefield Road and Embarcadero Road (#16) under all six scenarios

VTA Route 88 runs on Charleston Avenue and crosses the Caltrain tracks and Alma Street. The intersection of Alma Street and Charleston Avenue (#4), is one of the impacted intersections under Scenarios 1 and 2, but signal pre-emption for VTA's bus service would not be possible at this location, due to the railroad crossing and the need for Caltrain to have signal pre-emption capabilities. However, signal priority for VTA buses should be possible at this intersection, and would provide sufficient mitigation to eliminate the impact on transit at this intersection..

Although the intersection of I-280 northbound Off-Ramp and Sand Hill Road (#1) would operate at level F under all six scenarios, there would not be a congestion-related impact on transit because this intersection is not used by SamTrans or VTA services.

In addition, queue jump lanes and curbside platforms on El Camino Real (included as part of Scenarios 4 and 6, but not Scenarios 1, 2, 3, and 5) could be implemented to reduce the effects of traffic congestion on VTA buses in the El Camino corridor.

However, even with implementation of the above mitigation measures, congestion at all intersections and on all roadway segments where buses operate would not be eliminated. Thus, all four scenarios would have a significant impact on transit operations by increasing congestion. These impacts are considered *significant and unavoidable*.

Would any of the scenarios create the potential demand for through traffic to use local residential streets?

Increased congestion on arterials can result in some drivers attempting to avoid the congestion by using local residential streets instead. Thus, on segments that would experience a degradation in the motor vehicle level of service in the future, a scenario may be said to create demand for traffic from congested arterials to be diverted onto local residential streets. As shown on Table 6, eight of the 13 studied segments are projected to experience a decline in level of service under at least one scenario, compared with Existing Conditions.

All six scenarios include at least one segment where the level of service would decline, compared with Existing Conditions, as shown in Table 6, so all six scenarios would potentially cause a significant impact on local residential streets. The greater the decline in level of service, the more likely that some drivers would seek alternate routes, some of which could be local residential streets. For example, on Embarcadero Road (Segment #9), the level of service is projected to decline from LOS C to LOS E under Scenarios 1, 3 and 4, which may motivate some drivers to seek alternate routes.

Implementation of the mitigation measures discussed previously in Chapters 1 and 6 would reduce but not eliminate this potential impact.

Another appropriate mitigation for traffic diverted from congested arterials onto local streets would be the installation of traffic calming measures. Implementation of traffic calming is highly site-specific, depending on the physical characteristics of the street, the circulation pattern of a neighborhood, and whether the residents support such measures, among many other factors. It is not possible at the Comprehensive Plan level to determine where traffic calming measures would be appropriate or feasible or which specific measures should be implemented along a given roadway or at a given intersection. For example, one neighborhood might support the installation of speed humps, whereas other neighborhoods might not – or, some residents of a specific neighborhood may advocate for speed humps while other residents oppose them. In all situations, traffic calming should be addressed on a case-by-case basis with ample opportunity for public input and a careful analysis of a neighborhood's entire street network.

As mitigation for potential cut-through impacts, the City would implement the following mitigation measure:

TRANS-8: Mitigation for Impacts on Local Residential Streets

Include policies in the Comprehensive Plan to identify specific improvements that can be used to discourage drivers from using local neighborhood streets to bypass traffic congestion on arterials.

The traffic calming program should include metrics for defining streets eligible for traffic calming, a process for implementing traffic calming, and a list of acceptable traffic calming measures. The program should require analysis of the entire street network of a neighborhood, not isolated streets. With such a program in place, the potential impact on local residential streets would be *less than significant*.

Would any of the scenarios create an operational safety hazard?

None of the scenarios call for any policies or physical changes to the City's transportation network or other facilities that would introduce any safety hazards. The Comprehensive Plan is a long-range planning document that would guide future development in the city, but would not introduce any physical features that would create a safety hazard. Thus, none of the six scenarios would result in a significant impact by creating an operational safety hazard.

Would any of the scenarios result in inadequate emergency access?

The issue of adequate emergency access typically applies to specific development proposals where a project's street access may be evaluated. Adequacy of emergency access requires case-by-case site analysis of individual projects, which is not possible for the six scenarios. To the extent that global land use and transportation assumptions included in the scenarios result in roadway congestion that causes delay for other vehicles, emergency vehicles would be slowed down, too. However, emergency vehicles have the right to use lights and sirens to allow them to bypass the congestion. Even in cases where an intersection is operating at LOS F or a roadway segment is operating at LOS F, all other vehicles are required by State law to pull over to the right and allow the emergency vehicle to pass. Thus, none of the four scenarios would result in a significant impact to emergency access.

Motor Vehicle Travel Times (Scenarios 1 – 4 Only)

The Existing Conditions Report prepared during an earlier phase of the Comprehensive Plan Update process included motor vehicle travel times on five roadway segments. Motor vehicle travel times provide another way of understanding roadway conditions from the point of view of drivers, but they are not used to determine if there would be a significant impact under CEQA. For the Existing Conditions Report, five roadway segments were driven once in each direction during the AM peak hour, the PM peak hour, and at midday, and the resulting travel times were reported. The five segments were:

- Charleston-Arastradero, between I-280 and San Antonio Road
- Embarcadero Road, between El Camino Real (SR 82) and US 101

- Middlefield Road, between University Avenue and San Antonio Road
- Alma Street, between University Avenue and San Antonio Road
- El Camino Real, between Sand Hill Road and San Antonio Road

Clearly, it is not possible to drive these segments in the conditions that would exist in the year 2030 under each of the planning scenarios. The only method for determining the travel times in the future is through the Palo Alto travel demand forecasting model used throughout this TIA. Based on the increases in ADT on the above segments and the increases in delay (in seconds) at the study intersections on each segment, a projection was made for Scenarios 1-4 only as to whether or not motor vehicle travel times would noticeably increase.

Charleston-Arastradero, between I-280 and San Antonio Road: This segment includes both Segments #5 and #11, as they were defined for ADT purposes, and five of the study intersections: at Foothill Expressway (#10), at El Camino Real (#7), at Alma (#4), at Middlefield (#2), and at San Antonio Road (#12). Average delay at all of these intersections would increase substantially under all 2030 scenarios, especially during the PM peak hour, with two exceptions. The intersection at Foothill Expressway would improve under Scenario 2, due to the proposed grade separation. The intersection at Alma Street would improve under Scenarios 3 and 4, due to the construction of a trench for Caltrain. Segment LOS is projected to decline from LOS A to LOS C on Segment #5 (west of El Camino) and from LOS D to LOS E on Segment #11 (east of El Camino). Thus, motor vehicle travel times would be expected to increase under all four scenarios, especially during the PM peak hour when the increased delay at intersections would be greatest. Motor vehicle travel times would increase the most under Scenario 1, the Business as Usual scenario, since the other three scenarios each include one intersection that would actually operate with less delay than it currently does.

Embarcadero Road, between El Camino Real (SR 82) and US 101: This segment is the same as Segment #9, as defined for ADT purposes. Segment level of service would decline from LOS C to LOS D under Scenario 2 and to LOS E under the other three scenarios. ADT is projected to increase by at least 29% (Scenario 2), and more under the other scenarios. The only study intersection on this segment is #5, at El Camino Real, where the level of service is projected to decline from LOS D to LOS E under all scenarios in both the AM and PM peak hour. Therefore, motor vehicle travel times would be expected to increase under all four scenarios, especially in the PM peak hour where the increased seconds of delay at the study intersection is greatest, going from 42.5 seconds under Existing Conditions to 72.8 seconds under Scenario 4.

Middlefield Road, between University Avenue and San Antonio Road: This segment is the same as Segment #7, as defined for ADT purposes. ADT is not projected to increase by nearly as much (both in absolute terms and on a percentage basis) on this segment as on most of the other segments. The segment LOS is projected to remain at LOS D under all four scenarios. The only study intersections on this segment are #2 (at Charleston Road) and #3 (at San Antonio Road). The level of service at the intersection of Middlefield and Charleston is projected to decline from LOS D to LOS E in the PM peak hour under Scenarios 1 and 4, but remain at LOS D under the Scenarios 2 and 3. The level of service at the intersection of Middlefield and San Antonio Road is projected to remain at LOS D under all four scenarios in both the AM and PM peak hours. Thus, compared to the other segments, the motor vehicle travel time would likely increase only slightly compared to Existing Conditions, but would increase most under Scenarios 1 and 4.

Alma Street, between University Avenue and San Antonio Road: This segment is the same as Segment #6, as defined for ADT purposes. ADT is projected to increase by about 20% under all four scenarios, and the segment level of service is projected to decline from LOS D to LOS E under all four scenarios. The only study intersection on Alma is at Charleston (#4). As described above for the Charleston segment, this intersection is projected to go from LOS D to LOS F under Scenarios 1 and 2. However, since Scenarios 3 and 4 include a trench for Caltrain, the intersection level of service would not decline under those scenarios. Motor vehicle travel times on Alma would likely increase substantially under Scenarios 1 and 2, but much less so under Scenarios 3 and 4 with the construction of a Caltrain trench.

El Camino Real, between Sand Hill Road and San Antonio Road: This segment includes both Segments #2 and #3, as they were defined for ADT purposes. The segment north of Page Mill Road (#2) would decline from LOS C to LOS D, and the segment south of Page Mill Road (#3) would decline from LOS B to LOS C under all four scenarios. Although Scenario 4 includes queue jump lanes for BRT service, this would not affect vehicular travel times much because it would shift, not remove, existing travel lanes. This segment includes five study

intersections: at Alma Street/Sand Hill Road (#11), at Embarcadero/Galvez (#5), at Page Mill Road (#6), at Arastradero Road/Charleston Road (#7), and at San Antonio Road (#8). In addition, intersections #13 and #14 include the ramps from El Camino at University Avenue and Palm Drive. Level of service is not projected to change at the intersection at Alma/Sand Hill Road, but is projected to decline from LOS D to LOS E during the PM peak hour under all four scenarios at Embarcadero, at Page Mill Road, and at Arastradero/Charleston. It is projected to decline to LOS F during the PM peak hour under all four scenarios at San Antonio Road. Accordingly, the motor vehicle travel times on El Camino Real would likely increase moderately during the AM peak hour and greatly during the PM peak hour.

Multimodal Level of Service (Scenarios 1 – 4 Only)

As was done for the Existing Conditions Report prepared in August 2014 for the Comprehensive Plan Update, the Multimodal Level of Service (MMLOS) was analyzed under Scenarios 1 – 4 only on two roadway segments: University Avenue and Park Boulevard. The MMLOS methodology is based on the *2010 Highway Capacity Manual* and incorporates all modes of travel – motor vehicles, transit, pedestrians, and cyclists – in the evaluation. This broader view of how well a roadway functions for all of its users is consistent with the State of California's Complete Streets mandate and current trends in the transportation planning field.

However, because neither the City nor VTA has officially adopted this MMLOS methodology or any criteria regarding what would constitute a significant impact when using it, this analysis is not used as the basis for any impact findings under CEQA. The City and VTA are currently developing guidelines for analyzing potential impacts on pedestrians, bicyclists, and transit users that are focused on issues of connectivity, pedestrian access to transit, and upgrading facilities to current ADA standards, which are not parts of the MMLOS methodology.

Multimodal Level of Service Methodology and Standards

The multimodal levels of service within this TIA are calculated based on the *2010 Highway Capacity Manual* (HCM) level of service methodology. This method separately evaluates roadway facilities from the perspectives of automobile drivers, pedestrians, bicyclists, and transit riders.

When analyzing MMLOS, it is important to analyze the roadway facility in segments. The different segments of the roadway facility are defined by the changes in the physical configurations or attributes along the roadway. That is, each segment should be fairly uniform along its entire length in terms of providing similar facilities for all modes. Where the facilities change for one or more modes (e.g., a change in bike lanes or sidewalk width or vehicular travel lanes), a different segment is identified. To ensure that the roadway segments of each multimodal facility exhibit similar characteristics for the different modes of transportation, the analysis was conducted on the following segments:

Multimodal roadway segments on University Avenue:

1. University Avenue between High Street and Cowper Street
2. University Avenue between Cowper Street and Woodland Avenue

Multimodal roadway segments on Park Boulevard:

1. Park Boulevard between Whittlem Drive and Charleston Road
2. Park Boulevard between Charleston Road and Lambert Avenue
3. Park Boulevard between Lambert Avenue and California Avenue
4. Park Boulevard between California Avenue and El Camino Real (SR 82)

The HCM methodology and level of service definitions for each mode are discussed below in detail.

Motor Vehicle Mode

The motor vehicle mode level of service under MMLOS is evaluated based on average travel speed for through-movement vehicles and the critical volume-to-capacity (V/C) ratio for the through movement at the boundary

intersections. If the critical V/C ratio is more than 1.0, the level of service is F, regardless of the average travel speed. If the V/C ratio is less than 1.0, then the level of service is determined by the average travel speed as a percentage of the segment's base free-flow speed, which is defined as the segment's speed limit. The average travel speed reflects delays incurred by through vehicles along the roadway facility and boundary intersections. These two criteria together indicate the degree of motor vehicle mobility provided by the facility. The level of service definitions for motor vehicle mode are shown in Table 15.

It should be noted that the basis for calculating the motor vehicle level of service for the multimodal analysis is different from calculating the level of service for roadway segments as presented in Chapter 5. For the multimodal analysis, both the critical V/C ratio for the peak hours and the average travel speed of through traffic is considered. For the standard (non-multimodal) analysis of roadway segments, only the daily (24-hour) V/C ratio is considered. Furthermore, the level of service definitions for intersections are also different from the MMLOS definitions, since intersection level of service is based on the average delay of all turning movements at an intersection.

Table 15
Multimodal Level of Service Definitions – Motor Vehicle Mode

Travel Speed as a Percentage of Base Free-Flow Speed (%)	LOS by Critical Volume-to-Capacity Ratio ¹	
	≤ 1.0	> 1.0
> 85	A	F
> 67-85	B	F
> 50-67	C	F
> 40-50	D	F
> 30-40	E	F
≤ 30	F	F

Note:
¹ The critical volume-to-capacity ratio is based on consideration of the through movement volume-to-capacity ratio at each boundary intersection in the subject direction of travel. The critical volume-to-capacity ratio is the largest ratio of those considered.

Source: Transportation Research Board, *2010 Highway Capacity Manual* (Washington, D.C., 2010) p16-8

Pedestrian Mode

Pedestrian level of service is determined based on a combination of two parameters: pedestrian LOS score and average pedestrian walk space on the sidewalk. The pedestrian LOS score indicates the typical pedestrian perception of the overall travel experience. The pedestrian LOS score for each sidewalk segment is based on a number of factors, including the width of the sidewalk, separation from the street, vehicular volume and speed, and pedestrian delay at intersections due to conflicting vehicular volumes. A lower pedestrian LOS score would represent a “better” quality of service.

The average pedestrian walk space represents the pedestrian's ability to walk freely on the sidewalk. Since pedestrians are sensitive to their walk speed and space, the average pedestrian walk space parameter provides a direct indication of segment sidewalk levels of service. A larger walk space would correspond to a “better” sidewalk operation. The level of service definitions for the pedestrian mode are shown in Table 16.

Since the pedestrian mode LOS is based on both the pedestrian LOS score and the average pedestrian walk space, the pedestrian mode LOS for a roadway facility is determined in Table 16 by finding the intersection of the row corresponding to the calculated LOS score and the column corresponding to the calculated walk space.

Table 16
Multimodal Level of Service Definitions – Pedestrian Mode

Pedestrian LOS Score ¹	LOS by Average Pedestrian Space (ft ² / p)					
	>60	>40-60	>24-40	>15-24	>8.0-15	≤ 8.0
≤ 2.00	A	B	C	D	E	F
> 2.00-2.75	B	B	C	D	E	F
> 2.75-3.50	C	C	C	D	E	F
> 3.50-4.25	D	D	D	D	E	F
> 4.25-5.00	E	E	E	E	E	F
> 5.00	F	F	F	F	F	F

Note:
 1 Pedestrian LOS scores are determined using mathematical equations modeling pedestrian perceptions of sidewalk operations. A lower pedestrian LOS score represents a "better" quality of service.
 Source: Transportation Research Board, *2010 Highway Capacity Manual* (Washington, D.C., 2010) p16-8

Bicycle Mode

The bicycle mode level of service is evaluated based on the bicycle LOS score. These scores indicate the typical bicyclist perception of the overall travel experience. The bicycle LOS score for each roadway segment is based on a number of factors, including available roadway width for bicycle travel, vehicular volumes, number of driveways, and delay at intersections. A lower bicycle LOS score would represent a "better" quality of service. The correlation between the bicycle LOS score and the bicycle mode LOS is shown in Table 17.

Table 17
Multimodal Level of Service Definitions – Bicycle and Transit Modes

Bicycle/Transit LOS Score ¹	LOS
≤ 2.00	A
> 2.00-2.75	B
> 2.75-3.50	C
> 3.50-4.25	D
> 4.25-5.00	E
> 5.00	F

Note:
 1 Bicycle/Transit LOS scores are determined using mathematical equations modeling bicyclist or transit rider perceptions of the bicycle or transit mode operations, respectively. A lower LOS score represents a "better" quality of service.
 Source: Transportation Research Board, *2010 Highway Capacity Manual* (Washington, D.C., 2010) p16-8

Transit Mode

The transit mode level of service is evaluated based on the transit LOS score. These scores indicate the typical transit rider perception of the overall commute experience. The transit rider commute experience typically includes the rider wait delays at the bus stop, transit travel speed, and rider comfort. The transit LOS score for each roadway segment is primarily based on the transit dwell time, frequency, and delay, as well as vehicular volume at boundary intersections and mid-segments. A lower transit LOS score would represent a "better" quality of service. The correlation between the transit level of service score and the transit mode level of service is shown in Table 17 above.

Multi-Modal Roadway Facility Levels of Service

Table 18 presents the level of service for the roadway segments included in the multimodal analysis for both the AM and PM peak hours under Existing Conditions and under all four scenarios. Key inputs to this evaluation included increases in vehicular volumes, which were based on the ADTs calculated by the 2030 Travel Demand Model, and increases in the bike and pedestrian volumes, which were based on the mode share increases discussed above. A planned increase in SamTrans service on University Avenue between Cowper Street and Woodland Avenue, the only segment that includes transit service, was an input to the transit mode.

In general, most of the levels of service calculated with the HCM 2010 MMLOS methodology would be the same in 2030 as under Existing Conditions. All of the levels of service for all of the modes would be the same under all four of the scenarios. With the single exception of University Avenue between High Street and Cowper Street for the motor vehicle mode in the PM peak hour, all other segments were estimated to have a level of service of LOS D or better for all modes in both the AM and PM peak hours under all four scenarios.

On that same segment of University Avenue, the pedestrian mode is projected to deteriorate from LOS A to LOS B in the westbound direction during the AM peak hour. That change is due to increased vehicular volumes making right turns from University Avenue onto cross-streets, making left turns (where permitted) from University Avenue onto cross-streets, and making right turns from the cross-streets onto University Avenue. From the point of view of a pedestrian walking along University Avenue, those additional turning movements reduce the ease with which they can cross the cross-streets as they proceed along University Avenue.

On the segment of University Avenue between Cowper Street and Woodland Avenue, the level of service for the bike mode is projected to decline from LOS C to LOS D in the PM peak hour under all four scenarios. This projected decline is consistent with the increase in vehicular volumes in 2030 under all scenarios, which is one of the factors used to determine the bicycle level of service.

The only segment of Park Boulevard which is projected to experience a decline for any of the modes is the segment between California Avenue and El Camino Real in one direction during the AM peak hour. On that segment, the bike mode is projected to decline from LOS A to LOS B under all four scenarios.

As noted above, because the MMLOS methodology was used to evaluate only University Avenue and Park Boulevard, this analysis does not address Palo Alto's larger network of bicycle and pedestrian facilities. All four scenarios assume that the city's Bicycle and Pedestrian Master Plan will be implemented, and the Comprehensive Plan itself also calls for upgrading the City's bicycle and pedestrian facilities to current accessibility and design standards. Therefore, all four scenarios may be said to have a beneficial impact on the City's network of bicycle and pedestrian facilities.

Table 18
AM and PM Peak Hour LOS Results for Two Multimodal Facilities

#	Facility Name	Between	Dir	Existing Conditions				2030 Scenario 1				2030 Scenario 2				2030 Scenario 3				2030 Scenario 4			
				Auto Mode	Ped Mode	Bike Mode	Transit Mode	Auto Mode	Ped Mode	Bike Mode	Transit Mode	Auto Mode	Ped Mode	Bike Mode	Transit Mode	Auto Mode	Ped Mode	Bike Mode	Transit Mode	Auto Mode	Ped Mode	Bike Mode	Transit Mode
<u>AM Conditions</u>																							
1	University Avenue ^{1 3}	High Street & Cowper Street	EB	D	B	D	N/A	D	B	D	N/A	D	B	D	N/A	D	B	D	N/A	D	B	D	N/A
			WB	D	A	D	N/A	D	B	D	N/A	D	B	D	N/A	D	B	D	N/A	D	B	D	N/A
2	University Avenue ²	Cowper Street & Woodland Avenue	EB	C	B	C	A	C	B	C	A	C	B	C	A	C	B	C	A	C	B	C	A
			WB	C	B	D	A	C	B	D	A	C	B	D	A	C	B	D	A	C	B	D	A
3	Park Boulevard ^{1 3}	Whitclm Drive & Charleston Road	NB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
			SB	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A
4	Park Boulevard ^{1 3}	Charleston Road & Lambert Avenue	NB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
			SB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
5	Park Boulevard ³	Lambert Avenue & California Avenue	NB	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A
			SB	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A	B	A	C	N/A
4	Park Boulevard ³	California Avenue & El Camino Real	NB	B	A	A	N/A	B	A	B	N/A	B	A	B	N/A	B	A	B	N/A	B	A	B	N/A
			SB	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A
<u>PM Conditions</u>																							
1	University Avenue ^{1 3}	High Street & Cowper Street	EB	D	B	D	N/A	E	B	D	N/A	E	B	D	N/A	E	B	D	N/A	E	B	D	N/A
			WB	D	B	D	N/A	E	B	D	N/A	E	B	D	N/A	E	B	D	N/A	E	B	D	N/A
2	University Avenue ²	Cowper Street & Woodland Avenue	EB	C	B	C	A	C	B	C	A	C	B	C	A	C	B	C	A	C	B	C	A
			WB	C	B	C	A	C	B	D	A	C	B	D	A	C	B	D	A	C	B	D	A
3	Park Boulevard ^{1 3}	Whitclm Drive & Charleston Road	NB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
			SB	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A	A	A	C	N/A
4	Park Boulevard ^{1 3}	Charleston Road & Lambert Avenue	NB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
			SB	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A	C	A	C	N/A
5	Park Boulevard ³	Lambert Avenue & California Avenue	NB	B	B	D	N/A	B	B	D	N/A	B	B	D	N/A	B	B	D	N/A	B	B	D	N/A
			SB	A	B	C	N/A	A	B	C	N/A	A	B	C	N/A	A	B	C	N/A	A	B	C	N/A
4	Park Boulevard ³	California Avenue & El Camino Real	NB	B	A	B	N/A	B	A	B	N/A	B	A	B	N/A	B	A	B	N/A	B	A	B	N/A
			SB	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A	A	A	B	N/A
Note:																							
1 Bicycle Lanes are not present along the facility.																							
2 Bicycle Lanes are partially present along the facility.																							
3 No transit vehicles run along any portion of the facility.																							

Source: Hexagon Transportation Consultants, Inc., October 2015.

9.

Comparative Summary of the Six Scenarios

Each of the six scenarios has different transportation-related outcomes, which are briefly summarized below. Table 19 presents some of the topics discussed in this TIA that have quantitative metrics associated with them and for which the evaluation showed differences among the six scenarios.

Scenario 1, the Business As Usual scenario, results in the second highest mode share for drive-alone automobiles of the six Comp Plan scenarios, the highest Vehicle Miles Traveled (VMT), and the highest number of intersections with a significant impact (tied with Scenario 4 at seven out of 18 intersections). These results are consistent with the fact that Scenario 1 has the second highest combined total of new housing units and new jobs, but includes no specific measures to shift those trips out of automobiles. Also, Scenario 1 does not include the costly improvements included in some of the other scenarios, such as grade separations on the expressways or constructing a trench for the Caltrain tracks, which mitigate impacts in some locations.

Scenario 2, the Slowing Growth scenario, has the lowest VMT of the original four scenarios because it has the lowest growth assumptions among those scenarios, but its VMT is higher than Scenarios 5 and 6, both of which include even fewer new jobs than Scenario 2. Scenario 2 results in the fewest number of impacted intersections, partly because it includes the least intense land use assumptions and partly because of the expressway improvements that are included for Page Mill Road and Foothill Expressway. However, because it includes few specific measures to shift trips out of automobiles, Scenario 2 has the highest auto mode share and the fewest trips by transit of the six scenarios.

Scenario 3 represents a middle ground among all six scenarios in terms of land use assumptions, and also is the middle ground in terms of transportation outcomes. It is neither the highest nor the lowest in terms of any of the transportation metrics examined. Under Scenario 3, there would be five impacted intersections, which is less than the Business As Usual scenario, partly because it assumes that a trench would be constructed for the Caltrain tracks, which mitigates one impacted study intersection.

Scenario 4, which has the most intense land use assumptions of the original four scenarios, attempts to mitigate some of the transportation outcomes of more housing units and jobs through policies that promote transit, bicycling, and walking. It succeeds by some metrics, in that it results in the lowest mode share for Drive-Alone Auto, the highest mode share for walking, and the most transit trips of the original four scenarios. As a result of these mode shifts, VMT is lower for Scenario 4 than the Business As Usual scenario, but not as low as Scenario 2. However, Scenario 4 results in seven impacted intersections, indicating that the policies to promote alternative modes do not fully mitigate the additional vehicular trips generated by the additional number of housing units and jobs included in this scenario.

Scenario 5, which includes 10% fewer new jobs than Scenario 2, is projected to have the lowest VMT of all six scenarios, partly due to its land use assumptions and partly due to its sustainability assumptions. As a result of its pro-transit measures, it would result in a lower auto mode share and more transit trips than Scenarios 1 – 3, but a higher auto mode share than Scenario 4, which includes far more new jobs than Scenario 5, because work trips are generally more likely to be made on transit than non-work trips. Scenario 5 is tied with Scenario 2 for the lowest number of impacted intersections (four) of the 18 study intersections. This is because it includes a trench

for Caltrain (unlike Scenario 2) which eliminates one impact, but does not include grade separation at the intersection of Foothill and Arastradero (included in Scenario 2).

Scenario 5M includes the same assumptions as Scenario 5, plus the implementation of the proposed mitigation measures. It would result in an even lower auto mode share, higher number of transit trips, lower VMT, and lower VMT per capita than Scenario 5.

Scenario 6, which includes more new housing and population than any of the other scenarios, would result in the lowest auto mode share and the lowest VMT of the six scenarios. The reduced auto mode share, compared with Scenario 5, is likely due to the inclusion of queue jump lanes for buses on El Camino Real and the addition of more housing, which reduces the jobs-housing imbalance and facilitates more trips to be made by biking and walking. Scenario 6's low VMT per capita also suggests that the additional housing would help address the jobs-housing imbalance, since work trips tend to be longer than non-work trips. The growth in population, compared with Scenario 5, accounts for Scenario 6's higher number of transit trips and higher VMT. Of the 18 study intersections, Scenario 6 has two more impacted study intersections than Scenario 5. One of these intersection impacts is because Scenario 6 does not include the addition of two HOV lanes on Page Mill Road (intersection of Foothill and Page Mill).

Scenario 6M includes the same assumptions as Scenario 6, plus the implementation of the proposed mitigation measures. It would result in an even lower auto mode share, higher number of transit trips, lower VMT, and lower VMT per capita than Scenario 6.

The **No Growth Scenario**, which includes the new housing and commercial square footage already approved in Palo Alto but no additional development, results in lower VMT than any of the six scenarios and would be only 0.5% higher than existing conditions. The number of transit trips, however, would be 33% higher than existing conditions, as more trips are made on transit due to increased congestion on the region's streets and freeways. The No Growth scenario would result in almost as many impacted intersections as the Business As Usual scenario and more than Scenarios 2, 3, and 5, because it does not include any of their transportation investment and sustainability assumptions. Also, these intersections would still experience increased traffic volumes due to regional growth, even if no additional development is approved in Palo Alto.

Table 19
Summary of Transportation Metrics

Comparative Metric	Existing Conditions	2030								
		Scen 1	Scen 2	Scen 3	Scen 4	Scen 5	Scen 5M	Scen 6	Scen 6M	No Growth
<u>Mode Share</u>										
% Drive Alone	61.5%	59.9%	60.0%	59.7%	58.5%	58.9%	58.0%	58.5%	57.6%	60.4%
<u>Transit Use</u>										
Number of Transit Trips	29,494	44,503	41,659	43,820	51,975	48,203	50,416	50,560	52,965	39,361
<u>Vehicle Miles Travelled (VMT)</u>										
Total Palo Alto VMT	5,320,931	5,914,158	5,741,373	5,853,201	5,788,497	5,511,446	5,469,258	5,663,040	5,618,277	5,349,838
<u>VMT Per Capita</u>										
Palo Alto VMT per capita	33.0	32.5	32.3	32.1	30.9	30.9	30.6	30.8	30.5	32.2
<u>Intersection Level of Service^a</u>										
Number of Impacted Intersections		7	4	5	7	4	4	6	5	6
<u>Notes:</u>										
(a) There were 18 study intersctions for all scenarios.										

Source: Hexagon Transportation Consultants, Inc, February 2017.

In terms of the potential CEQA impacts presented in the first chapter, the following summarizes the findings of this Supplemental TIA. Would any of the six scenarios:

- Cause an intersection to drop below its level of service standard, or if it is already operating at a substandard level of service, deteriorate by more than a specified amount? Yes, all six scenarios would result in at least one impacted intersection during the AM or PM peak hour. The implementation of additional TDM-related policies and other measures to mitigate those impacts would reduce the intersection impact to a less than significant level at Middlefield Road and Charleston Road (#2) under Scenarios 1 and 4 and at Embarcadero Road and E. Bayshore Road (#18) under Scenarios 4 and 6. However, all scenarios would still result in a significant and unavoidable impact at at least one intersection.
- Cause a freeway segment or ramp to operate at LOS F or contribute traffic in excess of 1% of segment capacity to a freeway segment or ramp already operating at LOS F? Yes, all six scenarios would result in significant impacts on six freeway segments during at least one peak hour. Scenarios 1 – 5 would result in a significant impact on a seventh freeway segment. With implementation of a TDM mitigation program and other measures, the projected impact would be eliminated on three freeway segments. The TDM measures would reduce but not eliminate the impact on four of the freeway segments. These impacts are considered significant and unavoidable. None of the scenarios would cause an impact on any of the freeway ramps.
- Impede the development or function of planned pedestrian or bicycle facilities? No. Scenarios 2 and 5 include the expansion of Page Mill Road from four to six lanes between I-280 and Porter Drive, and wider roadways can generally be considered detrimental to pedestrians. (The additional lanes would be restricted to transit and HOV use under Scenario 5.) However, Scenarios 2 and 5 also include construction of improved bicycle and pedestrian facilities along that segment of Page Mill Road. There are currently no pedestrian facilities at all between I-280 and Deer Creek Road. Thus, on balance, those scenarios would enhance rather than degrade the bicycle and pedestrian facilities. None of the other scenarios include components that would impede the function of planned bicycle or pedestrian facilities.
- Increase demand for pedestrian and bicycle facilities that cannot be met by existing or planned facilities? No.
- Impedes the operation of a transit system as a result of congestion? Yes, but with implementation of additional TDM policies, and signal priority for buses at intersections and queue jump lanes and curbside platforms along El Camino Real, this impact would be reduced. However, because the congestion at all intersections and roadway segments where buses operate would not be eliminated, all six scenarios would have a significant and unavoidable impact on transit operations by increasing congestion.
- Create demand for transit services that cannot be met by current or planned services? No.
- Create the potential demand for through traffic to use local residential streets? Yes, all six scenarios would result in additional traffic on arterials which could result in additional traffic being diverted from those arterials onto local residential streets. As mitigation for potential cut-through impacts, the City would adopt a traffic calming program. With implementation of traffic calming measures, it can be assumed that any impacts to local residential streets from traffic that may be diverted from arterials could be reduced to less than significant.
- Create an operational safety hazard? No.
- Result in inadequate emergency access? No.

Palo Alto Comp Plan Update: Supplemental TIA Appendix A

Level of Service Calculation Sheets

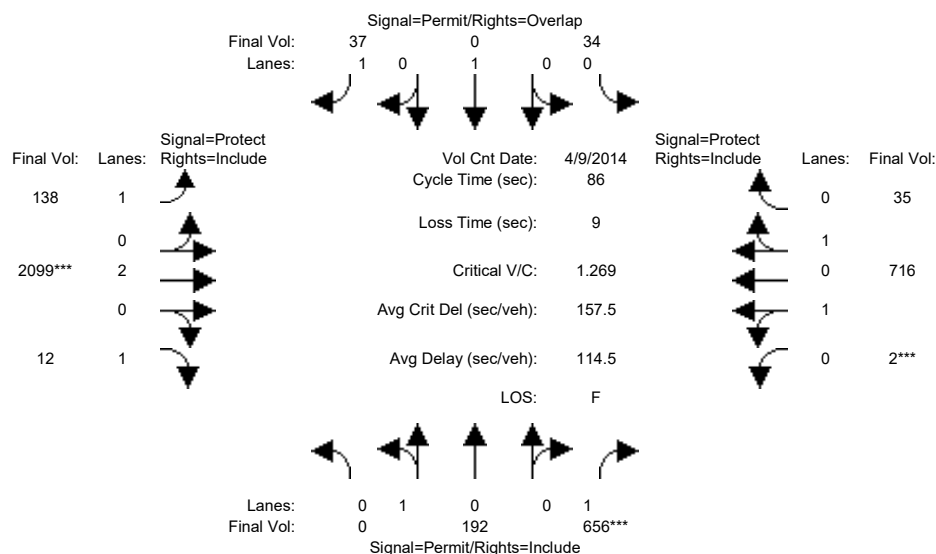
18 Study Intersections

1. AM Existing Conditions
2. PM Existing Conditions
3. AM Scenarios 1-4
4. PM Scenarios 1-4
5. AM Scenarios 5, 5M, 6, 6M
6. PM Scenarios 5, 5M, 6, 6M
7. AM No Growth Scenario
8. PM No Growth Scenario

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



Street Name: I-280 NB Ramps Sand Hill Rd

Approach:	North Bound						South Bound						East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R			
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10	7	10	10			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			

Volume Module: >> Count Date: 9 Apr 2014 << 7:45 AM - 8:45 AM

Base Vol:	0	192	656	34	0	37	138	2099	12	2	716	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	34	0	37	138	2099	12	2	716	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	34	0	37	138	2099	12	2	716	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	34	0	37	138	2099	12	2	716	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	34	0	37	138	2099	12	2	716	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	192	656	34	0	37	138	2099	12	2	716	35

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.90	0.09
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	10	3423	167

Capacity Analysis Module:

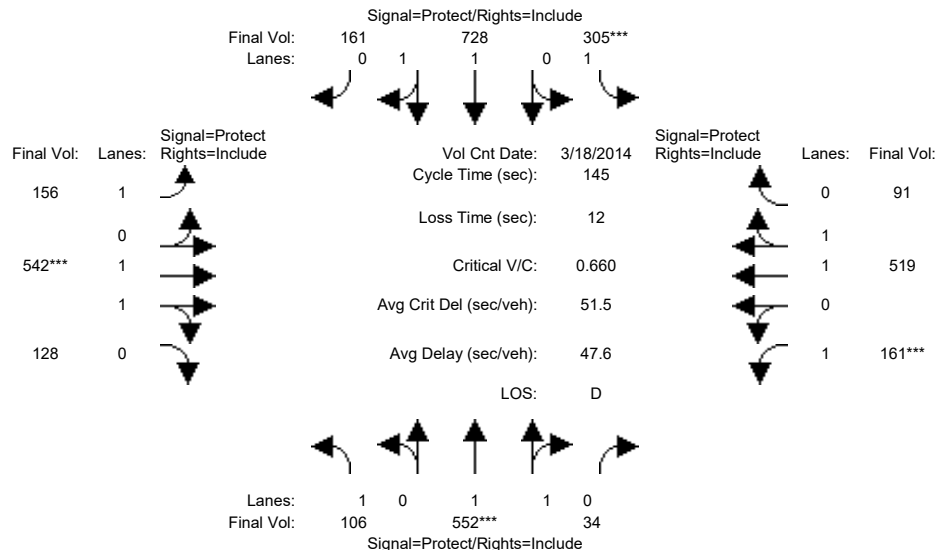
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.55	0.01	0.21	0.21	0.21
Crit Moves:			****					****			****	
Green Time:	0.0	25.4	25.4	25.4	0.0	39.9	14.5	37.4	37.4	14.2	37.1	37.1
Volume/Cap:	0.00	0.36	1.27	0.06	0.00	0.05	0.47	1.27	0.02	1.27	0.48	0.48
Delay/Veh:	0.0	24.3	166.1	21.8	0.0	12.7	33.5	150	13.8	170.0	17.8	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	24.3	166.1	21.8	0.0	12.7	33.5	150	13.8	170.0	17.8	17.8
LOS by Move:	A	C	F	C	A	B	C	F	B	F	B	B
HCM2kAvgQ:	0	4	40	1	0	1	4	57	0	24	8	8

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #2: Middlefield Road & Charleston Road



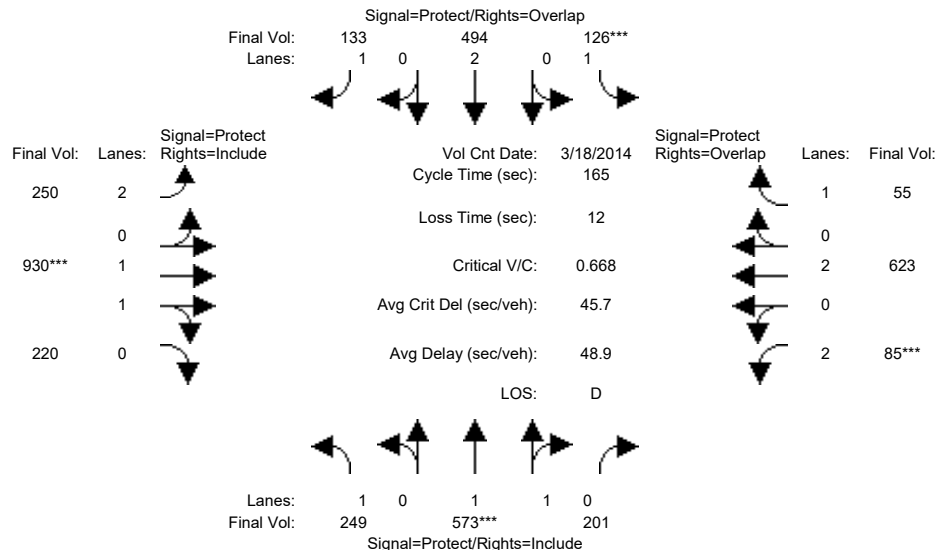
Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	106	552	34	305	728	161	156	542	128	161	519	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	552	34	305	728	161	156	542	128	161	519	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	552	34	305	728	161	156	542	128	161	519	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	552	34	305	728	161	156	542	128	161	519	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	552	34	305	728	161	156	542	128	161	519	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	106	552	34	305	728	161	156	542	128	161	519	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.61	0.39	1.00	1.69	0.31
Final Sat.:	1750	3485	215	1750	3029	670	1750	2993	707	1750	3148	552
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.17	0.24	0.24	0.09	0.18	0.18	0.09	0.16	0.16
Crit Moves:	****			****			****			****		
Green Time:	14.7	34.8	34.8	38.3	58.3	58.3	21.0	39.8	39.8	20.2	38.9	38.9
Volume/Cap:	0.60	0.66	0.66	0.66	0.60	0.60	0.61	0.66	0.66	0.66	0.61	0.61
Delay/Veh:	67.8	51.6	51.6	51.1	34.8	34.8	62.6	48.3	48.3	65.7	47.6	47.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.8	51.6	51.6	51.1	34.8	34.8	62.6	48.3	48.3	65.7	47.6	47.6
LOS by Move:	E	D	D	D	C	C	E	D	D	E	D	D
HCM2kAvgQ:	6	13	13	14	16	16	8	14	14	8	13	13

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



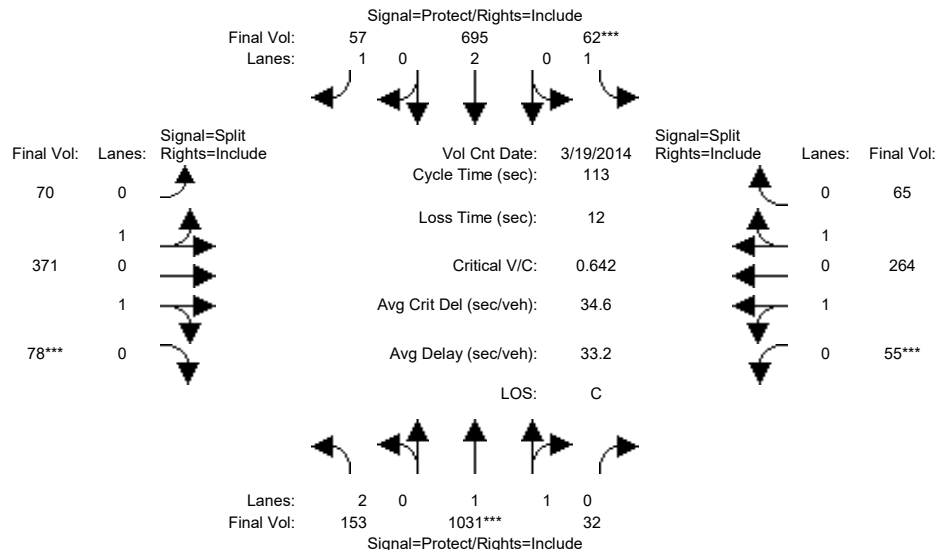
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	249	573	201	126	494	221	250	930	220	85	623	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	126	494	221	250	930	220	85	623	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	126	494	221	250	930	220	85	623	78
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	126	494	133	250	930	220	85	623	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	126	494	133	250	930	220	85	623	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	126	494	133	250	930	220	85	623	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.61	0.39	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	2992	708	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.07	0.13	0.08	0.08	0.31	0.31	0.03	0.16	0.03
Crit Moves:	****			****			****			****		
Green Time:	36.2	51.6	51.6	17.8	33.1	60.4	27.3	76.7	76.7	7.0	56.4	74.1
Volume/Cap:	0.65	0.67	0.67	0.67	0.65	0.21	0.48	0.67	0.67	0.64	0.48	0.07
Delay/Veh:	62.4	50.8	50.8	79.7	62.5	36.0	63.1	35.4	35.4	87.5	43.1	25.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.4	50.8	50.8	79.7	62.5	36.0	63.1	35.4	35.4	87.5	43.1	25.9
LOS by Move:	E	D	D	E	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	18	18	8	12	5	7	23	23	4	12	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #4: Alma Street & Charleston Road

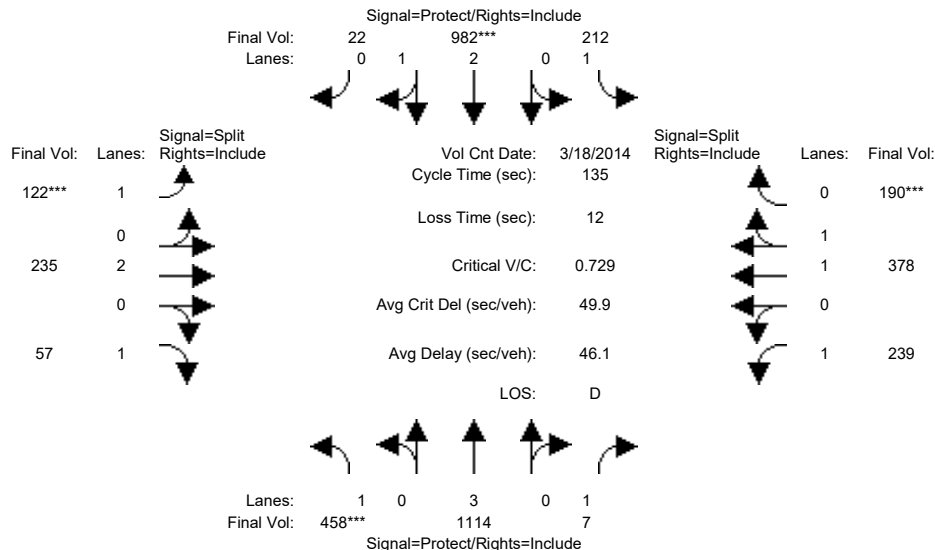


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	153	1031	32	62	695	57	70	371	78	55	264	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	1031	32	62	695	57	70	371	78	55	264	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	1031	32	62	695	57	70	371	78	55	264	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	1031	32	62	695	57	70	371	78	55	264	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	1031	32	62	695	57	70	371	78	55	264	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	153	1031	32	62	695	57	70	371	78	55	264	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.94	0.06	1.00	2.00	1.00	0.27	1.43	0.30	0.29	1.37	0.34
Final Sat.:	3150	3589	111	1750	3800	1750	486	2573	541	516	2475	609
Capacity Analysis Module:												
Vol/Sat:	0.05	0.29	0.29	0.04	0.18	0.03	0.14	0.14	0.14	0.11	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	14.5	50.2	50.2	7.0	42.7	42.7	25.2	25.2	25.2	18.6	18.6	18.6
Volume/Cap:	0.38	0.65	0.65	0.57	0.48	0.09	0.65	0.65	0.65	0.65	0.65	0.65
Delay/Veh:	45.7	25.4	25.4	58.7	27.0	22.6	41.7	41.7	41.7	46.6	46.6	46.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	25.4	25.4	58.7	27.0	22.6	41.7	41.7	41.7	46.6	46.6	46.6
LOS by Move:	D	C	C	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	3	15	15	3	9	1	9	9	9	8	8	8
Note: Queue reported is the number of cars per lane.												

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Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



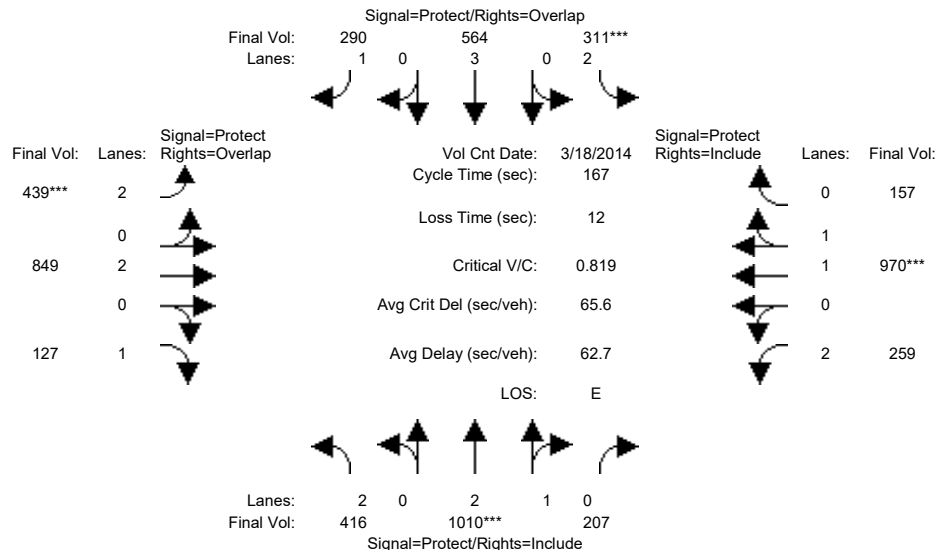
Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	458	1114	14	212	982	43	122	235	113	239	378	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	458	1114	14	212	982	43	122	235	113	239	378	190
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	1114	14	212	982	43	122	235	113	239	378	190
User Adj:	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	458	1114	7	212	982	22	122	235	57	239	378	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	1114	7	212	982	22	122	235	57	239	378	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	458	1114	7	212	982	22	122	235	57	239	378	190
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	1.00	2.00	1.00	1.00	1.31	0.69
Final Sat.:	1750	5700	1750	1750	5480	120	1750	3800	1750	1750	2461	1237
Capacity Analysis Module:												
Vol/Sat:	0.26	0.20	0.00	0.12	0.18	0.18	0.07	0.06	0.03	0.14	0.15	0.15
Crit Moves:	***			***			***					***
Green Time:	48.5	50.4	50.4	31.2	33.2	33.2	12.9	12.9	12.9	28.4	28.4	28.4
Volume/Cap:	0.73	0.52	0.01	0.52	0.73	0.73	0.73	0.65	0.34	0.65	0.73	0.73
Delay/Veh:	41.9	33.2	26.6	46.6	48.8	48.8	74.3	62.9	58.3	52.7	53.2	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.9	33.2	26.6	46.6	48.8	48.8	74.3	62.9	58.3	52.7	53.2	53.2
LOS by Move:	D	C	C	D	D	D	E	E	E	D	D	D
HCM2kAvgQ:	19	12	0	9	14	14	7	6	3	11	13	13

Note: Queue reported is the number of cars per lane.

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Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



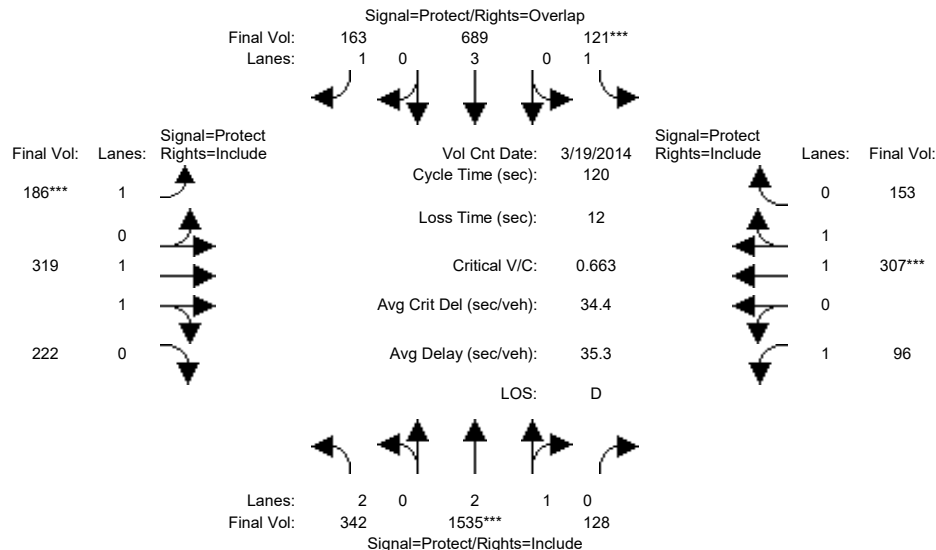
Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	416	1010	207	311	564	290	439	849	127	259	970	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	416	1010	207	311	564	290	439	849	127	259	970	157
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	416	1010	207	311	564	290	439	849	127	259	970	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	416	1010	207	311	564	290	439	849	127	259	970	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	416	1010	207	311	564	290	439	849	127	259	970	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	416	1010	207	311	564	290	439	849	127	259	970	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.47	0.53	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	4646	952	3150	5700	1750	3150	3800	1750	3150	3184	515
Capacity Analysis Module:												
Vol/Sat:	0.13	0.22	0.22	0.10	0.10	0.17	0.14	0.22	0.07	0.08	0.30	0.30
Crit Moves:	****			****			****			****		
Green Time:	36.9	44.3	44.3	20.1	27.6	56.0	28.4	66.2	103.0	24.4	62.1	62.1
Volume/Cap:	0.60	0.82	0.82	0.82	0.60	0.49	0.82	0.56	0.12	0.56	0.82	0.82
Delay/Veh:	59.9	61.3	61.3	84.8	65.6	44.8	76.5	39.7	13.3	68.0	51.4	51.4
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.9	61.3	61.3	118.7	91.9	62.8	76.5	39.7	13.3	68.0	51.4	51.4
LOS by Move:	E	E	E	F	F	E	E	D	B	E	D	D
HCM2kAvgQ:	12	21	21	11	9	13	15	17	3	8	28	28

Note: Queue reported is the number of cars per lane.

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Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 19 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	342	1535	128	121	689	163	186	319	222	96	307	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	342	1535	128	121	689	163	186	319	222	96	307	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	342	1535	128	121	689	163	186	319	222	96	307	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	342	1535	128	121	689	163	186	319	222	96	307	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	342	1535	128	121	689	163	186	319	222	96	307	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	342	1535	128	121	689	163	186	319	222	96	307	153

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.99	0.95
Lanes:	2.00	2.76	0.24	1.00	3.00	1.00	1.00	1.16	0.84	1.00	1.32	0.68
Final Sat.:	3150	5168	431	1750	5700	1750	1750	2181	1518	1750	2468	1230

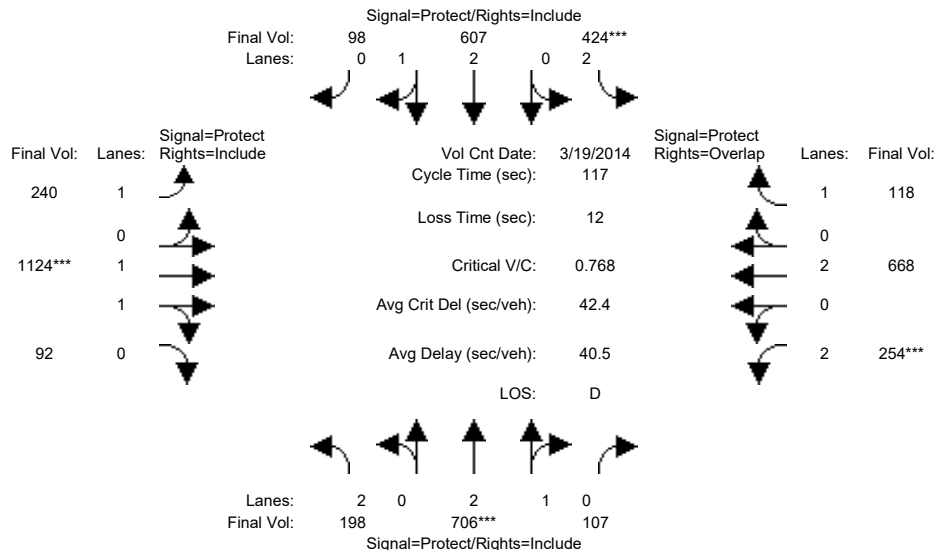
Capacity Analysis Module:												
Vol/Sat:	0.11	0.30	0.30	0.07	0.12	0.09	0.11	0.15	0.15	0.05	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	31.4	53.7	53.7	12.5	34.9	54.1	19.2	29.8	29.8	11.9	22.5	22.5
Volume/Cap:	0.42	0.66	0.66	0.66	0.42	0.21	0.66	0.59	0.59	0.55	0.66	0.66
Delay/Veh:	37.1	26.7	26.7	60.5	34.5	20.1	53.2	40.7	40.7	55.4	47.6	47.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	26.7	26.7	60.5	34.5	20.1	53.2	40.7	40.7	55.4	47.6	47.6
LOS by Move:	D	C	C	E	C	C	D	D	D	E	D	D
HCM2kAvgQ:	6	17	17	6	7	4	8	10	10	4	9	9

Note: Queue reported is the number of cars per lane.

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Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



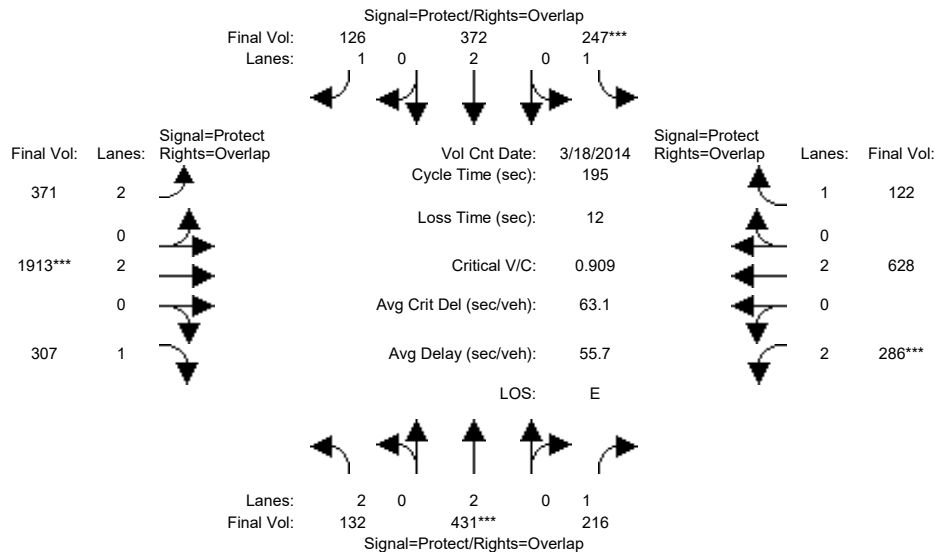
Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	198	706	107	424	607	98	240	1124	92	254	668	118
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	706	107	424	607	98	240	1124	92	254	668	118
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	706	107	424	607	98	240	1124	92	254	668	118
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	706	107	424	607	98	240	1124	92	254	668	118
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	706	107	424	607	98	240	1124	92	254	668	118
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	706	107	424	607	98	240	1124	92	254	668	118
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.59	0.41	2.00	2.57	0.43	1.00	1.84	0.16	2.00	2.00	1.00
Final Sat.:	3150	4862	737	3150	4821	778	1750	3420	280	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.15	0.15	0.13	0.13	0.13	0.14	0.33	0.33	0.08	0.18	0.07
Crit Moves:	****			****			****			****		
Green Time:	14.2	22.1	22.1	20.5	28.4	28.4	27.3	50.1	50.1	12.3	35.0	55.5
Volume/Cap:	0.52	0.77	0.77	0.77	0.52	0.52	0.59	0.77	0.77	0.77	0.59	0.14
Delay/Veh:	49.4	48.5	48.5	52.4	38.7	38.7	42.0	30.8	30.8	61.4	35.6	17.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.4	48.5	48.5	52.4	38.7	38.7	42.0	30.8	30.8	61.4	35.6	17.4
LOS by Move:	D	D	D	D	D	D	D	C	C	E	D	B
HCM2kAvgQ:	5	11	11	11	8	8	9	20	20	7	11	3

Note: Queue reported is the number of cars per lane.

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Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Movement	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM

Module	L	T	R	L	T	R	L	T	R	L	T	R
Base Vol:	132	431	216	247	372	126	371	1913	307	286	628	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	132	431	216	247	372	126	371	1913	307	286	628	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	431	216	247	372	126	371	1913	307	286	628	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	132	431	216	247	372	126	371	1913	307	286	628	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	132	431	216	247	372	126	371	1913	307	286	628	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	132	431	216	247	372	126	371	1913	307	286	628	122

Saturation Flow Module:

Module	L	T	R	L	T	R	L	T	R	L	T	R
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

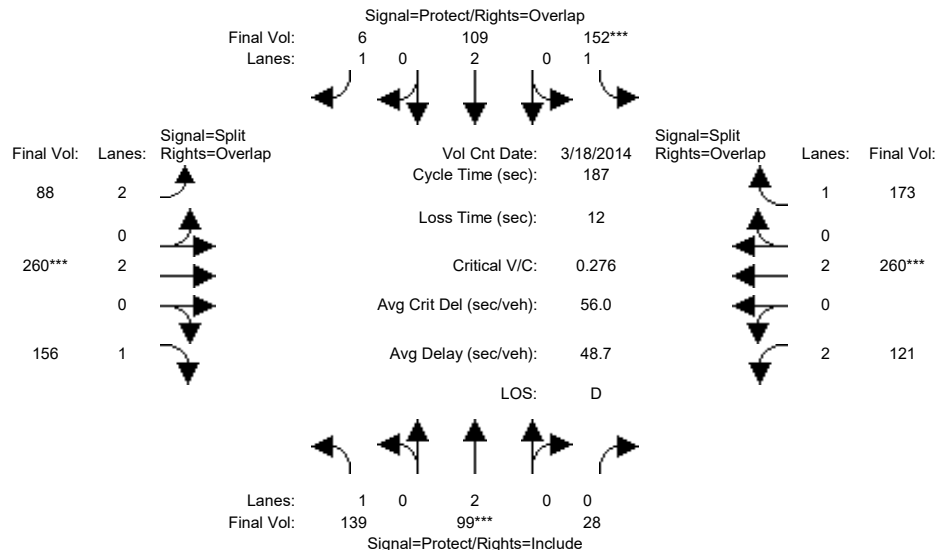
Module	L	T	R	L	T	R	L	T	R	L	T	R
Vol/Sat:	0.04	0.11	0.12	0.14	0.10	0.07	0.12	0.50	0.18	0.09	0.17	0.07
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	16.4	24.3	43.8	30.3	38.2	91.2	53.0	108	124.3	19.5	74.4	104.7
Volume/Cap:	0.50	0.91	0.55	0.91	0.50	0.15	0.43	0.91	0.28	0.91	0.43	0.13
Delay/Veh:	80.3	99.2	63.4	106.7	65.0	27.5	54.4	42.5	14.5	109.0	41.5	20.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.3	99.2	63.4	106.7	65.0	27.5	54.4	42.5	14.5	109.0	41.5	20.8
LOS by Move:	F	F	E	F	E	C	D	D	B	F	D	C
HCM2kAvgQ:	5	15	12	18	9	4	10	49	8	12	12	3

Note: Queue reported is the number of cars per lane.

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Count Year AM Peak Hour

Intersection #10: Foothill & Arastradero (CMP #5207)

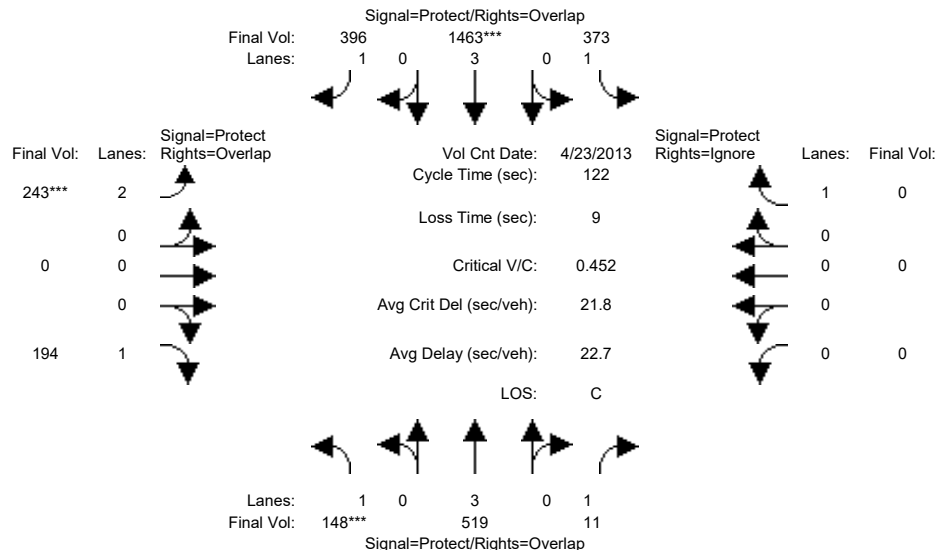


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 7:30 AM - 8:30 AM											
Base Vol:	139	99	28	152	109	16	88	260	156	121	260	173
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	139	99	28	152	109	16	88	260	156	121	260	173
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	139	99	28	152	109	16	88	260	156	121	260	173
User Adj:	1.00	1.00	1.00	1.00	1.00	0.40	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	139	99	28	152	109	6	88	260	156	121	260	173
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	99	28	152	109	6	88	260	156	121	260	173
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	139	99	28	152	109	6	88	260	156	121	260	173
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.55	0.45	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	2884	816	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.03	0.09	0.03	0.00	0.03	0.07	0.09	0.04	0.07	0.10
Crit Moves:	****			****			****			****		
Green Time:	48.2	23.2	23.2	58.8	33.7	80.0	46.3	46.3	94.5	46.3	46.3	105.0
Volume/Cap:	0.31	0.28	0.28	0.28	0.16	0.01	0.11	0.28	0.18	0.16	0.28	0.18
Delay/Veh:	54.2	71.8	71.8	46.6	62.3	29.6	52.5	54.9	24.3	53.1	54.9	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.2	71.8	71.8	46.6	62.3	29.6	52.5	54.9	24.3	53.1	54.9	19.3
LOS by Move:	D	E	E	D	E	C	D	D	C	D	D	B
HCM2kAvgQ:	7	3	3	7	2	0	2	6	5	3	6	5
Note: Queue reported is the number of cars per lane.												

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Count Year AM Peak Hour

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

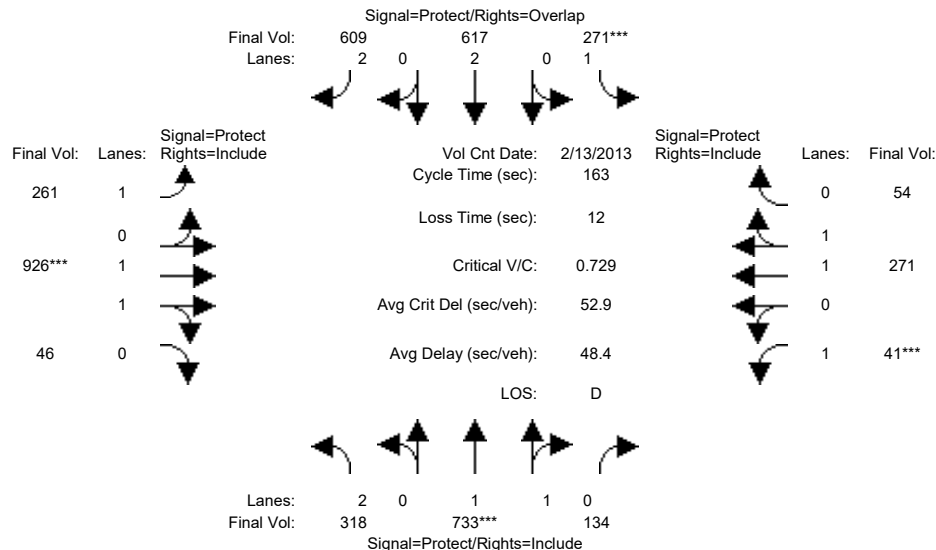


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 Apr 2013 << AM												
Base Vol:	148	519	11	373	1463	396	243	0	194	0	0	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	519	11	373	1463	396	243	0	194	0	0	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	519	11	373	1463	396	243	0	194	0	0	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	519	11	373	1463	396	243	0	194	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	519	11	373	1463	396	243	0	194	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	519	11	373	1463	396	243	0	194	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.08	0.09	0.01	0.21	0.26	0.23	0.08	0.00	0.11	0.00	0.00	0.00
Crit Moves:	***			***			***					
Green Time:	22.8	27.6	27.6	64.6	69.3	90.2	20.8	0.0	43.7	0.0	0.0	0.0
Volume/Cap:	0.45	0.40	0.03	0.40	0.45	0.31	0.45	0.00	0.31	0.00	0.00	0.00
Delay/Veh:	45.0	40.4	36.8	17.5	15.4	5.5	46.1	0.0	28.6	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.0	40.4	36.8	17.5	15.4	5.5	46.1	0.0	28.6	0.0	0.0	0.0
LOS by Move:	D	D	D	B	B	A	D	A	C	A	A	A
HCM2kAvgQ:	6	6	0	9	10	5	5	0	6	0	0	0
Note: Queue reported is the number of cars per lane.												

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Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

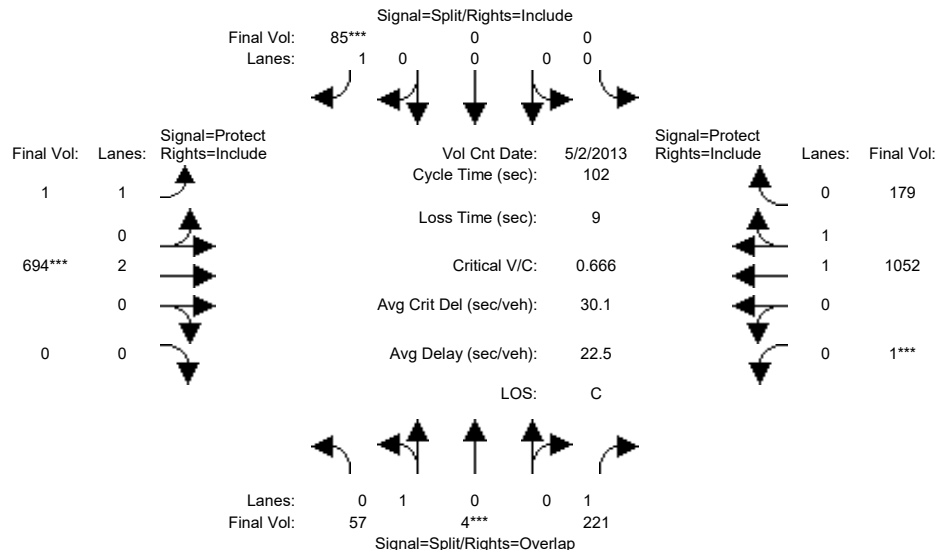


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Feb 2013 << AM												
Base Vol:	318	733	134	271	617	609	261	926	46	41	271	108
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	318	733	134	271	617	609	261	926	46	41	271	108
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	318	733	134	271	617	609	261	926	46	41	271	108
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	318	733	134	271	617	609	261	926	46	41	271	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	318	733	134	271	617	609	261	926	46	41	271	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	318	733	134	271	617	609	261	926	46	41	271	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.68	0.32	1.00	2.00	2.00	1.00	1.90	0.10	1.00	1.66	0.34
Final Sat.:	3150	3128	572	1750	3800	3150	1750	3525	175	1750	3085	615
Capacity Analysis Module:												
Vol/Sat:	0.10	0.23	0.23	0.15	0.16	0.19	0.15	0.26	0.26	0.02	0.09	0.09
Crit Moves:	****			****			****			****		
Green Time:	33.0	51.8	51.8	34.2	53.0	93.9	40.9	58.0	58.0	7.0	24.1	24.1
Volume/Cap:	0.50	0.74	0.74	0.74	0.50	0.34	0.59	0.74	0.74	0.55	0.59	0.59
Delay/Veh:	58.3	52.1	52.1	67.9	44.6	18.2	55.9	48.1	48.1	84.5	66.6	66.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.3	52.1	52.1	67.9	44.6	18.2	55.9	48.1	48.1	84.5	66.6	66.6
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	20	20	15	12	9	13	22	22	3	8	8
Note: Queue reported is the number of cars per lane.												

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Count Year AM Peak Hour

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



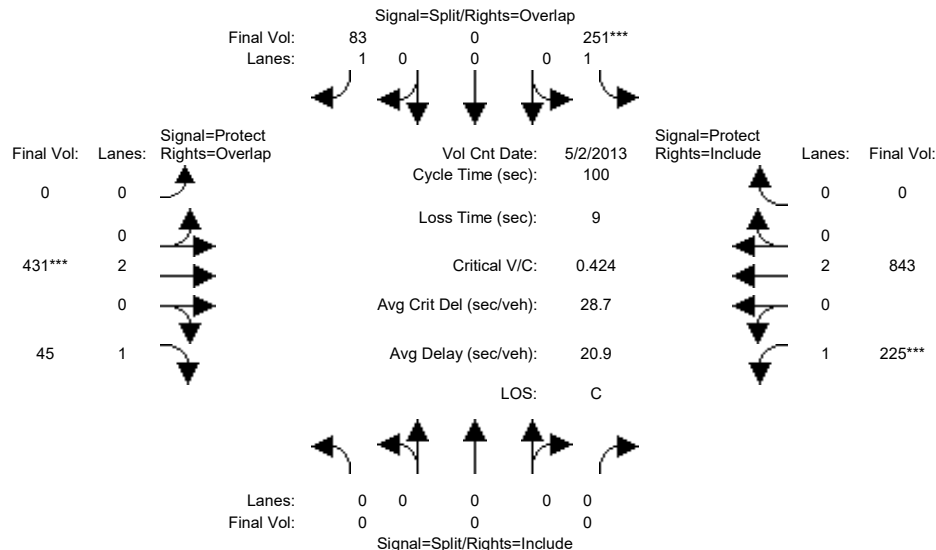
Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 << AM												
Base Vol:	57	4	221	0	0	85	1	694	0	1	1052	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	4	221	0	0	85	1	694	0	1	1052	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	4	221	0	0	85	1	694	0	1	1052	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	4	221	0	0	85	1	694	0	1	1052	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	4	221	0	0	85	1	694	0	1	1052	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	57	4	221	0	0	85	1	694	0	1	1052	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.93	0.07	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.70	0.29
Final Sat.:	1682	118	1750	0	0	1750	1750	3800	0	3	3074	523
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.13	0.00	0.00	0.05	0.00	0.18	0.00	0.34	0.34	0.34
Crit Moves:	****			****			****			****		
Green Time:	10.0	10.0	57.6	0.0	0.0	10.0	12.2	25.4	0.0	47.6	60.8	60.8
Volume/Cap:	0.35	0.35	0.22	0.00	0.00	0.50	0.00	0.73	0.00	0.73	0.57	0.57
Delay/Veh:	44.1	44.1	11.2	0.0	0.0	45.9	39.6	38.2	0.0	23.8	13.0	13.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.1	44.1	11.2	0.0	0.0	45.9	39.6	38.2	0.0	23.8	13.0	13.0
LOS by Move:	D	D	B	A	A	D	D	D	A	C	B	B
HCM2kAvgQ:	2	2	4	0	0	3	0	11	0	17	13	13

Note: Queue reported is the number of cars per lane.

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Count Year AM Peak Hour

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

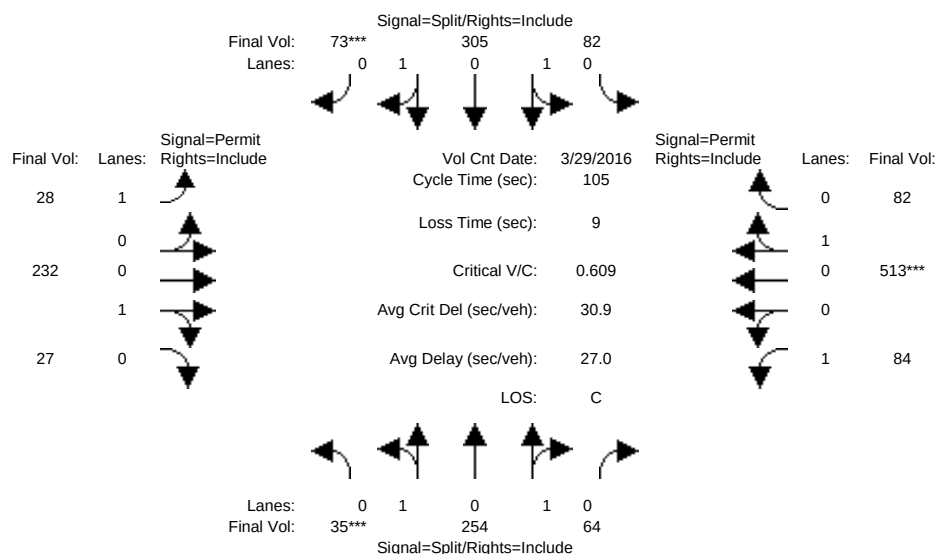


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 <<												
Base Vol:	0	0	0	251	0	83	0	431	45	225	843	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	251	0	83	0	431	45	225	843	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	251	0	83	0	431	45	225	843	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	251	0	83	0	431	45	225	843	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	251	0	83	0	431	45	225	843	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	251	0	83	0	431	45	225	843	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.00	0.11	0.03	0.13	0.22	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	33.9	0.0	33.9	0.0	26.8	26.8	30.4	57.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.42	0.00	0.14	0.00	0.42	0.10	0.42	0.39	0.00
Delay/Veh:	0.0	0.0	0.0	26.0	0.0	23.1	0.0	30.5	27.6	28.4	11.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.0	0.0	23.1	0.0	30.5	27.6	28.4	11.9	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	B	A
HCM2kAvgQ:	0	0	0	7	0	2	0	6	1	6	7	0
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #15: Middlefield Road & University Avenue

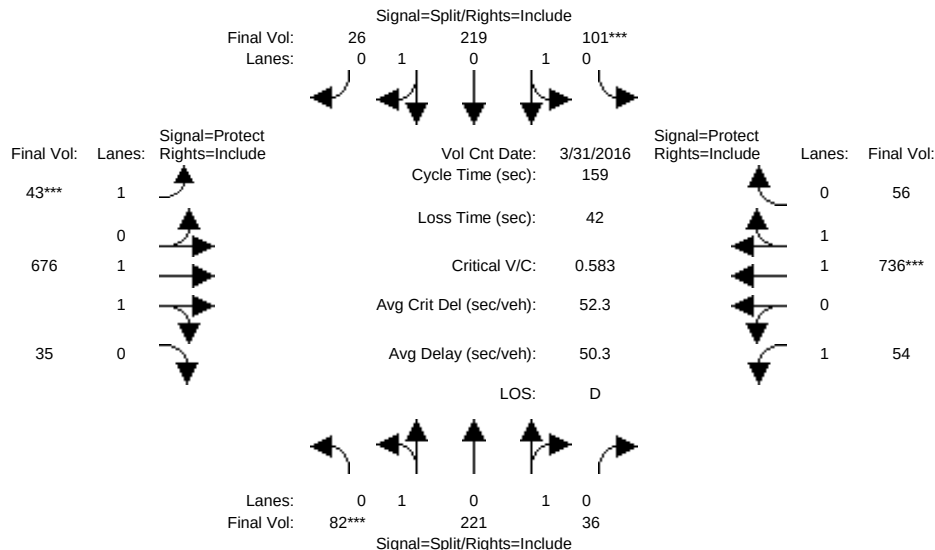


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 29 Mar 2016 << AM												
Base Vol:	35	254	64	82	305	73	28	232	27	84	513	82
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	35	254	64	82	305	73	28	232	27	84	513	82
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	35	254	64	82	305	73	28	232	27	84	513	82
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	35	254	64	82	305	73	28	232	27	84	513	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	254	64	82	305	73	28	232	27	84	513	82
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	35	254	64	82	305	73	28	232	27	84	513	82
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.20	1.44	0.36	0.36	1.32	0.32	1.00	0.90	0.10	1.00	0.86	0.14
Final Sat.:	357	2590	653	642	2387	571	1750	1612	188	1750	1552	248
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.13	0.13	0.13	0.02	0.14	0.14	0.05	0.33	0.33
Crit Moves:	****					****					****	
Green Time:	16.9	16.9	16.9	22.0	22.0	22.0	57.0	57.0	57.0	57.0	57.0	57.0
Volume/Cap:	0.61	0.61	0.61	0.61	0.61	0.61	0.03	0.26	0.26	0.09	0.61	0.61
Delay/Veh:	42.8	42.8	42.8	39.0	39.0	39.0	11.1	12.9	12.9	11.5	17.5	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	42.8	42.8	39.0	39.0	39.0	11.1	12.9	12.9	11.5	17.5	17.5
LOS by Move:	D	D	D	D	D	D	B	B	B	B	B	B
HCM2kAvgQ:	6	6	6	8	8	8	0	5	5	1	14	14
Note: Queue reported is the number of cars per lane.												

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Count Year AM Peak Hour

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]

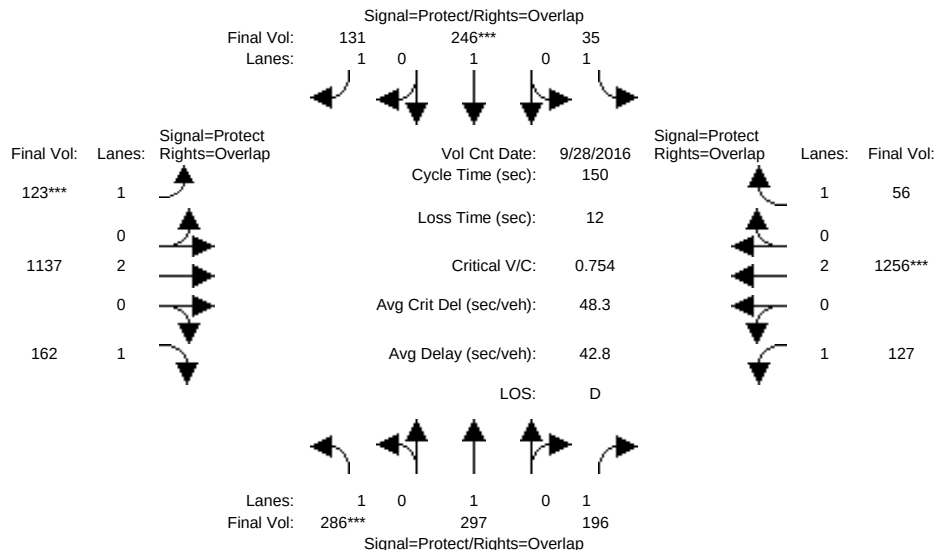


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 31 Mar 2016 << AM											
Base Vol:	82	221	36	101	219	26	43	676	35	54	736	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	82	221	36	101	219	26	43	676	35	54	736	56
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	221	36	101	219	26	43	676	35	54	736	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	82	221	36	101	219	26	43	676	35	54	736	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	221	36	101	219	26	43	676	35	54	736	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	82	221	36	101	219	26	43	676	35	54	736	56
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.48	1.31	0.21	0.58	1.27	0.15	1.00	1.90	0.10	1.00	1.85	0.15
Final Sat.:	871	2347	382	1051	2279	271	1750	3518	182	1750	3438	262
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.10	0.10	0.10	0.02	0.19	0.19	0.03	0.21	0.21
Crit Moves:	***			***			***			***		
Green Time:	25.6	25.6	25.6	26.1	26.1	26.1	7.0	53.1	53.1	12.2	58.2	58.2
Volume/Cap:	0.58	0.58	0.58	0.58	0.58	0.58	0.56	0.58	0.58	0.40	0.58	0.58
Delay/Veh:	63.3	63.3	63.3	62.9	62.9	62.9	83.3	44.3	44.3	72.0	41.3	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.3	63.3	63.3	62.9	62.9	62.9	83.3	44.3	44.3	72.0	41.3	41.3
LOS by Move:	E	E	E	E	E	E	F	D	D	E	D	D
HCM2kAvgQ:	9	9	9	9	9	9	3	15	15	3	16	16
Note: Queue reported is the number of cars per lane.												

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Count Year AM Peak Hour

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

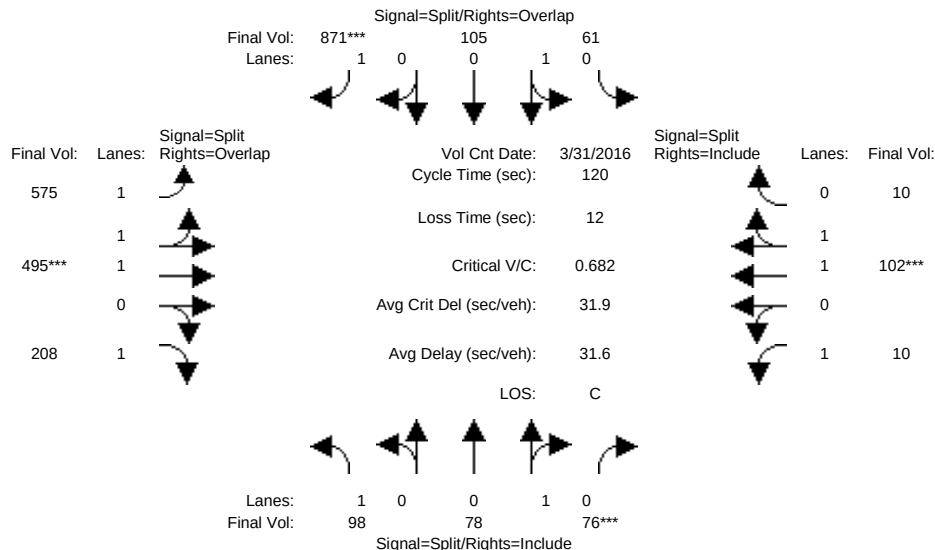


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 28 Sep 2016 << AM											
Base Vol:	286	297	196	35	246	131	123	1137	162	127	1256	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	297	196	35	246	131	123	1137	162	127	1256	56
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	297	196	35	246	131	123	1137	162	127	1256	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	297	196	35	246	131	123	1137	162	127	1256	56
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	297	196	35	246	131	123	1137	162	127	1256	56
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	297	196	35	246	131	123	1137	162	127	1256	56
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	1900	1750	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.16	0.16	0.11	0.02	0.13	0.07	0.07	0.30	0.09	0.07	0.33	0.03
Crit Moves:	***				***		***				***	
Green Time:	32.5	44.9	60.4	13.4	25.8	39.7	14.0	64.2	96.7	15.6	65.8	79.1
Volume/Cap:	0.75	0.52	0.28	0.22	0.75	0.28	0.75	0.70	0.14	0.70	0.75	0.06
Delay/Veh:	63.3	44.6	30.3	64.2	68.7	44.1	84.3	36.4	10.5	76.4	37.3	17.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.3	44.6	30.3	64.2	68.7	44.1	84.3	36.4	10.5	76.4	37.3	17.3
LOS by Move:	E	D	C	E	E	D	F	D	B	E	D	B
HCM2kAvgQ:	15	11	6	2	12	5	8	22	3	7	25	1
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Count Year AM Peak Hour

Intersection #18: Bayshore Road & Embarcadero Road

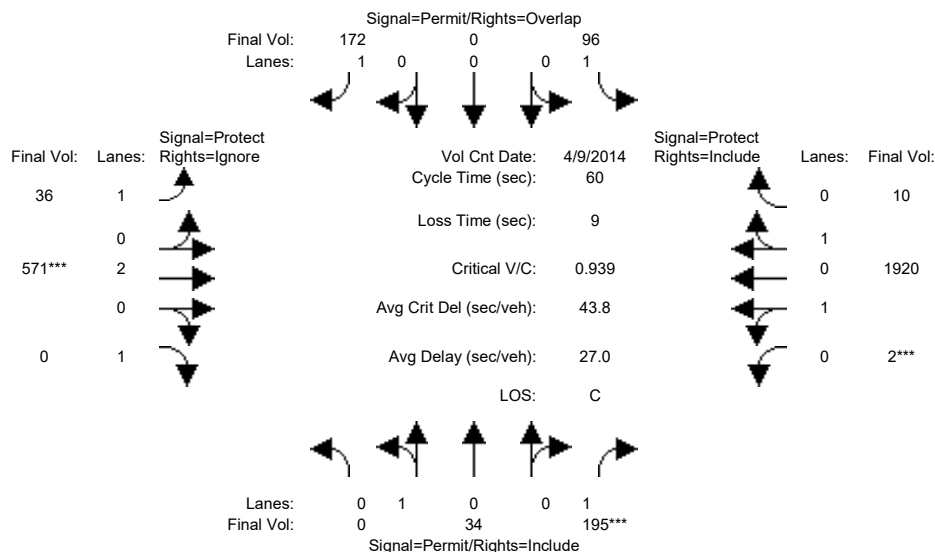


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 31 Mar 2016 << AM												
Base Vol:	98	78	76	61	105	871	575	495	208	10	102	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	78	76	61	105	871	575	495	208	10	102	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	78	76	61	105	871	575	495	208	10	102	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	78	76	61	105	871	575	495	208	10	102	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	78	76	61	105	871	575	495	208	10	102	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	98	78	76	61	105	871	575	495	208	10	102	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.51	0.49	0.37	0.63	1.00	1.65	1.35	1.00	1.00	1.82	0.18
Final Sat.:	1750	912	888	661	1139	1750	2926	2519	1750	1750	3369	330
Capacity Analysis Module:												
Vol/Sat:	0.06	0.09	0.09	0.09	0.09	0.50	0.20	0.20	0.12	0.01	0.03	0.03
Crit Moves:	****			****			****			****		
Green Time:	14.4	14.4	14.4	50.6	50.6	83.6	33.0	33.0	47.4	10.0	10.0	10.0
Volume/Cap:	0.47	0.71	0.71	0.22	0.22	0.71	0.71	0.71	0.30	0.07	0.36	0.36
Delay/Veh:	50.9	61.6	61.6	22.2	22.2	13.0	40.9	40.9	25.2	50.9	52.7	52.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	61.6	61.6	22.2	22.2	13.0	40.9	40.9	25.2	50.9	52.7	52.7
LOS by Move:	D	E	E	C	C	B	D	D	C	D	D	D
HCM2kAvgQ:	4	7	7	4	4	21	13	13	6	0	2	2
Note: Queue reported is the number of cars per lane.												

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Count Year PM Peak Hour

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



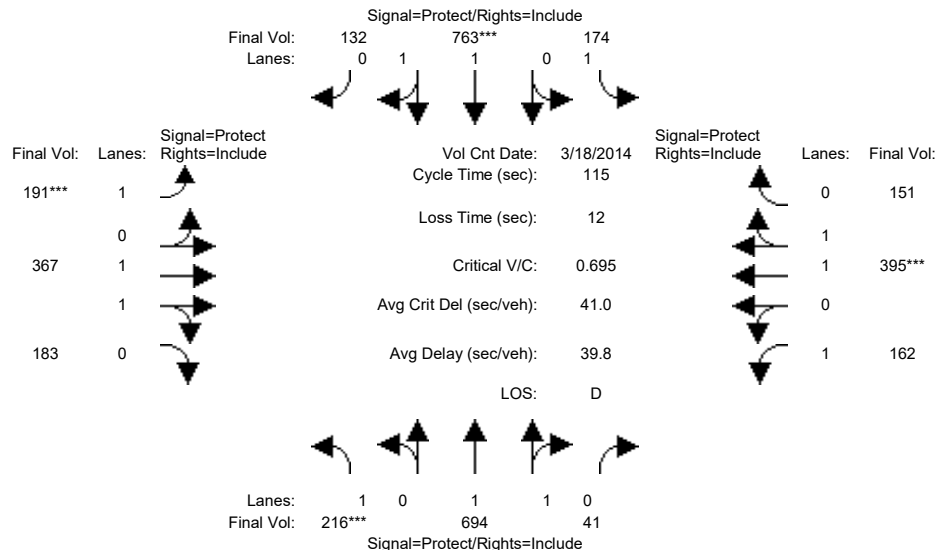
Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 9 Apr 2014 << 4:00 PM - 5:00 PM											
Base Vol:	0	34	195	96	0	172	36	571	106	2	1920	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	34	195	96	0	172	36	571	106	2	1920	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	34	195	96	0	172	36	571	106	2	1920	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	34	195	96	0	172	36	571	0	2	1920	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	34	195	96	0	172	36	571	0	2	1920	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	34	195	96	0	172	36	571	0	2	1920	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	4	3578	19
Capacity Analysis Module:												
Vol/Sat:	0.00	0.02	0.11	0.05	0.00	0.10	0.02	0.15	0.00	0.54	0.54	0.54
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.3	7.3	10.0	0.0	31.0	33.7	33.7
Volume/Cap:	0.00	0.11	0.67	0.33	0.00	0.34	0.17	0.90	0.00	1.04	0.96	0.96
Delay/Veh:	0.0	21.4	29.3	22.7	0.0	17.2	24.0	40.6	0.0	46.2	23.9	23.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.4	29.3	22.7	0.0	17.2	24.0	40.6	0.0	46.2	23.9	23.9
LOS by Move:	A	C	C	C	A	B	C	D	A	D	C	C
HCM2kAvgQ:	0	1	5	2	0	3	1	9	0	31	25	25

Note: Queue reported is the number of cars per lane.

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Count Year PM Peak Hour

Intersection #2: Middlefield Road & Charleston Road



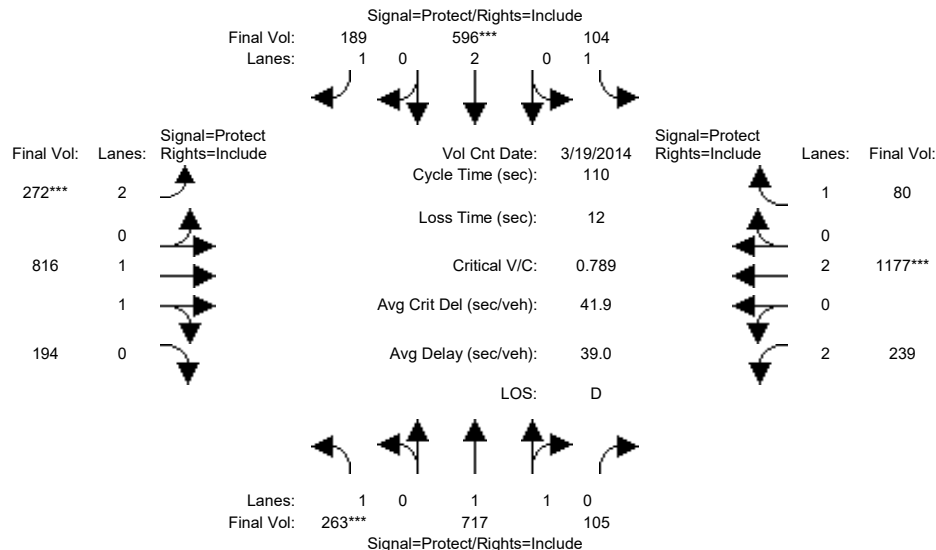
Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	216	694	41	174	763	132	191	367	183	162	395	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	694	41	174	763	132	191	367	183	162	395	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	694	41	174	763	132	191	367	183	162	395	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	694	41	174	763	132	191	367	183	162	395	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	694	41	174	763	132	191	367	183	162	395	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	216	694	41	174	763	132	191	367	183	162	395	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.70	0.30	1.00	1.32	0.68	1.00	1.43	0.57
Final Sat.:	1750	3493	206	1750	3154	546	1750	2468	1231	1750	2676	1023
Capacity Analysis Module:												
Vol/Sat:	0.12	0.20	0.20	0.10	0.24	0.24	0.11	0.15	0.15	0.09	0.15	0.15
Crit Moves:	***			***			***			***		
Green Time:	20.4	40.3	40.3	20.2	40.1	40.1	18.1	26.2	26.2	16.3	24.4	24.4
Volume/Cap:	0.69	0.57	0.57	0.57	0.69	0.69	0.69	0.65	0.65	0.65	0.69	0.69
Delay/Veh:	51.0	30.9	30.9	45.9	33.9	33.9	53.4	42.1	42.1	52.8	44.5	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	30.9	30.9	45.9	33.9	33.9	53.4	42.1	42.1	52.8	44.5	44.5
LOS by Move:	D	C	C	D	C	C	D	D	D	D	D	D
HCM2kAvgQ:	9	11	11	7	15	15	8	10	10	7	10	10

Note: Queue reported is the number of cars per lane.

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Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



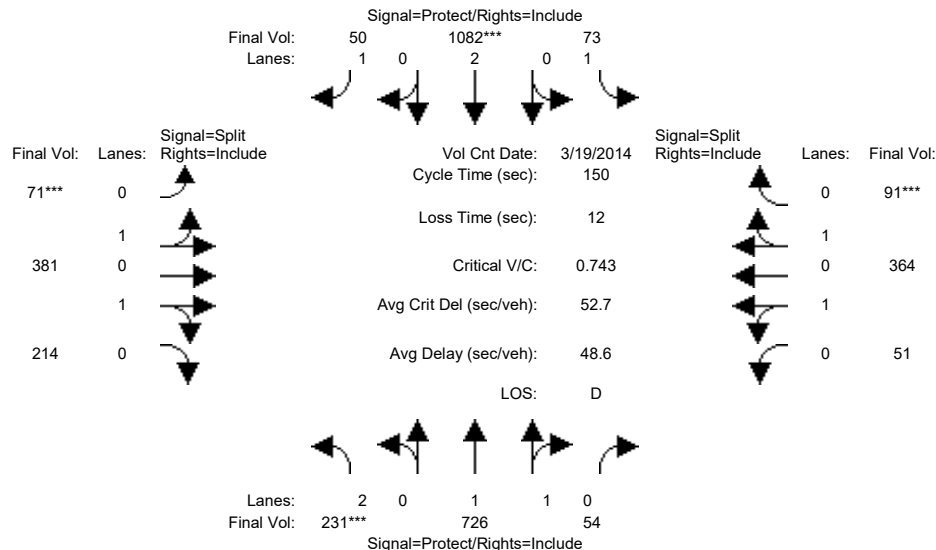
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	263	717	105	104	596	315	272	816	194	239	1177	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	104	596	315	272	816	194	239	1177	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	104	596	315	272	816	194	239	1177	114
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	104	596	189	272	816	194	239	1177	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	104	596	189	272	816	194	239	1177	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	104	596	189	272	816	194	239	1177	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.61	0.39	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2989	711	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.11	0.09	0.27	0.27	0.08	0.31	0.05
Crit Moves:	***				***		***				***	
Green Time:	20.9	33.3	33.3	9.5	21.9	21.9	12.0	43.2	43.2	12.0	43.2	43.2
Volume/Cap:	0.79	0.73	0.73	0.69	0.79	0.54	0.79	0.70	0.70	0.70	0.79	0.12
Delay/Veh:	54.4	37.0	37.0	61.1	47.5	41.4	59.3	29.4	29.4	53.3	32.3	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	37.0	37.0	61.1	47.5	41.4	59.3	29.4	29.4	53.3	32.3	21.4
LOS by Move:	D	D	D	E	D	D	E	C	C	D	C	C
HCM2kAvgQ:	11	14	14	5	12	7	7	15	15	6	19	2

Note: Queue reported is the number of cars per lane.

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Intersection #4: Alma Street & Charleston Road

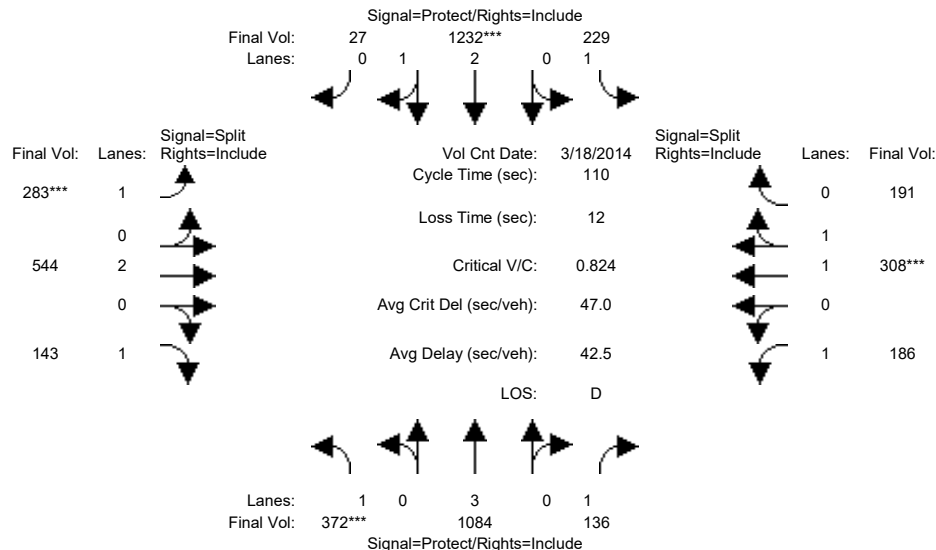


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 4:45 PM - 5:45 PM											
Base Vol:	231	726	54	73	1082	50	71	381	214	51	364	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	231	726	54	73	1082	50	71	381	214	51	364	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	231	726	54	73	1082	50	71	381	214	51	364	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	231	726	54	73	1082	50	71	381	214	51	364	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	231	726	54	73	1082	50	71	381	214	51	364	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	231	726	54	73	1082	50	71	381	214	51	364	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.86	0.14	1.00	2.00	1.00	0.21	1.15	0.64	0.20	1.44	0.36
Final Sat.:	3150	3444	256	1750	3800	1750	384	2059	1157	363	2590	647
Capacity Analysis Module:												
Vol/Sat:	0.07	0.21	0.21	0.04	0.28	0.03	0.19	0.19	0.19	0.14	0.14	0.14
Crit Moves:	***				***		***					***
Green Time:	14.8	59.2	59.2	13.1	57.5	57.5	37.3	37.3	37.3	28.4	28.4	28.4
Volume/Cap:	0.74	0.53	0.53	0.48	0.74	0.07	0.74	0.74	0.74	0.74	0.74	0.74
Delay/Veh:	75.1	35.2	35.2	67.5	42.0	29.4	55.3	55.3	55.3	61.8	61.8	61.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.1	35.2	35.2	67.5	42.0	29.4	55.3	55.3	55.3	61.8	61.8	61.8
LOS by Move:	E	D	D	E	D	C	E	E	E	E	E	E
HCM2kAvgQ:	8	14	14	4	22	2	16	16	16	13	13	13
Note: Queue reported is the number of cars per lane.												

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Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

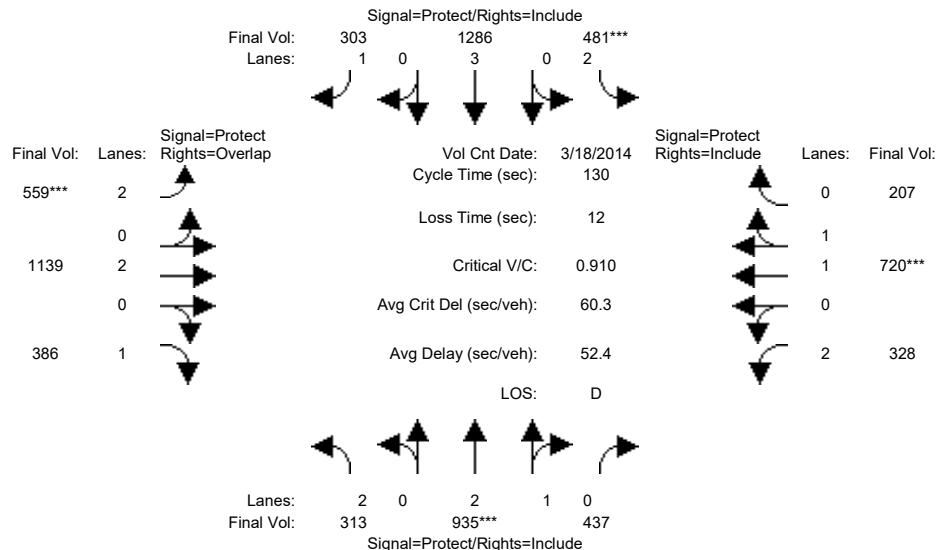


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	372	1084	136	229	1232	27	283	544	285	186	308	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	372	1084	136	229	1232	27	283	544	285	186	308	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	372	1084	136	229	1232	27	283	544	285	186	308	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	372	1084	136	229	1232	27	283	544	143	186	308	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	372	1084	136	229	1232	27	283	544	143	186	308	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	372	1084	136	229	1232	27	283	544	143	186	308	191
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.93	0.07	1.00	2.00	1.00	1.00	1.21	0.79
Final Sat.:	1750	5700	1750	1750	5480	120	1750	3800	1750	1750	2283	1416
Capacity Analysis Module:												
Vol/Sat:	0.21	0.19	0.08	0.13	0.22	0.22	0.16	0.14	0.08	0.11	0.13	0.13
Crit Moves:	***			***			***			***		
Green Time:	28.4	34.6	34.6	23.8	30.0	30.0	21.6	21.6	21.6	18.0	18.0	18.0
Volume/Cap:	0.82	0.60	0.25	0.60	0.82	0.82	0.82	0.73	0.41	0.65	0.82	0.82
Delay/Veh:	50.1	32.5	28.3	41.6	41.3	41.3	57.2	45.1	39.5	48.2	53.4	53.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.1	32.5	28.3	41.6	41.3	41.3	57.2	45.1	39.5	48.2	53.4	53.4
LOS by Move:	D	C	C	D	D	D	E	D	D	D	D	D
HCM2kAvgQ:	15	11	4	8	16	16	12	10	5	7	11	11
Note: Queue reported is the number of cars per lane.												

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Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

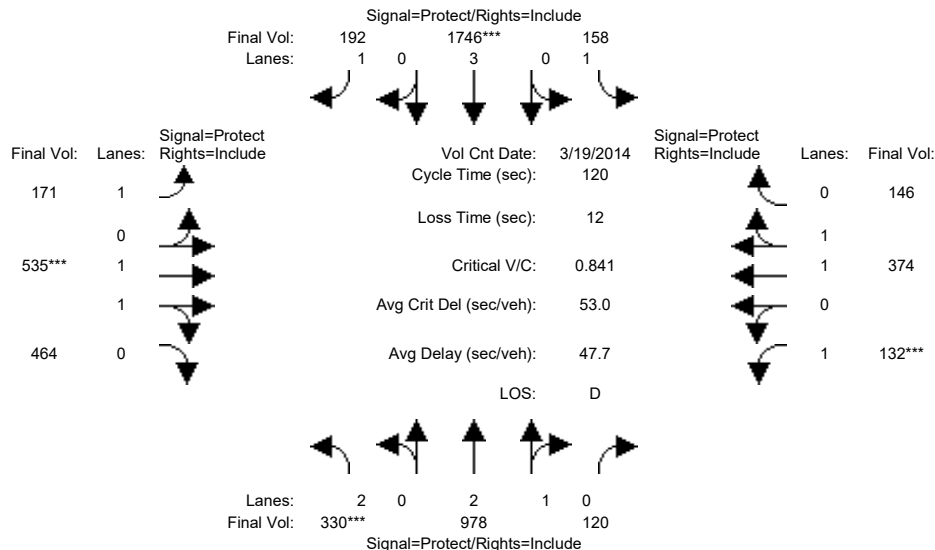


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	313	935	437	481	1286	303	559	1139	386	328	720	207
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	313	935	437	481	1286	303	559	1139	386	328	720	207
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	313	935	437	481	1286	303	559	1139	386	328	720	207
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	313	935	437	481	1286	303	559	1139	386	328	720	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	313	935	437	481	1286	303	559	1139	386	328	720	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	313	935	437	481	1286	303	559	1139	386	328	720	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.01	0.99	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.54	0.46
Final Sat.:	3150	3814	1783	3150	5700	1750	3150	3800	1750	3150	2873	826
Capacity Analysis Module:												
Vol/Sat:	0.10	0.25	0.25	0.15	0.23	0.17	0.18	0.30	0.22	0.10	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	17.4	35.0	35.0	21.8	39.5	39.5	25.4	45.4	62.8	15.8	35.8	35.8
Volume/Cap:	0.74	0.91	0.91	0.91	0.74	0.57	0.91	0.86	0.46	0.86	0.91	0.91
Delay/Veh:	61.2	54.5	54.5	72.9	42.5	39.6	68.8	45.2	22.7	73.4	57.4	57.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.2	54.5	54.5	72.9	42.5	39.6	68.8	45.2	22.7	73.4	57.4	57.4
LOS by Move:	E	D	D	E	D	D	E	D	C	E	E	E
HCM2kAvgQ:	9	22	22	15	16	11	17	24	11	10	22	22
Note: Queue reported is the number of cars per lane.												

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Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date:	19 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	330	978	120	158	1746	192	171	535	464	132	374	146
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	330	978	120	158	1746	192	171	535	464	132	374	146
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	330	978	120	158	1746	192	171	535	464	132	374	146
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	330	978	120	158	1746	192	171	535	464	132	374	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	330	978	120	158	1746	192	171	535	464	132	374	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	330	978	120	158	1746	192	171	535	464	132	374	146

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.66	0.34	1.00	3.00	1.00	1.00	1.05	0.95	1.00	1.42	0.58
Final Sat.:	3150	4987	612	1750	5700	1750	1750	1980	1717	1750	2660	1039

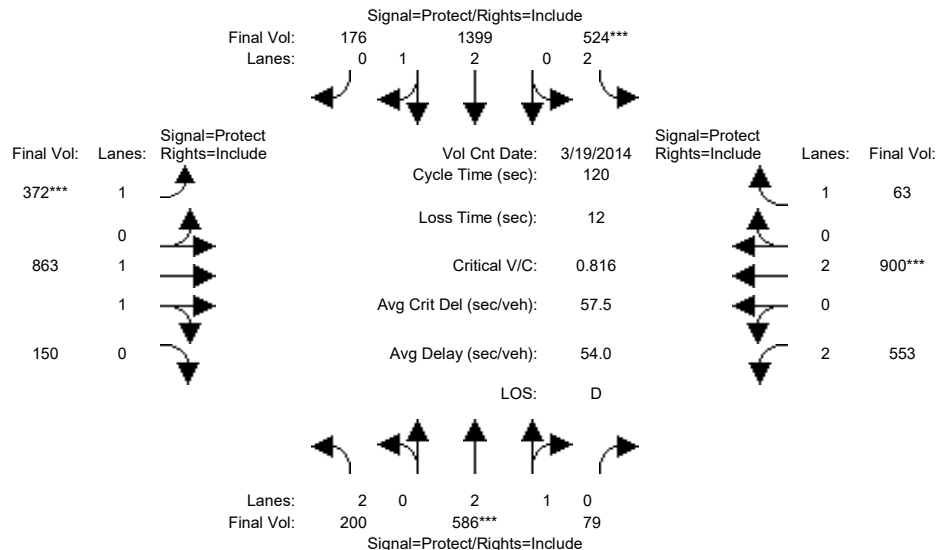
Capacity Analysis Module:												
Vol/Sat:	0.10	0.20	0.20	0.09	0.31	0.11	0.10	0.27	0.27	0.08	0.14	0.14
Crit Moves:	***			***			***			***		
Green Time:	15.0	40.2	40.2	18.5	43.7	43.7	20.2	38.6	38.6	10.8	29.1	29.1
Volume/Cap:	0.84	0.59	0.59	0.59	0.84	0.30	0.58	0.84	0.84	0.84	0.58	0.58
Delay/Veh:	66.3	33.5	33.5	50.5	38.2	27.5	48.9	43.4	43.4	85.1	41.0	41.0
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.3	33.5	33.5	70.7	53.5	38.5	48.9	43.4	43.4	85.1	41.0	41.0
LOS by Move:	E	C	C	E	D	D	D	D	D	F	D	D
HCM2kAvgQ:	10	12	12	7	22	5	7	20	20	8	9	9

Note: Queue reported is the number of cars per lane.

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Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



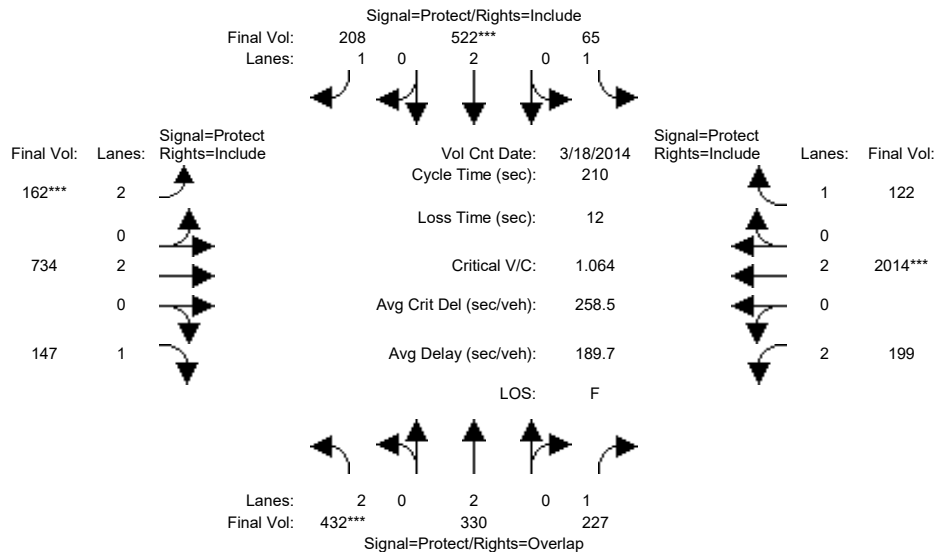
Street Name:	El Camino Real						San Antonio Road								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
-----	-----			-----			-----			-----					
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0			
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
-----	-----			-----			-----			-----					
Volume Module: >>	Count	Date:	19 Mar 2014	<<	4:45 PM	-	5:45 PM								
Base Vol:	200	586	79	524	1399	176	372	863	150	553	900	63			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	200	586	79	524	1399	176	372	863	150	553	900	63			
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	200	586	79	524	1399	176	372	863	150	553	900	63			
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Volume:	200	586	79	524	1399	176	372	863	150	553	900	63			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	200	586	79	524	1399	176	372	863	150	553	900	63			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
FinalVolume:	200	586	79	524	1399	176	372	863	150	553	900	63			
-----	-----			-----			-----			-----					
Saturation Flow Module:															
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92			
Lanes:	2.00	2.63	0.37	2.00	2.65	0.35	1.00	1.70	0.30	2.00	2.00	1.00			
Final Sat.:	3150	4934	665	3150	4973	626	1750	3152	548	3150	3800	1750			
-----	-----			-----			-----			-----					
Capacity Analysis Module:															
Vol/Sat:	0.06	0.12	0.12	0.17	0.28	0.28	0.21	0.27	0.27	0.18	0.24	0.04			
Crit Moves:	****			****			****			****					
Green Time:	11.3	28.0	28.0	21.6	38.3	38.3	27.6	35.6	35.6	22.8	30.8	30.8			
Volume/Cap:	0.67	0.51	0.51	0.92	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.14			
Delay/Veh:	58.4	40.4	40.4	69.3	44.3	44.3	71.9	53.6	53.6	67.9	57.4	34.6			
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
AdjDel/Veh:	58.4	40.4	40.4	69.3	44.3	44.3	71.9	53.6	53.6	67.9	57.4	34.6			
LOS by Move:	E	D	D	E	D	D	E	D	D	E	E	C			
HCM2kAvgQ:	6	8	8	15	22	22	18	23	23	16	20	2			
Note: Queue reported is the number of cars per lane.															

Note: Queue reported is the number of cars per lane.

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Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)

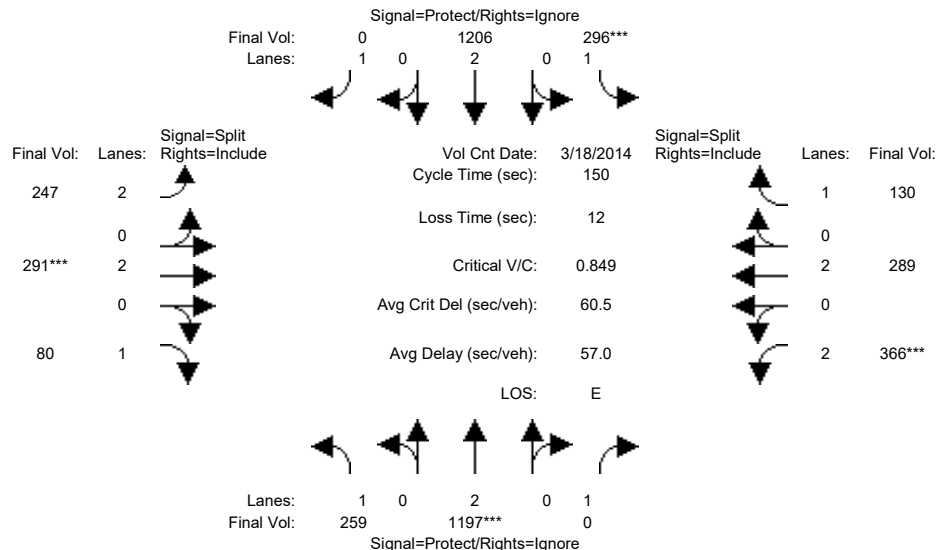


Street Name:Foothill Expressway - Junipero Se							Page Mill Road					
Approach:			Approach:			Approach:			Approach:			
North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Volume Module: >> Count Date: 18 Mar 2014 << 4:45 PM - 5:45 PM												
Base Vol:	432	330	227	65	522	347	162	734	147	199	2014	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	432	330	227	65	522	347	162	734	147	199	2014	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	432	330	227	65	522	347	162	734	147	199	2014	122
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	432	330	227	65	522	208	162	734	147	199	2014	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	432	330	227	65	522	208	162	734	147	199	2014	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	432	330	227	65	522	208	162	734	147	199	2014	122
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Capacity Analysis Module:												
Vol/Sat:	0.14	0.09	0.13	0.07	0.27	0.12	0.05	0.19	0.08	0.06	0.53	0.07
Crit Moves:	****				****		****				****	
Green Time:	16.3	17.5	35.8	16.3	17.5	17.5	16.3	144	143.9	18.3	146	145.8
Volume/Cap:	1.76	1.04	0.76	0.96	3.30	1.43	0.66	0.28	0.12	0.72	0.76	0.10
Delay/Veh:	442.7	144	82.0	175.8	1132	309.8	87.3	11.1	9.8	89.3	6.3	2.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	442.7	144	82.0	175.8	1132	309.8	87.3	11.1	9.8	89.3	6.3	2.6
LOS by Move:	F	F	F	F	F	F	F	B	A	F	A	A
HCM2kAvgQ:	29	13	15	6	37	22	6	8	3	8	16	1
Note: Queue reported is the number of cars per lane.												

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Intersection #10: Foothill & Arastradero (CMP #5207)



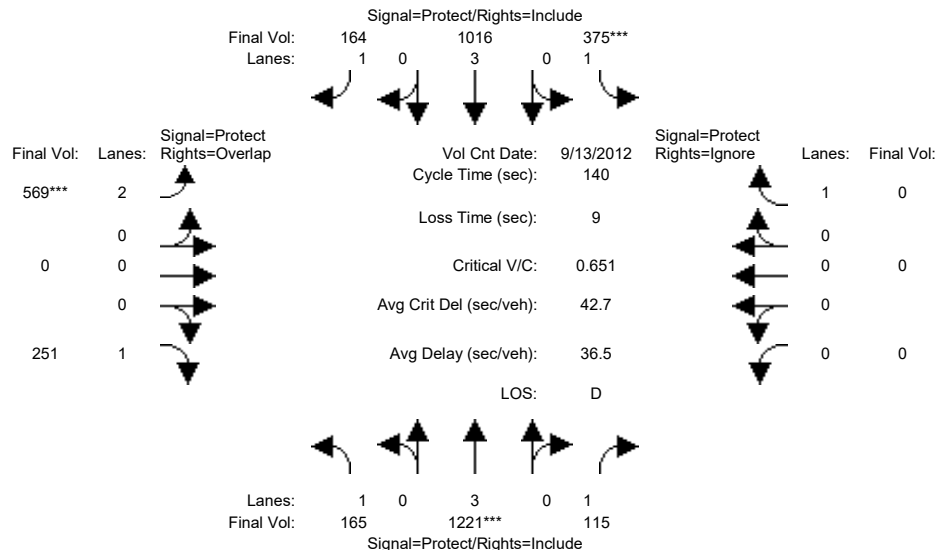
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	259	1197	54	296	1206	29	247	291	80	366	289	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	259	1197	54	296	1206	29	247	291	80	366	289	130
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	259	1197	54	296	1206	29	247	291	80	366	289	130
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	259	1197	0	296	1206	0	247	291	80	366	289	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	259	1197	0	296	1206	0	247	291	80	366	289	130
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	259	1197	0	296	1206	0	247	291	80	366	289	130
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.32	0.00	0.17	0.32	0.00	0.11	0.13	0.05	0.17	0.13	0.07
Crit Moves:	****			****			****			****		
Green Time:	27.2	55.6	0.0	29.9	58.3	0.0	23.2	23.2	23.2	29.3	29.3	29.3
Volume/Cap:	0.82	0.85	0.00	0.85	0.82	0.00	0.73	0.85	0.30	0.85	0.67	0.38
Delay/Veh:	74.1	48.4	0.0	75.4	44.7	0.0	67.9	79.5	56.8	72.9	59.8	53.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.1	48.4	0.0	75.4	44.7	0.0	67.9	79.5	56.8	72.9	59.8	53.2
LOS by Move:	E	D	A	E	D	A	E	E	E	E	E	D
HCM2kAvgQ:	14	27	0	17	26	0	8	9	4	12	8	6

Note: Queue reported is the number of cars per lane.

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Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

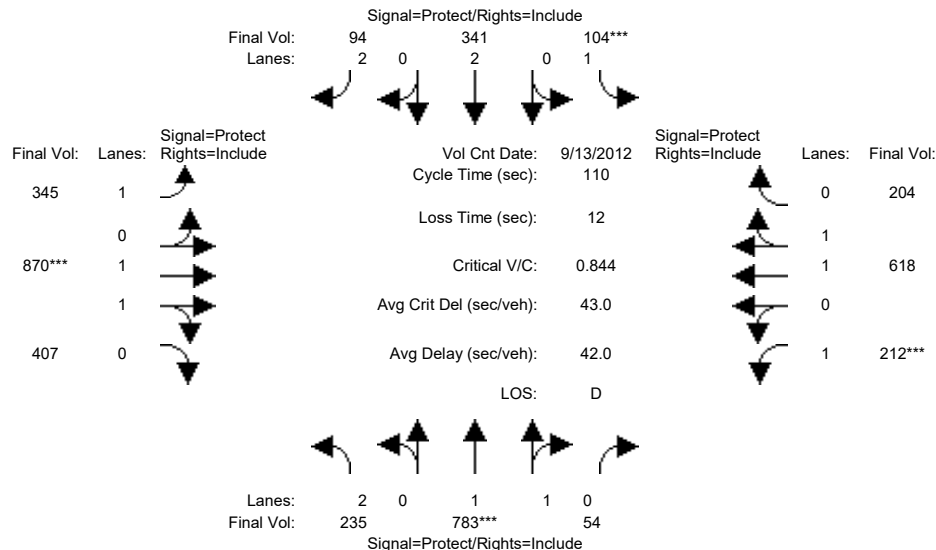


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	13 Sep 2012 << 5:00-6:00PM											
Base Vol:	165	1221	115	375	1016	328	569	0	251	0	0	922
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1221	115	375	1016	328	569	0	251	0	0	922
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1221	115	375	1016	328	569	0	251	0	0	922
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1221	115	375	1016	164	569	0	251	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1221	115	375	1016	164	569	0	251	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1221	115	375	1016	164	569	0	251	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	0.00	0.00	1.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	0	0	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.21	0.07	0.21	0.18	0.09	0.18	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	31.9	46.1	46.1	46.1	60.3	60.3	38.8	0.0	70.7	0.0	0.0	0.0
Volume/Cap:	0.41	0.65	0.20	0.65	0.41	0.22	0.65	0.00	0.28	0.00	0.00	0.00
Delay/Veh:	46.8	40.9	33.9	42.7	27.7	25.2	46.4	0.0	20.2	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.8	40.9	33.9	42.7	27.7	25.2	46.4	0.0	20.2	0.0	0.0	0.0
LOS by Move:	D	D	C	D	C	C	D	A	C	A	A	A
HCM2kAvgQ:	7	15	4	15	10	5	14	0	7	0	0	0
Note: Queue reported is the number of cars per lane.												

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Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

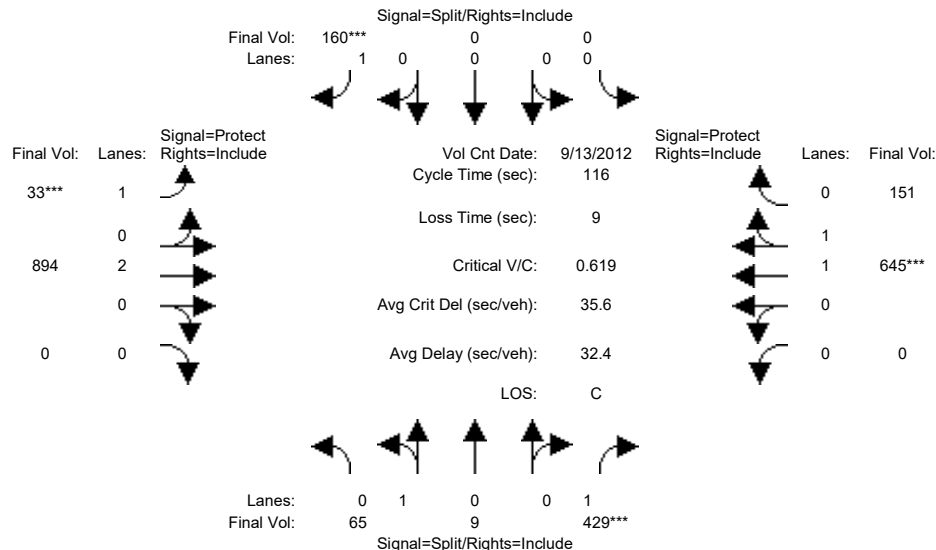


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << PM												
Base Vol:	235	783	54	104	341	187	345	870	407	212	618	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	341	187	345	870	407	212	618	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	341	187	345	870	407	212	618	204
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	341	94	345	870	407	212	618	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	341	94	345	870	407	212	618	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	341	94	345	870	407	212	618	204
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.35	0.65	1.00	1.49	0.51
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2520	1179	1750	2781	918
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.09	0.03	0.20	0.35	0.35	0.12	0.22	0.22
Crit Moves:	****			****			****			****		
Green Time:	16.8	29.5	29.5	7.7	20.4	20.4	28.6	45.0	45.0	15.8	32.2	32.2
Volume/Cap:	0.49	0.84	0.84	0.84	0.48	0.16	0.76	0.84	0.84	0.84	0.76	0.76
Delay/Veh:	43.5	44.8	44.8	88.9	40.6	37.7	44.8	33.9	33.9	68.1	38.5	38.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.5	44.8	44.8	88.9	40.6	37.7	44.8	33.9	33.9	68.1	38.5	38.5
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	5	16	16	6	6	2	13	22	22	10	14	14
Note: Queue reported is the number of cars per lane.												

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Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

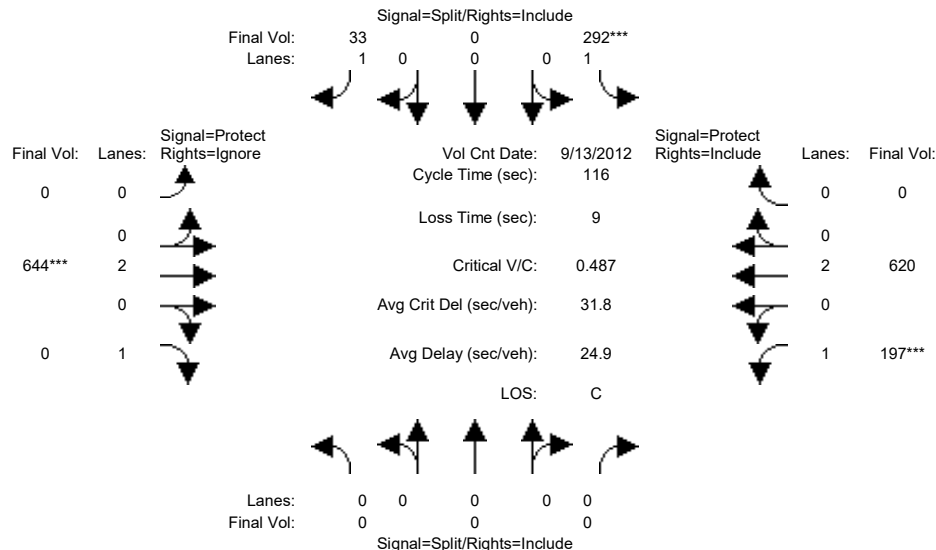


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10		10		10		7		10		0	
Y+R:	4.0		4.0		4.0		4.0		4.0		4.0	
Volume Module: >> Count Date:	13 Sep 2012 << 4:30-5:30PM											
Base Vol:	65	9	429	0	0	160	33	894	0	0	645	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	65	9	429	0	0	160	33	894	0	0	645	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	9	429	0	0	160	33	894	0	0	645	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	65	9	429	0	0	160	33	894	0	0	645	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	9	429	0	0	160	33	894	0	0	645	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	65	9	429	0	0	160	33	894	0	0	645	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.88	0.12	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.61	0.39
Final Sat.:	1581	219	1750	0	0	1750	1750	3800	0	0	2998	702
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.25	0.00	0.00	0.09	0.02	0.24	0.00	0.00	0.22	0.22
Crit Moves:	****			****			****			****		
Green Time:	44.4	44.4	44.4	0.0	0.0	16.6	7.0	46.0	0.0	0.0	39.0	39.0
Volume/Cap:	0.11	0.11	0.64	0.00	0.00	0.64	0.31	0.59	0.00	0.00	0.64	0.64
Delay/Veh:	23.1	23.1	31.3	0.0	0.0	52.4	53.9	28.3	0.0	0.0	33.7	33.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.1	23.1	31.3	0.0	0.0	52.4	53.9	28.3	0.0	0.0	33.7	33.7
LOS by Move:	C	C	C	A	A	D	D	C	A	A	C	C
HCM2kAvgQ:	2	2	14	0	0	7	2	13	0	0	13	13
Note: Queue reported is the number of cars per lane.												

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Count Year PM Peak Hour

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

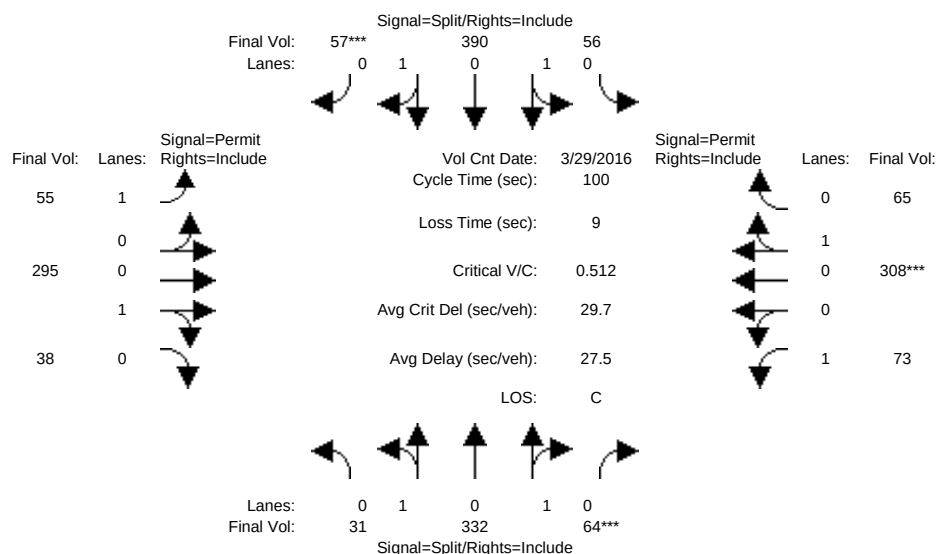


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 <<												
Base Vol:	0	0	0	292	0	33	0	644	134	197	620	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	292	0	33	0	644	134	197	620	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	292	0	33	0	644	134	197	620	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	292	0	33	0	644	0	197	620	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	292	0	33	0	644	0	197	620	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	292	0	33	0	644	0	197	620	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.02	0.00	0.17	0.00	0.11	0.16	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	39.8	0.0	39.8	0.0	40.4	0.0	26.8	67.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.49	0.00	0.05	0.00	0.49	0.00	0.49	0.28	0.00
Delay/Veh:	0.0	0.0	0.0	30.7	0.0	25.6	0.0	29.9	0.0	39.5	12.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	30.7	0.0	25.6	0.0	29.9	0.0	39.5	12.3	0.0
LOS by Move:	A	A	A	C	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	9	0	1	0	9	0	7	5	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year PM Peak Hour

Intersection #15: Middlefield Road & University Avenue

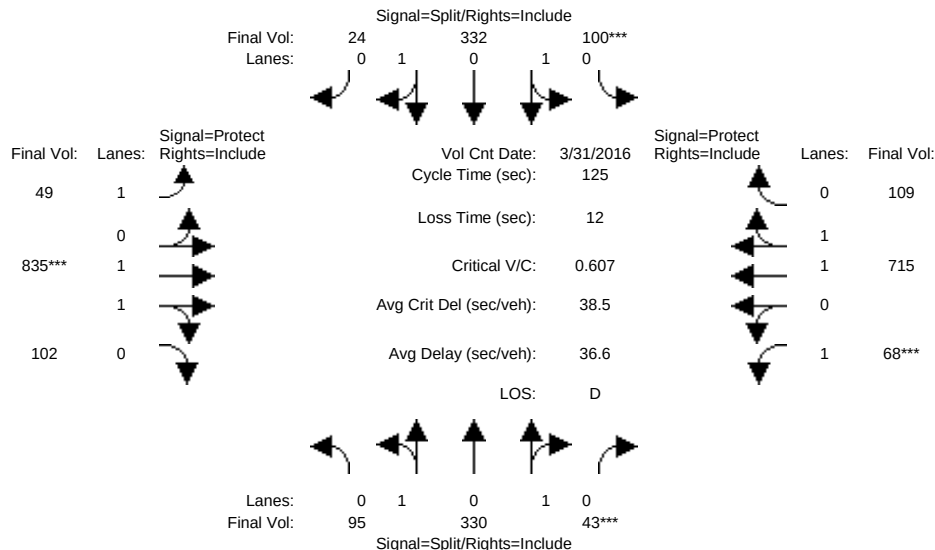


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 29 Mar 2016 << PM											
Base Vol:	31	332	64	56	390	57	55	295	38	73	308	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	332	64	56	390	57	55	295	38	73	308	65
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	332	64	56	390	57	55	295	38	73	308	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	31	332	64	56	390	57	55	295	38	73	308	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	332	64	56	390	57	55	295	38	73	308	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	31	332	64	56	390	57	55	295	38	73	308	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.15	1.55	0.30	0.22	1.55	0.23	1.00	0.89	0.11	1.00	0.83	0.17
Final Sat.:	261	2799	540	401	2791	408	1750	1595	205	1750	1486	314
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.14	0.14	0.14	0.03	0.19	0.19	0.04	0.21	0.21
Crit Moves:	****			****			****			****		
Green Time:	23.2	23.2	23.2	27.3	27.3	27.3	40.5	40.5	40.5	40.5	40.5	40.5
Volume/Cap:	0.51	0.51	0.51	0.51	0.51	0.51	0.08	0.46	0.46	0.10	0.51	0.51
Delay/Veh:	34.0	34.0	34.0	31.2	31.2	31.2	18.3	22.2	22.2	18.5	22.9	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	34.0	34.0	34.0	31.2	31.2	31.2	18.3	22.2	22.2	18.5	22.9	22.9
LOS by Move:	C	C	C	C	C	C	B	C	C	B	C	C
HCM2kAvgQ:	6	6	6	7	7	7	1	8	8	1	9	9
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Count Year PM Peak Hour

Intersection #16: Middlefield Road & Embarcadero Road

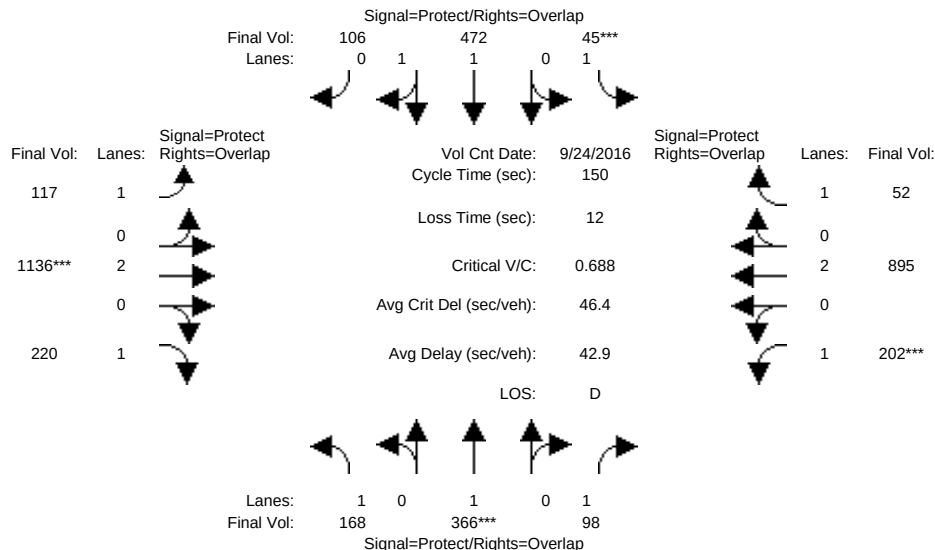


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 31 Mar 2016 << PM												
Base Vol:	95	330	43	100	332	24	49	835	102	68	715	109
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	100	332	24	49	835	102	68	715	109
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	100	332	24	49	835	102	68	715	109
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	100	332	24	49	835	102	68	715	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	100	332	24	49	835	102	68	715	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	100	332	24	49	835	102	68	715	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.44	1.46	0.10	1.00	1.78	0.22	1.00	1.73	0.27
Final Sat.:	731	2538	331	789	2621	189	1750	3297	403	1750	3210	489
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.25	0.25	0.04	0.22	0.22
Crit Moves:	****			****			****			****		
Green Time:	26.8	26.8	26.8	26.1	26.1	26.1	12.1	52.1	52.1	8.0	48.1	48.1
Volume/Cap:	0.61	0.61	0.61	0.61	0.61	0.61	0.29	0.61	0.61	0.61	0.58	0.58
Delay/Veh:	45.8	45.8	45.8	46.3	46.3	46.3	53.4	29.1	29.1	66.2	31.1	31.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.8	45.8	45.8	46.3	46.3	46.3	53.4	29.1	29.1	66.2	31.1	31.1
LOS by Move:	D	D	D	D	D	D	D	C	C	E	C	C
HCM2kAvgQ:	9	9	9	9	9	9	2	15	15	4	13	13
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Count Year PM Peak Hour

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

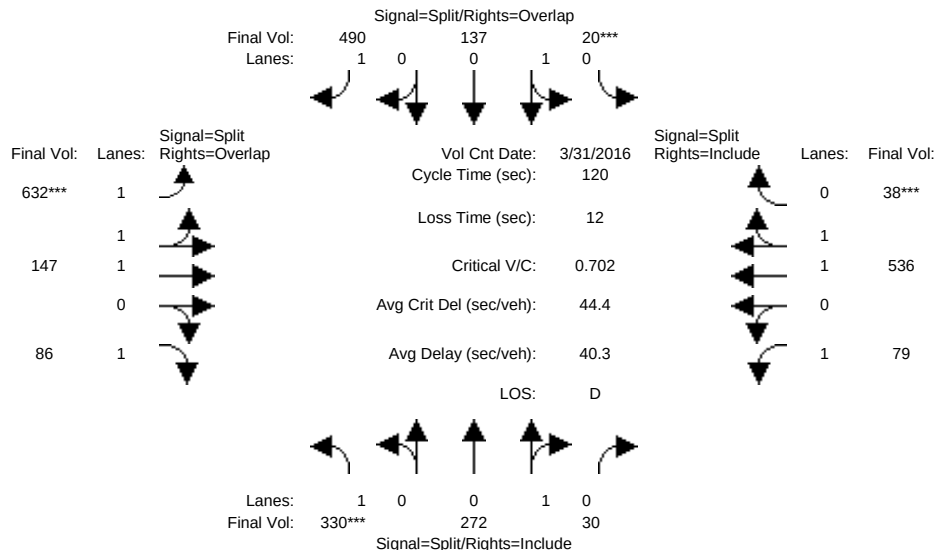


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	65	10	14	63	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Sep 2016 << PM												
Base Vol:	168	366	98	45	472	106	117	1136	220	202	895	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	45	472	106	117	1136	220	202	895	52
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	45	472	106	117	1136	220	202	895	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	45	472	106	117	1136	220	202	895	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	45	472	106	117	1136	220	202	895	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	45	472	106	117	1136	220	202	895	52
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	1.00	1.00	1.00	1.00	1.62	0.38	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1750	1900	1750	1750	3021	678	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.10	0.19	0.06	0.03	0.16	0.16	0.07	0.30	0.13	0.12	0.24	0.03
Crit Moves:	****			****			****			****		
Green Time:	19.4	36.9	59.0	14.0	31.5	47.4	15.8	65.0	84.4	22.1	71.3	85.3
Volume/Cap:	0.74	0.78	0.14	0.28	0.74	0.49	0.63	0.69	0.22	0.78	0.50	0.05
Delay/Veh:	75.4	61.2	29.3	64.2	59.4	41.9	71.3	35.6	16.5	76.1	27.2	14.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.4	61.2	29.3	64.2	59.4	41.9	71.3	35.6	16.5	76.1	27.2	14.4
LOS by Move:	E	E	C	E	E	D	E	D	B	E	C	B
HCM2kAvgQ:	10	18	4	2	15	13	7	21	5	11	14	1
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Count Year PM Peak Hour

Intersection #18: Bayshore Road & Embarcadero Road

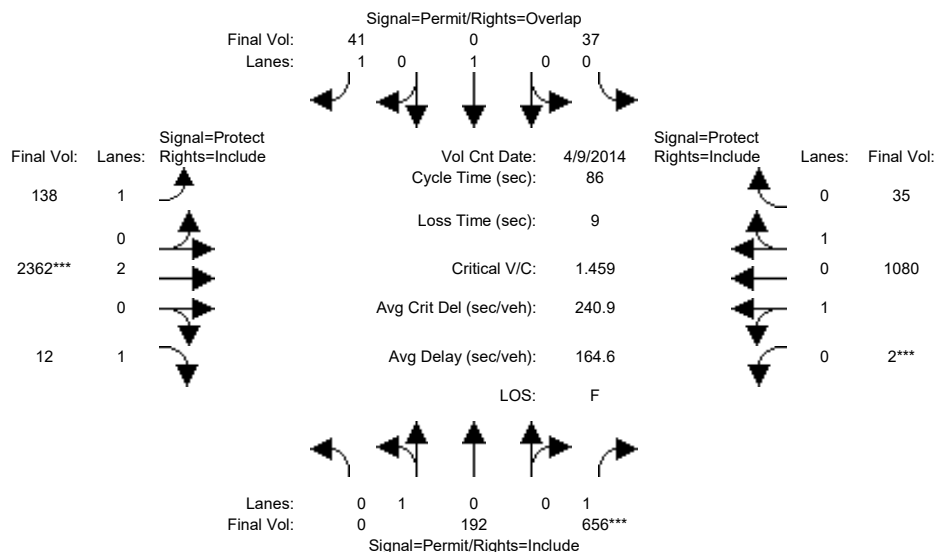


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 31 Mar 2016 << PM												
Base Vol:	330	272	30	20	137	490	632	147	86	79	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	330	272	30	20	137	490	632	147	86	79	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	330	272	30	20	137	490	632	147	86	79	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	330	272	30	20	137	490	632	147	86	79	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	330	272	30	20	137	490	632	147	86	79	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	330	272	30	20	137	490	632	147	86	79	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.13	0.87	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	229	1571	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.19	0.17	0.17	0.09	0.09	0.28	0.20	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	32.2	32.2	32.2	14.9	14.9	49.2	34.3	34.3	66.6	26.5	26.5	26.5
Volume/Cap:	0.70	0.62	0.62	0.70	0.70	0.68	0.70	0.27	0.09	0.20	0.70	0.70
Delay/Veh:	44.3	41.1	41.1	60.0	60.0	31.7	40.3	33.2	12.6	38.4	45.8	45.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.3	41.1	41.1	60.0	60.0	31.7	40.3	33.2	12.6	38.4	45.8	45.8
LOS by Move:	D	D	D	E	E	C	D	C	B	D	D	D
HCM2kAvgQ:	13	11	11	7	7	17	13	4	2	3	11	11
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

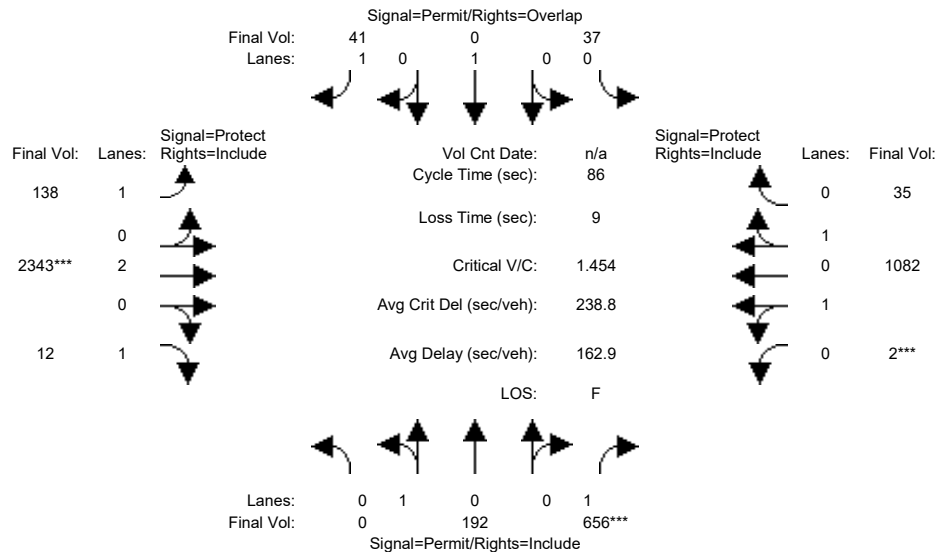


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 9 Apr 2014 << 7:45 AM - 8:45 AM											
Base Vol:	0	192	656	37	0	41	138	2362	12	2	1080	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	41	138	2362	12	2	1080	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	41	138	2362	12	2	1080	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	41	138	2362	12	2	1080	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	41	138	2362	12	2	1080	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	41	138	2362	12	2	1080	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3481	113
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	0.0	22.1	22.1	22.1	0.0	33.5	11.4	36.6	36.6	18.3	43.5	43.5
Volume/Cap:	0.00	0.42	1.46	0.08	0.00	0.06	0.59	1.46	0.02	1.46	0.61	0.61
Delay/Veh:	0.0	27.2	250.7	24.3	0.0	16.4	39.2	235	14.3	247.8	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.2	250.7	24.3	0.0	16.4	39.2	235	14.3	247.8	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	78	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

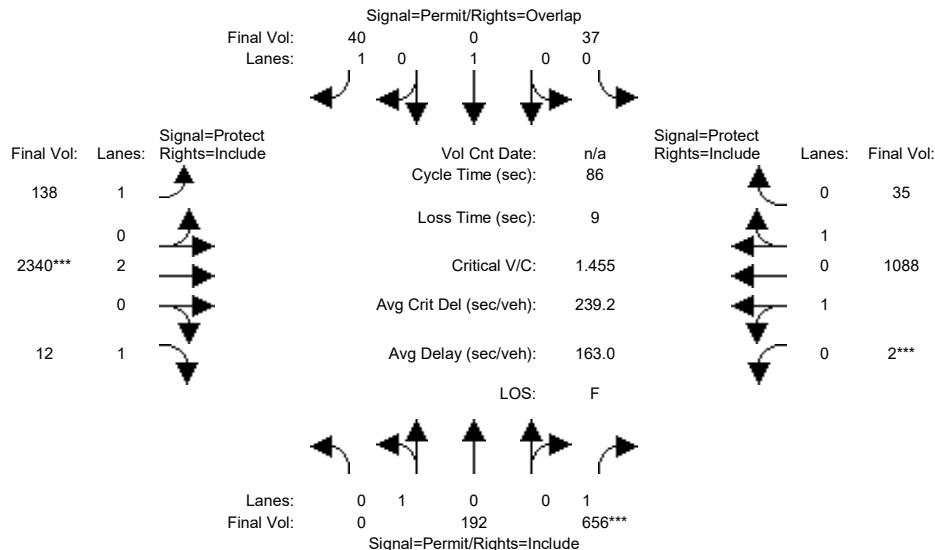


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	37	0	41	138	2343	12	2	1082	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	41	138	2343	12	2	1082	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	41	138	2343	12	2	1082	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	41	138	2343	12	2	1082	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	41	138	2343	12	2	1082	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	41	138	2343	12	2	1082	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3481	113
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:	****						****			****		
Green Time:	0.0	22.2	22.2	22.2	0.0	33.5	11.4	36.5	36.5	18.4	43.5	43.5
Volume/Cap:	0.00	0.41	1.45	0.08	0.00	0.06	0.60	1.45	0.02	1.45	0.62	0.62
Delay/Veh:	0.0	27.1	248.5	24.3	0.0	16.4	39.3	233	14.4	245.6	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	248.5	24.3	0.0	16.4	39.3	233	14.4	245.6	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	77	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

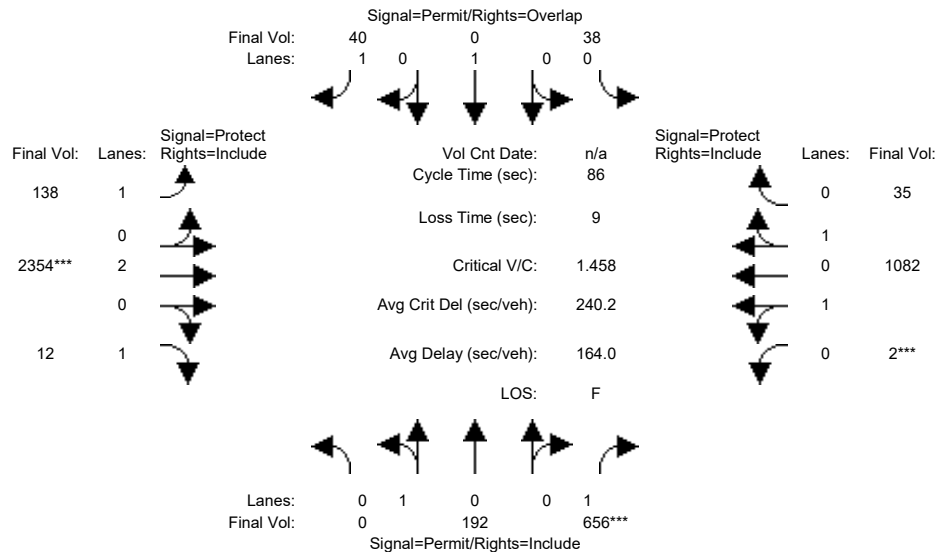


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	37	0	40	138	2340	12	2	1088	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	40	138	2340	12	2	1088	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	40	138	2340	12	2	1088	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	40	138	2340	12	2	1088	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	40	138	2340	12	2	1088	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	40	138	2340	12	2	1088	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3482	112
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:	****						****			****		
Green Time:	0.0	22.1	22.1	22.1	0.0	33.5	11.3	36.4	36.4	18.5	43.5	43.5
Volume/Cap:	0.00	0.41	1.46	0.08	0.00	0.06	0.60	1.46	0.02	1.46	0.62	0.62
Delay/Veh:	0.0	27.1	248.9	24.3	0.0	16.4	39.5	233	14.4	245.9	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	248.9	24.3	0.0	16.4	39.5	233	14.4	245.9	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	77	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	192	656	38	0	40	138	2354	12	2	1082	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	38	0	40	138	2354	12	2	1082	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	38	0	40	138	2354	12	2	1082	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	38	0	40	138	2354	12	2	1082	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	38	0	40	138	2354	12	2	1082	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	38	0	40	138	2354	12	2	1082	35

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3481	113

Capacity Analysis Module:

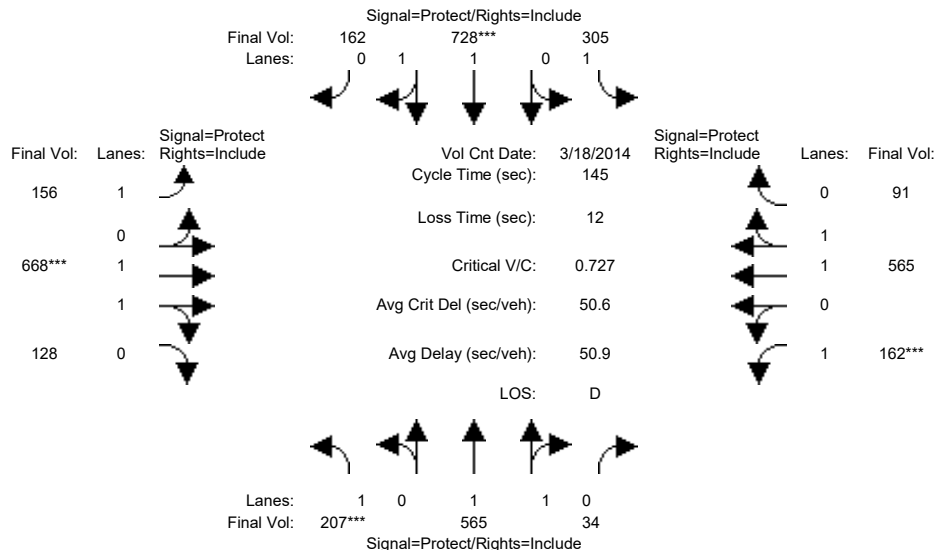
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	0.0	22.1	22.1	22.1	0.0	33.5	11.4	36.5	36.5	18.3	43.5	43.5
Volume/Cap:	0.00	0.41	1.46	0.08	0.00	0.06	0.60	1.46	0.02	1.46	0.61	0.61
Delay/Veh:	0.0	27.2	249.9	24.3	0.0	16.4	39.3	234	14.3	247.0	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.2	249.9	24.3	0.0	16.4	39.3	234	14.3	247.0	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	77	0	40	12	12

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #2: Middlefield Road & Charleston Road



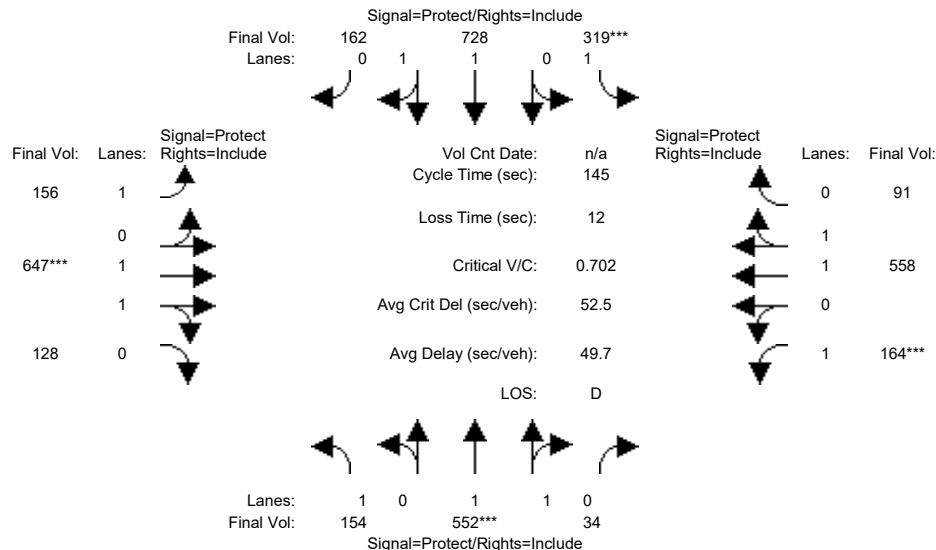
Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	207	565	34	305	728	162	156	668	128	162	565	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	207	565	34	305	728	162	156	668	128	162	565	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	207	565	34	305	728	162	156	668	128	162	565	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	207	565	34	305	728	162	156	668	128	162	565	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	207	565	34	305	728	162	156	668	128	162	565	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	207	565	34	305	728	162	156	668	128	162	565	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.67	0.33	1.00	1.71	0.29
Final Sat.:	1750	3490	210	1750	3026	673	1750	3105	595	1750	3186	513
Capacity Analysis Module:												
Vol/Sat:	0.12	0.16	0.16	0.17	0.24	0.24	0.09	0.22	0.22	0.09	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	23.6	34.5	34.5	37.1	48.0	48.0	20.5	42.9	42.9	18.5	40.9	40.9
Volume/Cap:	0.73	0.68	0.68	0.68	0.73	0.73	0.63	0.73	0.73	0.73	0.63	0.63
Delay/Veh:	66.7	52.4	52.4	52.8	44.9	44.9	63.7	48.2	48.2	72.2	46.7	46.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.7	52.4	52.4	52.8	44.9	44.9	63.7	48.2	48.2	72.2	46.7	46.7
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	11	13	13	14	19	19	8	17	17	9	13	13

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #2: Middlefield Road & Charleston Road



Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	154	552	34	319	728	162	156	647	128	164	558	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	552	34	319	728	162	156	647	128	164	558	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	154	552	34	319	728	162	156	647	128	164	558	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	552	34	319	728	162	156	647	128	164	558	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	552	34	319	728	162	156	647	128	164	558	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	154	552	34	319	728	162	156	647	128	164	558	91

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.66	0.34	1.00	1.71	0.29
Final Sat.:	1750	3485	215	1750	3026	673	1750	3088	611	1750	3181	519

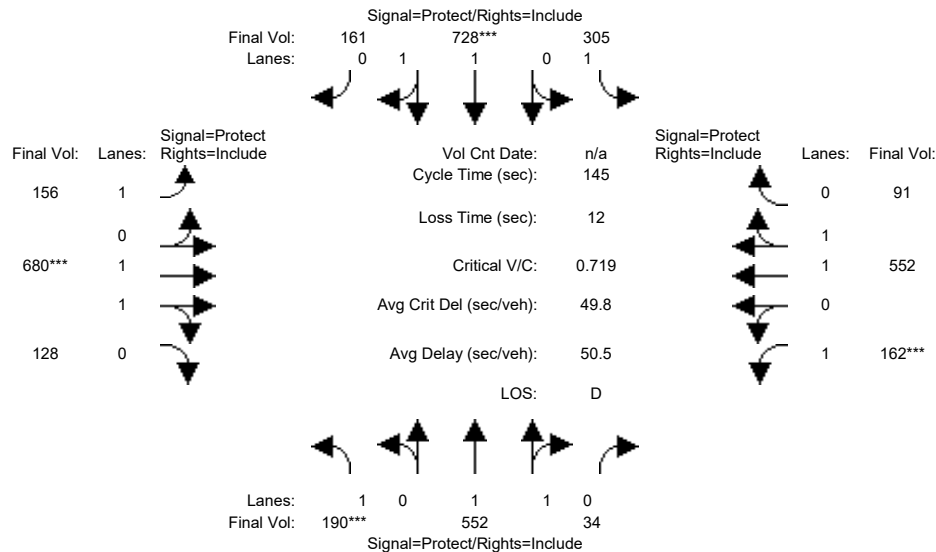
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.16	0.18	0.24	0.24	0.09	0.21	0.21	0.09	0.18	0.18
Crit Moves:	****			****			****			****		
Green Time:	18.8	32.7	32.7	37.7	51.5	51.5	21.1	43.3	43.3	19.4	41.5	41.5
Volume/Cap:	0.68	0.70	0.70	0.70	0.68	0.68	0.61	0.70	0.70	0.70	0.61	0.61
Delay/Veh:	68.1	54.4	54.4	53.5	41.1	41.1	62.5	47.2	47.2	69.3	45.8	45.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.1	54.4	54.4	53.5	41.1	41.1	62.5	47.2	47.2	69.3	45.8	45.8
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	8	13	13	15	18	18	8	16	16	9	13	13

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #2: Middlefield Road & Charleston Road



Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	190	552	34	305	728	161	156	680	128	162	552	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	190	552	34	305	728	161	156	680	128	162	552	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	190	552	34	305	728	161	156	680	128	162	552	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	190	552	34	305	728	161	156	680	128	162	552	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	190	552	34	305	728	161	156	680	128	162	552	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	190	552	34	305	728	161	156	680	128	162	552	91

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.67	0.33	1.00	1.71	0.29
Final Sat.:	1750	3485	215	1750	3029	670	1750	3113	586	1750	3176	524

Capacity Analysis Module:

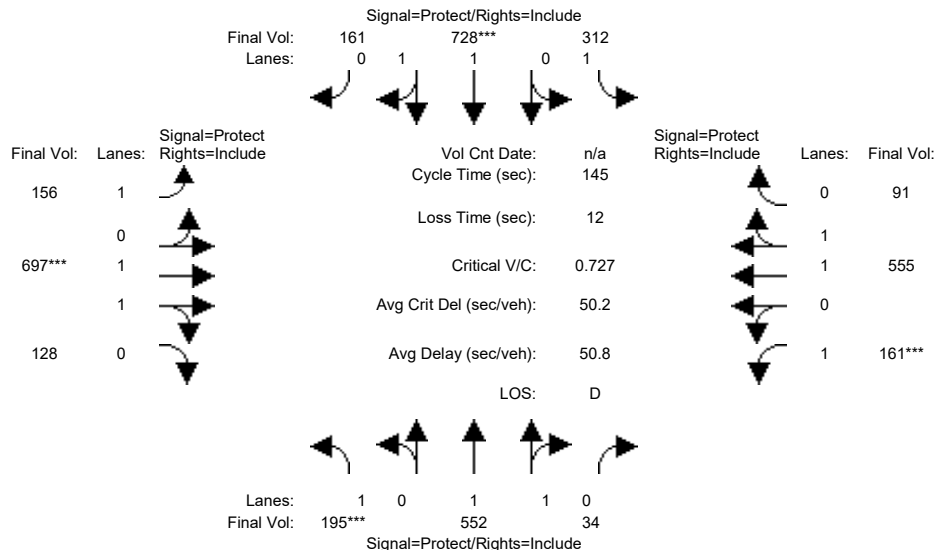
Vol/Sat:	0.11	0.16	0.16	0.17	0.24	0.24	0.09	0.22	0.22	0.09	0.17	0.17
Crit Moves:	***			***			***			***		
Green Time:	21.9	33.5	33.5	36.8	48.4	48.4	21.2	44.0	44.0	18.7	41.4	41.4
Volume/Cap:	0.72	0.69	0.69	0.69	0.72	0.72	0.61	0.72	0.72	0.72	0.61	0.61
Delay/Veh:	67.9	53.3	53.3	53.3	44.4	44.4	62.2	47.3	47.3	71.4	45.8	45.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.9	53.3	53.3	53.3	44.4	44.4	62.2	47.3	47.3	71.4	45.8	45.8
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	10	13	13	14	18	18	8	17	17	9	13	13

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #2: Middlefield Road & Charleston Road



Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	195	552	34	312	728	161	156	697	128	161	555	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	195	552	34	312	728	161	156	697	128	161	555	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	195	552	34	312	728	161	156	697	128	161	555	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	195	552	34	312	728	161	156	697	128	161	555	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	552	34	312	728	161	156	697	128	161	555	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	195	552	34	312	728	161	156	697	128	161	555	91

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.68	0.32	1.00	1.71	0.29
Final Sat.:	1750	3485	215	1750	3029	670	1750	3126	574	1750	3178	521

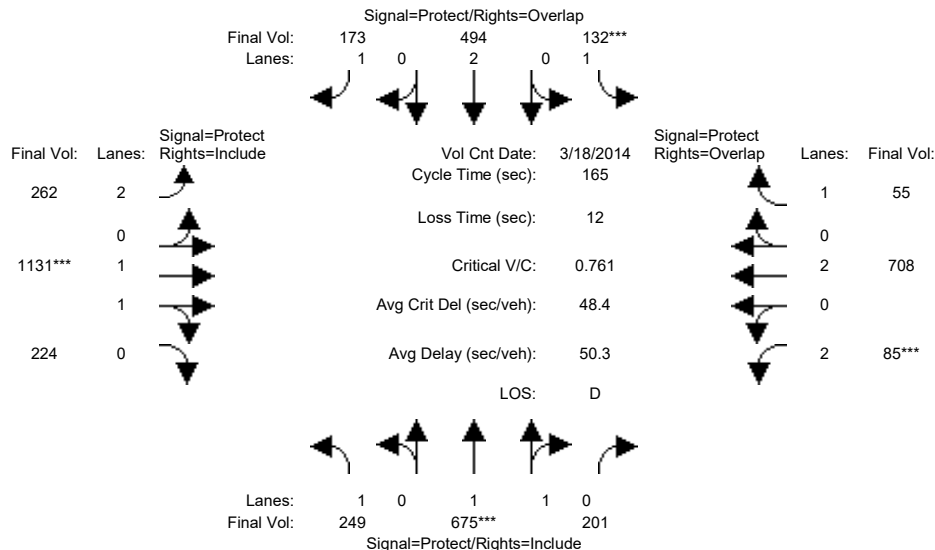
Capacity Analysis Module:												
Vol/Sat:	0.11	0.16	0.16	0.18	0.24	0.24	0.09	0.22	0.22	0.09	0.17	0.17
Crit Moves:	***			***			***			***		
Green Time:	22.2	33.0	33.0	37.2	47.9	47.9	21.2	44.5	44.5	18.4	41.6	41.6
Volume/Cap:	0.73	0.70	0.70	0.70	0.73	0.73	0.61	0.73	0.73	0.73	0.61	0.61
Delay/Veh:	68.1	53.9	53.9	53.5	45.0	45.0	62.2	47.2	47.2	72.3	45.7	45.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.1	53.9	53.9	53.5	45.0	45.0	62.2	47.2	47.2	72.3	45.7	45.7
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	10	13	13	14	19	19	8	18	18	9	13	13

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



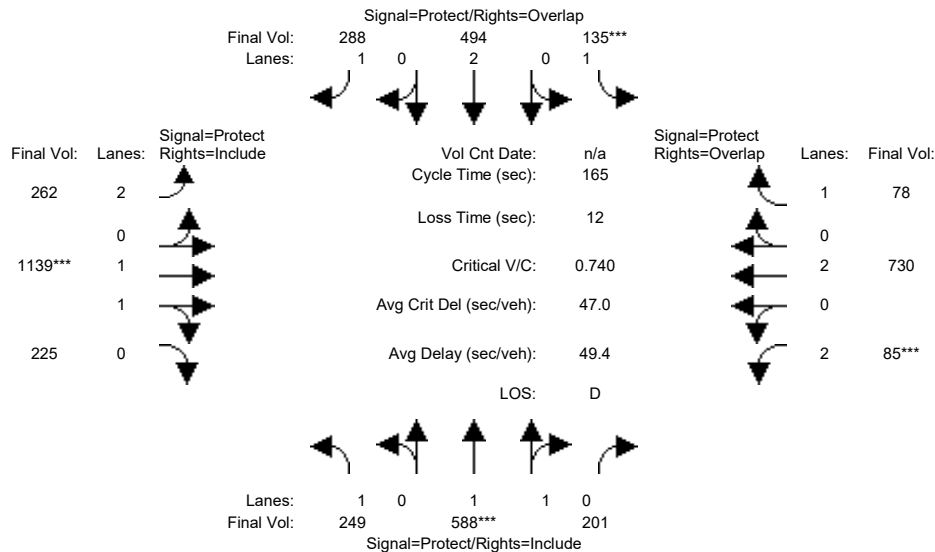
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	249	675	201	132	494	288	262	1131	224	85	708	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	675	201	132	494	288	262	1131	224	85	708	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	675	201	132	494	288	262	1131	224	85	708	78
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	675	201	132	494	173	262	1131	224	85	708	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	675	201	132	494	173	262	1131	224	85	708	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	675	201	132	494	173	262	1131	224	85	708	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.53	0.47	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2850	849	1750	3800	1750	3150	3088	612	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.24	0.24	0.08	0.13	0.10	0.08	0.37	0.37	0.03	0.19	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.1	51.0	51.0	16.2	32.1	58.6	26.5	78.8	78.8	7.0	59.3	75.6
Volume/Cap:	0.67	0.77	0.77	0.77	0.67	0.28	0.52	0.77	0.77	0.64	0.52	0.07
Delay/Veh:	64.2	54.8	54.8	91.1	63.9	38.3	64.4	37.6	37.6	87.5	41.9	25.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.2	54.8	54.8	91.1	63.9	38.3	64.4	37.6	37.6	87.5	41.9	25.1
LOS by Move:	E	D	D	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	21	21	9	12	7	8	29	29	4	14	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	249	588	201	135	494	288	262	1139	225	85	730	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	588	201	135	494	288	262	1139	225	85	730	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	588	201	135	494	288	262	1139	225	85	730	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	588	201	135	494	288	262	1139	225	85	730	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	588	201	135	494	288	262	1139	225	85	730	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	588	201	135	494	288	262	1139	225	85	730	78

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.48	0.52	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2757	942	1750	3800	1750	3150	3089	610	3150	3800	1750

Capacity Analysis Module:

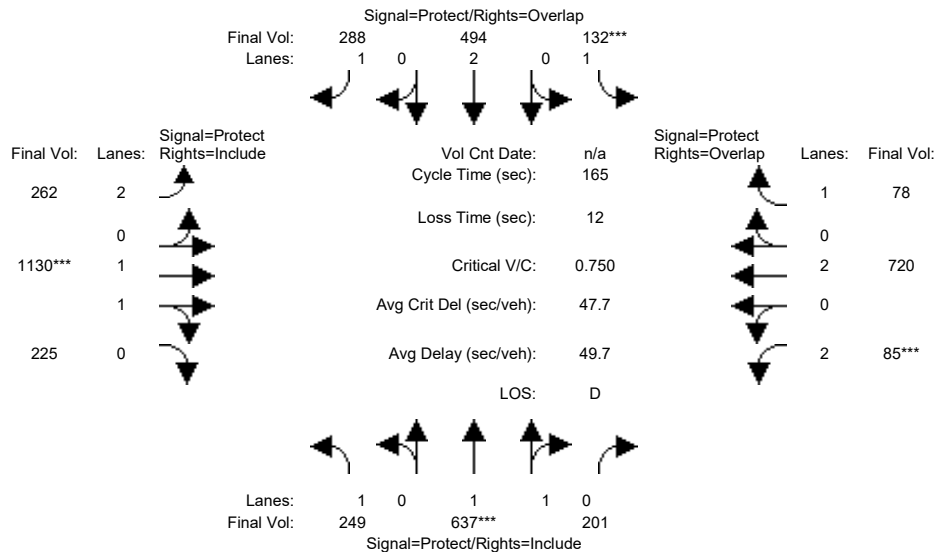
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.16	0.08	0.37	0.37	0.03	0.19	0.04
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	33.6	47.2	47.2	17.1	30.7	57.5	26.8	81.7	81.7	7.0	61.9	79.0
Volume/Cap:	0.70	0.74	0.74	0.74	0.70	0.47	0.51	0.74	0.74	0.64	0.51	0.09
Delay/Veh:	67.0	56.3	56.3	87.3	65.9	42.5	64.0	35.0	35.0	87.5	40.2	23.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.0	56.3	56.3	87.3	65.9	42.5	64.0	35.0	35.0	87.5	40.2	23.5
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	14	19	19	9	13	12	8	28	28	4	14	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	249	637	201	132	494	288	262	1130	225	85	720	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	637	201	132	494	288	262	1130	225	85	720	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	637	201	132	494	288	262	1130	225	85	720	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	637	201	132	494	288	262	1130	225	85	720	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	637	201	132	494	288	262	1130	225	85	720	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	637	201	132	494	288	262	1130	225	85	720	78

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.51	0.49	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2812	887	1750	3800	1750	3150	3085	614	3150	3800	1750

Capacity Analysis Module:

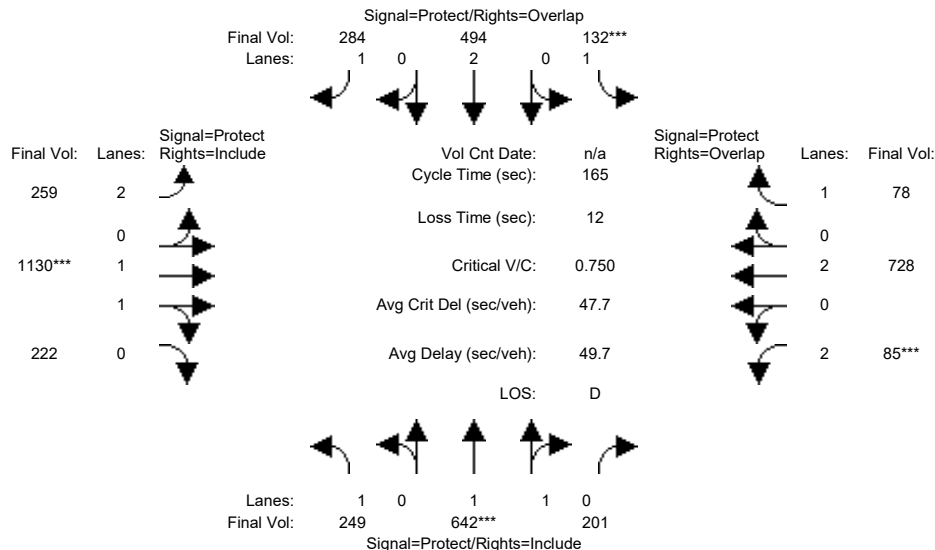
Vol/Sat:	0.14	0.23	0.23	0.08	0.13	0.16	0.08	0.37	0.37	0.03	0.19	0.04
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	34.5	49.5	49.5	16.5	31.5	58.0	26.5	80.0	80.0	7.0	60.5	77.0
Volume/Cap:	0.68	0.76	0.76	0.76	0.68	0.47	0.52	0.76	0.76	0.64	0.52	0.10
Delay/Veh:	65.4	55.3	55.3	89.3	64.7	42.1	64.3	36.4	36.4	87.5	41.2	24.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.4	55.3	55.3	89.3	64.7	42.1	64.3	36.4	36.4	87.5	41.2	24.6
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	21	21	9	12	12	8	29	29	4	14	2

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



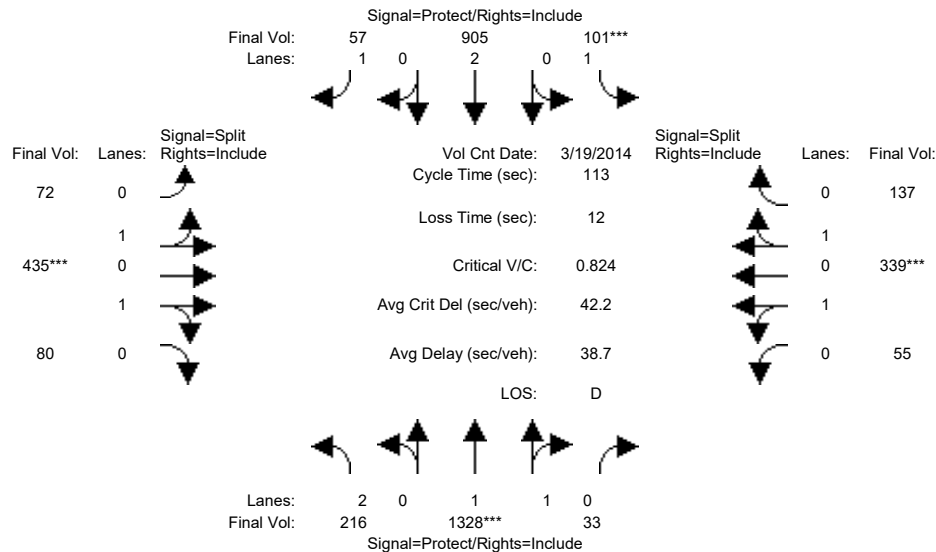
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	249	642	201	132	494	284	259	1130	222	85	728	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	642	201	132	494	284	259	1130	222	85	728	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	642	201	132	494	284	259	1130	222	85	728	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	642	201	132	494	284	259	1130	222	85	728	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	642	201	132	494	284	259	1130	222	85	728	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	642	201	132	494	284	259	1130	222	85	728	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.51	0.49	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2817	882	1750	3800	1750	3150	3092	607	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.23	0.23	0.08	0.13	0.16	0.08	0.37	0.37	0.03	0.19	0.04
Crit Moves:	****			****			****			****		
Green Time:	34.6	49.8	49.8	16.5	31.6	57.7	26.1	79.8	79.8	7.0	60.7	77.2
Volume/Cap:	0.68	0.76	0.76	0.76	0.68	0.46	0.52	0.76	0.76	0.64	0.52	0.10
Delay/Veh:	65.1	55.1	55.1	89.4	64.6	42.2	64.7	36.6	36.6	87.5	41.1	24.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.1	55.1	55.1	89.4	64.6	42.2	64.7	36.6	36.6	87.5	41.1	24.5
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	21	21	9	12	12	8	29	29	4	14	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #4: Alma Street & Charleston Road

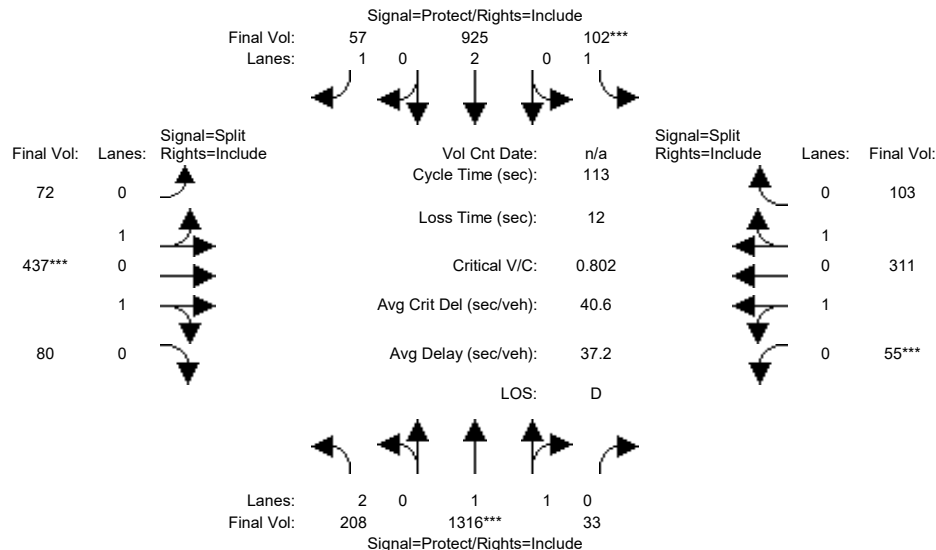


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	216	1328	33	101	905	57	72	435	80	55	339	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	216	1328	33	101	905	57	72	435	80	55	339	137
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	1328	33	101	905	57	72	435	80	55	339	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	216	1328	33	101	905	57	72	435	80	55	339	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	1328	33	101	905	57	72	435	80	55	339	137
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	216	1328	33	101	905	57	72	435	80	55	339	137
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.48	0.27	0.21	1.28	0.51
Final Sat.:	3150	3610	90	1750	3800	1750	442	2668	491	373	2298	929
Capacity Analysis Module:												
Vol/Sat:	0.07	0.37	0.37	0.06	0.24	0.03	0.16	0.16	0.16	0.15	0.15	0.15
Crit Moves:	****			****			****			****		
Green Time:	13.1	50.5	50.5	7.9	45.3	45.3	22.4	22.4	22.4	20.2	20.2	20.2
Volume/Cap:	0.59	0.82	0.82	0.82	0.59	0.08	0.82	0.82	0.82	0.82	0.82	0.82
Delay/Veh:	50.1	30.9	30.9	86.2	27.2	21.0	51.1	51.1	51.1	53.1	53.1	53.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.1	30.9	30.9	86.2	27.2	21.0	51.1	51.1	51.1	53.1	53.1	53.1
LOS by Move:	D	C	C	F	C	C	D	D	D	D	D	D
HCM2kAvgQ:	5	23	23	6	13	1	13	13	13	12	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #4: Alma Street & Charleston Road



Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	208	1316	33	102	925	57	72	437	80	55	311	103
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1316	33	102	925	57	72	437	80	55	311	103
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	1316	33	102	925	57	72	437	80	55	311	103
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1316	33	102	925	57	72	437	80	55	311	103
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1316	33	102	925	57	72	437	80	55	311	103
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	208	1316	33	102	925	57	72	437	80	55	311	103

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.24	1.49	0.27	0.23	1.33	0.44
Final Sat.:	3150	3609	91	1750	3800	1750	440	2671	489	422	2387	791

Capacity Analysis Module:

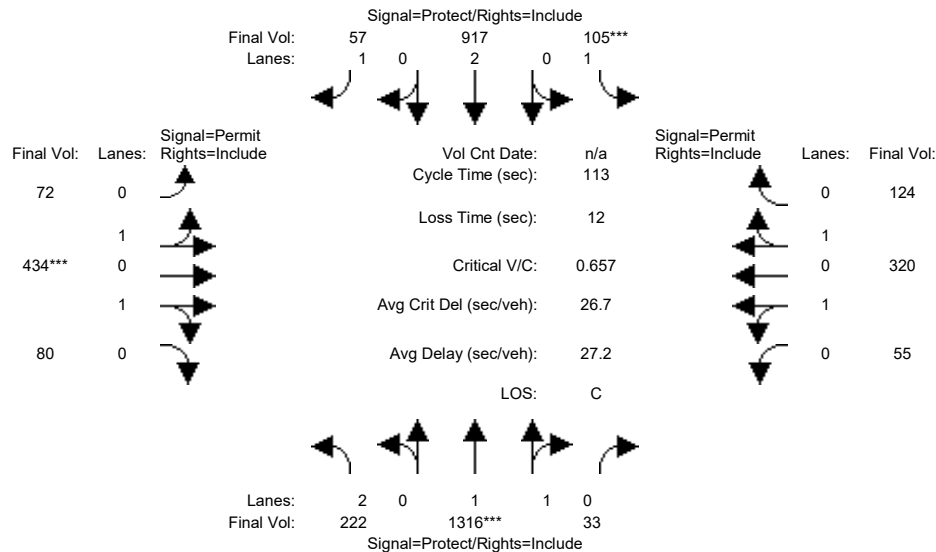
Vol/Sat:	0.07	0.36	0.36	0.06	0.24	0.03	0.16	0.16	0.16	0.13	0.13	0.13
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	12.7	51.4	51.4	8.2	46.9	46.9	23.1	23.1	23.1	18.4	18.4	18.4
Volume/Cap:	0.59	0.80	0.80	0.80	0.59	0.08	0.80	0.80	0.80	0.80	0.80	0.80
Delay/Veh:	50.2	29.3	29.3	81.0	26.2	20.0	49.1	49.1	49.1	53.4	53.4	53.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.2	29.3	29.3	81.0	26.2	20.0	49.1	49.1	49.1	53.4	53.4	53.4
LOS by Move:	D	C	C	F	C	C	D	D	D	D	D	D
HCM2kAvgQ:	5	22	22	6	13	1	12	12	12	10	10	10

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #4: Alma Street & Charleston Road



Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	222	1316	33	105	917	57	72	434	80	55	320	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	222	1316	33	105	917	57	72	434	80	55	320	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	1316	33	105	917	57	72	434	80	55	320	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	222	1316	33	105	917	57	72	434	80	55	320	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	222	1316	33	105	917	57	72	434	80	55	320	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	222	1316	33	105	917	57	72	434	80	55	320	124

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.48	0.27	0.22	1.28	0.50
Final Sat.:	3150	3609	91	1750	3800	1750	442	2666	491	397	2309	895

Capacity Analysis Module:

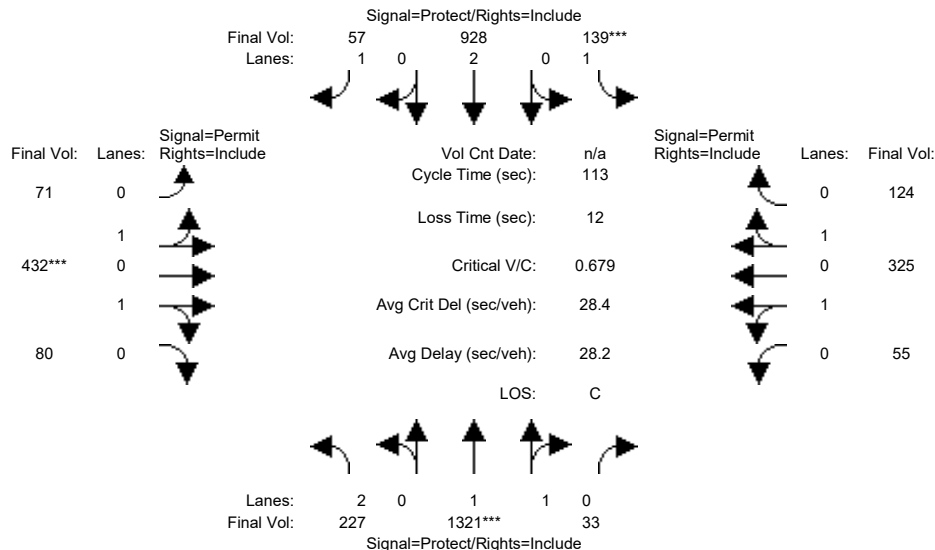
Vol/Sat:	0.07	0.36	0.36	0.06	0.24	0.03	0.16	0.16	0.16	0.14	0.14	0.14
Crit Moves:	****			****			****			****		
Green Time:	16.5	62.7	62.7	10.3	56.5	56.5	28.0	28.0	28.0	28.0	28.0	28.0
Volume/Cap:	0.48	0.66	0.66	0.66	0.48	0.07	0.66	0.66	0.66	0.56	0.56	0.56
Delay/Veh:	45.1	18.4	18.4	59.2	18.8	14.6	40.0	40.0	40.0	37.9	37.9	37.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.1	18.4	18.4	59.2	18.8	14.6	40.0	40.0	40.0	37.9	37.9	37.9
LOS by Move:	D	B	B	E	B	B	D	D	D	D	D	D
HCM2kAvgQ:	5	17	17	5	10	1	10	10	10	8	8	8

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #4: Alma Street & Charleston Road



Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	227	1321	33	139	928	57	71	432	80	55	325	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	227	1321	33	139	928	57	71	432	80	55	325	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	227	1321	33	139	928	57	71	432	80	55	325	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	227	1321	33	139	928	57	71	432	80	55	325	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	227	1321	33	139	928	57	71	432	80	55	325	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	227	1321	33	139	928	57	71	432	80	55	325	124

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.24	1.49	0.27	0.22	1.29	0.49
Final Sat.:	3150	3610	90	1750	3800	1750	438	2668	494	393	2321	886

Capacity Analysis Module:

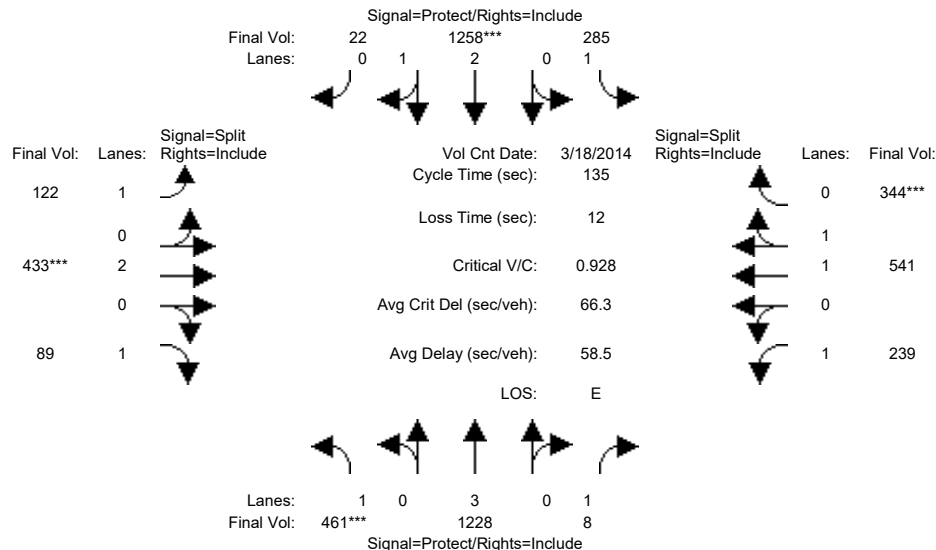
Vol/Sat:	0.07	0.37	0.37	0.08	0.24	0.03	0.16	0.16	0.16	0.14	0.14	0.14
Crit Moves:	****			****			****			****		
Green Time:	16.9	60.9	60.9	13.2	57.2	57.2	26.9	26.9	26.9	26.9	26.9	26.9
Volume/Cap:	0.48	0.68	0.68	0.68	0.48	0.06	0.68	0.68	0.68	0.59	0.59	0.59
Delay/Veh:	44.8	19.9	19.9	56.8	18.4	14.3	41.3	41.3	41.3	39.2	39.2	39.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	19.9	19.9	56.8	18.4	14.3	41.3	41.3	41.3	39.2	39.2	39.2
LOS by Move:	D	B	B	E	B	B	D	D	D	D	D	D
HCM2kAvgQ:	5	18	18	6	10	1	11	11	11	9	9	9

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



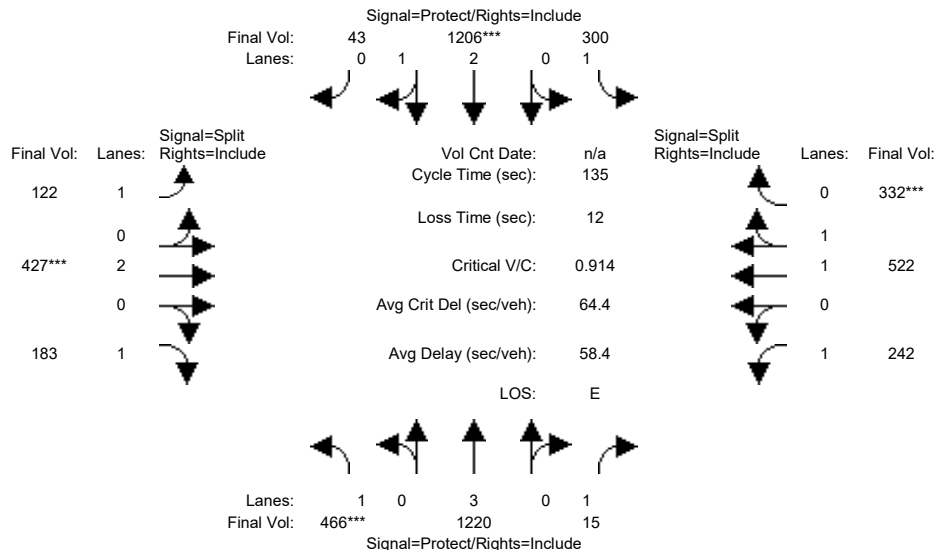
Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	461	1228	15	285	1258	43	122	433	178	239	541	344
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	461	1228	15	285	1258	43	122	433	178	239	541	344
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	461	1228	15	285	1258	43	122	433	178	239	541	344
User Adj:	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	461	1228	8	285	1258	22	122	433	89	239	541	344
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	461	1228	8	285	1258	22	122	433	89	239	541	344
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	461	1228	8	285	1258	22	122	433	89	239	541	344
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.20	0.80
Final Sat.:	1750	5700	1750	1750	5506	94	1750	3800	1750	1750	2261	1438
Capacity Analysis Module:												
Vol/Sat:	0.26	0.22	0.00	0.16	0.23	0.23	0.07	0.11	0.05	0.14	0.24	0.24
Crit Moves:	***			***			***					***
Green Time:	38.3	40.8	40.8	30.8	33.3	33.3	16.6	16.6	16.6	34.8	34.8	34.8
Volume/Cap:	0.93	0.71	0.01	0.71	0.93	0.93	0.57	0.93	0.41	0.53	0.93	0.93
Delay/Veh:	70.7	43.4	33.0	54.0	60.7	60.7	59.4	83.4	56.0	44.2	63.6	63.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.7	43.4	33.0	54.0	60.7	60.7	59.4	83.4	56.0	44.2	63.6	63.6
LOS by Move:	E	D	C	D	E	E	E	F	E	D	E	E
HCM2kAvgQ:	24	16	0	13	21	21	6	12	4	9	22	22

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	466	1220	15	300	1206	43	122	427	183	242	522	332
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	466	1220	15	300	1206	43	122	427	183	242	522	332
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	466	1220	15	300	1206	43	122	427	183	242	522	332
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	466	1220	15	300	1206	43	122	427	183	242	522	332
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	466	1220	15	300	1206	43	122	427	183	242	522	332
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	466	1220	15	300	1206	43	122	427	183	242	522	332

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.20	0.80
Final Sat.:	1750	5700	1750	1750	5407	193	1750	3800	1750	1750	2261	1438

Capacity Analysis Module:

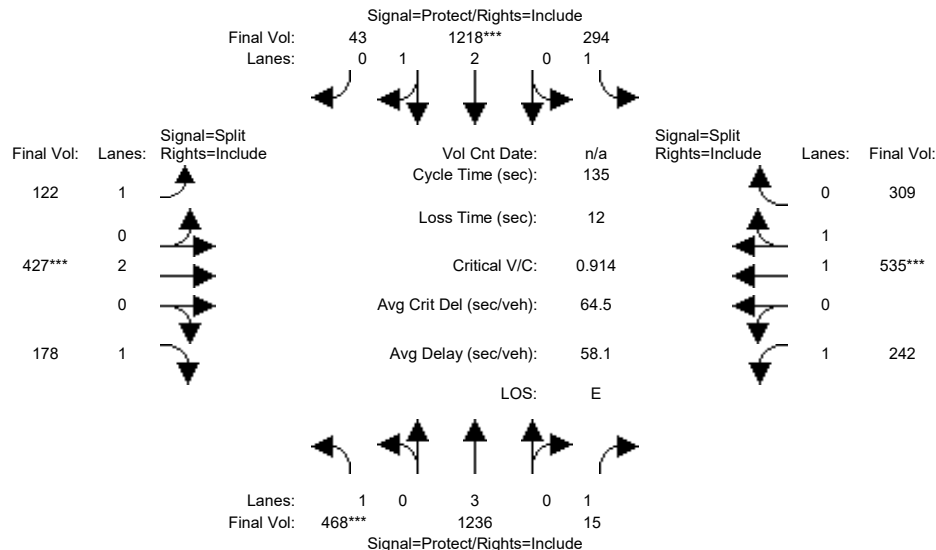
Vol/Sat:	0.27	0.21	0.01	0.17	0.22	0.22	0.07	0.11	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***					***
Green Time:	39.3	40.1	40.1	32.1	32.9	32.9	16.6	16.6	16.6	34.1	34.1	34.1
Volume/Cap:	0.91	0.72	0.03	0.72	0.91	0.91	0.57	0.91	0.85	0.55	0.91	0.91
Delay/Veh:	67.2	43.9	33.6	53.3	59.3	59.3	59.3	80.8	84.1	45.2	62.2	62.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.2	43.9	33.6	53.3	59.3	59.3	59.3	80.8	84.1	45.2	62.2	62.2
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	24	16	0	13	21	21	6	12	11	10	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	468	1236	15	294	1218	43	122	427	178	242	535	309
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	468	1236	15	294	1218	43	122	427	178	242	535	309
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	468	1236	15	294	1218	43	122	427	178	242	535	309
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	468	1236	15	294	1218	43	122	427	178	242	535	309
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	468	1236	15	294	1218	43	122	427	178	242	535	309
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	468	1236	15	294	1218	43	122	427	178	242	535	309

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.25	0.75
Final Sat.:	1750	5700	1750	1750	5409	191	1750	3800	1750	1750	2344	1354

Capacity Analysis Module:

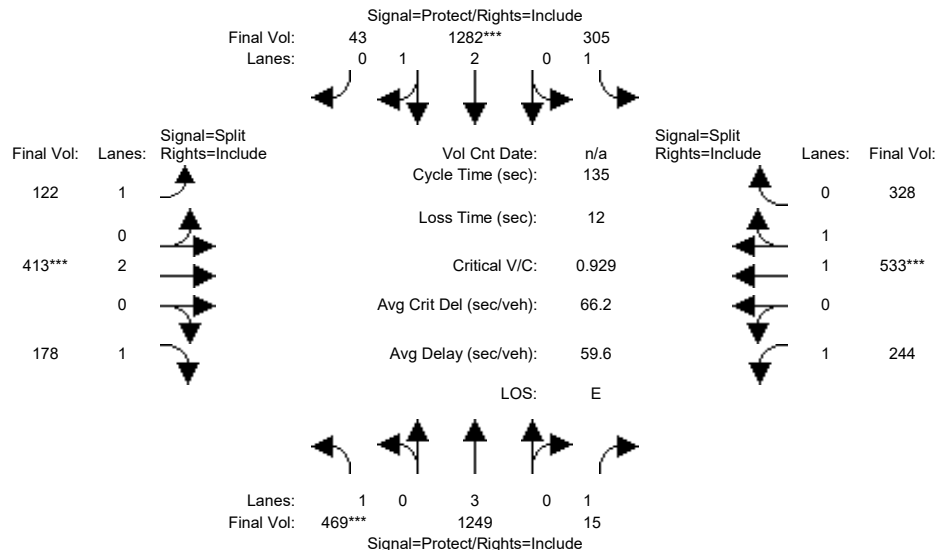
Vol/Sat:	0.27	0.22	0.01	0.17	0.23	0.23	0.07	0.11	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***			***		
Green Time:	39.5	41.0	41.0	31.7	33.2	33.2	16.6	16.6	16.6	33.7	33.7	33.7
Volume/Cap:	0.91	0.71	0.03	0.71	0.91	0.91	0.57	0.91	0.83	0.55	0.91	0.91
Delay/Veh:	67.1	43.3	33.0	53.3	59.1	59.1	59.4	81.0	80.4	45.7	62.6	62.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.1	43.3	33.0	53.3	59.1	59.1	59.4	81.0	80.4	45.7	62.6	62.6
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	24	16	0	13	21	21	6	12	10	10	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	469	1249	15	305	1282	43	122	413	178	244	533	328
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	469	1249	15	305	1282	43	122	413	178	244	533	328
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	469	1249	15	305	1282	43	122	413	178	244	533	328
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	469	1249	15	305	1282	43	122	413	178	244	533	328
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	469	1249	15	305	1282	43	122	413	178	244	533	328
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	469	1249	15	305	1282	43	122	413	178	244	533	328

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.90	0.10	1.00	2.00	1.00	1.00	1.22	0.78
Final Sat.:	1750	5700	1750	1750	5418	182	1750	3800	1750	1750	2289	1409

Capacity Analysis Module:

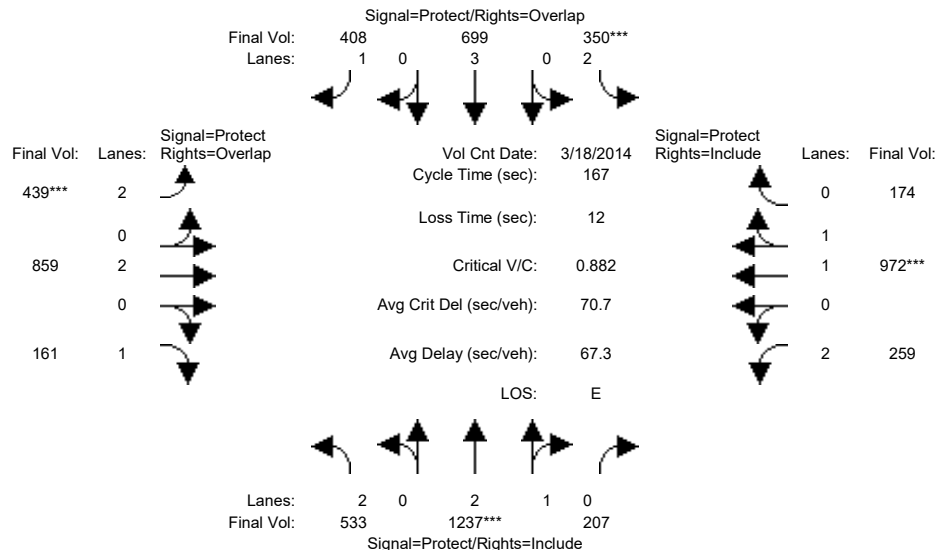
Vol/Sat:	0.27	0.22	0.01	0.17	0.24	0.24	0.07	0.11	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***			***		
Green Time:	39.0	40.9	40.9	32.5	34.4	34.4	15.8	15.8	15.8	33.8	33.8	33.8
Volume/Cap:	0.93	0.72	0.03	0.72	0.93	0.93	0.60	0.93	0.87	0.56	0.93	0.93
Delay/Veh:	70.3	43.6	33.1	53.3	60.0	60.0	61.3	84.9	89.0	45.6	64.6	64.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.3	43.6	33.1	53.3	60.0	60.0	61.3	84.9	89.0	45.6	64.6	64.6
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	24	16	0	14	22	22	6	12	11	10	22	22

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

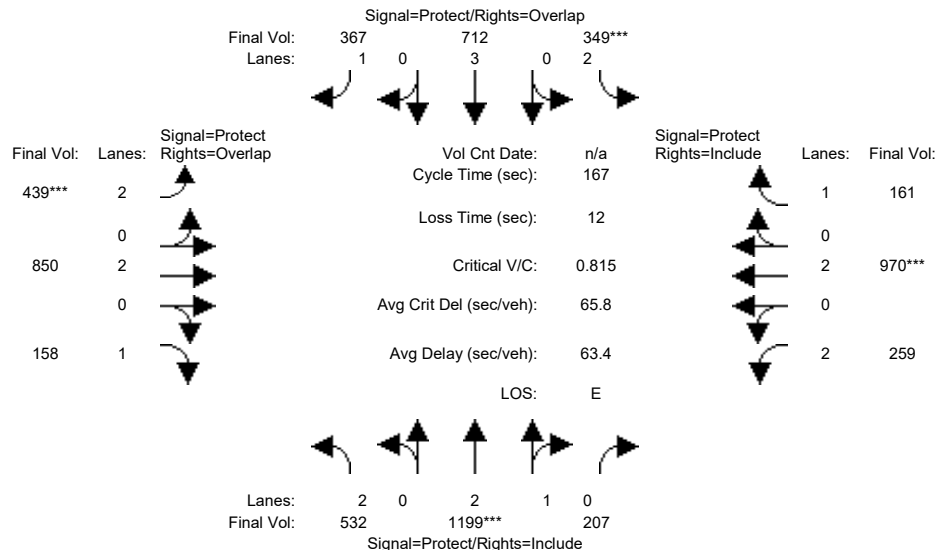


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	533	1237	207	350	699	408	439	859	161	259	972	174
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	533	1237	207	350	699	408	439	859	161	259	972	174
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	533	1237	207	350	699	408	439	859	161	259	972	174
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	533	1237	207	350	699	408	439	859	161	259	972	174
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	533	1237	207	350	699	408	439	859	161	259	972	174
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	533	1237	207	350	699	408	439	859	161	259	972	174
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.55	0.45	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.69	0.31
Final Sat.:	3150	4796	803	3150	5700	1750	3150	3800	1750	3150	3138	562
Capacity Analysis Module:												
Vol/Sat:	0.17	0.26	0.26	0.11	0.12	0.23	0.14	0.23	0.09	0.08	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	40.5	48.9	48.9	21.0	29.4	55.8	26.4	62.4	102.9	22.7	58.7	58.7
Volume/Cap:	0.70	0.88	0.88	0.88	0.70	0.70	0.88	0.61	0.15	0.61	0.88	0.88
Delay/Veh:	60.5	62.3	62.3	91.7	66.8	52.0	85.4	43.1	13.6	70.4	58.2	58.2
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.5	62.3	62.3	128.3	93.5	72.8	85.4	43.1	13.6	70.4	58.2	58.2
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	16	26	26	13	12	20	16	18	4	8	31	31
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real			Page Mill Rd/Oregon Expwy		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	532	1199	207	349	712	367	439	850	158	259	970	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	532	1199	207	349	712	367	439	850	158	259	970	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	532	1199	207	349	712	367	439	850	158	259	970	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	532	1199	207	349	712	367	439	850	158	259	970	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	532	1199	207	349	712	367	439	850	158	259	970	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	532	1199	207	349	712	367	439	850	158	259	970	161

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.54	0.46	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	4774	824	3150	5700	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

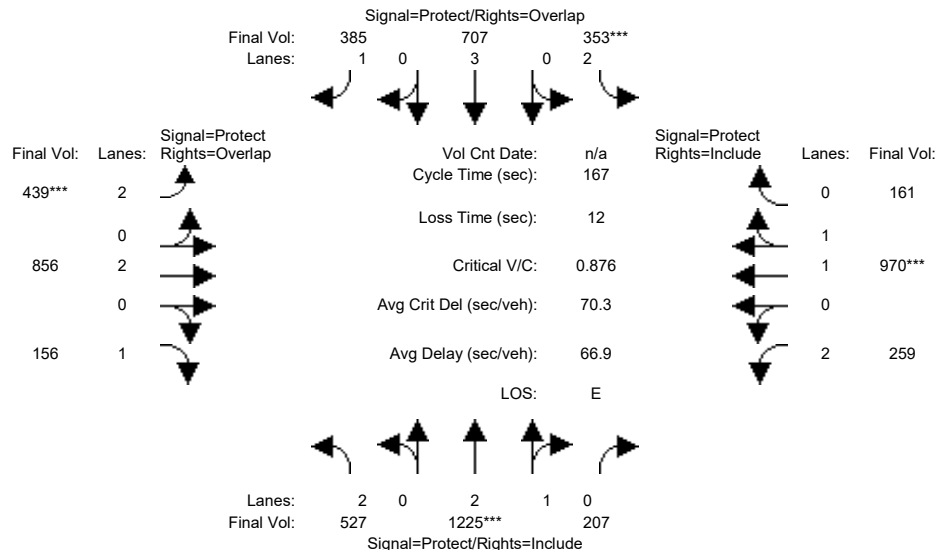
Vol/Sat:	0.17	0.25	0.25	0.11	0.12	0.21	0.14	0.22	0.09	0.08	0.26	0.09
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	42.6	51.5	51.5	22.7	31.5	60.1	28.6	59.1	101.7	21.7	52.3	52.3
Volume/Cap:	0.66	0.82	0.82	0.82	0.66	0.58	0.82	0.63	0.15	0.63	0.82	0.29
Delay/Veh:	57.8	56.5	56.5	81.6	64.3	44.7	76.0	45.9	14.1	72.0	57.4	43.7
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.8	56.5	56.5	114.2	90.1	62.6	76.0	45.9	14.1	72.0	57.4	43.7
LOS by Move:	E	E	E	F	F	E	E	D	B	E	E	D
HCM2kAvgQ:	15	24	24	12	12	16	15	18	4	8	24	7

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	527	1225	207	353	707	385	439	856	156	259	970	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	527	1225	207	353	707	385	439	856	156	259	970	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	527	1225	207	353	707	385	439	856	156	259	970	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	527	1225	207	353	707	385	439	856	156	259	970	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	527	1225	207	353	707	385	439	856	156	259	970	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	527	1225	207	353	707	385	439	856	156	259	970	161

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.55	0.45	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	4789	809	3150	5700	1750	3150	3800	1750	3150	3173	527

Capacity Analysis Module:

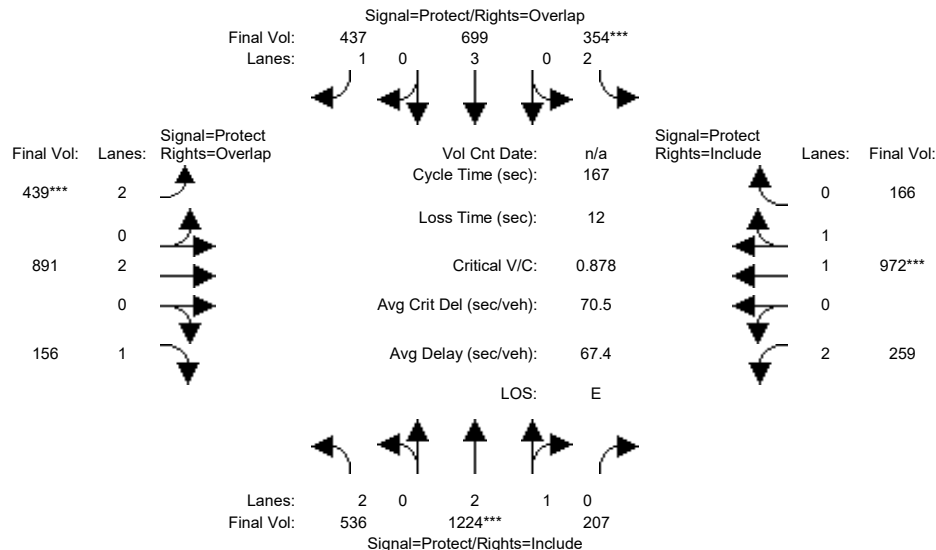
Vol/Sat:	0.17	0.26	0.26	0.11	0.12	0.22	0.14	0.23	0.09	0.08	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	40.3	48.8	48.8	21.4	29.9	56.4	26.6	62.2	102.4	22.7	58.3	58.3
Volume/Cap:	0.69	0.88	0.88	0.88	0.69	0.65	0.88	0.61	0.15	0.61	0.88	0.88
Delay/Veh:	60.5	61.9	61.9	90.4	66.4	49.5	84.4	43.2	13.8	70.4	58.0	58.0
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.5	61.9	61.9	126.5	92.9	69.3	84.4	43.2	13.8	70.4	58.0	58.0
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	15	26	26	13	12	18	16	18	4	8	30	30

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real			Page Mill Rd/Oregon Expwy		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	536	1224	207	354	699	437	439	891	156	259	972	166
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	536	1224	207	354	699	437	439	891	156	259	972	166
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	536	1224	207	354	699	437	439	891	156	259	972	166
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	536	1224	207	354	699	437	439	891	156	259	972	166
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	536	1224	207	354	699	437	439	891	156	259	972	166
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	536	1224	207	354	699	437	439	891	156	259	972	166

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.55	0.45	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.70	0.30
Final Sat.:	3150	4789	810	3150	5700	1750	3150	3800	1750	3150	3160	540

Capacity Analysis Module:

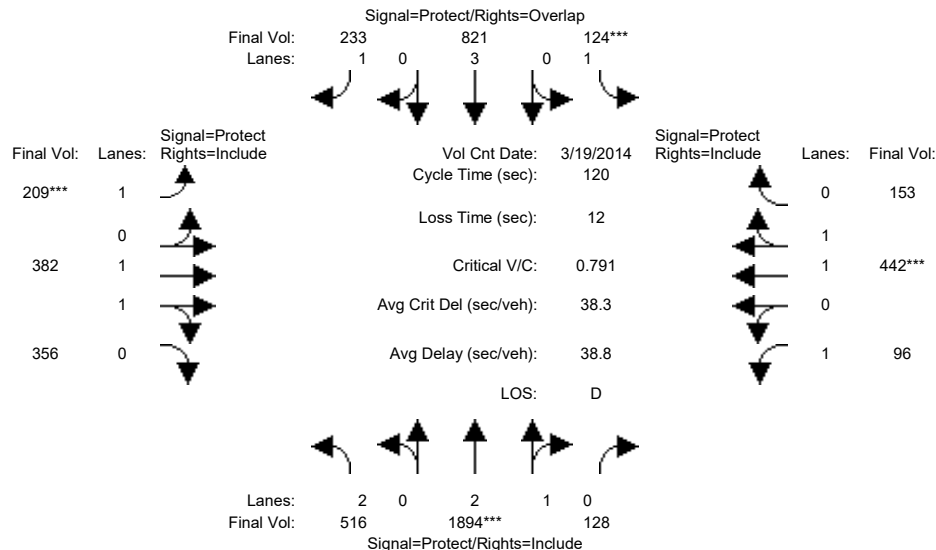
Vol/Sat:	0.17	0.26	0.26	0.11	0.12	0.25	0.14	0.23	0.09	0.08	0.31	0.31
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	40.7	48.6	48.6	21.4	29.3	55.8	26.5	62.9	103.6	22.1	58.5	58.5
Volume/Cap:	0.70	0.88	0.88	0.88	0.70	0.75	0.88	0.62	0.14	0.62	0.88	0.88
Delay/Veh:	60.4	62.2	62.2	90.7	66.9	54.6	84.8	43.2	13.3	71.4	58.0	58.0
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.4	62.2	62.2	127.0	93.7	76.4	84.8	43.2	13.3	71.4	58.0	58.0
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	16	26	26	13	12	22	16	18	3	8	30	30

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real			Arastradero Rd/Charleston Rd		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 19 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	516	1894	128	124	821	233	209	382	356	96	442	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	516	1894	128	124	821	233	209	382	356	96	442	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	516	1894	128	124	821	233	209	382	356	96	442	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	516	1894	128	124	821	233	209	382	356	96	442	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	516	1894	128	124	821	233	209	382	356	96	442	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	516	1894	128	124	821	233	209	382	356	96	442	153

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.01	0.99	1.00	1.47	0.53
Final Sat.:	3150	5245	354	1750	5700	1750	1750	1914	1784	1750	2748	951

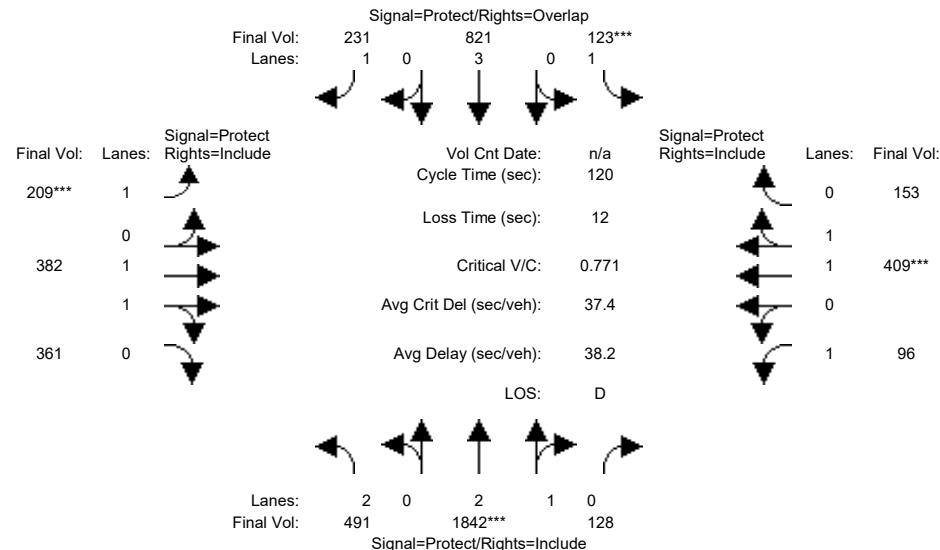
Capacity Analysis Module:												
Vol/Sat:	0.16	0.36	0.36	0.07	0.14	0.13	0.12	0.20	0.20	0.05	0.16	0.16
Crit Moves:	****			****			****			****		
Green Time:	34.9	54.8	54.8	10.7	30.6	48.8	18.1	32.9	32.9	9.6	24.4	24.4
Volume/Cap:	0.56	0.79	0.79	0.79	0.56	0.33	0.79	0.73	0.73	0.68	0.79	0.79
Delay/Veh:	36.9	29.5	29.5	76.8	39.4	24.7	64.0	42.2	42.2	66.9	51.1	51.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.9	29.5	29.5	76.8	39.4	24.7	64.0	42.2	42.2	66.9	51.1	51.1
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	10	23	23	7	9	6	10	14	14	5	13	13

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	491	1842	128	123	821	231	209	382	361	96	409	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	491	1842	128	123	821	231	209	382	361	96	409	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	491	1842	128	123	821	231	209	382	361	96	409	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	491	1842	128	123	821	231	209	382	361	96	409	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	491	1842	128	123	821	231	209	382	361	96	409	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	491	1842	128	123	821	231	209	382	361	96	409	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.44	0.56
Final Sat.:	3150	5236	364	1750	5700	1750	1750	1901	1796	1750	2692	1007

Capacity Analysis Module:

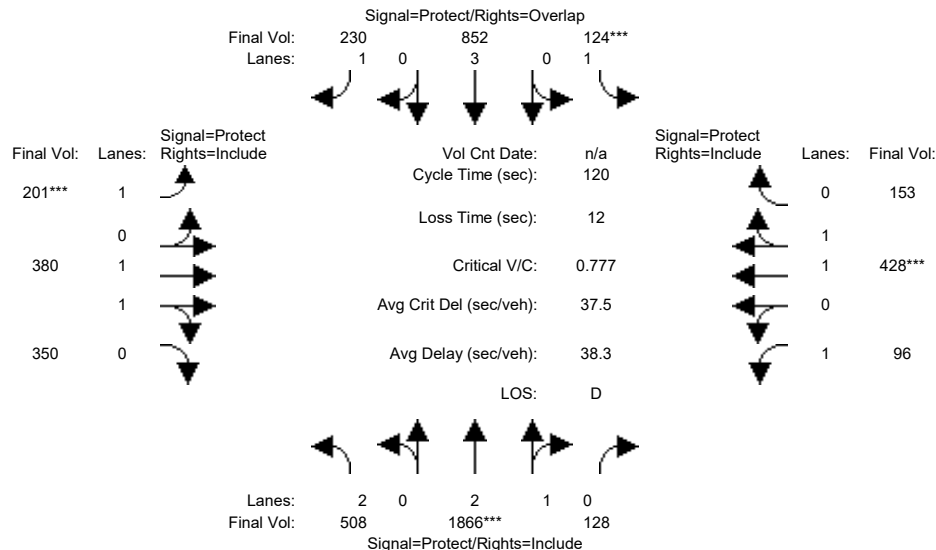
Vol/Sat:	0.16	0.35	0.35	0.07	0.14	0.13	0.12	0.20	0.20	0.05	0.15	0.15
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	34.2	54.8	54.8	10.9	31.6	50.2	18.6	32.8	32.8	9.5	23.7	23.7
Volume/Cap:	0.55	0.77	0.77	0.77	0.55	0.32	0.77	0.74	0.74	0.69	0.77	0.77
Delay/Veh:	37.1	28.8	28.8	73.5	38.5	23.7	61.3	42.6	42.6	67.8	50.6	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.1	28.8	28.8	73.5	38.5	23.7	61.3	42.6	42.6	67.8	50.6	50.6
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	10	22	22	7	9	6	10	14	14	5	12	12

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	508	1866	128	124	852	230	201	380	350	96	428	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	508	1866	128	124	852	230	201	380	350	96	428	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	508	1866	128	124	852	230	201	380	350	96	428	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	508	1866	128	124	852	230	201	380	350	96	428	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	508	1866	128	124	852	230	201	380	350	96	428	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	508	1866	128	124	852	230	201	380	350	96	428	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.02	0.98	1.00	1.46	0.54
Final Sat.:	3150	5240	359	1750	5700	1750	1750	1925	1773	1750	2725	974

Capacity Analysis Module:

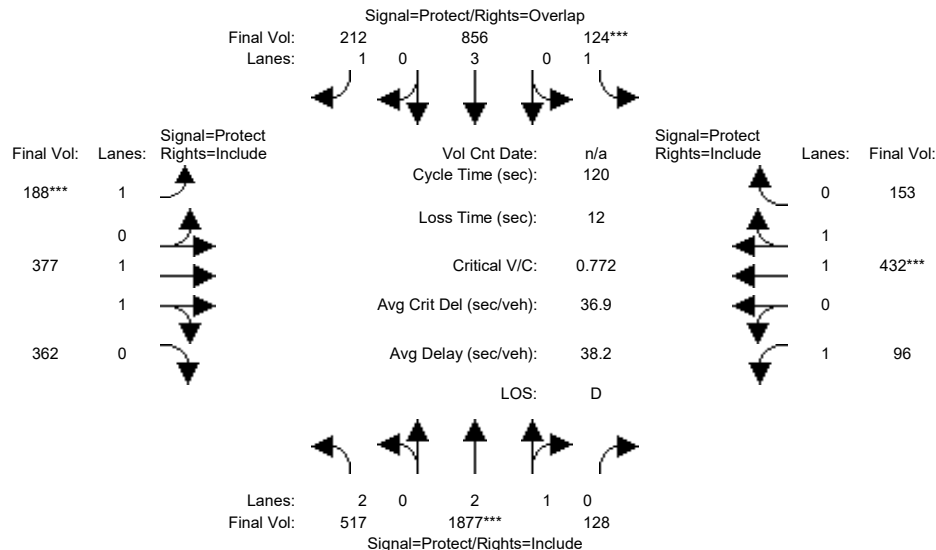
Vol/Sat:	0.16	0.36	0.36	0.07	0.15	0.13	0.11	0.20	0.20	0.05	0.16	0.16
Crit Moves:	****			****			****			****		
Green Time:	34.2	55.0	55.0	10.9	31.7	49.5	17.7	32.4	32.4	9.6	24.3	24.3
Volume/Cap:	0.57	0.78	0.78	0.78	0.57	0.32	0.78	0.73	0.73	0.69	0.78	0.78
Delay/Veh:	37.4	28.9	28.9	74.3	38.7	24.1	63.0	42.6	42.6	67.1	50.4	50.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	28.9	28.9	74.3	38.7	24.1	63.0	42.6	42.6	67.1	50.4	50.4
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	10	22	22	7	9	6	10	14	14	5	12	12

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	517	1877	128	124	856	212	188	377	362	96	432	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	517	1877	128	124	856	212	188	377	362	96	432	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	517	1877	128	124	856	212	188	377	362	96	432	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	517	1877	128	124	856	212	188	377	362	96	432	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	517	1877	128	124	856	212	188	377	362	96	432	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	517	1877	128	124	856	212	188	377	362	96	432	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.46	0.54
Final Sat.:	3150	5242	357	1750	5700	1750	1750	1898	1800	1750	2732	967

Capacity Analysis Module:

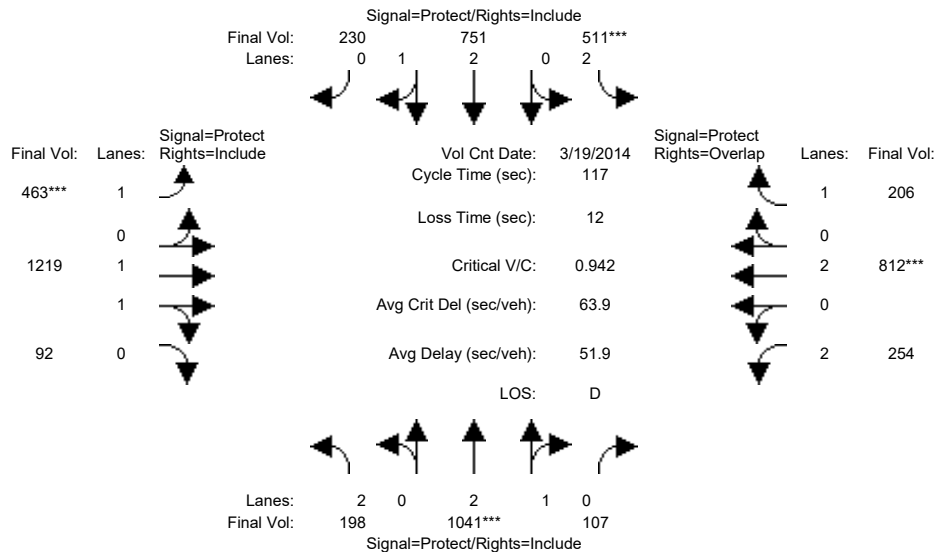
Vol/Sat:	0.16	0.36	0.36	0.07	0.15	0.12	0.11	0.20	0.20	0.05	0.16	0.16
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	34.8	55.7	55.7	11.0	31.9	48.6	16.7	32.0	32.0	9.3	24.6	24.6
Volume/Cap:	0.57	0.77	0.77	0.77	0.57	0.30	0.77	0.74	0.75	0.71	0.77	0.77
Delay/Veh:	37.0	28.3	28.3	73.5	38.6	24.4	63.9	43.4	43.7	70.0	50.0	50.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.0	28.3	28.3	73.5	38.6	24.4	63.9	43.4	43.7	70.0	50.0	50.0
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	10	22	22	7	9	6	9	14	14	5	12	12

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

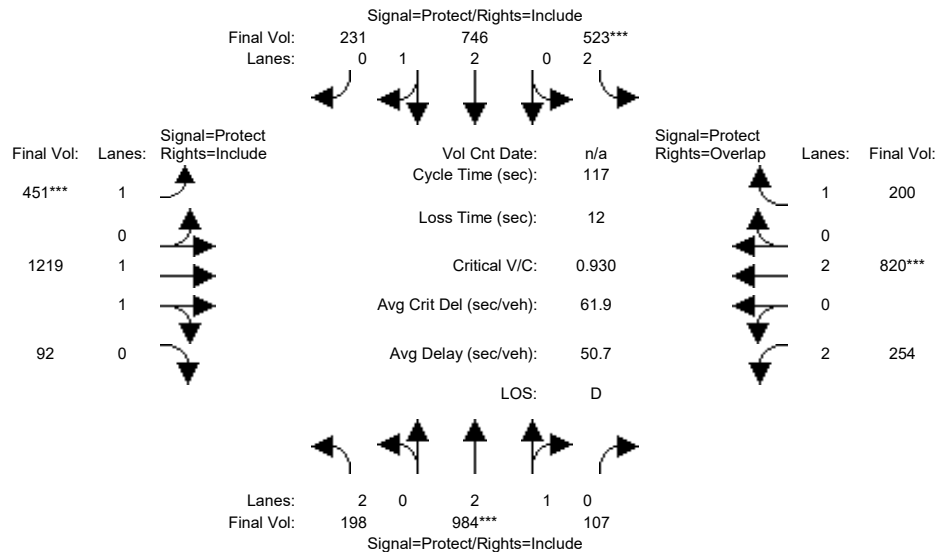


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	198	1041	107	511	751	230	463	1219	92	254	812	206
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	1041	107	511	751	230	463	1219	92	254	812	206
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	1041	107	511	751	230	463	1219	92	254	812	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	1041	107	511	751	230	463	1219	92	254	812	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1041	107	511	751	230	463	1219	92	254	812	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	1041	107	511	751	230	463	1219	92	254	812	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.71	0.29	2.00	2.27	0.73	1.00	1.86	0.14	2.00	2.00	1.00
Final Sat.:	3150	5077	522	3150	4285	1312	1750	3440	260	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.21	0.21	0.16	0.18	0.18	0.26	0.35	0.35	0.08	0.21	0.12
Crit Moves:	****			****			****			****		
Green Time:	12.0	25.5	25.5	20.1	33.6	33.6	32.9	48.4	48.4	11.0	26.5	46.7
Volume/Cap:	0.61	0.94	0.94	0.94	0.61	0.61	0.94	0.86	0.86	0.86	0.94	0.30
Delay/Veh:	53.6	59.2	59.2	72.9	36.8	36.8	67.9	36.2	36.2	73.3	62.6	24.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.6	59.2	59.2	72.9	36.8	36.8	67.9	36.2	36.2	73.3	62.6	24.2
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	18	18	15	11	11	22	24	24	8	19	5
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	198	984	107	523	746	231	451	1219	92	254	820	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	984	107	523	746	231	451	1219	92	254	820	200
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	984	107	523	746	231	451	1219	92	254	820	200
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	984	107	523	746	231	451	1219	92	254	820	200
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	984	107	523	746	231	451	1219	92	254	820	200
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	984	107	523	746	231	451	1219	92	254	820	200

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	2.26	0.74	1.00	1.86	0.14	2.00	2.00	1.00
Final Sat.:	3150	5050	549	3150	4274	1324	1750	3440	260	3150	3800	1750

Capacity Analysis Module:

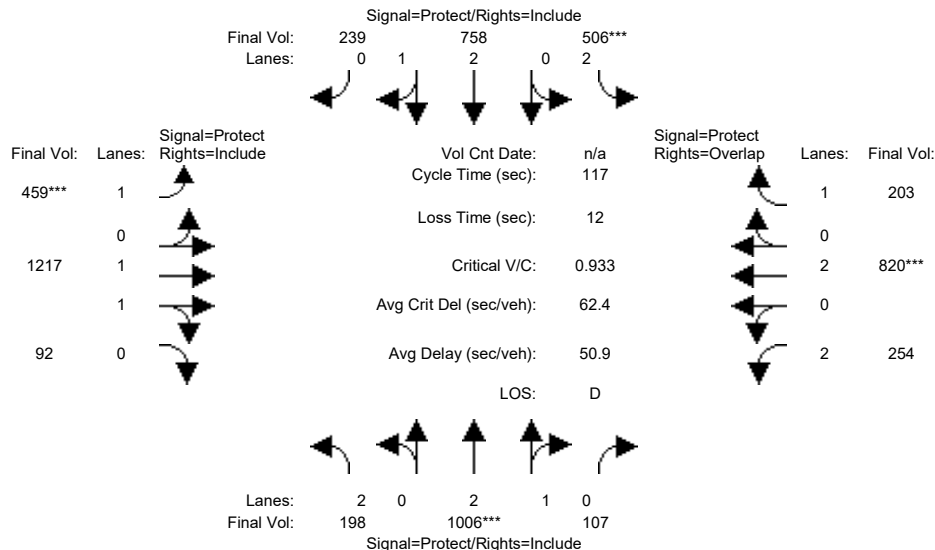
Vol/Sat:	0.06	0.19	0.19	0.17	0.17	0.17	0.26	0.35	0.35	0.08	0.22	0.11
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	12.0	24.5	24.5	20.9	33.4	33.4	32.4	48.5	48.5	11.0	27.2	48.0
Volume/Cap:	0.61	0.93	0.93	0.93	0.61	0.61	0.93	0.85	0.85	0.85	0.93	0.28
Delay/Veh:	53.7	58.2	58.2	69.4	36.9	36.9	65.7	35.9	35.9	72.8	59.9	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.7	58.2	58.2	69.4	36.9	36.9	65.7	35.9	35.9	72.8	59.9	23.2
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	17	17	15	11	11	21	24	24	8	19	5

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	198	1006	107	506	758	239	459	1217	92	254	820	203
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	1006	107	506	758	239	459	1217	92	254	820	203
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	1006	107	506	758	239	459	1217	92	254	820	203
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	1006	107	506	758	239	459	1217	92	254	820	203
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1006	107	506	758	239	459	1217	92	254	820	203
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	1006	107	506	758	239	459	1217	92	254	820	203

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.70	0.30	2.00	2.25	0.75	1.00	1.86	0.14	2.00	2.00	1.00
Final Sat.:	3150	5061	538	3150	4256	1342	1750	3440	260	3150	3800	1750

Capacity Analysis Module:

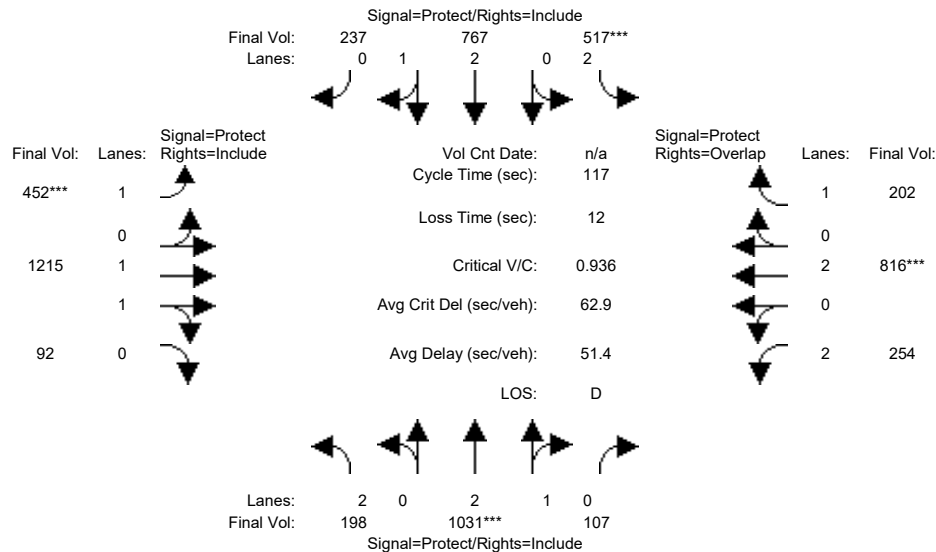
Vol/Sat:	0.06	0.20	0.20	0.16	0.18	0.18	0.26	0.35	0.35	0.08	0.22	0.12
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	11.8	24.9	24.9	20.1	33.3	33.3	32.9	48.8	48.8	11.1	27.1	47.2
Volume/Cap:	0.63	0.93	0.93	0.93	0.63	0.63	0.93	0.85	0.85	0.85	0.93	0.29
Delay/Veh:	54.4	58.3	58.3	71.1	37.2	37.2	65.9	35.4	35.4	71.8	60.6	23.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	58.3	58.3	71.1	37.2	37.2	65.9	35.4	35.4	71.8	60.6	23.8
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	17	17	15	11	11	22	24	24	8	19	5

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	198	1031	107	517	767	237	452	1215	92	254	816	202
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	1031	107	517	767	237	452	1215	92	254	816	202
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	1031	107	517	767	237	452	1215	92	254	816	202
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	1031	107	517	767	237	452	1215	92	254	816	202
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	1031	107	517	767	237	452	1215	92	254	816	202
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	1031	107	517	767	237	452	1215	92	254	816	202

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.71	0.29	2.00	2.27	0.73	1.00	1.86	0.14	2.00	2.00	1.00
Final Sat.:	3150	5073	526	3150	4276	1321	1750	3439	260	3150	3800	1750

Capacity Analysis Module:

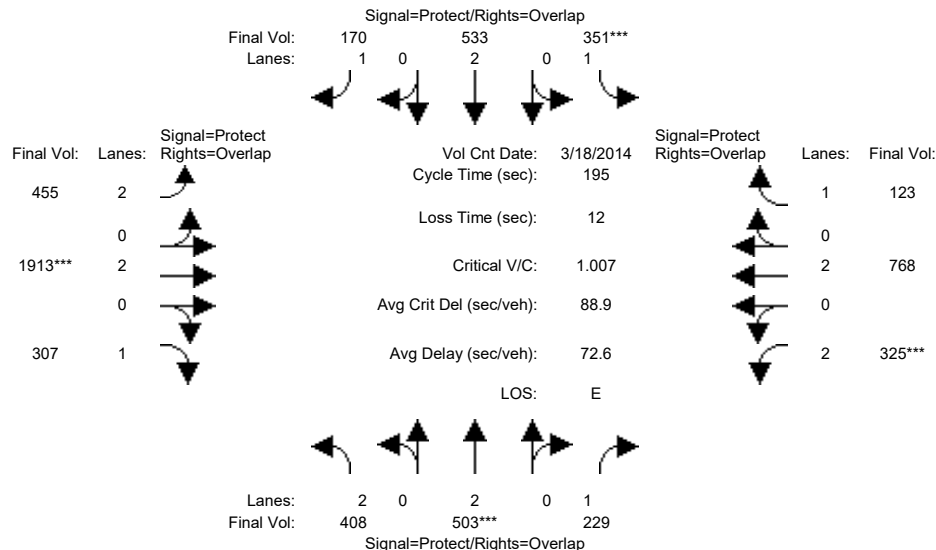
Vol/Sat:	0.06	0.20	0.20	0.16	0.18	0.18	0.26	0.35	0.35	0.08	0.21	0.12
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	11.9	25.4	25.4	20.5	34.0	34.0	32.3	48.1	48.1	11.0	26.8	47.3
Volume/Cap:	0.62	0.94	0.94	0.94	0.62	0.62	0.94	0.86	0.86	0.86	0.94	0.29
Delay/Veh:	54.0	58.4	58.4	71.2	36.6	36.6	67.3	36.5	36.5	73.7	61.4	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.0	58.4	58.4	71.2	36.6	36.6	67.3	36.5	36.5	73.7	61.4	23.7
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	18	18	15	11	11	22	24	24	8	19	5

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM

Base Vol:	408	503	229	351	533	170	455	1913	307	325	768	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	408	503	229	351	533	170	455	1913	307	325	768	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	408	503	229	351	533	170	455	1913	307	325	768	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	408	503	229	351	533	170	455	1913	307	325	768	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	408	503	229	351	533	170	455	1913	307	325	768	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	408	503	229	351	533	170	455	1913	307	325	768	123

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

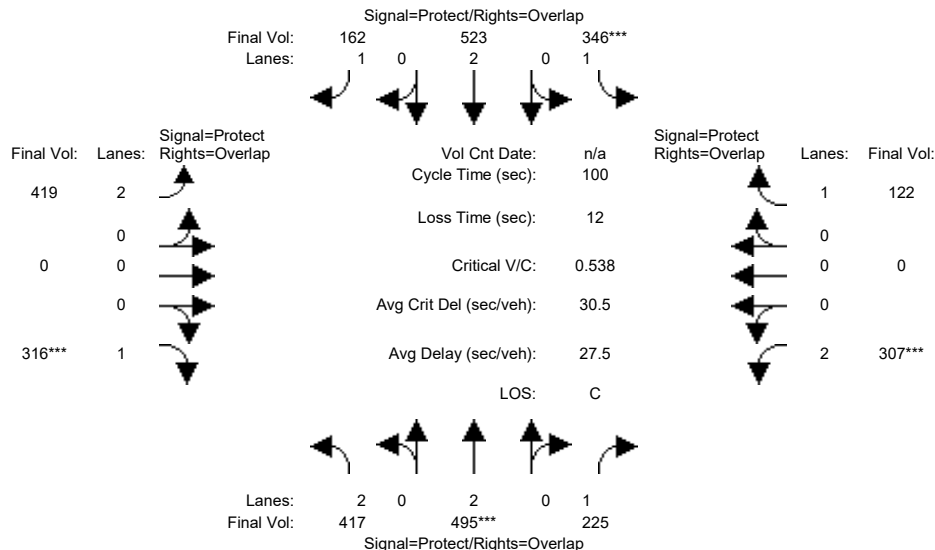
Vol/Sat:	0.13	0.13	0.13	0.20	0.14	0.10	0.14	0.50	0.18	0.10	0.20	0.07
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	31.0	25.6	45.6	38.9	33.5	82.5	49.0	97.5	128.5	20.0	68.5	107.4
Volume/Cap:	0.82	1.01	0.56	1.01	0.82	0.23	0.58	1.01	0.27	1.01	0.58	0.13
Delay/Veh:	83.2	120	62.5	121.9	79.6	33.3	60.0	67.3	12.8	132.5	48.1	19.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.2	120	62.5	121.9	79.6	33.3	60.0	67.3	12.8	132.5	48.1	19.6
LOS by Move:	F	F	E	F	E	C	E	E	B	F	D	B
HCM2kAvgQ:	15	18	12	26	16	6	13	59	7	15	17	3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 10 10 7 10 10 7 0 10 7 0 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module:

Base Vol: 417 495 225 346 523 162 419 0 316 307 0 122

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 417 495 225 346 523 162 419 0 316 307 0 122

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 417 495 225 346 523 162 419 0 316 307 0 122

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 417 495 225 346 523 162 419 0 316 307 0 122

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 417 495 225 346 523 162 419 0 316 307 0 122

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 417 495 225 346 523 162 419 0 316 307 0 122

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.83 1.00 0.92 0.92 1.00 0.92 0.83 1.00 0.92 0.83 1.00 0.92

Lanes: 2.00 2.00 1.00 1.00 2.00 1.00 2.00 0.00 1.00 2.00 0.00 1.00

Final Sat.: 3150 3800 1750 1750 3800 1750 3150 0 1750 3150 0 1750

Capacity Analysis Module:

Vol/Sat: 0.13 0.13 0.13 0.20 0.14 0.09 0.13 0.00 0.18 0.10 0.00 0.07

Crit Moves: ****

Green Time: 29.9 24.2 42.3 36.7 31.1 58.1 27.1 0.0 38.8 18.1 0.0 54.8

Volume/Cap: 0.44 0.54 0.30 0.54 0.44 0.16 0.49 0.00 0.47 0.54 0.00 0.13

Delay/Veh: 28.7 33.7 19.3 25.9 27.8 9.7 31.1 0.0 23.3 38.2 0.0 11.0

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 28.7 33.7 19.3 25.9 27.8 9.7 31.1 0.0 23.3 38.2 0.0 11.0

LOS by Move: C C B C C A C A C D A B

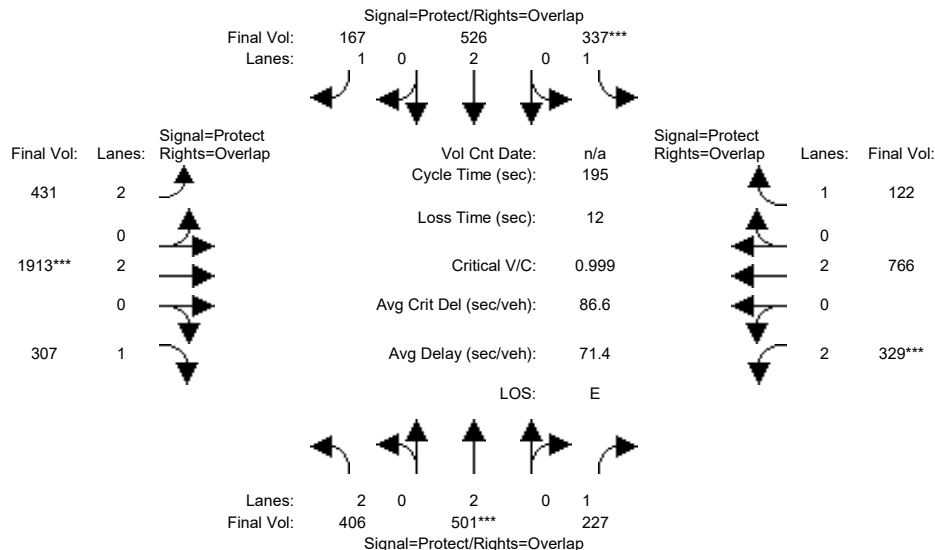
HCM2kAvgQ: 6 7 5 9 7 2 7 0 8 6 0 2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module:

Base Vol: 406 501 227 337 526 167 431 1913 307 329 766 122

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 406 501 227 337 526 167 431 1913 307 329 766 122

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 406 501 227 337 526 167 431 1913 307 329 766 122

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 406 501 227 337 526 167 431 1913 307 329 766 122

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 406 501 227 337 526 167 431 1913 307 329 766 122

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 406 501 227 337 526 167 431 1913 307 329 766 122

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.83 1.00 0.92 0.92 1.00 0.92 0.83 1.00 0.92 0.83 1.00 0.92

Lanes: 2.00 2.00 1.00 1.00 2.00 1.00 2.00 2.00 1.00 2.00 2.00 1.00

Final Sat.: 3150 3800 1750 1750 3800 1750 3150 3800 1750 3150 3800 1750

Capacity Analysis Module:

Vol/Sat: 0.13 0.13 0.13 0.19 0.14 0.10 0.14 0.50 0.18 0.10 0.20 0.07

Crit Moves: ****

Green Time: 30.5 25.7 46.1 37.6 32.8 80.8 48.0 98.3 128.8 20.4 70.7 108.3

Volume/Cap: 0.82 1.00 0.55 1.00 0.82 0.23 0.56 1.00 0.27 1.00 0.56 0.13

Delay/Veh: 84.2 118 61.8 121.3 80.8 34.3 60.2 64.9 12.7 129.8 46.3 19.2

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 84.2 118 61.8 121.3 80.8 34.3 60.2 64.9 12.7 129.8 46.3 19.2

LOS by Move: F F E F F C E E B F D B

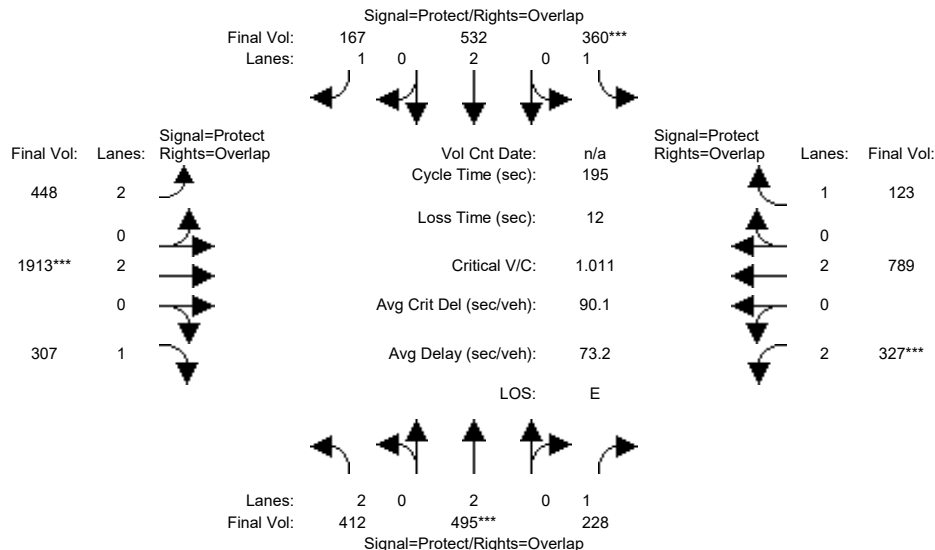
HCM2kAvgQ: 15 18 12 25 16 6 13 59 7 15 17 3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 10 10 7 10 10 7 10 10 7 10 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module:

Base Vol: 412 495 228 360 532 167 448 1913 307 327 789 123

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 412 495 228 360 532 167 448 1913 307 327 789 123

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 412 495 228 360 532 167 448 1913 307 327 789 123

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 412 495 228 360 532 167 448 1913 307 327 789 123

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 412 495 228 360 532 167 448 1913 307 327 789 123

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 412 495 228 360 532 167 448 1913 307 327 789 123

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.83 1.00 0.92 0.92 1.00 0.92 0.83 1.00 0.92 0.83 1.00 0.92

Lanes: 2.00 2.00 1.00 1.00 2.00 1.00 2.00 2.00 1.00 2.00 2.00 1.00

Final Sat.: 3150 3800 1750 1750 3800 1750 3150 3800 1750 3150 3800 1750

Capacity Analysis Module:

Vol/Sat: 0.13 0.13 0.13 0.21 0.14 0.10 0.14 0.50 0.18 0.10 0.21 0.07

Crit Moves: ****

Green Time: 31.3 25.1 45.2 39.7 33.5 81.1 47.6 97.1 128.5 20.0 69.5 109.2

Volume/Cap: 0.81 1.01 0.56 1.01 0.81 0.23 0.58 1.01 0.27 1.01 0.58 0.13

Delay/Veh: 82.8 122 62.9 122.1 79.6 34.1 61.1 68.5 12.8 133.5 47.7 18.8

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 82.8 122 62.9 122.1 79.6 34.1 61.1 68.5 12.8 133.5 47.7 18.8

LOS by Move: F F E F E C E E B F D B

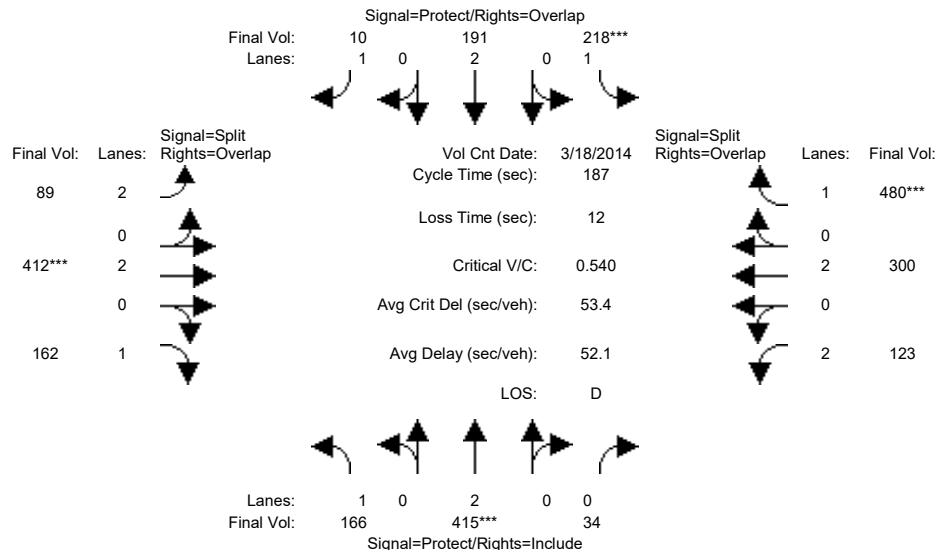
HCM2kAvgQ: 15 18 12 27 16 6 13 59 7 15 17 3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #10: Foothill & Arastradero (CMP #5207)

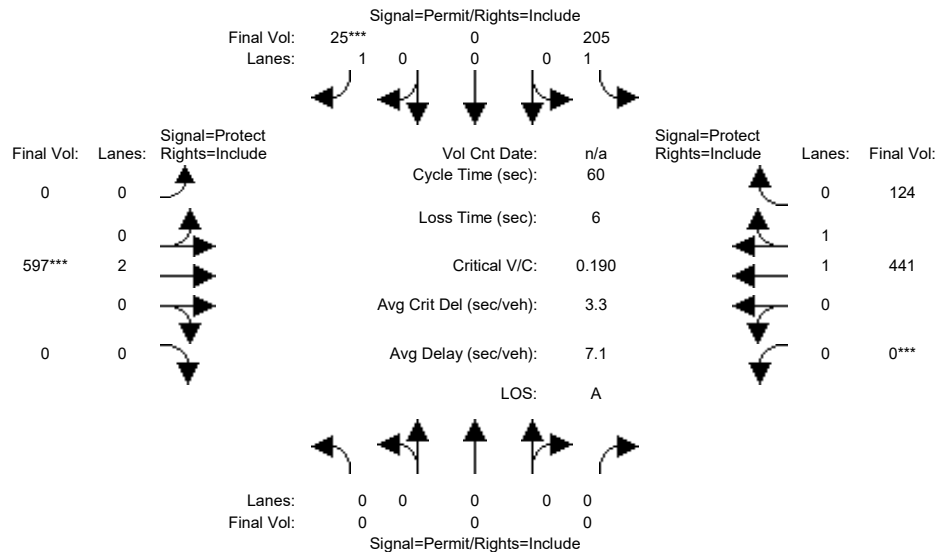


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 7:30 AM - 8:30 AM											
Base Vol:	166	415	34	218	191	25	89	412	162	123	300	480
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	166	415	34	218	191	25	89	412	162	123	300	480
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	166	415	34	218	191	25	89	412	162	123	300	480
User Adj:	1.00	1.00	1.00	1.00	1.00	0.40	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	166	415	34	218	191	10	89	412	162	123	300	480
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	166	415	34	218	191	10	89	412	162	123	300	480
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	166	415	34	218	191	10	89	412	162	123	300	480
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3420	280	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.12	0.12	0.05	0.01	0.03	0.11	0.09	0.04	0.08	0.27
Crit Moves:	****			****			****			****		
Green Time:	53.7	42.0	42.0	43.1	31.5	69.0	37.5	37.5	91.2	51.8	51.8	95.0
Volume/Cap:	0.33	0.54	0.54	0.54	0.30	0.02	0.14	0.54	0.19	0.14	0.28	0.54
Delay/Veh:	50.9	62.3	62.3	62.3	65.8	36.1	59.3	65.3	26.1	49.0	51.2	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	62.3	62.3	62.3	65.8	36.1	59.3	65.3	26.1	49.0	51.2	30.7
LOS by Move:	D	E	E	E	E	D	E	E	C	D	D	C
HCM2kAvgQ:	8	11	11	12	5	0	2	10	5	3	6	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #10: Foothill & Arastradero (CMP #5207)



Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	0	0	0	205	0	25	0	597	0	0	441	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	205	0	25	0	597	0	0	441	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	205	0	25	0	597	0	0	441	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	205	0	25	0	597	0	0	441	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	205	0	25	0	597	0	0	441	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	205	0	25	0	597	0	0	441	124

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	1.55	0.45
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	2887	812

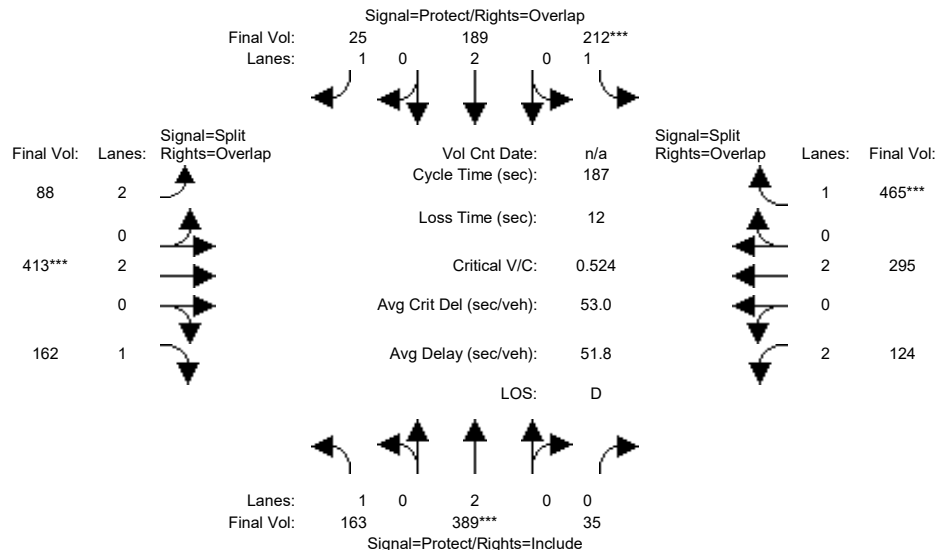
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.12	0.00	0.01	0.00	0.16	0.00	0.00	0.15	0.15
Crit Moves:						****		****			****	
Green Time:	0.0	0.0	0.0	10.0	0.0	10.0	0.0	44.0	0.0	0.0	44.0	44.0
Volume/Cap:	0.00	0.00	0.00	0.70	0.00	0.09	0.00	0.21	0.00	0.00	0.21	0.21
Delay/Veh:	0.0	0.0	0.0	31.1	0.0	21.3	0.0	2.6	0.0	0.0	2.6	2.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.1	0.0	21.3	0.0	2.6	0.0	0.0	2.6	2.6
LOS by Move:	A	A	A	C	A	C	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	6	0	0	0	2	0	0	2	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #10: Foothill & Arastradero (CMP #5207)



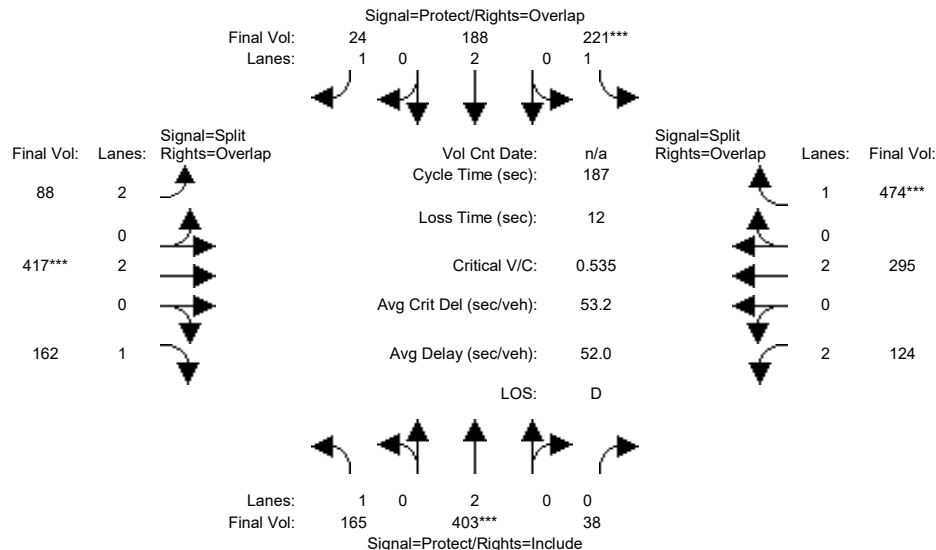
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	163	389	35	212	189	25	88	413	162	124	295	465
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	163	389	35	212	189	25	88	413	162	124	295	465
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	163	389	35	212	189	25	88	413	162	124	295	465
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	163	389	35	212	189	25	88	413	162	124	295	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	163	389	35	212	189	25	88	413	162	124	295	465
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	163	389	35	212	189	25	88	413	162	124	295	465
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.83	0.17	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3394	305	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.11	0.11	0.12	0.05	0.01	0.03	0.11	0.09	0.04	0.08	0.27
Crit Moves:	****			****			****			****		
Green Time:	52.7	40.9	40.9	43.2	31.4	70.2	38.8	38.8	91.5	51.6	51.6	94.8
Volume/Cap:	0.33	0.52	0.52	0.52	0.30	0.04	0.13	0.52	0.19	0.14	0.28	0.52
Delay/Veh:	51.6	62.7	62.7	61.8	65.8	35.6	58.3	64.1	26.0	49.2	51.3	30.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	62.7	62.7	61.8	65.8	35.6	58.3	64.1	26.0	49.2	51.3	30.3
LOS by Move:	D	E	E	E	E	D	E	E	C	D	D	C
HCM2kAvgQ:	7	11	11	11	5	1	2	10	5	3	6	18

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #10: Foothill & Arastradero (CMP #5207)

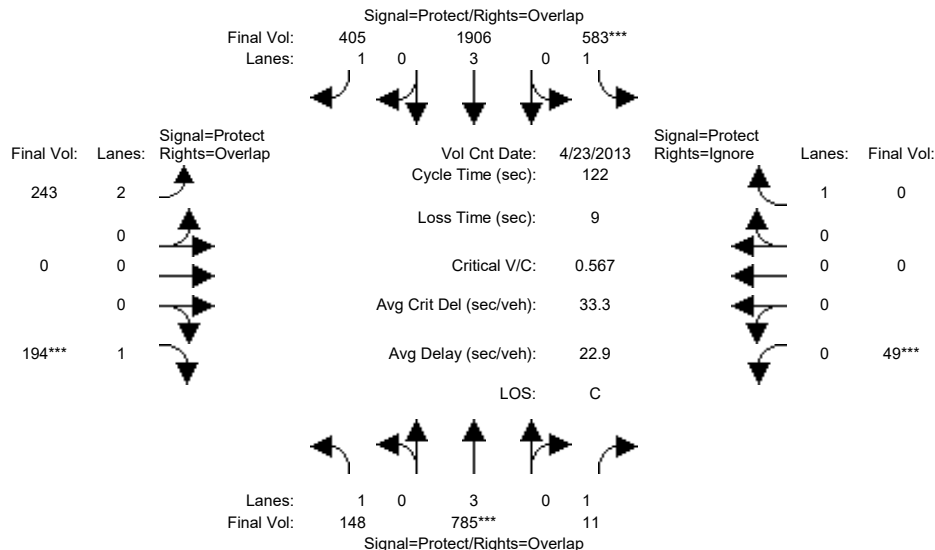


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	403	38	221	188	24	88	417	162	124	295	474
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	403	38	221	188	24	88	417	162	124	295	474
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	403	38	221	188	24	88	417	162	124	295	474
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	403	38	221	188	24	88	417	162	124	295	474
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	403	38	221	188	24	88	417	162	124	295	474
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	165	403	38	221	188	24	88	417	162	124	295	474
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.82	0.18	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3381	319	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.12	0.12	0.13	0.05	0.01	0.03	0.11	0.09	0.04	0.08	0.27
Crit Moves:	****			****			****			****		
Green Time:	53.9	41.6	41.6	44.1	31.8	70.1	38.3	38.3	92.3	50.5	50.5	94.6
Volume/Cap:	0.33	0.54	0.54	0.54	0.29	0.04	0.14	0.54	0.19	0.15	0.29	0.54
Delay/Veh:	50.7	62.4	62.4	61.5	65.5	35.7	58.6	64.6	25.6	50.0	52.2	30.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	62.4	62.4	61.5	65.5	35.7	58.6	64.6	25.6	50.0	52.2	30.8
LOS by Move:	D	E	E	E	E	D	E	E	C	D	D	C
HCM2kAvgQ:	8	11	11	12	5	1	2	10	5	3	6	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

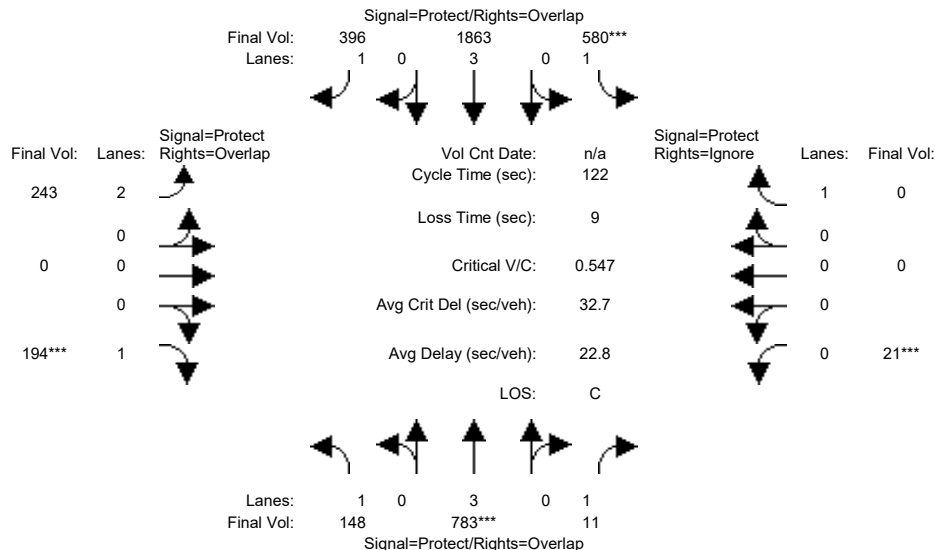


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 Apr 2013 << AM												
Base Vol:	148	785	11	583	1906	405	243	0	194	49	0	494
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	785	11	583	1906	405	243	0	194	49	0	494
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	785	11	583	1906	405	243	0	194	49	0	494
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	785	11	583	1906	405	243	0	194	49	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	785	11	583	1906	405	243	0	194	49	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	785	11	583	1906	405	243	0	194	49	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.01	0.33	0.33	0.23	0.08	0.00	0.11	0.03	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	20.3	29.4	36.4	71.0	80.1	92.7	12.6	0.0	25.9	7.0	0.0	0.0
Volume/Cap:	0.51	0.57	0.02	0.57	0.51	0.30	0.75	0.00	0.52	0.49	0.00	0.00
Delay/Veh:	47.8	41.4	30.3	16.8	10.9	4.7	62.3	0.0	43.9	59.5	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.8	41.4	30.3	16.8	10.9	4.7	62.3	0.0	43.9	59.5	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	15	12	5	7	0	7	3	0	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	148	783	11	580	1863	396	243	0	194	21	0	492
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	783	11	580	1863	396	243	0	194	21	0	492
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	783	11	580	1863	396	243	0	194	21	0	492
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	783	11	580	1863	396	243	0	194	21	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	783	11	580	1863	396	243	0	194	21	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	783	11	580	1863	396	243	0	194	21	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

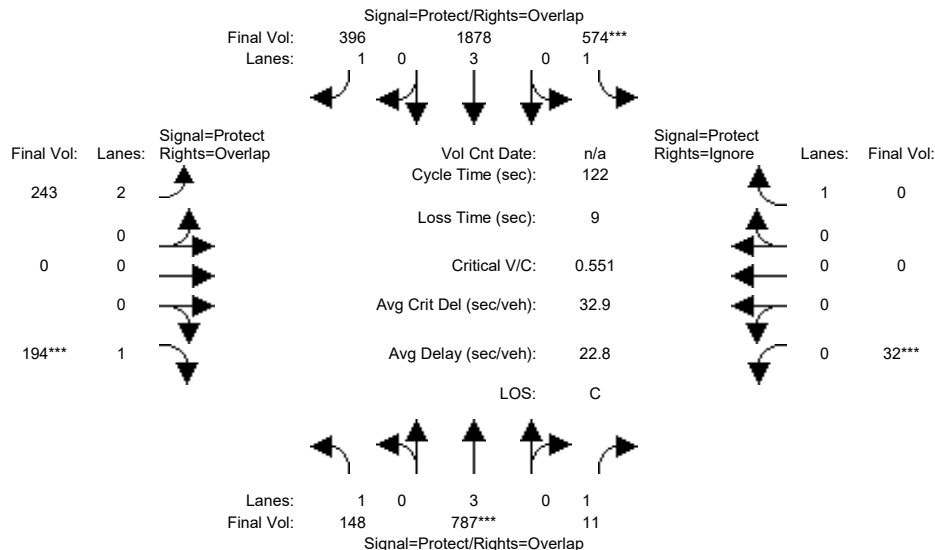
Vol/Sat:	0.08	0.14	0.01	0.33	0.33	0.23	0.08	0.00	0.11	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	20.6	29.4	36.4	71.0	79.7	92.4	12.6	0.0	26.3	7.0	0.0	0.0
Volume/Cap:	0.50	0.57	0.02	0.57	0.50	0.30	0.75	0.00	0.52	0.21	0.00	0.00
Delay/Veh:	47.3	41.3	30.2	16.7	11.0	4.8	62.2	0.0	43.5	55.9	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.3	41.3	30.2	16.7	11.0	4.8	62.2	0.0	43.5	55.9	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	15	12	5	7	0	7	1	0	0

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	148	787	11	574	1878	396	243	0	194	32	0	507
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	787	11	574	1878	396	243	0	194	32	0	507
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	787	11	574	1878	396	243	0	194	32	0	507
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	787	11	574	1878	396	243	0	194	32	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	787	11	574	1878	396	243	0	194	32	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	787	11	574	1878	396	243	0	194	32	0	0

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

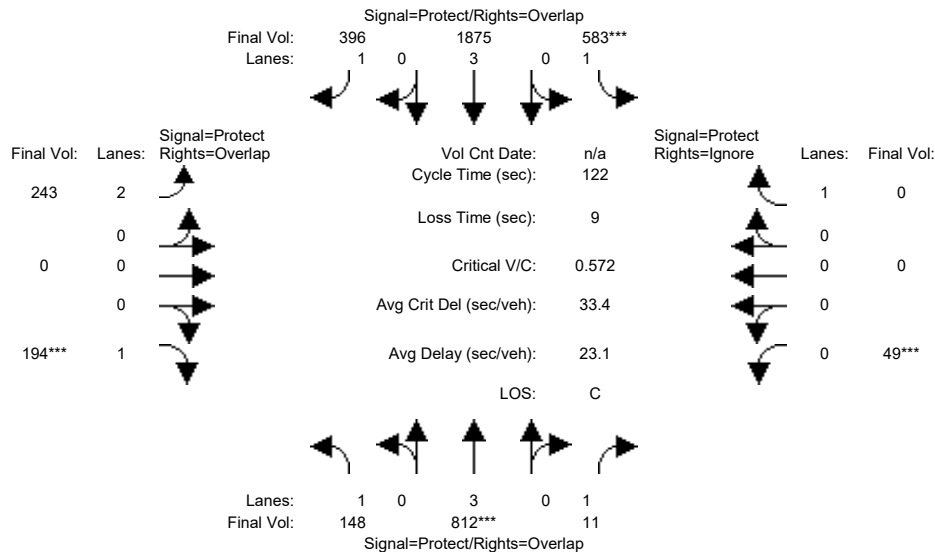
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.01	0.33	0.33	0.23	0.08	0.00	0.11	0.02	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	20.5	29.7	36.7	70.6	79.8	92.5	12.7	0.0	26.2	7.0	0.0	0.0
Volume/Cap:	0.50	0.57	0.02	0.57	0.50	0.30	0.74	0.00	0.52	0.32	0.00	0.00
Delay/Veh:	47.5	41.0	30.0	16.9	11.0	4.7	62.0	0.0	43.6	57.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.5	41.0	30.0	16.9	11.0	4.7	62.0	0.0	43.6	57.0	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	15	12	5	7	0	7	2	0	0

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	148	812	11	583	1875	396	243	0	194	49	0	501
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	812	11	583	1875	396	243	0	194	49	0	501
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	812	11	583	1875	396	243	0	194	49	0	501
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	812	11	583	1875	396	243	0	194	49	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	812	11	583	1875	396	243	0	194	49	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	812	11	583	1875	396	243	0	194	49	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

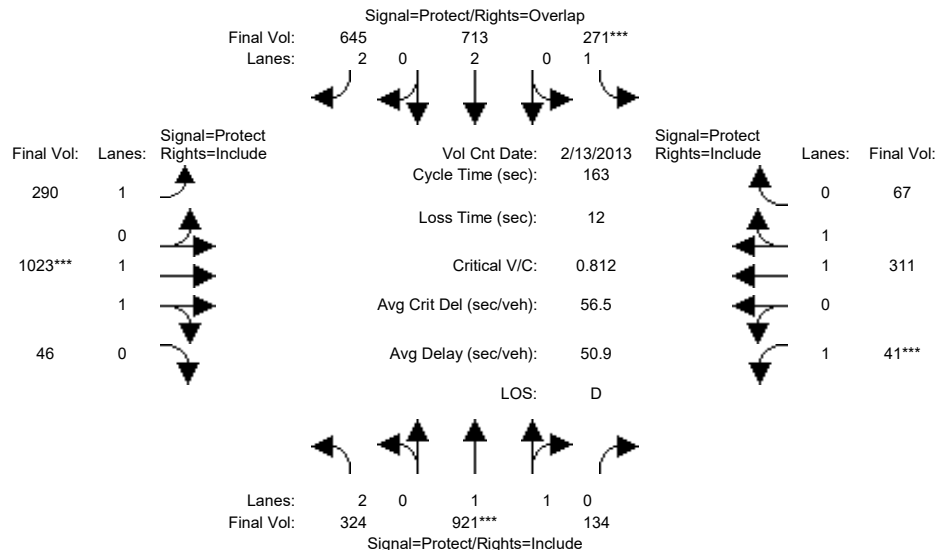
Vol/Sat:	0.08	0.14	0.01	0.33	0.33	0.23	0.08	0.00	0.11	0.03	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	20.5	30.1	37.1	70.4	79.9	92.5	12.6	0.0	26.1	7.0	0.0	0.0
Volume/Cap:	0.50	0.58	0.02	0.58	0.50	0.30	0.75	0.00	0.52	0.49	0.00	0.00
Delay/Veh:	47.5	41.0	29.8	17.2	10.9	4.8	62.6	0.0	43.7	59.5	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.5	41.0	29.8	17.2	10.9	4.8	62.6	0.0	43.7	59.5	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	15	12	5	7	0	7	3	0	0

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

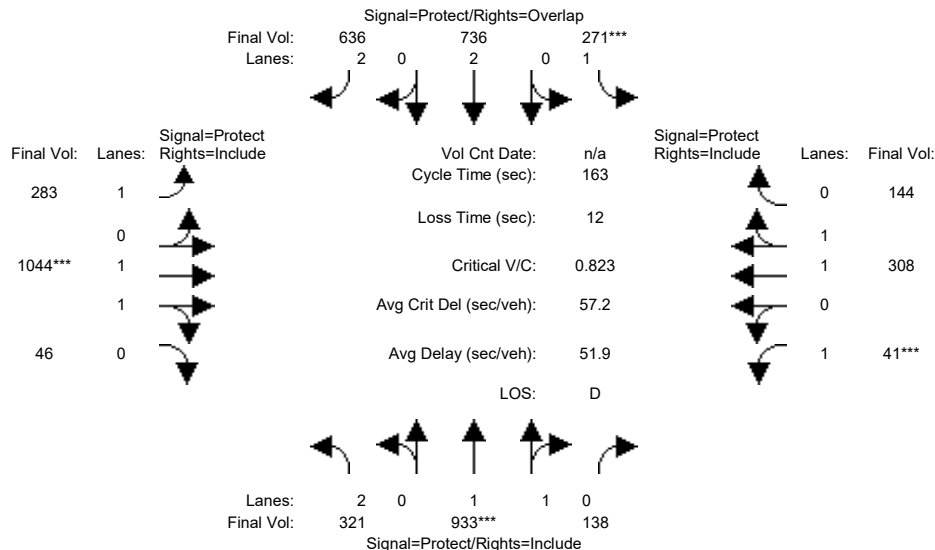


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Feb 2013 << AM												
Base Vol:	324	921	134	271	713	645	290	1023	46	41	311	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	324	921	134	271	713	645	290	1023	46	41	311	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	324	921	134	271	713	645	290	1023	46	41	311	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	324	921	134	271	713	645	290	1023	46	41	311	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	921	134	271	713	645	290	1023	46	41	311	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	324	921	134	271	713	645	290	1023	46	41	311	67
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.64	0.36
Final Sat.:	3150	3230	470	1750	3800	3150	1750	3541	159	1750	3048	652
Capacity Analysis Module:												
Vol/Sat:	0.10	0.29	0.29	0.15	0.19	0.20	0.17	0.29	0.29	0.02	0.10	0.10
Crit Moves:	****			****			****			****		
Green Time:	30.8	56.3	56.3	30.6	56.1	95.8	39.7	57.1	57.1	7.0	24.4	24.4
Volume/Cap:	0.54	0.83	0.83	0.83	0.54	0.35	0.68	0.83	0.83	0.55	0.68	0.68
Delay/Veh:	60.8	53.3	53.3	79.2	43.6	17.5	60.4	52.9	52.9	84.5	69.1	69.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.8	53.3	53.3	79.2	43.6	17.5	60.4	52.9	52.9	84.5	69.1	69.1
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	14	10	15	26	26	3	10	10
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	321	933	138	271	736	636	283	1044	46	41	308	144
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	321	933	138	271	736	636	283	1044	46	41	308	144
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	321	933	138	271	736	636	283	1044	46	41	308	144
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	321	933	138	271	736	636	283	1044	46	41	308	144
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	321	933	138	271	736	636	283	1044	46	41	308	144
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	321	933	138	271	736	636	283	1044	46	41	308	144

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.99	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.35	0.65
Final Sat.:	3150	3223	477	1750	3800	3150	1750	3544	156	1750	2520	1178

Capacity Analysis Module:

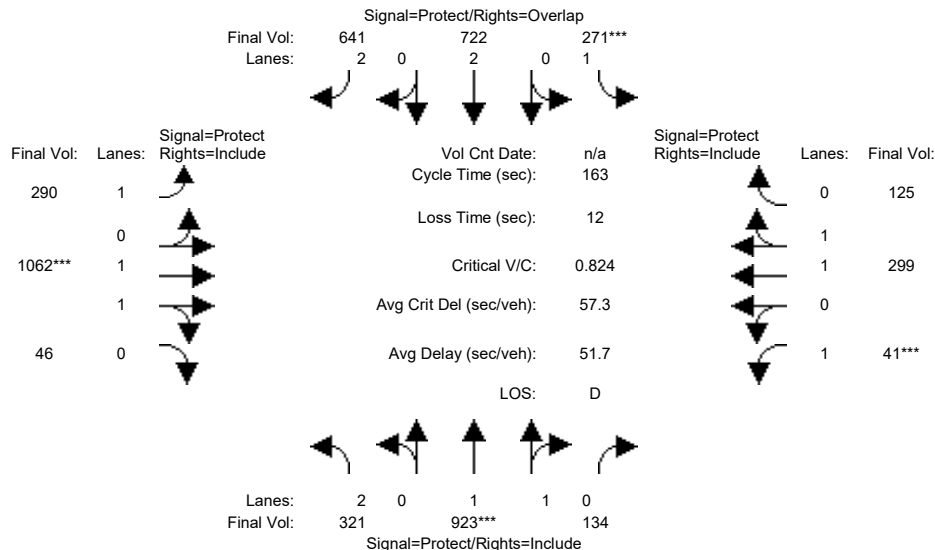
Vol/Sat:	0.10	0.29	0.29	0.15	0.19	0.20	0.16	0.29	0.29	0.02	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	29.9	56.4	56.4	30.2	56.7	93.4	36.7	57.4	57.4	7.0	27.7	27.7
Volume/Cap:	0.56	0.84	0.84	0.84	0.56	0.35	0.72	0.84	0.84	0.55	0.72	0.72
Delay/Veh:	61.8	54.0	54.0	81.1	43.5	18.7	64.7	53.4	53.4	84.5	68.0	68.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.8	54.0	54.0	81.1	43.5	18.7	64.7	53.4	53.4	84.5	68.0	68.0
LOS by Move:	E	D	D	F	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	27	27	16	15	10	15	27	27	3	12	12

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	321	923	134	271	722	641	290	1062	46	41	299	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	321	923	134	271	722	641	290	1062	46	41	299	125
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	321	923	134	271	722	641	290	1062	46	41	299	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	321	923	134	271	722	641	290	1062	46	41	299	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	321	923	134	271	722	641	290	1062	46	41	299	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	321	923	134	271	722	641	290	1062	46	41	299	125

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.39	0.61
Final Sat.:	3150	3231	469	1750	3800	3150	1750	3546	154	1750	2608	1090

Capacity Analysis Module:

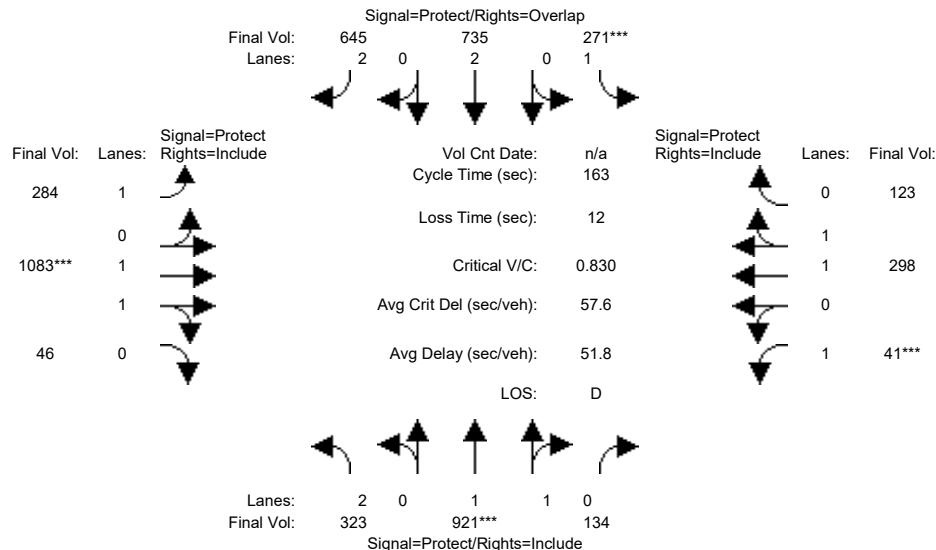
Vol/Sat:	0.10	0.29	0.29	0.15	0.19	0.20	0.17	0.30	0.30	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	29.9	55.6	55.6	30.1	55.8	94.4	38.6	58.3	58.3	7.0	26.7	26.7
Volume/Cap:	0.56	0.84	0.84	0.84	0.56	0.35	0.70	0.84	0.84	0.55	0.70	0.70
Delay/Veh:	61.7	54.6	54.6	81.3	44.1	18.3	62.2	52.9	52.9	84.5	68.0	68.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.7	54.6	54.6	81.3	44.1	18.3	62.2	52.9	52.9	84.5	68.0	68.0
LOS by Move:	E	D	D	F	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	27	27	16	14	10	15	28	28	3	11	11

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	323	921	134	271	735	645	284	1083	46	41	298	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	323	921	134	271	735	645	284	1083	46	41	298	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	323	921	134	271	735	645	284	1083	46	41	298	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	323	921	134	271	735	645	284	1083	46	41	298	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	323	921	134	271	735	645	284	1083	46	41	298	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	323	921	134	271	735	645	284	1083	46	41	298	123

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.92	0.08	1.00	1.40	0.60
Final Sat.:	3150	3230	470	1750	3800	3150	1750	3549	151	1750	2618	1081

Capacity Analysis Module:

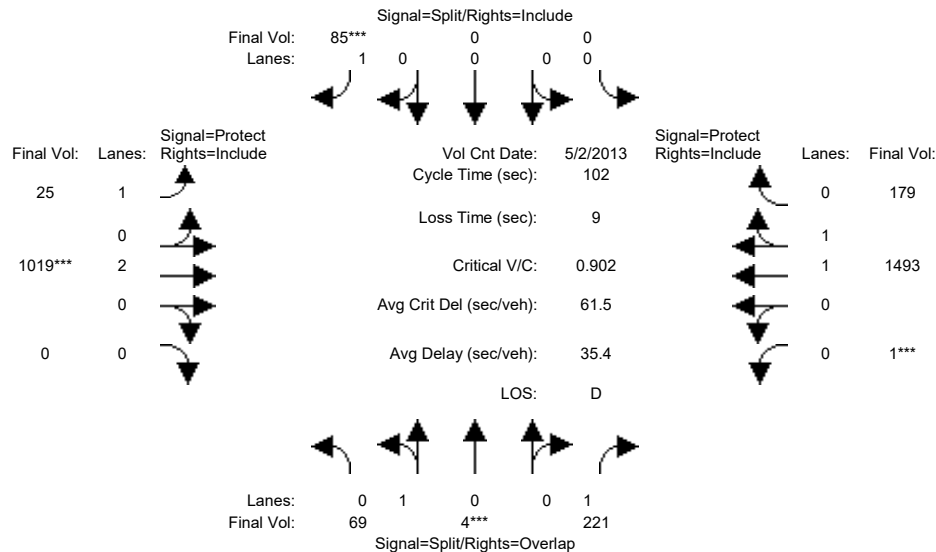
Vol/Sat:	0.10	0.29	0.29	0.15	0.19	0.20	0.16	0.31	0.31	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	29.5	55.1	55.1	29.9	55.6	94.3	38.8	59.0	59.0	7.0	27.2	27.2
Volume/Cap:	0.57	0.84	0.84	0.84	0.57	0.35	0.68	0.84	0.84	0.55	0.68	0.68
Delay/Veh:	62.3	55.4	55.4	82.3	44.5	18.3	61.1	52.8	52.8	84.5	67.0	67.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.3	55.4	55.4	82.3	44.5	18.3	61.1	52.8	52.8	84.5	67.0	67.0
LOS by Move:	E	E	E	F	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	27	27	16	15	10	15	28	28	3	11	11

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

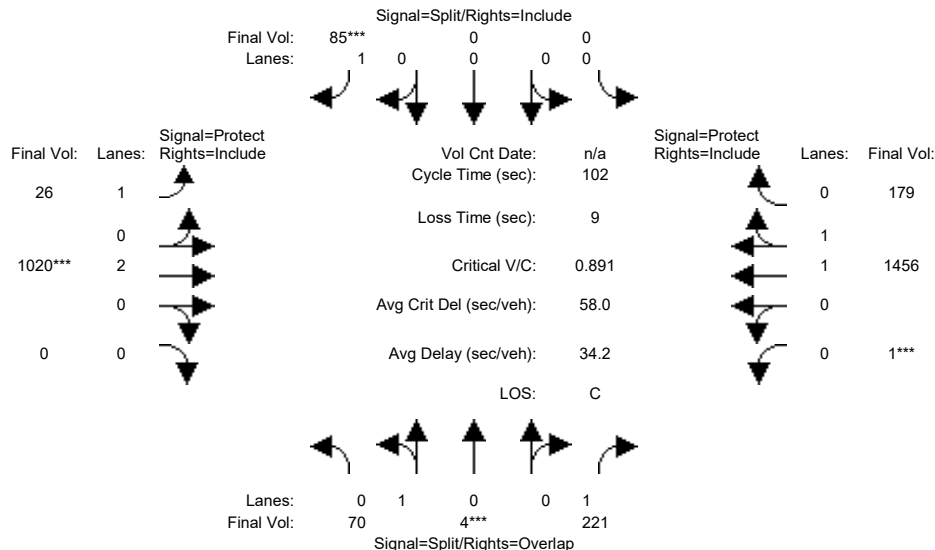


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 << AM												
Base Vol:	69	4	221	0	0	85	25	1019	0	1	1493	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	4	221	0	0	85	25	1019	0	1	1493	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	69	4	221	0	0	85	25	1019	0	1	1493	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	69	4	221	0	0	85	25	1019	0	1	1493	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	4	221	0	0	85	25	1019	0	1	1493	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	69	4	221	0	0	85	25	1019	0	1	1493	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.95	0.05	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.78	0.21
Final Sat.:	1701	99	1750	0	0	1750	1750	3800	0	2	3213	385
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.46	0.46	0.46
Crit Moves:	****			****			****			****		
Green Time:	10.0	10.0	56.3	0.0	0.0	10.0	9.4	26.7	0.0	46.3	63.6	63.6
Volume/Cap:	0.41	0.41	0.23	0.00	0.00	0.50	0.16	1.02	0.00	1.02	0.75	0.75
Delay/Veh:	44.8	44.8	11.8	0.0	0.0	45.9	43.1	72.4	0.0	56.4	14.9	14.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	44.8	11.8	0.0	0.0	45.9	43.1	72.4	0.0	56.4	14.9	14.9
LOS by Move:	D	D	B	A	A	D	D	E	A	E	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	23	0	37	20	20
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	70	4	221	0	0	85	26	1020	0	1	1456	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	4	221	0	0	85	26	1020	0	1	1456	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	4	221	0	0	85	26	1020	0	1	1456	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	70	4	221	0	0	85	26	1020	0	1	1456	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	4	221	0	0	85	26	1020	0	1	1456	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	70	4	221	0	0	85	26	1020	0	1	1456	179

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.95	0.05	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.78	0.21
Final Sat.:	1703	97	1750	0	0	1750	1750	3800	0	2	3204	394

Capacity Analysis Module:

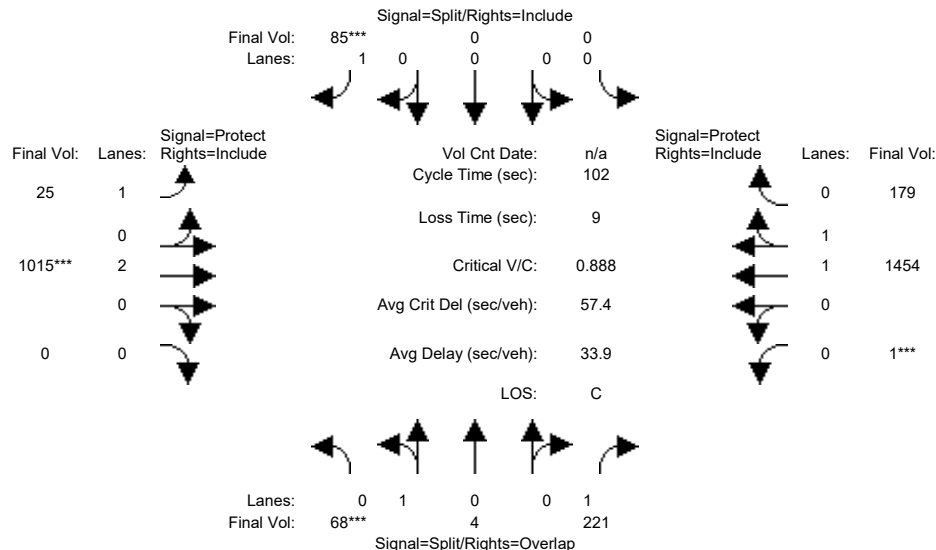
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.45	0.45	0.45
Crit Moves:	****					****		****		****		
Green Time:	10.0	10.0	55.9	0.0	0.0	10.0	9.6	27.1	0.0	45.9	63.4	63.4
Volume/Cap:	0.42	0.42	0.23	0.00	0.00	0.50	0.16	1.01	0.00	1.01	0.73	0.73
Delay/Veh:	44.9	44.9	12.1	0.0	0.0	45.9	43.0	68.3	0.0	52.9	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.9	44.9	12.1	0.0	0.0	45.9	43.0	68.3	0.0	52.9	14.6	14.6
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	23	0	35	20	20

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	68	4	221	0	0	85	25	1015	0	1	1454	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	4	221	0	0	85	25	1015	0	1	1454	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	4	221	0	0	85	25	1015	0	1	1454	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	4	221	0	0	85	25	1015	0	1	1454	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	4	221	0	0	85	25	1015	0	1	1454	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	68	4	221	0	0	85	25	1015	0	1	1454	179

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.78	0.21
Final Sat.:	1700	100	1750	0	0	1750	1750	3800	0	2	3203	394

Capacity Analysis Module:

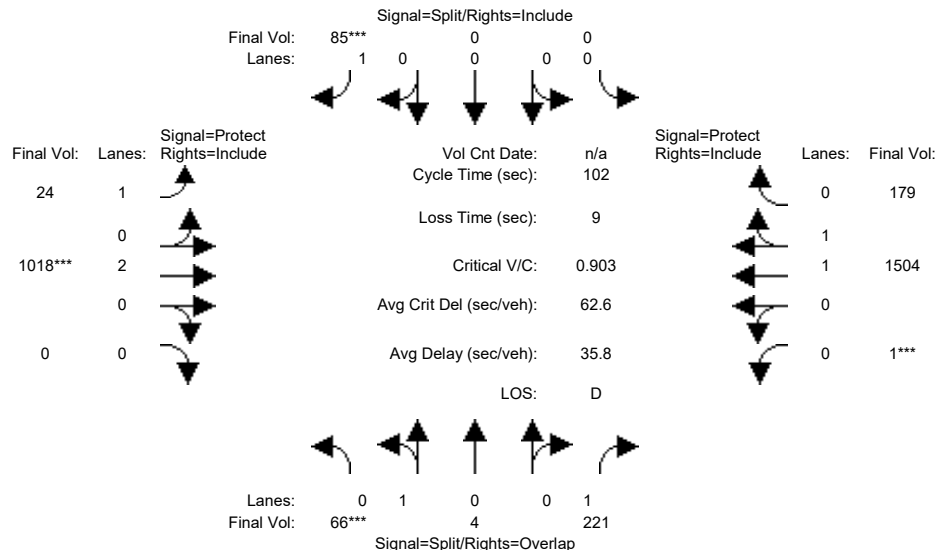
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.45	0.45	0.45
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	10.0	10.0	56.0	0.0	0.0	10.0	9.6	27.0	0.0	46.0	63.4	63.4
Volume/Cap:	0.41	0.41	0.23	0.00	0.00	0.50	0.15	1.01	0.00	1.01	0.73	0.73
Delay/Veh:	44.8	44.8	12.0	0.0	0.0	45.9	42.9	67.7	0.0	52.2	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.8	44.8	12.0	0.0	0.0	45.9	42.9	67.7	0.0	52.2	14.6	14.6
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	23	0	35	19	19

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	66	4	221	0	0	85	24	1018	0	1	1504	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	4	221	0	0	85	24	1018	0	1	1504	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	4	221	0	0	85	24	1018	0	1	1504	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	4	221	0	0	85	24	1018	0	1	1504	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	4	221	0	0	85	24	1018	0	1	1504	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	66	4	221	0	0	85	24	1018	0	1	1504	179

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.78	0.21
Final Sat.:	1697	103	1750	0	0	1750	1750	3800	0	2	3215	383

Capacity Analysis Module:

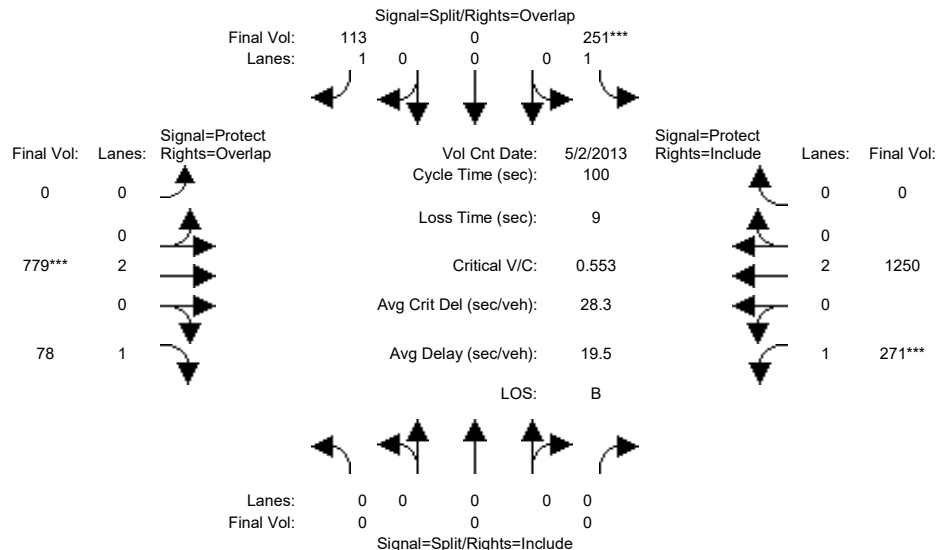
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.47	0.47	0.47
Crit Moves:	***					***		***		***		
Green Time:	10.0	10.0	56.4	0.0	0.0	10.0	9.3	26.6	0.0	46.4	63.7	63.7
Volume/Cap:	0.40	0.40	0.23	0.00	0.00	0.50	0.15	1.03	0.00	1.03	0.75	0.75
Delay/Veh:	44.6	44.6	11.8	0.0	0.0	45.9	43.1	73.7	0.0	57.5	15.0	15.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.6	44.6	11.8	0.0	0.0	45.9	43.1	73.7	0.0	57.5	15.0	15.0
LOS by Move:	D	D	B	A	A	D	D	E	A	E	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	23	0	37	21	21

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

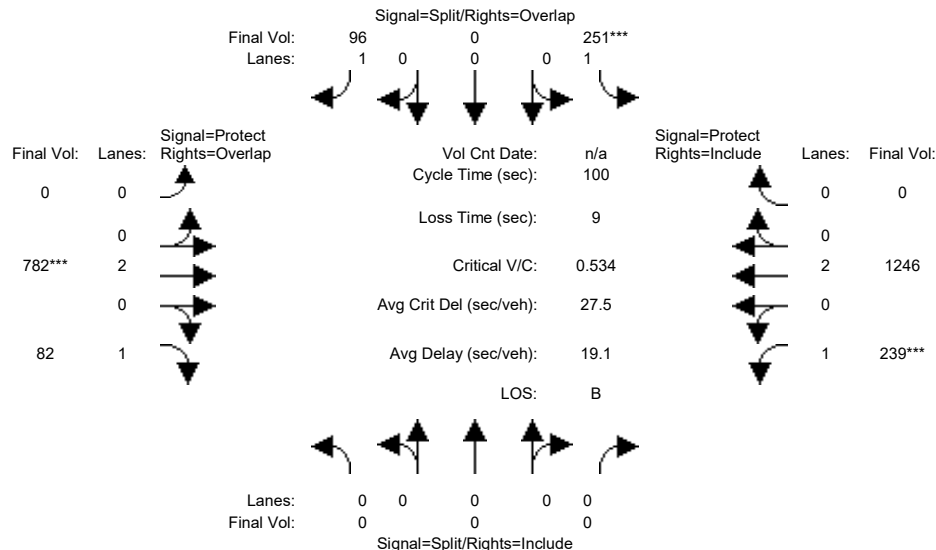


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	0	7	10	10	7	10	10	7	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 <<												
Base Vol:	0	0	0	251	0	113	0	779	78	271	1250	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	251	0	113	0	779	78	271	1250	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	251	0	113	0	779	78	271	1250	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	251	0	113	0	779	78	271	1250	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	251	0	113	0	779	78	271	1250	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	251	0	113	0	779	78	271	1250	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.06	0.00	0.21	0.04	0.15	0.33	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	25.9	0.0	25.9	0.0	37.1	37.1	28.0	65.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.25	0.00	0.55	0.12	0.55	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	33.5	0.0	29.6	0.0	25.4	20.8	32.0	9.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.5	0.0	29.6	0.0	25.4	20.8	32.0	9.3	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	8	0	3	0	10	2	8	10	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	0	0	251	0	96	0	782	82	239	1246	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	251	0	96	0	782	82	239	1246	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	251	0	96	0	782	82	239	1246	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	251	0	96	0	782	82	239	1246	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	251	0	96	0	782	82	239	1246	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	251	0	96	0	782	82	239	1246	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0

Capacity Analysis Module:

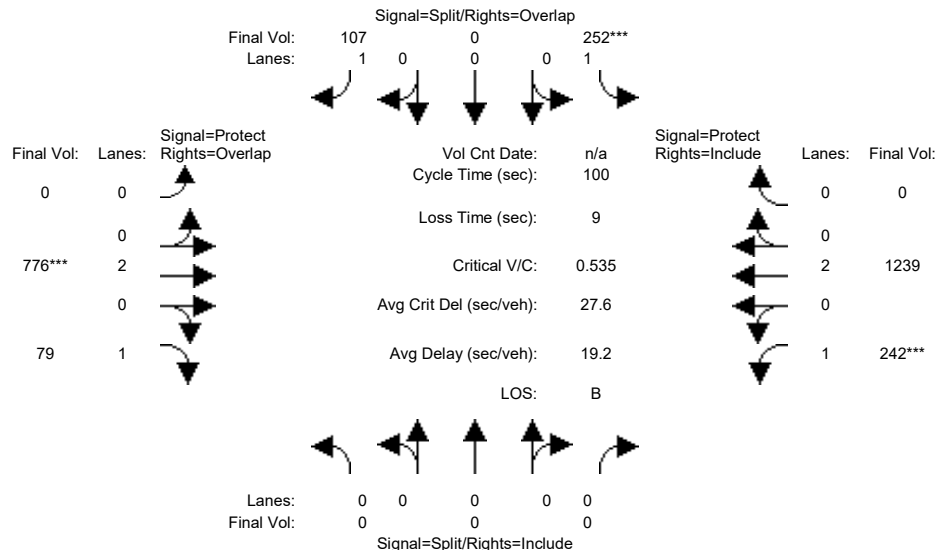
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.00	0.21	0.05	0.14	0.33	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	26.9	0.0	26.9	0.0	38.5	38.5	25.6	64.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.20	0.00	0.53	0.12	0.53	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	32.4	0.0	28.5	0.0	24.2	19.9	33.3	9.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.4	0.0	28.5	0.0	24.2	19.9	33.3	9.8	0.0
LOS by Move:	A	A	A	C	A	C	A	C	B	C	A	A
HCM2kAvgQ:	0	0	0	8	0	2	0	10	2	7	10	0

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

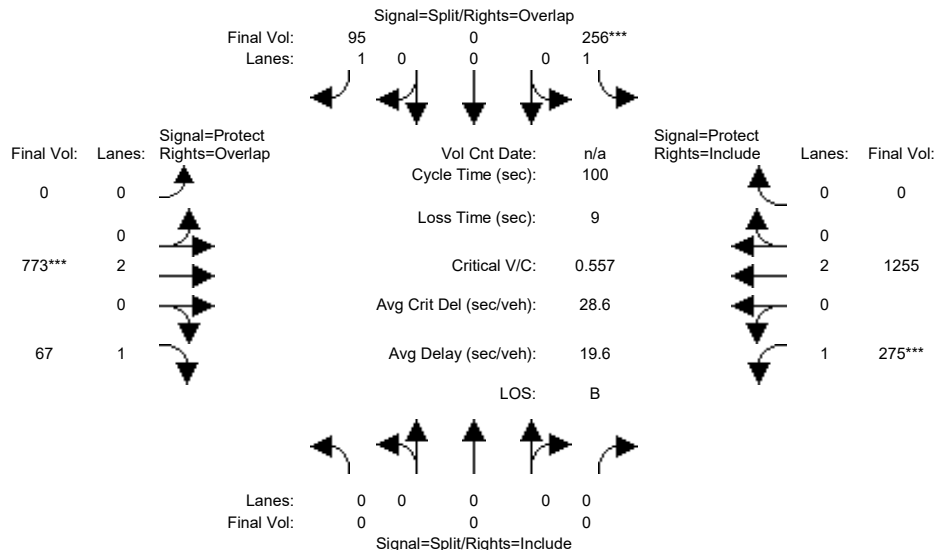


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	252	0	107	0	776	79	242	1239	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	252	0	107	0	776	79	242	1239	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	252	0	107	0	776	79	242	1239	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	252	0	107	0	776	79	242	1239	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	252	0	107	0	776	79	242	1239	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	252	0	107	0	776	79	242	1239	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.06	0.00	0.20	0.05	0.14	0.33	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	26.9	0.0	26.9	0.0	38.2	38.2	25.9	64.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.23	0.00	0.53	0.12	0.53	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	32.4	0.0	28.7	0.0	24.4	20.1	33.1	9.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.4	0.0	28.7	0.0	24.4	20.1	33.1	9.8	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	8	0	3	0	9	2	7	10	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	0	0	256	0	95	0	773	67	275	1255	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	256	0	95	0	773	67	275	1255	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	256	0	95	0	773	67	275	1255	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	256	0	95	0	773	67	275	1255	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	256	0	95	0	773	67	275	1255	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	256	0	95	0	773	67	275	1255	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0

Capacity Analysis Module:

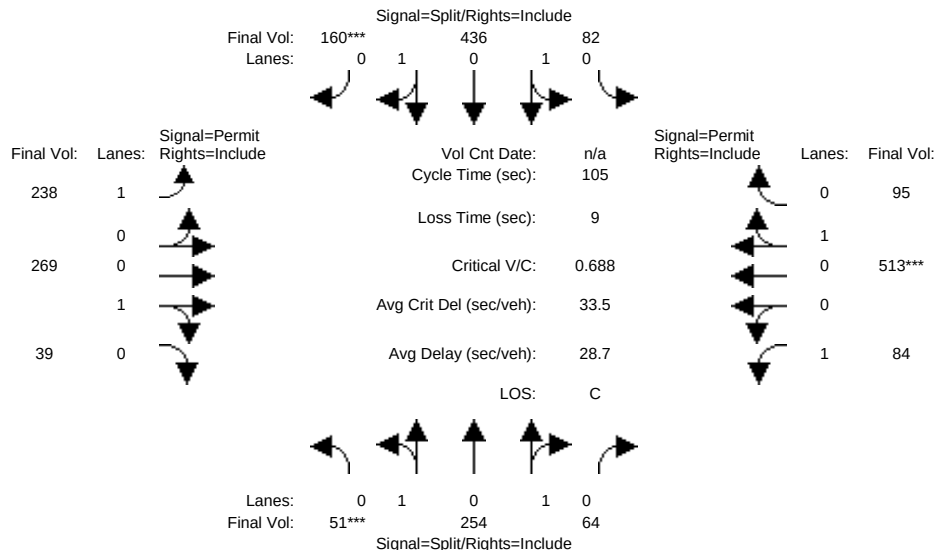
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.05	0.00	0.20	0.04	0.16	0.33	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	26.3	0.0	26.3	0.0	36.5	36.5	28.2	64.7	0.0
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.21	0.00	0.56	0.10	0.56	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	33.4	0.0	29.0	0.0	25.8	21.0	32.0	9.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.4	0.0	29.0	0.0	25.8	21.0	32.0	9.5	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	8	0	2	0	10	1	8	10	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #15: Middlefield Road & University Avenue

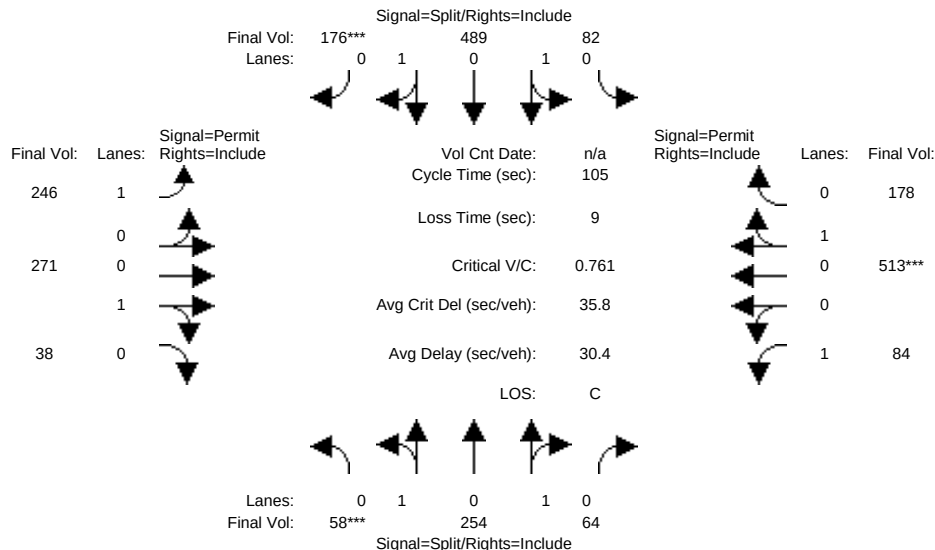


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:AM												
Base Vol:	51	254	64	82	436	160	238	269	39	84	513	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	254	64	82	436	160	238	269	39	84	513	95
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	51	254	64	82	436	160	238	269	39	84	513	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	51	254	64	82	436	160	238	269	39	84	513	95
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	254	64	82	436	160	238	269	39	84	513	95
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	254	64	82	436	160	238	269	39	84	513	95
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.27	1.38	0.35	0.24	1.29	0.47	1.00	0.87	0.13	1.00	0.84	0.16
Final Sat.:	498	2478	624	435	2315	850	1750	1572	228	1750	1519	281
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.14	0.17	0.17	0.05	0.34	0.34
Crit Moves:	***					***					***	
Green Time:	15.7	15.7	15.7	28.8	28.8	28.8	51.6	51.6	51.6	51.6	51.6	51.6
Volume/Cap:	0.69	0.69	0.69	0.69	0.69	0.69	0.28	0.35	0.35	0.10	0.69	0.69
Delay/Veh:	46.1	46.1	46.1	36.2	36.2	36.2	15.9	16.6	16.6	14.3	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.1	46.1	46.1	36.2	36.2	36.2	15.9	16.6	16.6	14.3	22.8	22.8
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	11	11	11	5	6	6	2	16	16
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #15: Middlefield Road & University Avenue

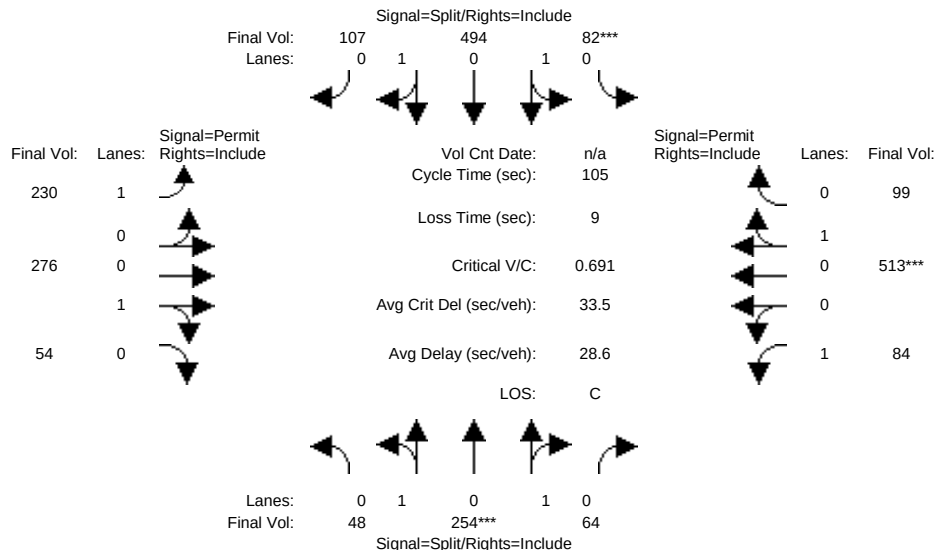


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	58	254	64	82	489	176	246	271	38	84	513	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	58	254	64	82	489	176	246	271	38	84	513	178
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	58	254	64	82	489	176	246	271	38	84	513	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	58	254	64	82	489	176	246	271	38	84	513	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	58	254	64	82	489	176	246	271	38	84	513	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	58	254	64	82	489	176	246	271	38	84	513	178
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.31	1.35	0.34	0.22	1.31	0.47	1.00	0.88	0.12	1.00	0.74	0.26
Final Sat.:	555	2432	613	395	2357	848	1750	1579	221	1750	1336	464
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.21	0.21	0.21	0.14	0.17	0.17	0.05	0.38	0.38
Crit Moves:	***					***					***	
Green Time:	14.4	14.4	14.4	28.6	28.6	28.6	53.0	53.0	53.0	53.0	53.0	53.0
Volume/Cap:	0.76	0.76	0.76	0.76	0.76	0.76	0.28	0.34	0.34	0.10	0.76	0.76
Delay/Veh:	50.5	50.5	50.5	38.6	38.6	38.6	15.2	15.8	15.8	13.6	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.5	50.5	50.5	38.6	38.6	38.6	15.2	15.8	15.8	13.6	24.7	24.7
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	13	13	13	5	6	6	1	20	20
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #15: Middlefield Road & University Avenue

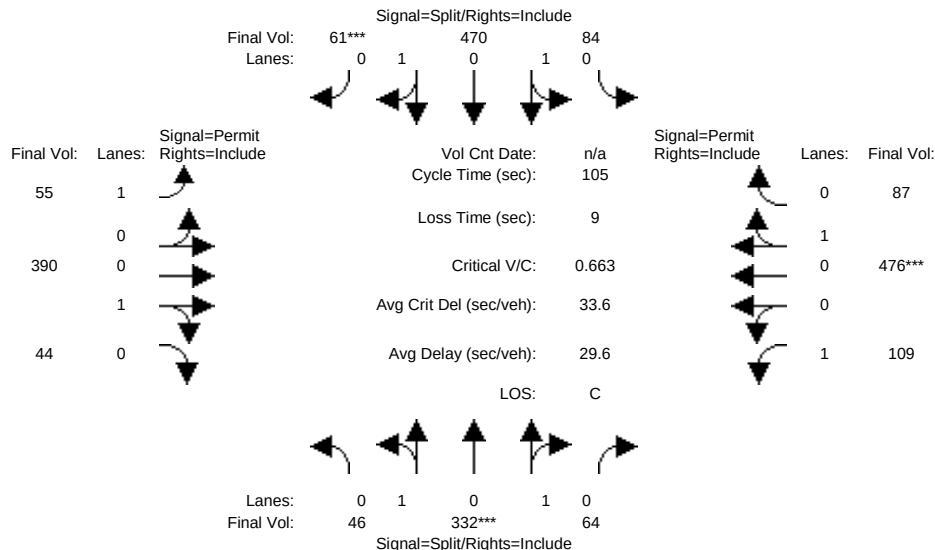


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	48	254	64	82	494	107	230	276	54	84	513	99
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	254	64	82	494	107	230	276	54	84	513	99
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	254	64	82	494	107	230	276	54	84	513	99
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	254	64	82	494	107	230	276	54	84	513	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	254	64	82	494	107	230	276	54	84	513	99
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	48	254	64	82	494	107	230	276	54	84	513	99
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.26	1.39	0.35	0.24	1.45	0.31	1.00	0.84	0.16	1.00	0.84	0.16
Final Sat.:	472	2498	630	432	2604	564	1750	1505	295	1750	1509	291
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.13	0.18	0.18	0.05	0.34	0.34
Crit Moves:	****			****						****		
Green Time:	15.5	15.5	15.5	28.8	28.8	28.8	51.7	51.7	51.7	51.7	51.7	51.7
Volume/Cap:	0.69	0.69	0.69	0.69	0.69	0.69	0.27	0.37	0.37	0.10	0.69	0.69
Delay/Veh:	46.4	46.4	46.4	36.2	36.2	36.2	15.7	16.8	16.8	14.3	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.4	46.4	46.4	36.2	36.2	36.2	15.7	16.8	16.8	14.3	22.8	22.8
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	11	11	11	5	7	7	2	17	17
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #15: Middlefield Road & University Avenue



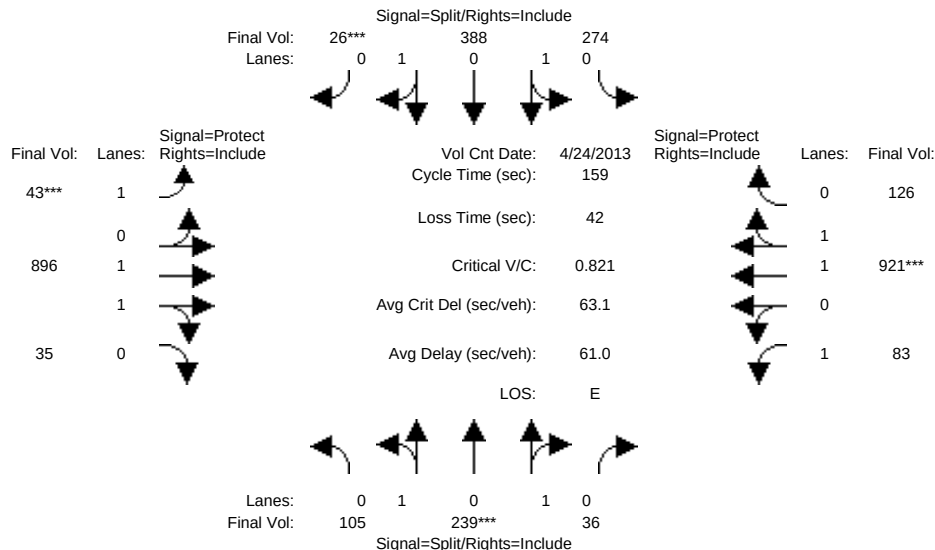
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	46	332	64	84	470	61	55	390	44	109	476	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	332	64	84	470	61	55	390	44	109	476	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	332	64	84	470	61	55	390	44	109	476	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	332	64	84	470	61	55	390	44	109	476	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	332	64	84	470	61	55	390	44	109	476	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	46	332	64	84	470	61	55	390	44	109	476	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.21	1.50	0.29	0.27	1.53	0.20	1.00	0.90	0.10	1.00	0.85	0.15
Final Sat.:	375	2704	521	492	2751	357	1750	1618	182	1750	1522	278
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.24	0.24	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	19.4	19.4	19.4	27.0	27.0	27.0	49.5	49.5	49.5	49.5	49.5	49.5
Volume/Cap:	0.66	0.66	0.66	0.66	0.66	0.66	0.07	0.51	0.51	0.13	0.66	0.66
Delay/Veh:	42.3	42.3	42.3	36.7	36.7	36.7	15.2	19.8	19.8	15.7	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.3	42.3	42.3	36.7	36.7	36.7	15.2	19.8	19.8	15.7	23.3	23.3
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	10	10	2	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]

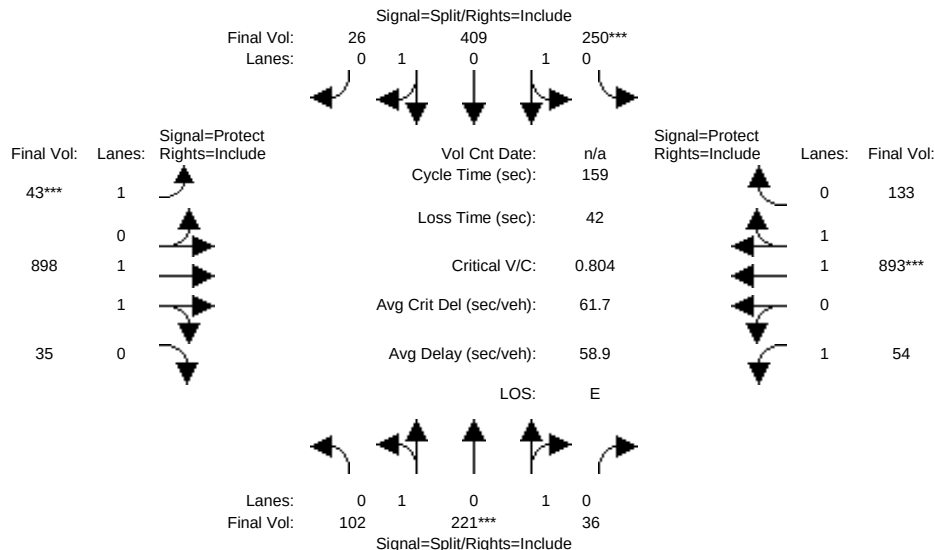


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Apr 2013 << AM												
Base Vol:	105	239	36	274	388	26	43	896	35	83	921	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	105	239	36	274	388	26	43	896	35	83	921	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	239	36	274	388	26	43	896	35	83	921	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	105	239	36	274	388	26	43	896	35	83	921	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	105	239	36	274	388	26	43	896	35	83	921	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	105	239	36	274	388	26	43	896	35	83	921	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.55	1.26	0.19	0.80	1.13	0.07	1.00	1.92	0.08	1.00	1.75	0.25
Final Sat.:	995	2264	341	1434	2030	136	1750	3561	139	1750	3254	445
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.11	0.19	0.19	0.19	0.02	0.25	0.25	0.05	0.28	0.28
Crit Moves:	****			****			****			****		
Green Time:	20.0	20.0	20.0	36.3	36.3	36.3	7.0	51.1	51.1	9.6	53.7	53.7
Volume/Cap:	0.84	0.84	0.84	0.84	0.84	0.84	0.56	0.78	0.78	0.78	0.84	0.84
Delay/Veh:	80.8	80.8	80.8	66.2	66.2	66.2	83.3	52.4	52.4	104.3	53.8	53.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.8	80.8	80.8	66.2	66.2	66.2	83.3	52.4	52.4	104.3	53.8	53.8
LOS by Move:	F	F	F	E	E	E	F	D	D	F	D	D
HCM2kAvgQ:	12	12	12	19	19	19	3	22	22	6	26	26
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



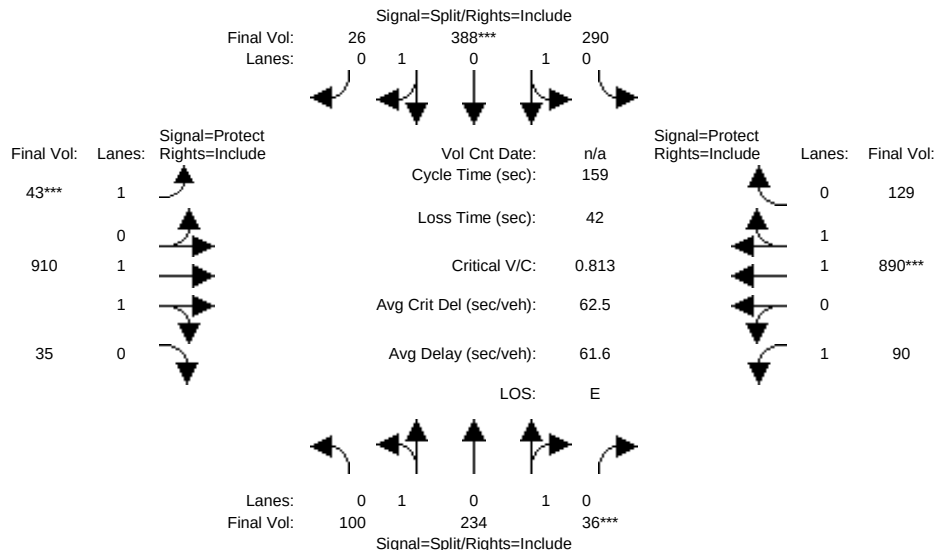
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	102	221	36	250	409	26	43	898	35	54	893	133
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	221	36	250	409	26	43	898	35	54	893	133
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	221	36	250	409	26	43	898	35	54	893	133
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	221	36	250	409	26	43	898	35	54	893	133
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	221	36	250	409	26	43	898	35	54	893	133
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	102	221	36	250	409	26	43	898	35	54	893	133
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.57	1.23	0.20	0.73	1.19	0.08	1.00	1.92	0.08	1.00	1.73	0.27
Final Sat.:	1023	2216	361	1314	2149	137	1750	3561	139	1750	3220	480
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.02	0.25	0.25	0.03	0.28	0.28
Crit Moves:	****			****			****			****		
Green Time:	19.3	19.3	19.3	36.9	36.9	36.9	7.0	51.7	51.7	9.0	53.8	53.8
Volume/Cap:	0.82	0.82	0.82	0.82	0.82	0.82	0.56	0.77	0.77	0.54	0.82	0.82
Delay/Veh:	79.8	79.8	79.8	64.4	64.4	64.4	83.3	51.6	51.6	79.0	52.6	52.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.8	79.8	79.8	64.4	64.4	64.4	83.3	51.6	51.6	79.0	52.6	52.6
LOS by Move:	E	E	E	E	E	E	F	D	D	E	D	D
HCM2kAvgQ:	11	11	11	19	19	19	3	22	22	4	25	25

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



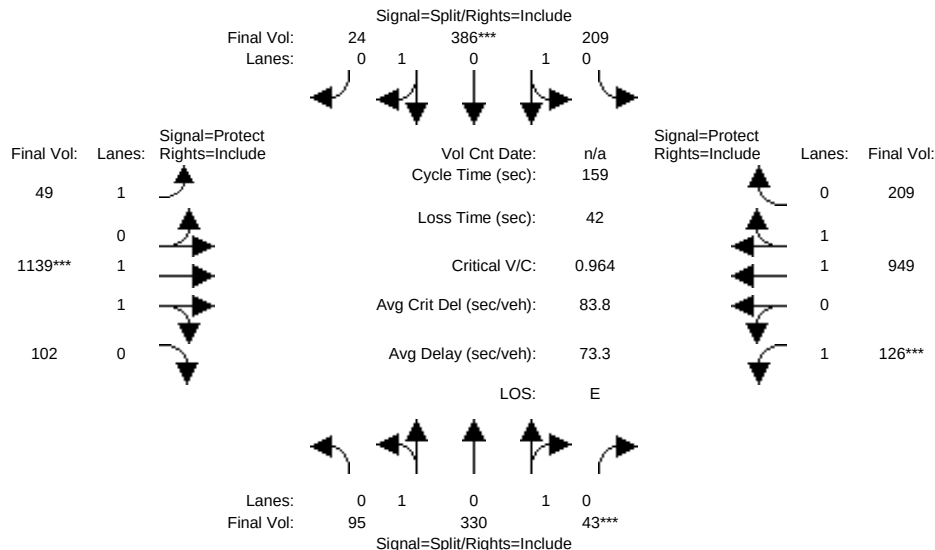
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	100	234	36	290	388	26	43	910	35	90	890	129
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	234	36	290	388	26	43	910	35	90	890	129
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	234	36	290	388	26	43	910	35	90	890	129
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	234	36	290	388	26	43	910	35	90	890	129
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	234	36	290	388	26	43	910	35	90	890	129
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	100	234	36	290	388	26	43	910	35	90	890	129
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.54	1.27	0.19	0.82	1.11	0.07	1.00	1.92	0.08	1.00	1.74	0.26
Final Sat.:	973	2277	350	1483	1984	133	1750	3563	137	1750	3231	468
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.20	0.20	0.20	0.02	0.26	0.26	0.05	0.28	0.28
Crit Moves:	****			****			****			****		
Green Time:	19.7	19.7	19.7	37.5	37.5	37.5	7.0	49.8	49.8	10.0	52.8	52.8
Volume/Cap:	0.83	0.83	0.83	0.83	0.83	0.83	0.56	0.82	0.82	0.82	0.83	0.83
Delay/Veh:	80.3	80.3	80.3	64.6	64.6	64.6	83.3	55.0	55.0	109.2	53.8	53.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.3	80.3	80.3	64.6	64.6	64.6	83.3	55.0	55.0	109.2	53.8	53.8
LOS by Move:	F	F	F	E	E	E	F	D	D	F	D	D
HCM2kAvgQ:	11	11	11	19	19	19	3	23	23	7	25	25

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



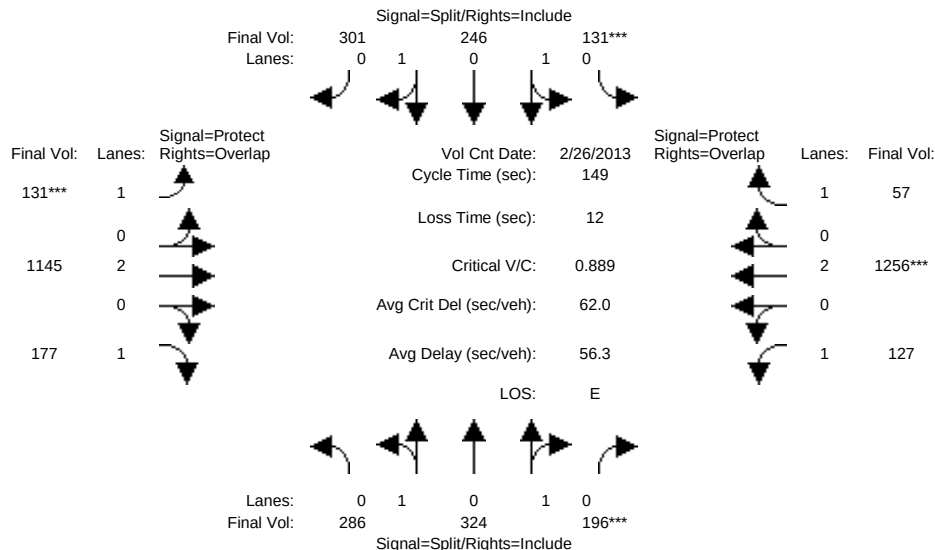
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	209	386	24	49	1139	102	126	949	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	209	386	24	49	1139	102	126	949	209
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	209	386	24	49	1139	102	126	949	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	209	386	24	49	1139	102	126	949	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	209	386	24	49	1139	102	126	949	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	209	386	24	49	1139	102	126	949	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.67	1.25	0.08	1.00	1.83	0.17	1.00	1.63	0.37
Final Sat.:	731	2538	331	1216	2245	140	1750	3396	304	1750	3032	668
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.17	0.17	0.17	0.03	0.34	0.34	0.07	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	21.4	21.4	21.4	28.4	28.4	28.4	8.3	55.3	55.3	11.9	58.9	58.9
Volume/Cap:	0.96	0.96	0.96	0.96	0.96	0.96	0.54	0.96	0.96	0.96	0.84	0.84
Delay/Veh:	100.1	100	100.1	91.5	91.5	91.5	79.7	68.0	68.0	140.7	50.9	50.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	100.1	100	100.1	91.5	91.5	91.5	79.7	68.0	68.0	140.7	50.9	50.9
LOS by Move:	F	F	F	F	F	F	E	E	E	F	D	D
HCM2kAvgQ:	16	16	16	20	20	20	3	35	35	10	28	28

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



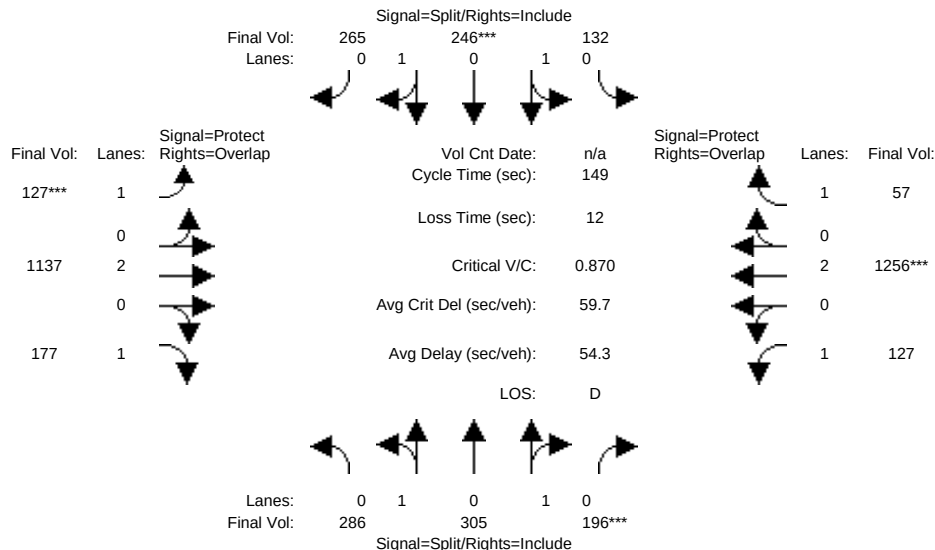
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Feb 2013 << AM												
Base Vol:	286	324	196	131	246	301	131	1145	177	127	1256	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	324	196	131	246	301	131	1145	177	127	1256	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	324	196	131	246	301	131	1145	177	127	1256	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	324	196	131	246	301	131	1145	177	127	1256	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	324	196	131	246	301	131	1145	177	127	1256	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	324	196	131	246	301	131	1145	177	127	1256	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.71	0.80	0.49	0.39	0.72	0.89	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1277	1447	875	696	1306	1598	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.19	0.19	0.19	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	37.5	37.5	37.5	31.6	31.6	31.6	12.5	54.7	92.3	13.2	55.4	86.9
Volume/Cap:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.82	0.16	0.82	0.89	0.06
Delay/Veh:	64.5	64.5	64.5	69.5	69.5	69.5	110.8	46.7	12.1	94.8	51.3	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.5	64.5	64.5	69.5	69.5	69.5	110.8	46.7	12.1	94.8	51.3	13.4
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	22	22	22	19	19	19	9	25	4	8	30	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



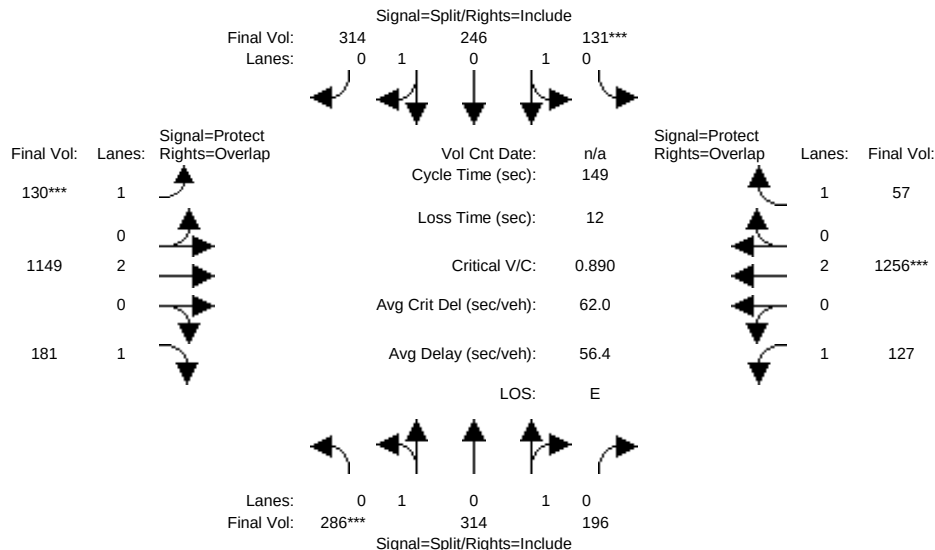
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	305	196	132	246	265	127	1137	177	127	1256	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	305	196	132	246	265	127	1137	177	127	1256	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	305	196	132	246	265	127	1137	177	127	1256	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	305	196	132	246	265	127	1137	177	127	1256	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	305	196	132	246	265	127	1137	177	127	1256	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	305	196	132	246	265	127	1137	177	127	1256	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.41	0.77	0.82	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1308	1395	897	739	1377	1484	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.18	0.18	0.18	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	37.4	37.4	37.4	30.6	30.6	30.6	12.4	55.5	93.0	13.5	56.6	87.2
Volume/Cap:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.80	0.16	0.80	0.87	0.06
Delay/Veh:	62.6	62.6	62.6	68.2	68.2	68.2	106.8	45.2	11.8	91.2	48.8	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.6	62.6	62.6	68.2	68.2	68.2	106.8	45.2	11.8	91.2	48.8	13.3
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	21	21	21	18	18	18	9	24	4	8	29	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

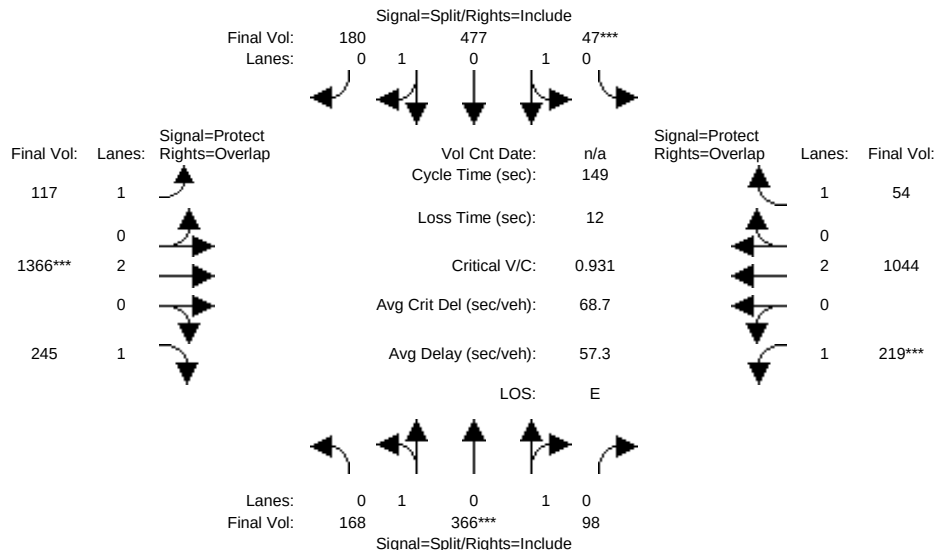


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	314	196	131	246	314	130	1149	181	127	1256	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	314	196	131	246	314	130	1149	181	127	1256	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	314	196	131	246	314	130	1149	181	127	1256	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	314	196	131	246	314	130	1149	181	127	1256	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	314	196	131	246	314	130	1149	181	127	1256	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	314	196	131	246	314	130	1149	181	127	1256	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.72	0.79	0.49	0.38	0.71	0.91	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1293	1420	886	682	1282	1636	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.19	0.19	0.19	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	***			***			***			***		
Green Time:	37.0	37.0	37.0	32.2	32.2	32.2	12.4	54.7	91.7	13.1	55.4	87.5
Volume/Cap:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.82	0.17	0.82	0.89	0.06
Delay/Veh:	64.9	64.9	64.9	69.0	69.0	69.0	111.1	46.9	12.4	95.6	51.3	13.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.9	64.9	64.9	69.0	69.0	69.0	111.1	46.9	12.4	95.6	51.3	13.1
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	21	21	21	19	19	19	9	25	4	8	30	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

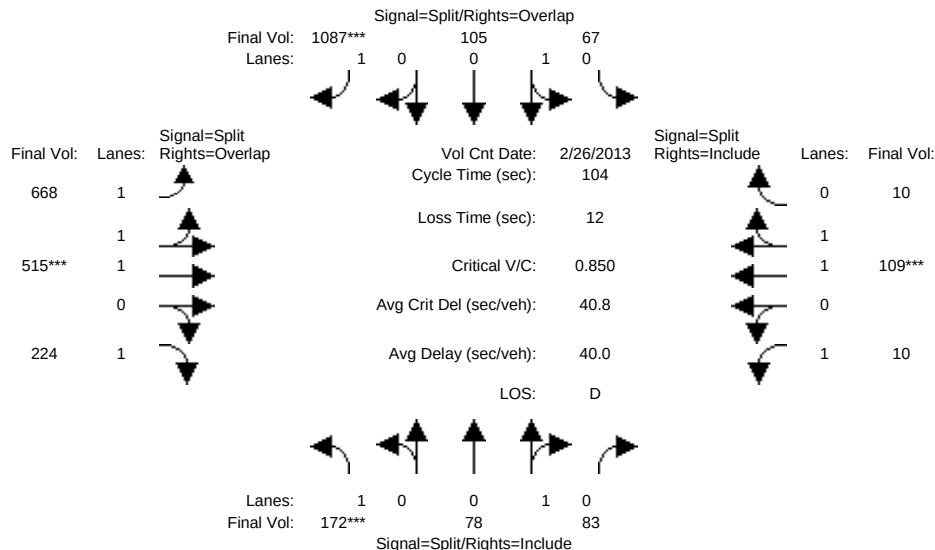


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	47	477	180	117	1366	245	219	1044	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	47	477	180	117	1366	245	219	1044	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	47	477	180	117	1366	245	219	1044	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	47	477	180	117	1366	245	219	1044	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	47	477	180	117	1366	245	219	1044	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	47	477	180	117	1366	245	219	1044	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.13	1.36	0.51	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	240	2439	920	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.20	0.20	0.20	0.07	0.36	0.14	0.13	0.27	0.03
Crit Moves:	****			****			****			****		
Green Time:	28.1	28.1	28.1	31.3	31.3	31.3	15.2	57.6	85.7	20.0	62.4	93.7
Volume/Cap:	0.93	0.93	0.93	0.93	0.93	0.93	0.66	0.93	0.24	0.93	0.66	0.05
Delay/Veh:	79.0	79.0	79.0	75.8	75.8	75.8	73.0	54.7	15.8	103.8	35.7	10.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.0	79.0	79.0	75.8	75.8	75.8	73.0	54.7	15.8	103.8	35.7	10.6
LOS by Move:	E	E	E	E	E	E	E	D	B	F	D	B
HCM2kAvgQ:	19	19	19	20	20	20	7	34	6	14	19	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 AM

Intersection #18: Bayshore Road & Embarcadero Road

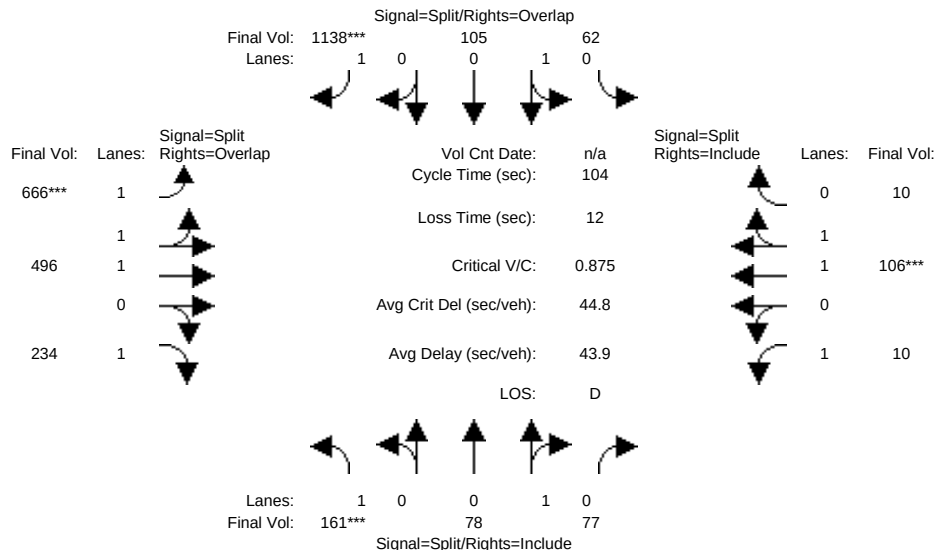


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Feb 2013 << AM												
Base Vol:	172	78	83	67	105	1087	668	515	224	10	109	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	172	78	83	67	105	1087	668	515	224	10	109	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	172	78	83	67	105	1087	668	515	224	10	109	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	172	78	83	67	105	1087	668	515	224	10	109	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	172	78	83	67	105	1087	668	515	224	10	109	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	172	78	83	67	105	1087	668	515	224	10	109	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.48	0.52	0.39	0.61	1.00	1.74	1.26	1.00	1.00	1.83	0.17
Final Sat.:	1750	872	928	701	1099	1750	3075	2371	1750	1750	3389	311
Capacity Analysis Module:												
Vol/Sat:	0.10	0.09	0.09	0.10	0.10	0.62	0.22	0.22	0.13	0.01	0.03	0.03
Crit Moves:	***					***	***	***		***		
Green Time:	11.2	11.2	11.2	46.0	46.0	70.8	24.8	24.8	36.0	10.0	10.0	10.0
Volume/Cap:	0.91	0.83	0.83	0.22	0.22	0.91	0.91	0.91	0.37	0.06	0.33	0.33
Delay/Veh:	87.5	70.4	70.4	18.0	18.0	24.6	48.5	48.5	25.9	42.9	44.5	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.5	70.4	70.4	18.0	18.0	24.6	48.5	48.5	25.9	42.9	44.5	44.5
LOS by Move:	F	E	E	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	9	8	8	4	4	36	17	17	6	0	2	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 AM

Intersection #18: Bayshore Road & Embarcadero Road



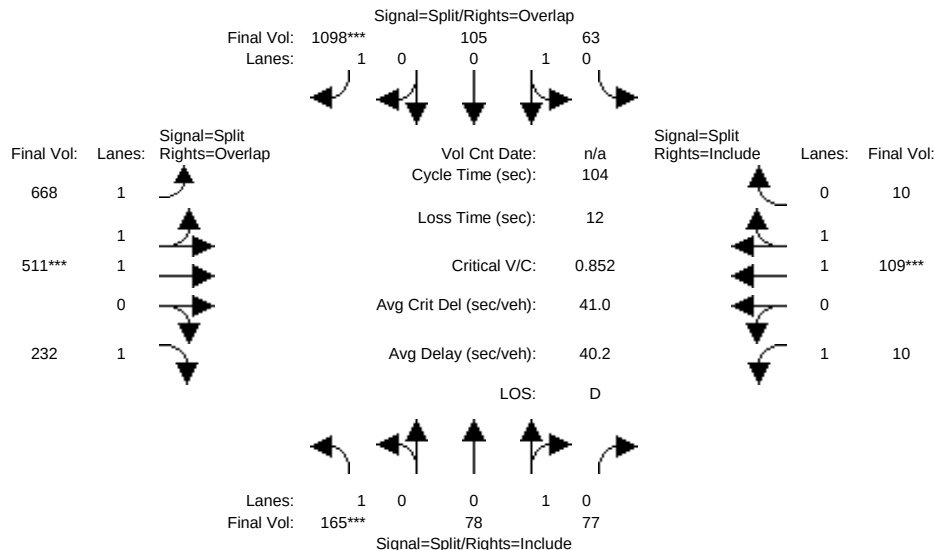
Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	161	78	77	62	105	1138	666	496	234	10	106	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	161	78	77	62	105	1138	666	496	234	10	106	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	161	78	77	62	105	1138	666	496	234	10	106	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	161	78	77	62	105	1138	666	496	234	10	106	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	161	78	77	62	105	1138	666	496	234	10	106	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	161	78	77	62	105	1138	666	496	234	10	106	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.50	0.50	0.37	0.63	1.00	1.76	1.24	1.00	1.00	1.82	0.18
Final Sat.:	1750	906	894	668	1132	1750	3121	2324	1750	1750	3381	319
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.65	0.21	0.21	0.13	0.01	0.03	0.03
Crit Moves:	***					***	***				***	
Green Time:	10.2	10.2	10.2	48.3	48.3	71.8	23.6	23.6	33.7	10.0	10.0	10.0
Volume/Cap:	0.94	0.88	0.88	0.20	0.20	0.94	0.94	0.94	0.41	0.06	0.33	0.33
Delay/Veh:	98.4	82.8	82.8	16.6	16.6	28.3	53.4	53.4	27.9	42.9	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	98.4	82.8	82.8	16.6	16.6	28.3	53.4	53.4	27.9	42.9	44.4	44.4
LOS by Move:	F	F	F	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	9	8	8	3	3	40	17	17	6	0	2	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 AM

Intersection #18: Bayshore Road & Embarcadero Road

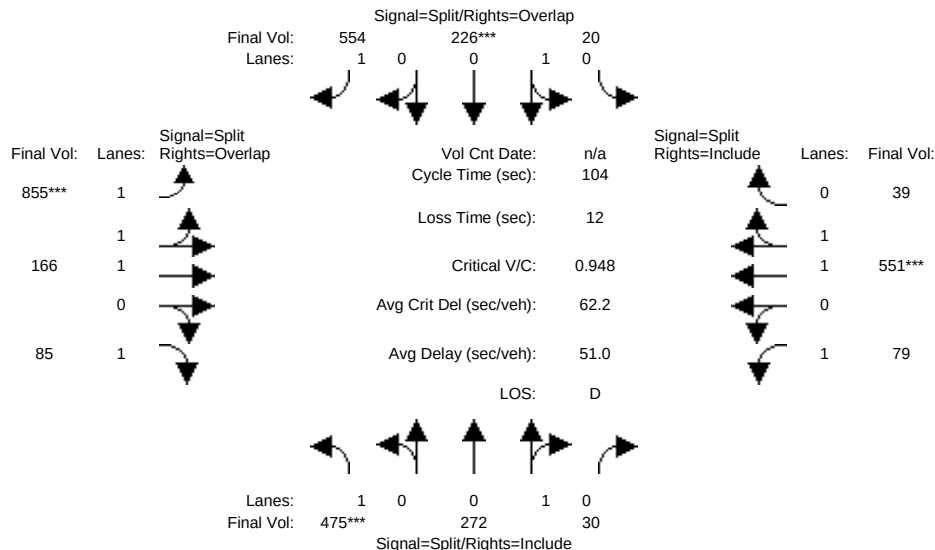


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	78	77	63	105	1098	668	511	232	10	109	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	78	77	63	105	1098	668	511	232	10	109	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	78	77	63	105	1098	668	511	232	10	109	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	165	78	77	63	105	1098	668	511	232	10	109	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	78	77	63	105	1098	668	511	232	10	109	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	165	78	77	63	105	1098	668	511	232	10	109	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.50	0.50	0.37	0.63	1.00	1.74	1.26	1.00	1.00	1.83	0.17
Final Sat.:	1750	906	894	675	1125	1750	3085	2360	1750	1750	3389	311
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.63	0.22	0.22	0.13	0.01	0.03	0.03
Crit Moves:	***					***	***	***		***		
Green Time:	10.7	10.7	10.7	46.7	46.7	71.3	24.6	24.6	35.3	10.0	10.0	10.0
Volume/Cap:	0.92	0.84	0.84	0.21	0.21	0.92	0.92	0.92	0.39	0.06	0.33	0.33
Delay/Veh:	89.7	72.6	72.6	17.5	17.5	24.7	49.0	49.0	26.6	42.9	44.5	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.7	72.6	72.6	17.5	17.5	24.7	49.0	49.0	26.6	42.9	44.5	44.5
LOS by Move:	F	E	E	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	9	8	8	3	3	36	17	17	6	0	2	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 AM

Intersection #18: Bayshore Road & Embarcadero Road

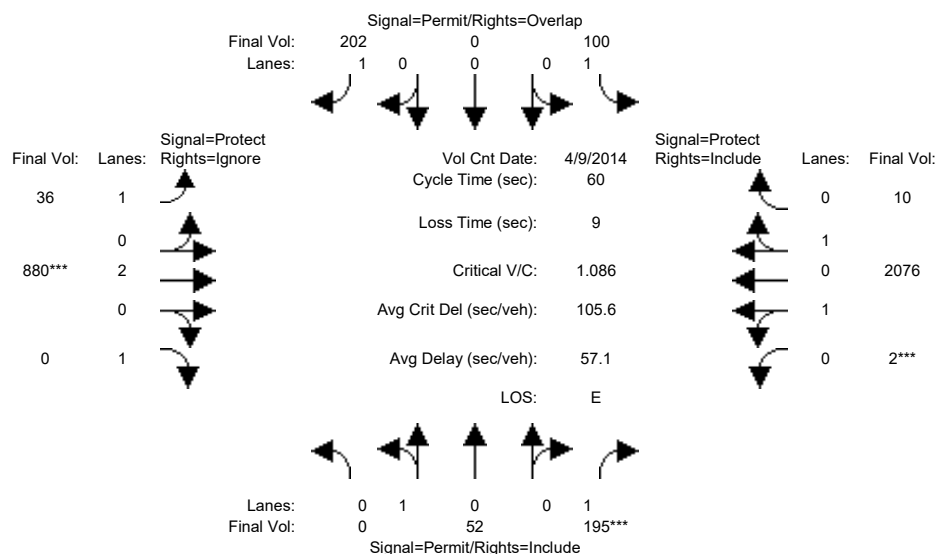


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	475	272	30	20	226	554	855	166	85	79	551	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	272	30	20	226	554	855	166	85	79	551	39
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	475	272	30	20	226	554	855	166	85	79	551	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	475	272	30	20	226	554	855	166	85	79	551	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	475	272	30	20	226	554	855	166	85	79	551	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	475	272	30	20	226	554	855	166	85	79	551	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	146	1654	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.27	0.17	0.17	0.14	0.14	0.32	0.27	0.09	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***				***	
Green Time:	29.8	29.8	29.8	15.0	15.0	44.7	29.8	29.8	59.5	17.5	17.5	17.5
Volume/Cap:	0.95	0.59	0.59	0.95	0.95	0.74	0.95	0.31	0.08	0.27	0.95	0.95
Delay/Veh:	64.0	33.6	33.6	85.9	85.9	28.5	52.9	29.1	10.0	38.2	66.8	66.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.0	33.6	33.6	85.9	85.9	28.5	52.9	29.1	10.0	38.2	66.8	66.8
LOS by Move:	E	C	C	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	21	9	9	12	12	17	21	4	1	3	14	14
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



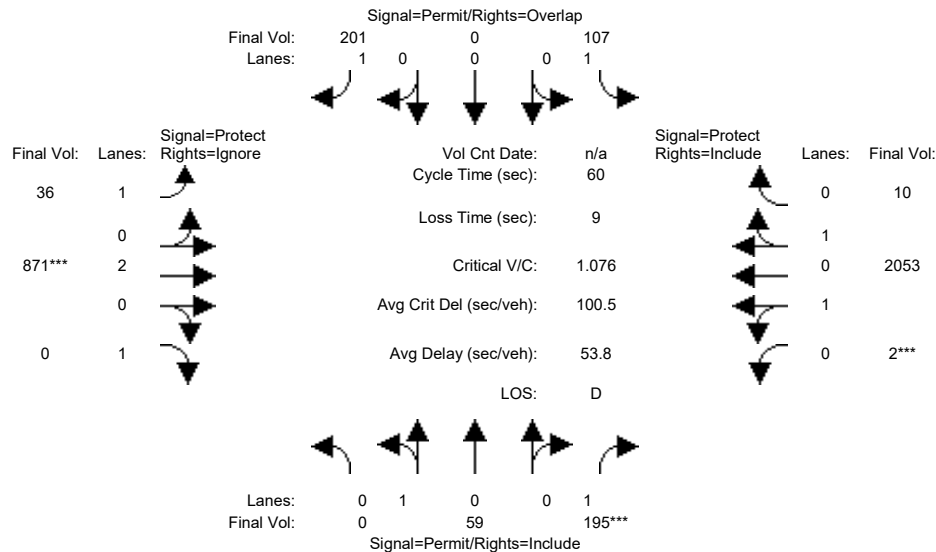
Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 9 Apr 2014 << 4:00 PM - 5:00 PM											
Base Vol:	0	52	195	100	0	202	36	880	106	2	2076	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	52	195	100	0	202	36	880	106	2	2076	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	52	195	100	0	202	36	880	106	2	2076	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	52	195	100	0	202	36	880	0	2	2076	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	52	195	100	0	202	36	880	0	2	2076	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	52	195	100	0	202	36	880	0	2	2076	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.11	0.06	0.00	0.12	0.02	0.23	0.00	0.58	0.58	0.58
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.7	0.0	29.3	34.0	34.0
Volume/Cap:	0.00	0.17	0.67	0.34	0.00	0.41	0.18	1.19	0.00	1.19	1.02	1.02
Delay/Veh:	0.0	21.7	29.3	22.8	0.0	18.0	24.3	122	0.0	105.9	39.1	39.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.7	29.3	22.8	0.0	18.0	24.3	122	0.0	105.9	39.1	39.1
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	45	32	32

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	0	59	195	107	0	201	36	871	106	2	2053	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	59	195	107	0	201	36	871	106	2	2053	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	59	195	107	0	201	36	871	106	2	2053	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	59	195	107	0	201	36	871	0	2	2053	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	59	195	107	0	201	36	871	0	2	2053	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	59	195	107	0	201	36	871	0	2	2053	10

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17

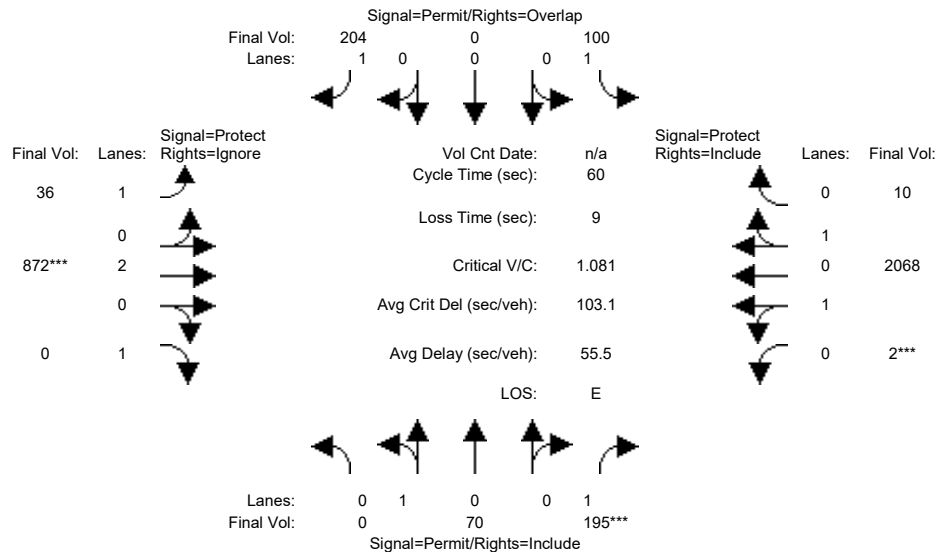
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.11	0.06	0.00	0.11	0.02	0.23	0.00	0.57	0.57	0.57
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.7	0.0	29.3	34.0	34.0
Volume/Cap:	0.00	0.20	0.67	0.37	0.00	0.41	0.18	1.17	0.00	1.17	1.01	1.01
Delay/Veh:	0.0	21.9	29.3	23.0	0.0	18.0	24.3	117	0.0	100.4	36.0	36.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.9	29.3	23.0	0.0	18.0	24.3	117	0.0	100.4	36.0	36.0
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	44	31	31

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

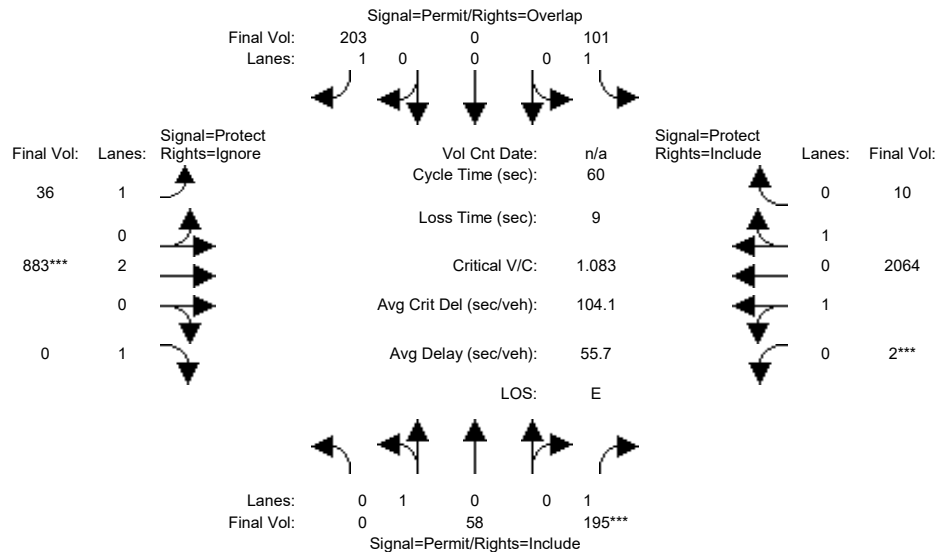


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	70	195	100	0	204	36	872	106	2	2068	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	70	195	100	0	204	36	872	106	2	2068	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	70	195	100	0	204	36	872	106	2	2068	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	70	195	100	0	204	36	872	0	2	2068	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	70	195	100	0	204	36	872	0	2	2068	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	70	195	100	0	204	36	872	0	2	2068	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.11	0.06	0.00	0.12	0.02	0.23	0.00	0.58	0.58	0.58
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.7	0.0	29.3	34.0	34.0
Volume/Cap:	0.00	0.23	0.67	0.34	0.00	0.41	0.18	1.18	0.00	1.18	1.02	1.02
Delay/Veh:	0.0	22.1	29.3	22.8	0.0	18.0	24.3	119	0.0	103.1	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.1	29.3	22.8	0.0	18.0	24.3	119	0.0	103.1	38.0	38.0
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	45	31	31
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	58	195	101	0	203	36	883	106	2	2064	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	58	195	101	0	203	36	883	106	2	2064	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	58	195	101	0	203	36	883	106	2	2064	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	58	195	101	0	203	36	883	0	2	2064	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	58	195	101	0	203	36	883	0	2	2064	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	58	195	101	0	203	36	883	0	2	2064	10

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17

Capacity Analysis Module:

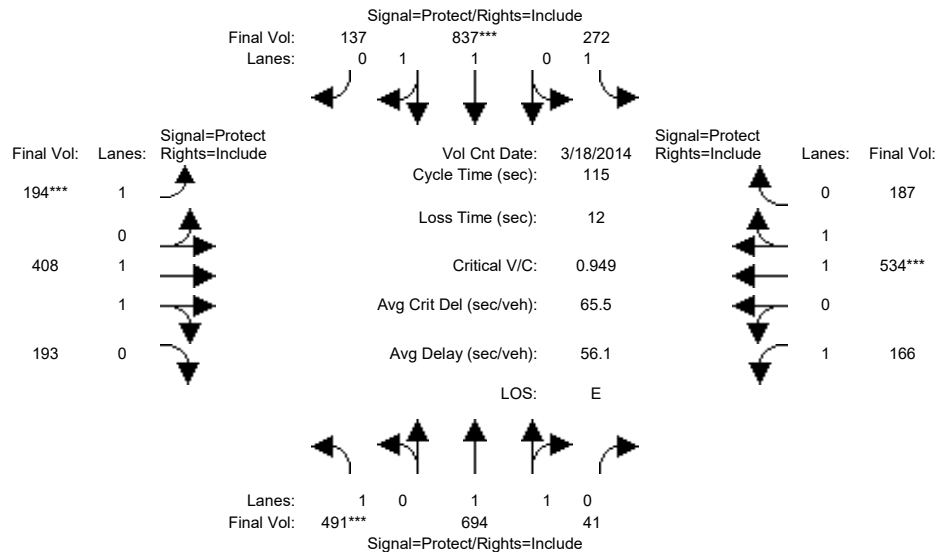
Vol/Sat:	0.00	0.03	0.11	0.06	0.00	0.12	0.02	0.23	0.00	0.58	0.58	0.58
Crit Moves:	****			****			****			****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.8	0.0	29.2	34.0	34.0
Volume/Cap:	0.00	0.19	0.67	0.35	0.00	0.41	0.18	1.18	0.00	1.18	1.02	1.02
Delay/Veh:	0.0	21.8	29.3	22.8	0.0	18.0	24.3	120	0.0	104.3	37.5	37.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.8	29.3	22.8	0.0	18.0	24.3	120	0.0	104.3	37.5	37.5
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	45	31	31

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #2: Middlefield Road & Charleston Road

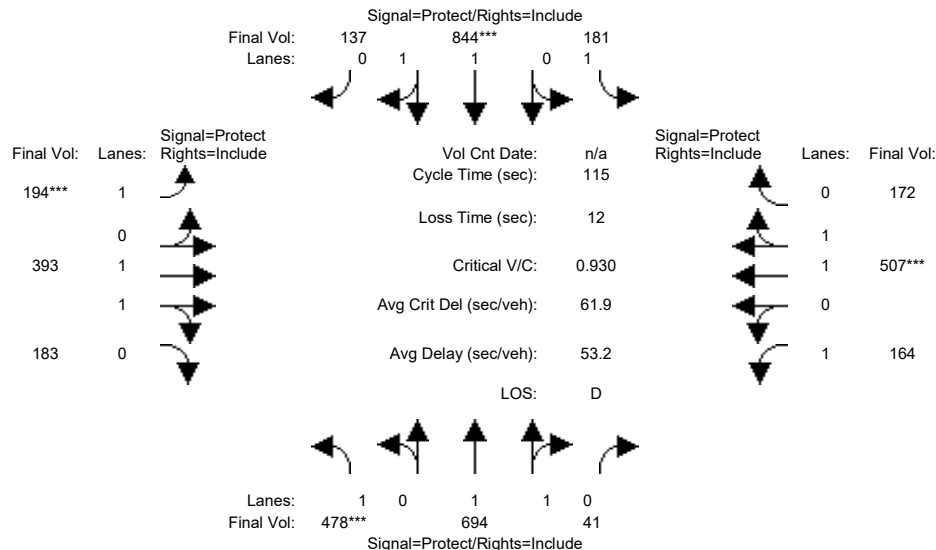


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 18 Mar 2014 << 5:00 PM - 6:00 PM												
Base Vol:	491	694	41	272	837	137	194	408	193	166	534	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	491	694	41	272	837	137	194	408	193	166	534	187
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	491	694	41	272	837	137	194	408	193	166	534	187
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	491	694	41	272	837	137	194	408	193	166	534	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	491	694	41	272	837	137	194	408	193	166	534	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	491	694	41	272	837	137	194	408	193	166	534	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.71	0.29	1.00	1.34	0.66	1.00	1.47	0.53
Final Sat.:	1750	3493	206	1750	3179	520	1750	2511	1188	1750	2740	959
Capacity Analysis Module:												
Vol/Sat:	0.28	0.20	0.20	0.16	0.26	0.26	0.11	0.16	0.16	0.09	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	34.0	37.0	37.0	28.9	31.9	31.9	13.4	23.4	23.4	13.7	23.6	23.6
Volume/Cap:	0.95	0.62	0.62	0.62	0.95	0.95	0.95	0.80	0.80	0.80	0.95	0.95
Delay/Veh:	66.8	34.0	34.0	40.8	57.8	57.8	98.7	49.6	49.6	68.5	66.1	66.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.8	34.0	34.0	40.8	57.8	57.8	98.7	49.6	49.6	68.5	66.1	66.1
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	23	12	12	10	22	22	11	12	12	8	17	17
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #2: Middlefield Road & Charleston Road



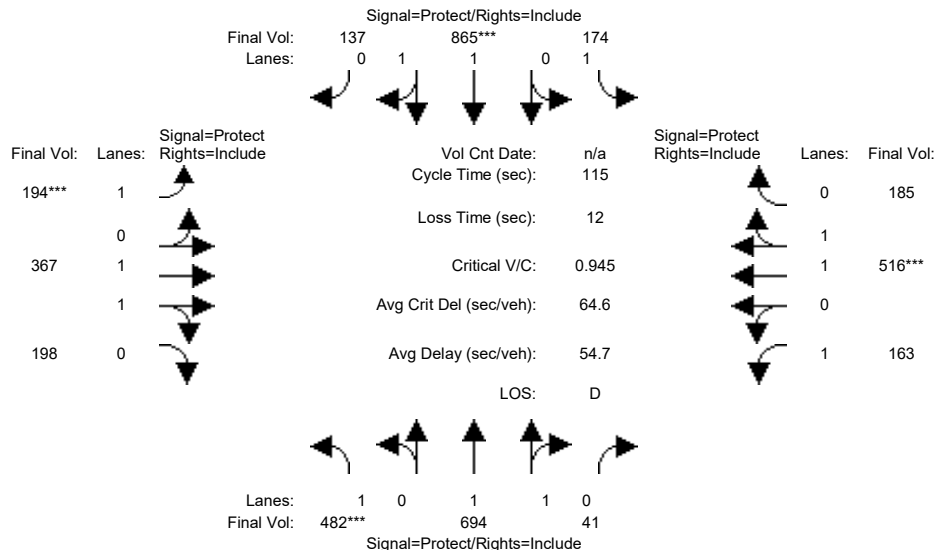
Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	478	694	41	181	844	137	194	393	183	164	507	172
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	478	694	41	181	844	137	194	393	183	164	507	172
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	478	694	41	181	844	137	194	393	183	164	507	172
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	478	694	41	181	844	137	194	393	183	164	507	172
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	478	694	41	181	844	137	194	393	183	164	507	172
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	478	694	41	181	844	137	194	393	183	164	507	172
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.71	0.29	1.00	1.35	0.65	1.00	1.48	0.52
Final Sat.:	1750	3493	206	1750	3183	517	1750	2524	1175	1750	2762	937
Capacity Analysis Module:												
Vol/Sat:	0.27	0.20	0.20	0.10	0.27	0.27	0.11	0.16	0.16	0.09	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	33.8	43.8	43.8	22.8	32.8	32.8	13.7	22.7	22.7	13.7	22.7	22.7
Volume/Cap:	0.93	0.52	0.52	0.52	0.93	0.93	0.93	0.79	0.79	0.79	0.93	0.93
Delay/Veh:	63.0	27.9	27.9	42.7	53.9	53.9	93.1	49.6	49.6	67.2	63.7	63.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.0	27.9	27.9	42.7	53.9	53.9	93.1	49.6	49.6	67.2	63.7	63.7
LOS by Move:	E	C	C	D	D	D	F	D	D	E	E	E
HCM2kAvgQ:	22	10	10	7	22	22	11	12	12	8	16	16

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #2: Middlefield Road & Charleston Road



Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	482	694	41	174	865	137	194	367	198	163	516	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	694	41	174	865	137	194	367	198	163	516	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	482	694	41	174	865	137	194	367	198	163	516	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	482	694	41	174	865	137	194	367	198	163	516	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	482	694	41	174	865	137	194	367	198	163	516	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	482	694	41	174	865	137	194	367	198	163	516	185

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.72	0.28	1.00	1.28	0.72	1.00	1.46	0.54
Final Sat.:	1750	3493	206	1750	3194	506	1750	2402	1296	1750	2723	976

Capacity Analysis Module:

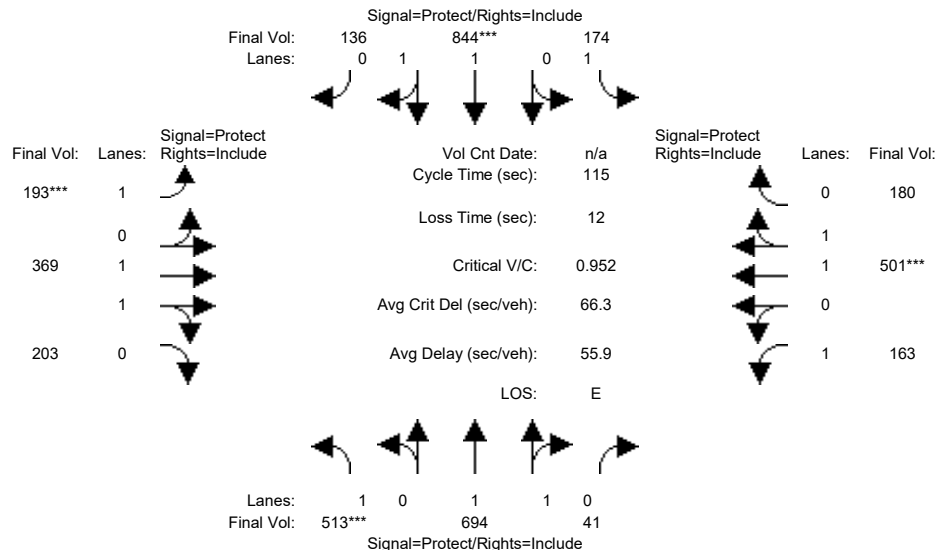
Vol/Sat:	0.28	0.20	0.20	0.10	0.27	0.27	0.11	0.15	0.15	0.09	0.19	0.19
Crit Moves:	***				***		***				***	
Green Time:	33.5	44.3	44.3	22.2	33.0	33.0	13.5	22.7	22.7	13.8	23.1	23.1
Volume/Cap:	0.95	0.52	0.52	0.52	0.95	0.95	0.95	0.77	0.77	0.77	0.95	0.95
Delay/Veh:	66.5	27.5	27.5	43.0	56.3	56.3	97.7	48.9	48.9	65.3	66.1	66.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	27.5	27.5	43.0	56.3	56.3	97.7	48.9	48.9	65.3	66.1	66.1
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	23	10	10	6	22	22	11	12	12	8	17	17

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #2: Middlefield Road & Charleston Road



Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	513	694	41	174	844	136	193	369	203	163	501	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	513	694	41	174	844	136	193	369	203	163	501	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	513	694	41	174	844	136	193	369	203	163	501	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	513	694	41	174	844	136	193	369	203	163	501	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	513	694	41	174	844	136	193	369	203	163	501	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	513	694	41	174	844	136	193	369	203	163	501	180

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.71	0.29	1.00	1.27	0.73	1.00	1.46	0.54
Final Sat.:	1750	3493	206	1750	3186	513	1750	2386	1313	1750	2721	978

Capacity Analysis Module:

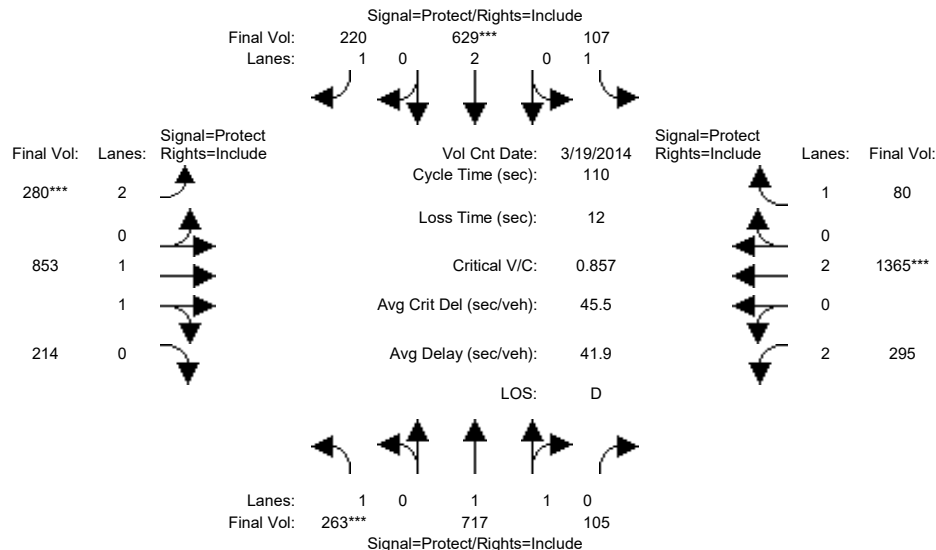
Vol/Sat:	0.29	0.20	0.20	0.10	0.26	0.26	0.11	0.15	0.15	0.09	0.18	0.18
Crit Moves:	***			****			****			****		
Green Time:	35.4	44.9	44.9	22.5	32.0	32.0	13.3	22.2	22.2	13.4	22.2	22.2
Volume/Cap:	0.95	0.51	0.51	0.51	0.95	0.95	0.95	0.80	0.80	0.80	0.95	0.95
Delay/Veh:	66.0	26.9	26.9	42.6	58.3	58.3	99.9	50.8	50.8	69.4	68.3	68.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.0	26.9	26.9	42.6	58.3	58.3	99.9	50.8	50.8	69.4	68.3	68.3
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	24	10	10	6	22	22	11	12	12	8	17	17

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



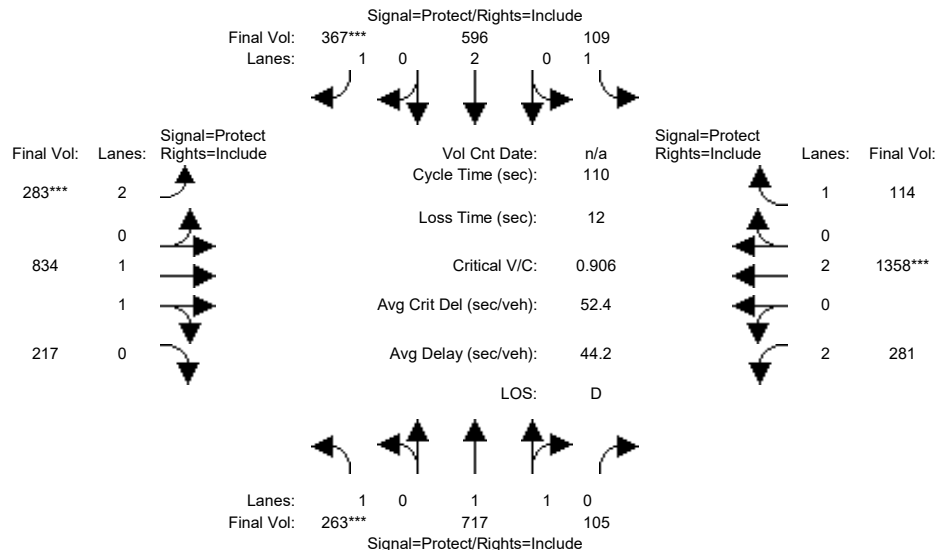
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	263	717	105	107	629	366	280	853	214	295	1365	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	107	629	366	280	853	214	295	1365	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	107	629	366	280	853	214	295	1365	114
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	107	629	220	280	853	214	295	1365	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	107	629	220	280	853	214	295	1365	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	107	629	220	280	853	214	295	1365	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.59	0.41	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2957	742	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.17	0.13	0.09	0.29	0.29	0.09	0.36	0.05
Crit Moves:	***				***		***				***	
Green Time:	19.3	31.5	31.5	9.0	21.2	21.2	11.4	43.4	43.4	14.1	46.1	46.1
Volume/Cap:	0.86	0.78	0.78	0.75	0.86	0.65	0.86	0.73	0.73	0.73	0.86	0.11
Delay/Veh:	64.6	39.7	39.7	68.4	52.8	45.4	68.1	30.3	30.3	52.8	33.9	19.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.6	39.7	39.7	68.4	52.8	45.4	68.1	30.3	30.3	52.8	33.9	19.5
LOS by Move:	E	D	D	E	D	D	E	C	C	D	C	B
HCM2kAvgQ:	12	15	15	6	13	8	8	17	17	7	23	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	263	717	105	109	596	367	283	834	217	281	1358	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	109	596	367	283	834	217	281	1358	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	109	596	367	283	834	217	281	1358	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	109	596	367	283	834	217	281	1358	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	109	596	367	283	834	217	281	1358	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	109	596	367	283	834	217	281	1358	114

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.58	0.42	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2935	764	3150	3800	1750

Capacity Analysis Module:

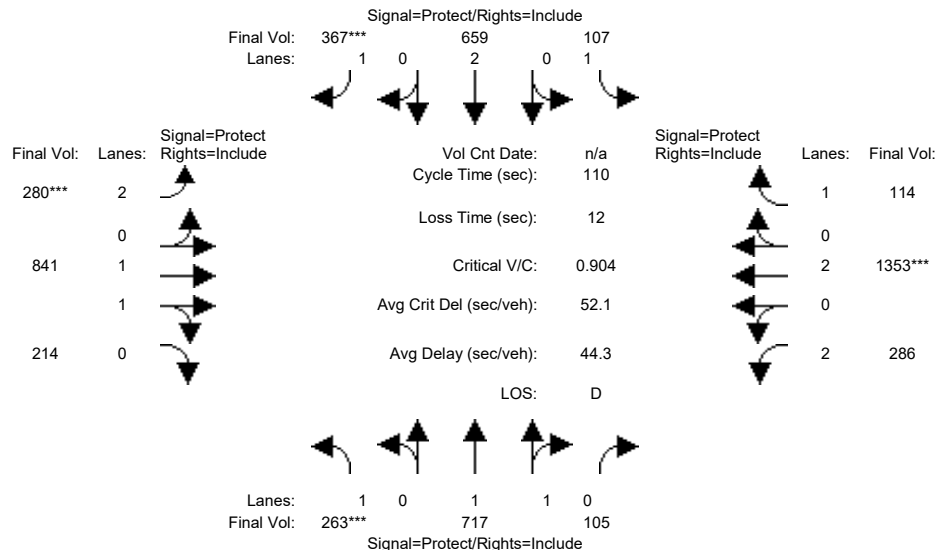
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.21	0.09	0.28	0.28	0.09	0.36	0.07
Crit Moves:	***					***	***				***	
Green Time:	18.2	34.0	34.0	9.7	25.5	25.5	10.9	41.3	41.3	13.0	43.4	43.4
Volume/Cap:	0.91	0.72	0.72	0.70	0.68	0.91	0.91	0.76	0.76	0.76	0.91	0.17
Delay/Veh:	74.8	36.0	36.0	62.4	40.7	64.5	77.3	32.4	32.4	55.6	39.6	21.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.8	36.0	36.0	62.4	40.7	64.5	77.3	32.4	32.4	55.6	39.6	21.7
LOS by Move:	E	D	D	E	D	E	E	C	C	E	D	C
HCM2kAvgQ:	13	14	14	5	10	17	9	17	17	7	25	3

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	263	717	105	107	659	367	280	841	214	286	1353	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	107	659	367	280	841	214	286	1353	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	107	659	367	280	841	214	286	1353	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	107	659	367	280	841	214	286	1353	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	107	659	367	280	841	214	286	1353	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	263	717	105	107	659	367	280	841	214	286	1353	114

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.58	0.42	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2949	750	3150	3800	1750

Capacity Analysis Module:

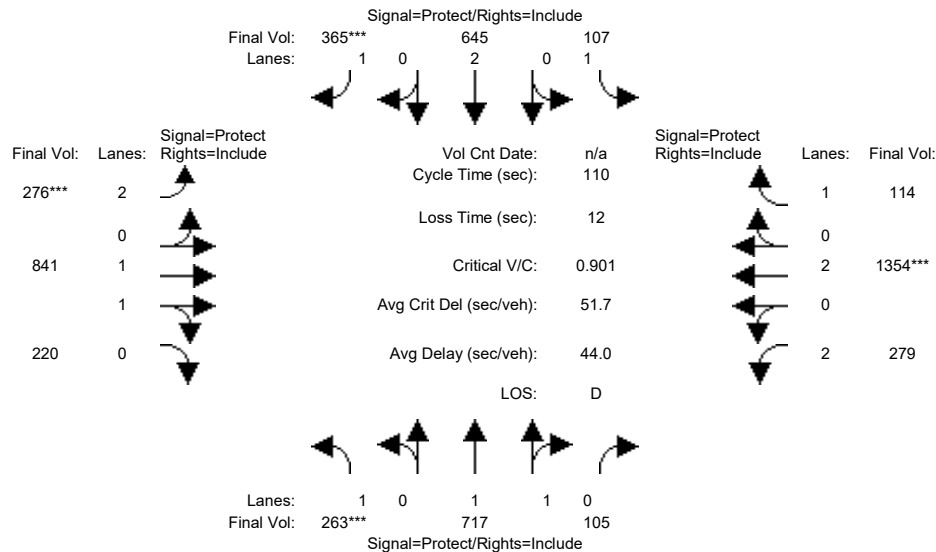
Vol/Sat:	0.15	0.22	0.22	0.06	0.17	0.21	0.09	0.29	0.29	0.09	0.36	0.07
Crit Moves:	***					***	***				***	
Green Time:	18.3	34.1	34.1	9.8	25.5	25.5	10.8	41.1	41.1	13.1	43.3	43.3
Volume/Cap:	0.90	0.72	0.72	0.69	0.75	0.90	0.90	0.76	0.76	0.76	0.90	0.17
Delay/Veh:	74.2	35.9	35.9	61.0	42.8	64.0	77.0	32.8	32.8	56.0	39.4	21.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.2	35.9	35.9	61.0	42.8	64.0	77.0	32.8	32.8	56.0	39.4	21.7
LOS by Move:	E	D	D	E	D	E	E	C	C	E	D	C
HCM2kAvgQ:	13	14	14	5	12	17	9	17	17	7	25	3

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	263	717	105	107	645	365	276	841	220	279	1354	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	107	645	365	276	841	220	279	1354	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	107	645	365	276	841	220	279	1354	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	107	645	365	276	841	220	279	1354	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	107	645	365	276	841	220	279	1354	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	263	717	105	107	645	365	276	841	220	279	1354	114

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.57	0.43	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2932	767	3150	3800	1750

Capacity Analysis Module:

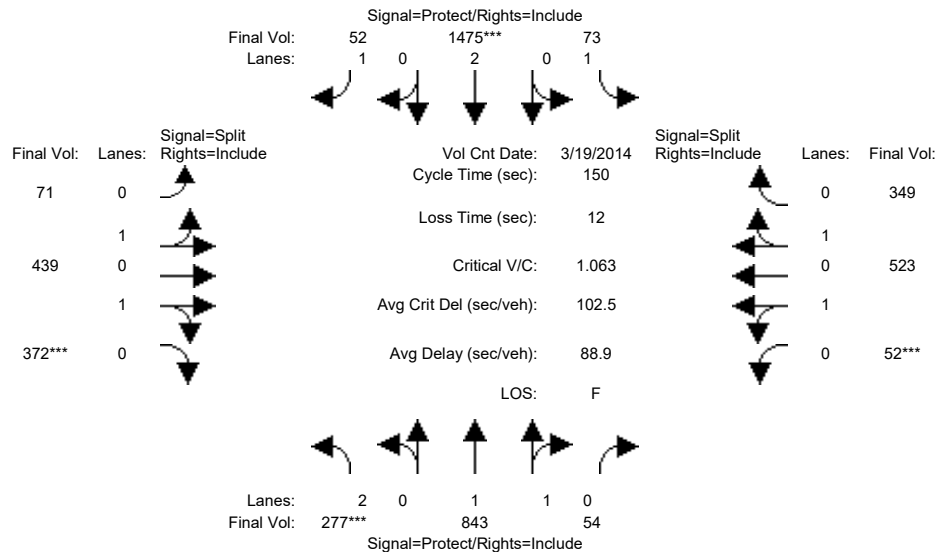
Vol/Sat:	0.15	0.22	0.22	0.06	0.17	0.21	0.09	0.29	0.29	0.09	0.36	0.07
Crit Moves:	***					***	***				***	
Green Time:	18.3	34.1	34.1	9.8	25.5	25.5	10.7	41.4	41.4	12.8	43.5	43.5
Volume/Cap:	0.90	0.72	0.72	0.69	0.73	0.90	0.90	0.76	0.76	0.76	0.90	0.16
Delay/Veh:	73.7	35.9	35.9	61.0	42.3	63.6	76.9	32.5	32.5	56.2	39.0	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.7	35.9	35.9	61.0	42.3	63.6	76.9	32.5	32.5	56.2	39.0	21.6
LOS by Move:	E	D	D	E	D	E	E	C	C	E	D	C
HCM2kAvgQ:	13	14	14	5	11	17	9	17	17	7	25	3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #4: Alma Street & Charleston Road

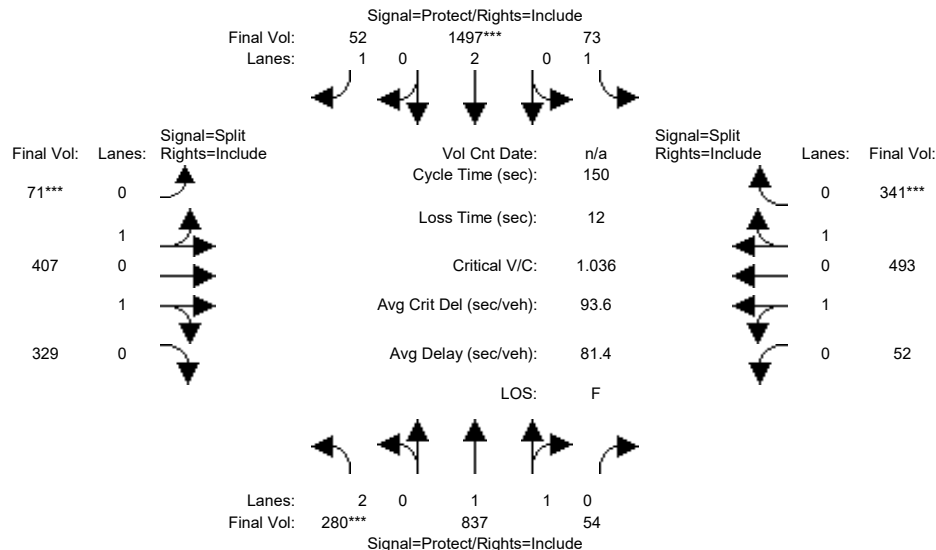


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	19 Mar 2014 << 4:45 PM - 5:45 PM											
Base Vol:	277	843	54	73	1475	52	71	439	372	52	523	349
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	277	843	54	73	1475	52	71	439	372	52	523	349
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	277	843	54	73	1475	52	71	439	372	52	523	349
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	277	843	54	73	1475	52	71	439	372	52	523	349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	277	843	54	73	1475	52	71	439	372	52	523	349
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	277	843	54	73	1475	52	71	439	372	52	523	349
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.16	1.00	0.84	0.11	1.13	0.76
Final Sat.:	3150	3477	223	1750	3800	1750	290	1792	1518	203	2038	1360
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.24	0.04	0.39	0.03	0.25	0.25	0.25	0.26	0.26	0.26
Crit Moves:	***				***				***		***	
Green Time:	12.4	56.3	56.3	10.8	54.8	54.8	34.6	34.6	34.6	36.2	36.2	36.2
Volume/Cap:	1.06	0.65	0.65	0.58	1.06	0.08	1.06	1.06	1.06	1.06	1.06	1.06
Delay/Veh:	142.1	39.7	39.7	73.8	90.4	31.2	107.0	107	107.0	105.5	106	105.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	142.1	39.7	39.7	73.8	90.4	31.2	107.0	107	107.0	105.5	106	105.5
LOS by Move:	F	D	D	E	F	C	F	F	F	F	F	F
HCM2kAvgQ:	12	18	18	4	43	2	29	29	29	30	30	30
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #4: Alma Street & Charleston Road



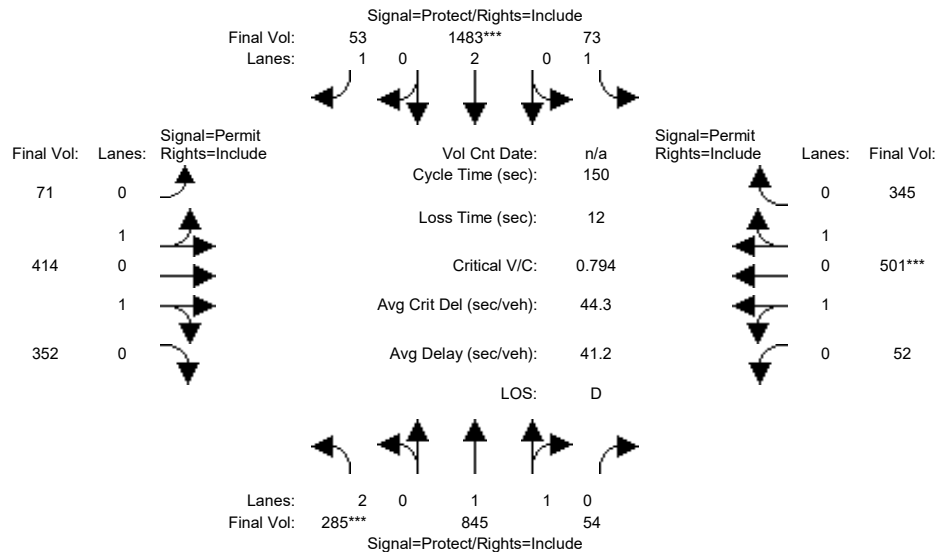
Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	280	837	54	73	1497	52	71	407	329	52	493	341
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	837	54	73	1497	52	71	407	329	52	493	341
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	280	837	54	73	1497	52	71	407	329	52	493	341
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	280	837	54	73	1497	52	71	407	329	52	493	341
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	280	837	54	73	1497	52	71	407	329	52	493	341
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	280	837	54	73	1497	52	71	407	329	52	493	341
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.18	1.01	0.81	0.12	1.11	0.77
Final Sat.:	3150	3476	224	1750	3800	1750	317	1816	1468	211	2003	1386
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.24	0.04	0.39	0.03	0.22	0.22	0.22	0.25	0.25	0.25
Crit Moves:	***				***		***					***
Green Time:	12.9	58.6	58.6	11.3	57.0	57.0	32.5	32.5	32.5	35.6	35.6	35.6
Volume/Cap:	1.04	0.62	0.62	0.55	1.04	0.08	1.04	1.04	1.04	1.04	1.04	1.04
Delay/Veh:	133.0	37.5	37.5	71.8	80.0	29.7	100.7	101	100.7	97.6	97.6	97.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	133.0	37.5	37.5	71.8	80.0	29.7	100.7	101	100.7	97.6	97.6	97.6
LOS by Move:	F	D	D	E	F	C	F	F	F	F	F	F
HCM2kAvgQ:	12	17	17	4	43	2	26	26	26	28	28	28

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #4: Alma Street & Charleston Road



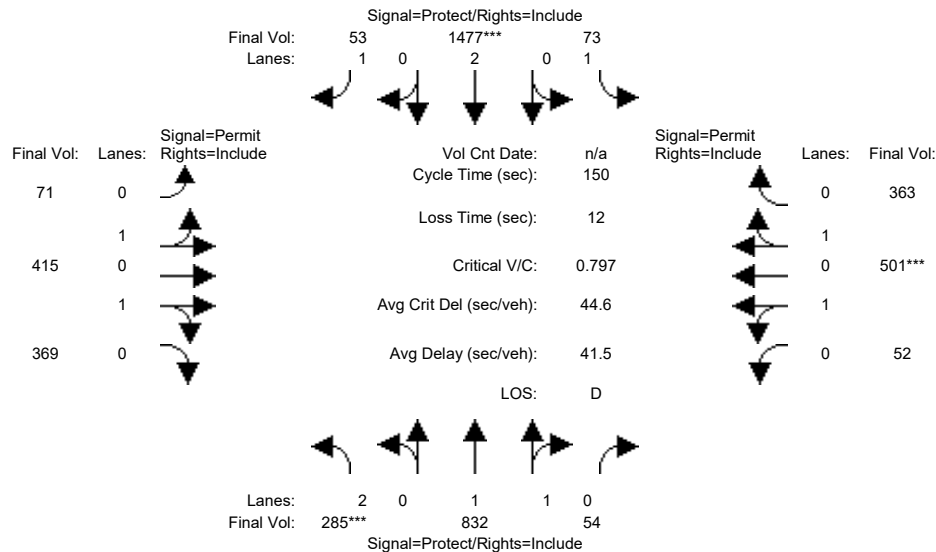
Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	285	845	54	73	1483	53	71	414	352	52	501	345
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	845	54	73	1483	53	71	414	352	52	501	345
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	845	54	73	1483	53	71	414	352	52	501	345
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	845	54	73	1483	53	71	414	352	52	501	345
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	845	54	73	1483	53	71	414	352	52	501	345
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	285	845	54	73	1483	53	71	414	352	52	501	345
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.17	0.99	0.84	0.12	1.11	0.77
Final Sat.:	3150	3478	222	1750	3800	1750	305	1781	1514	208	2008	1383
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.24	0.04	0.39	0.03	0.23	0.23	0.23	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	17.1	76.2	76.2	14.6	73.8	73.8	47.1	47.1	47.1	47.1	47.1	47.1
Volume/Cap:	0.79	0.48	0.48	0.43	0.79	0.06	0.74	0.74	0.74	0.79	0.79	0.79
Delay/Veh:	76.2	24.2	24.2	65.5	34.2	20.0	48.6	48.6	48.6	50.9	50.9	50.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.2	24.2	24.2	65.5	34.2	20.0	48.6	48.6	48.6	50.9	50.9	50.9
LOS by Move:	E	C	C	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	10	13	13	4	29	1	19	19	19	21	21	21

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #4: Alma Street & Charleston Road



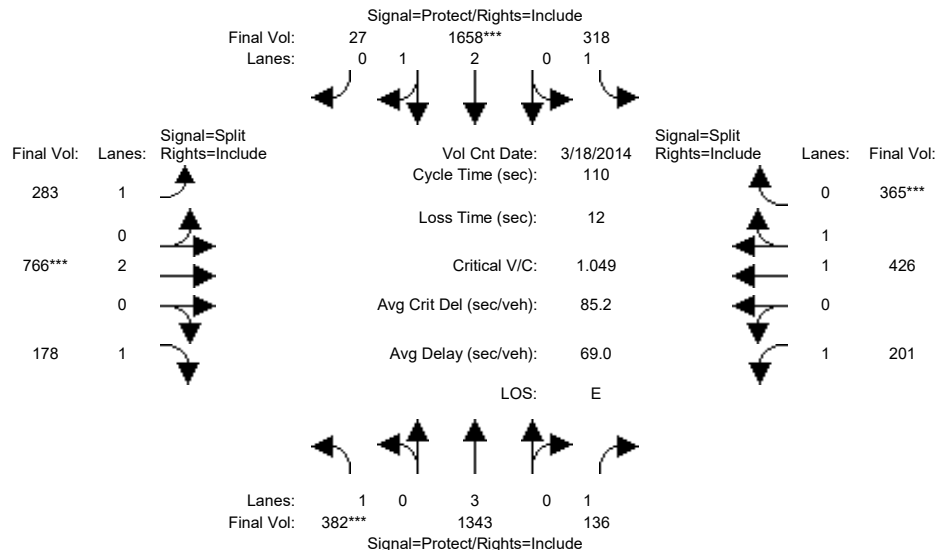
Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	285	832	54	73	1477	53	71	415	369	52	501	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	832	54	73	1477	53	71	415	369	52	501	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	832	54	73	1477	53	71	415	369	52	501	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	285	832	54	73	1477	53	71	415	369	52	501	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	285	832	54	73	1477	53	71	415	369	52	501	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	285	832	54	73	1477	53	71	415	369	52	501	363
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	1.00	0.17	0.97	0.86	0.11	1.10	0.79
Final Sat.:	3150	3474	225	1750	3800	1750	299	1747	1554	204	1969	1427
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.24	0.04	0.39	0.03	0.24	0.24	0.24	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	17.0	75.4	75.4	14.7	73.1	73.1	47.9	47.9	47.9	47.9	47.9	47.9
Volume/Cap:	0.80	0.48	0.48	0.43	0.80	0.06	0.74	0.74	0.74	0.80	0.80	0.80
Delay/Veh:	76.7	24.6	24.6	65.4	34.7	20.3	48.3	48.3	48.3	50.6	50.6	50.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.7	24.6	24.6	65.4	34.7	20.3	48.3	48.3	48.3	50.6	50.6	50.6
LOS by Move:	E	C	C	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	10	13	13	4	29	1	19	19	19	22	22	22

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

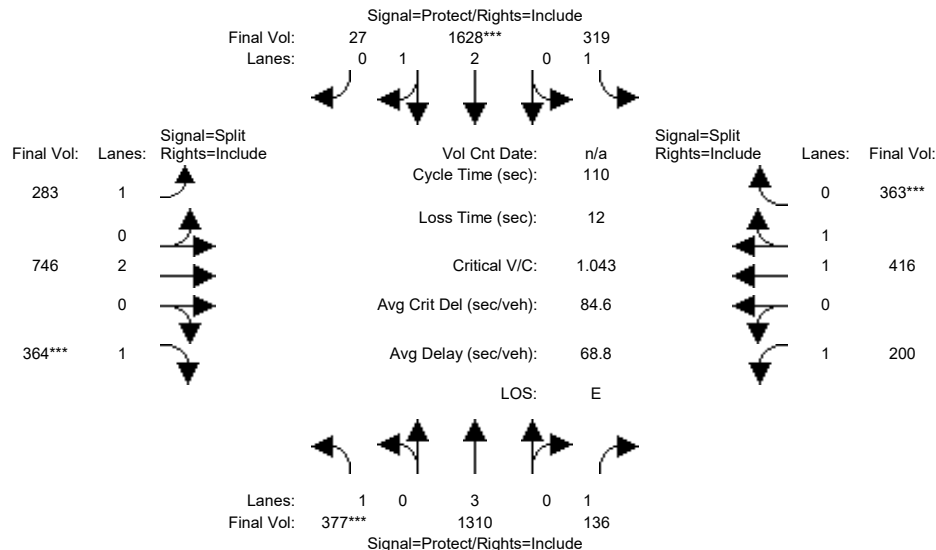


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	382	1343	136	318	1658	27	283	766	356	201	426	365
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	1343	136	318	1658	27	283	766	356	201	426	365
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	382	1343	136	318	1658	27	283	766	356	201	426	365
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	1343	136	318	1658	27	283	766	178	201	426	365
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	1343	136	318	1658	27	283	766	178	201	426	365
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	382	1343	136	318	1658	27	283	766	178	201	426	365
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.05	0.95
Final Sat.:	1750	5700	1750	1750	5510	90	1750	3800	1750	1750	1991	1706
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.08	0.18	0.30	0.30	0.16	0.20	0.10	0.11	0.21	0.21
Crit Moves:	***				***			***				***
Green Time:	22.9	30.7	30.7	23.7	31.5	31.5	21.1	21.1	21.1	22.4	22.4	22.4
Volume/Cap:	1.05	0.84	0.28	0.84	1.05	1.05	0.84	1.05	0.53	0.56	1.05	1.05
Delay/Veh:	104.2	41.7	31.3	57.1	75.8	75.8	59.9	91.3	41.6	41.4	90.2	90.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	104.2	41.7	31.3	57.1	75.8	75.8	59.9	91.3	41.6	41.4	90.2	90.2
LOS by Move:	F	D	C	E	E	E	E	F	D	D	F	F
HCM2kAvgQ:	21	17	4	14	28	28	13	20	6	7	21	21
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	377	1310	136	319	1628	27	283	746	364	200	416	363
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	1310	136	319	1628	27	283	746	364	200	416	363
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	1310	136	319	1628	27	283	746	364	200	416	363
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	1310	136	319	1628	27	283	746	364	200	416	363
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	1310	136	319	1628	27	283	746	364	200	416	363
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	377	1310	136	319	1628	27	283	746	364	200	416	363

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.04	0.96
Final Sat.:	1750	5700	1750	1750	5509	91	1750	3800	1750	1750	1975	1723

Capacity Analysis Module:

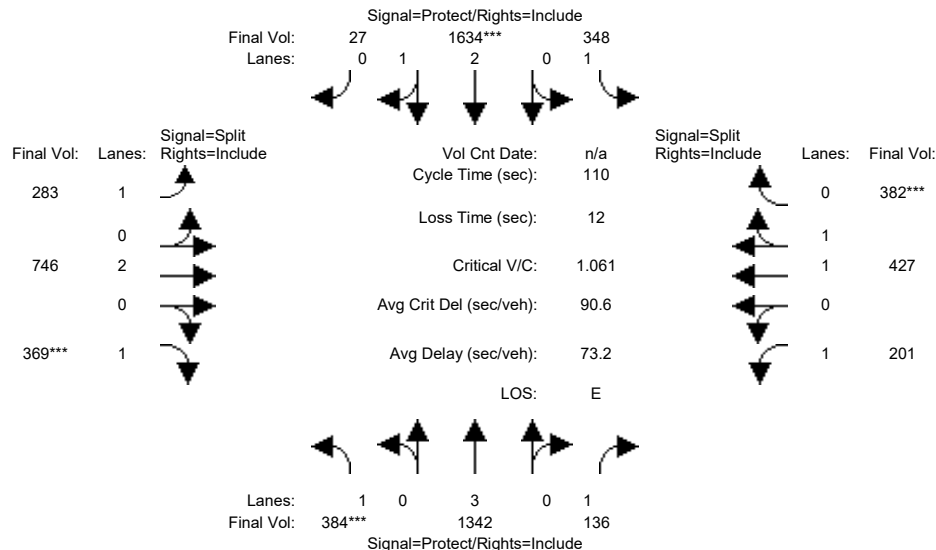
Vol/Sat:	0.22	0.23	0.08	0.18	0.30	0.30	0.16	0.20	0.21	0.11	0.21	0.21
Crit Moves:	***				***				***			***
Green Time:	22.7	30.0	30.0	23.8	31.2	31.2	21.9	21.9	21.9	22.2	22.2	22.2
Volume/Cap:	1.04	0.84	0.28	0.84	1.04	1.04	0.81	0.98	1.04	0.57	1.04	1.04
Delay/Veh:	102.8	42.1	31.8	56.8	74.3	74.3	55.4	72.7	104.0	41.7	88.7	88.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	102.8	42.1	31.8	56.8	74.3	74.3	55.4	72.7	104.0	41.7	88.7	88.7
LOS by Move:	F	D	C	E	E	E	E	E	F	D	F	F
HCM2kAvgQ:	21	16	4	14	27	27	12	18	20	7	20	20

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	384	1342	136	348	1634	27	283	746	369	201	427	382
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	384	1342	136	348	1634	27	283	746	369	201	427	382
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	384	1342	136	348	1634	27	283	746	369	201	427	382
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	384	1342	136	348	1634	27	283	746	369	201	427	382
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	384	1342	136	348	1634	27	283	746	369	201	427	382
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	384	1342	136	348	1634	27	283	746	369	201	427	382

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.03	0.97
Final Sat.:	1750	5700	1750	1750	5509	91	1750	3800	1750	1750	1952	1746

Capacity Analysis Module:

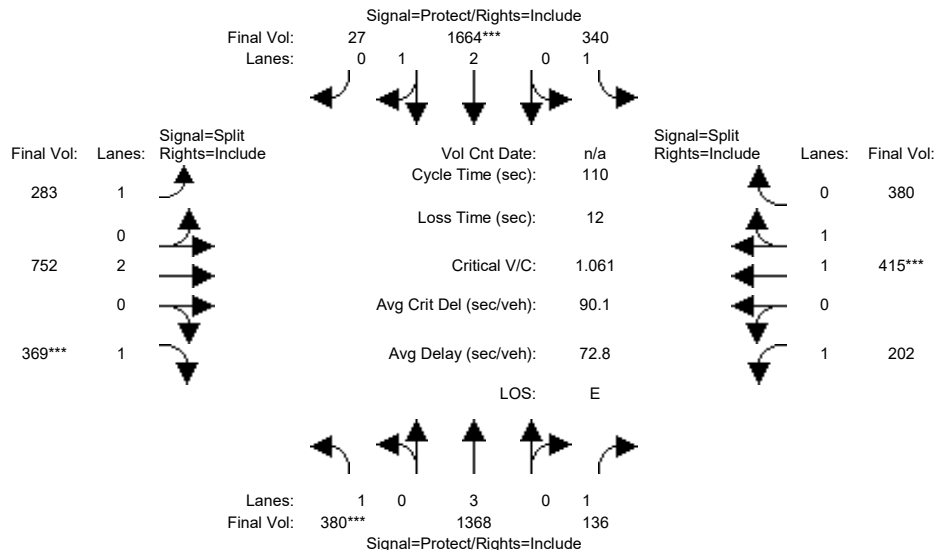
Vol/Sat:	0.22	0.24	0.08	0.20	0.30	0.30	0.16	0.20	0.21	0.11	0.22	0.22
Crit Moves:	***				***				***			***
Green Time:	22.7	29.0	29.0	24.5	30.7	30.7	21.9	21.9	21.9	22.7	22.7	22.7
Volume/Cap:	1.06	0.89	0.29	0.89	1.06	1.06	0.81	0.99	1.06	0.56	1.06	1.06
Delay/Veh:	108.1	46.2	32.7	63.5	80.7	80.7	55.8	73.7	109.5	41.1	93.8	93.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	108.1	46.2	32.7	63.5	80.7	80.7	55.8	73.7	109.5	41.1	93.8	93.8
LOS by Move:	F	D	C	E	F	F	E	E	F	D	F	F
HCM2kAvgQ:	22	18	4	16	28	28	12	18	21	7	22	22

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



Street Name:	El Camino Real			Embarcadero Rd/Galvez		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	380	1368	136	340	1664	27	283	752	369	202	415	380
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	380	1368	136	340	1664	27	283	752	369	202	415	380
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	380	1368	136	340	1664	27	283	752	369	202	415	380
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	380	1368	136	340	1664	27	283	752	369	202	415	380
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	380	1368	136	340	1664	27	283	752	369	202	415	380
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	380	1368	136	340	1664	27	283	752	369	202	415	380

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.02	0.98
Final Sat.:	1750	5700	1750	1750	5510	89	1750	3800	1750	1750	1930	1767

Capacity Analysis Module:

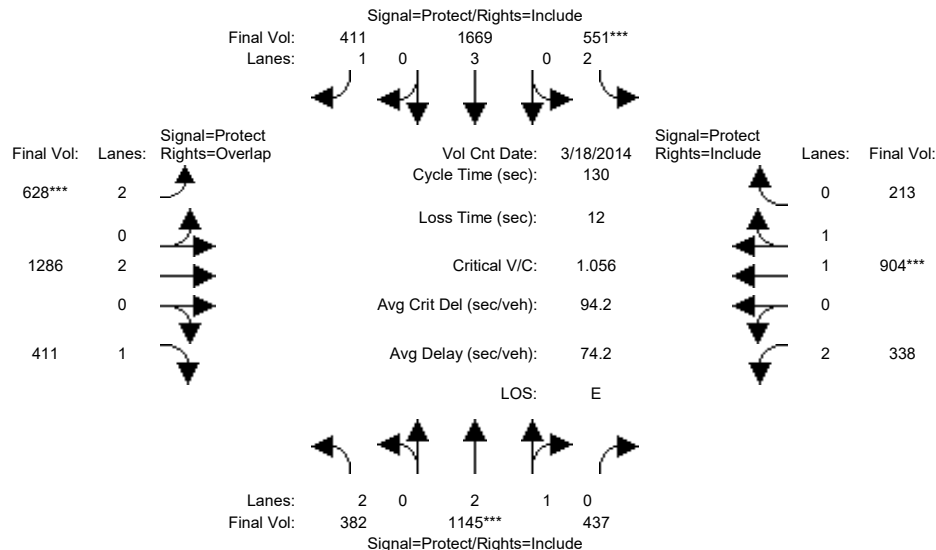
Vol/Sat:	0.22	0.24	0.08	0.19	0.30	0.30	0.16	0.20	0.21	0.12	0.22	0.22
Crit Moves:	***			***			***		***	***		
Green Time:	22.5	29.8	29.8	24.1	31.3	31.3	21.9	21.9	21.9	22.3	22.3	22.3
Volume/Cap:	1.06	0.89	0.29	0.89	1.06	1.06	0.81	1.00	1.06	0.57	1.06	1.06
Delay/Veh:	108.2	45.2	32.1	63.0	79.9	79.9	55.7	75.6	109.3	41.7	94.0	94.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	108.2	45.2	32.1	63.0	79.9	79.9	55.7	75.6	109.3	41.7	94.0	94.0
LOS by Move:	F	D	C	E	E	E	E	E	F	D	F	F
HCM2kAvgQ:	21	18	4	15	28	28	12	18	21	7	21	21

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



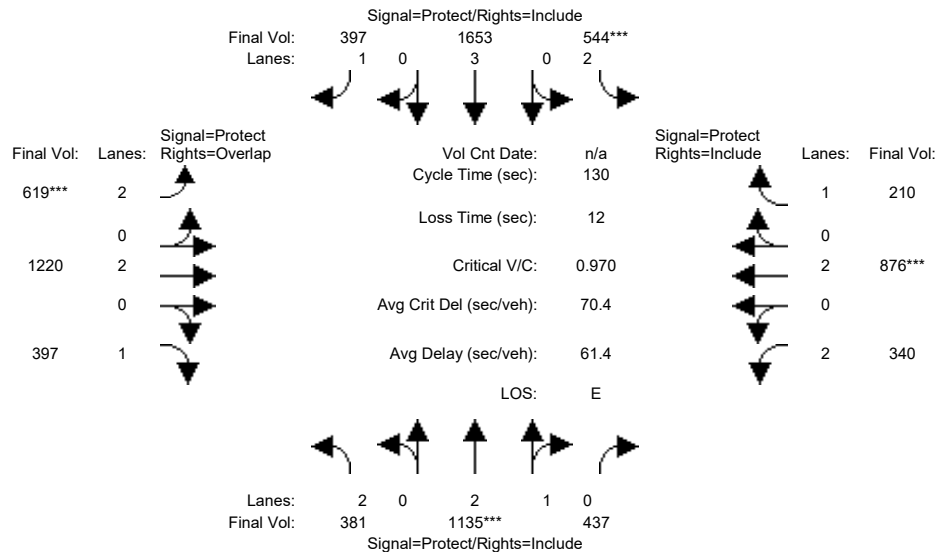
Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	382	1145	437	551	1669	411	628	1286	411	338	904	213
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	382	1145	437	551	1669	411	628	1286	411	338	904	213
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	382	1145	437	551	1669	411	628	1286	411	338	904	213
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	382	1145	437	551	1669	411	628	1286	411	338	904	213
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	382	1145	437	551	1669	411	628	1286	411	338	904	213
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	382	1145	437	551	1669	411	628	1286	411	338	904	213
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.14	0.86	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.61	0.39
Final Sat.:	3150	4051	1546	3150	5700	1750	3150	3800	1750	3150	2994	705
Capacity Analysis Module:												
Vol/Sat:	0.12	0.28	0.28	0.17	0.29	0.23	0.20	0.34	0.23	0.11	0.30	0.30
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	16.5	34.8	34.8	21.5	39.8	39.8	24.5	46.8	63.3	14.9	37.2	37.2
Volume/Cap:	0.96	1.06	1.06	1.06	0.96	0.77	1.06	0.94	0.48	0.94	1.06	1.06
Delay/Veh:	90.1	87.4	87.4	109.4	56.9	47.5	105.4	52.8	22.8	89.2	90.3	90.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.1	87.4	87.4	109.4	56.9	47.5	105.4	52.8	22.8	89.2	90.3	90.3
LOS by Move:	F	F	F	F	E	D	F	D	C	F	F	F
HCM2kAvgQ:	13	30	30	20	27	17	22	29	12	12	31	31

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	381	1135	437	544	1653	397	619	1220	397	340	876	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	381	1135	437	544	1653	397	619	1220	397	340	876	210
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	381	1135	437	544	1653	397	619	1220	397	340	876	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	381	1135	437	544	1653	397	619	1220	397	340	876	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	381	1135	437	544	1653	397	619	1220	397	340	876	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	381	1135	437	544	1653	397	619	1220	397	340	876	210

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.14	0.86	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	4041	1556	3150	5700	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

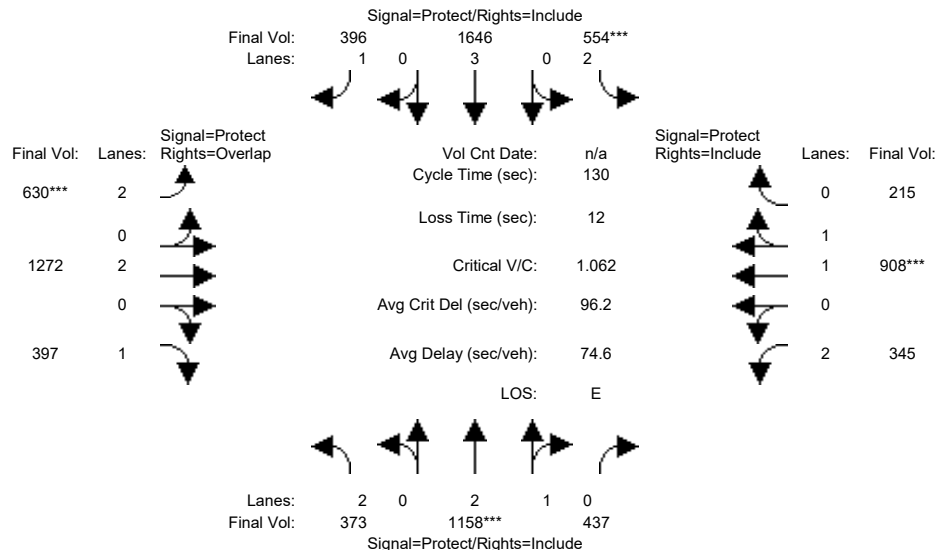
Vol/Sat:	0.12	0.28	0.28	0.17	0.29	0.23	0.20	0.32	0.23	0.11	0.23	0.12
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	17.9	37.6	37.6	23.1	42.9	42.9	26.3	42.8	60.7	14.4	30.9	30.9
Volume/Cap:	0.88	0.97	0.97	0.97	0.88	0.69	0.97	0.97	0.49	0.97	0.97	0.51
Delay/Veh:	73.2	61.4	61.4	83.5	46.2	41.2	79.6	62.6	24.3	98.8	71.9	43.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	73.2	61.4	61.4	83.5	46.2	41.2	79.6	62.6	24.3	98.8	71.9	43.9
LOS by Move:	E	E	E	F	D	D	E	E	C	F	E	D
HCM2kAvgQ:	12	26	26	18	24	16	20	30	12	12	22	8

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	373	1158	437	554	1646	396	630	1272	397	345	908	215
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	373	1158	437	554	1646	396	630	1272	397	345	908	215
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	373	1158	437	554	1646	396	630	1272	397	345	908	215
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	373	1158	437	554	1646	396	630	1272	397	345	908	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	373	1158	437	554	1646	396	630	1272	397	345	908	215
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	373	1158	437	554	1646	396	630	1272	397	345	908	215

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.15	0.85	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.61	0.39
Final Sat.:	3150	4064	1534	3150	5700	1750	3150	3800	1750	3150	2991	708

Capacity Analysis Module:

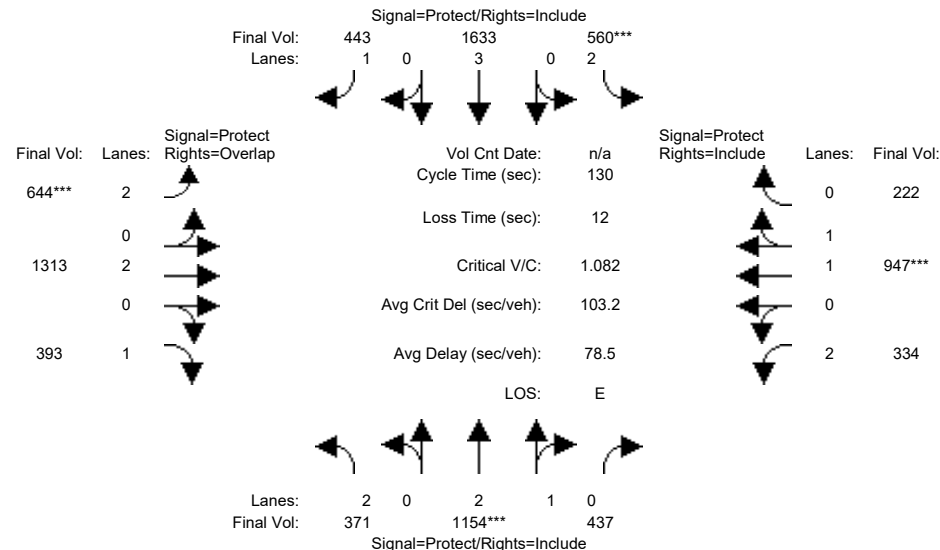
Vol/Sat:	0.12	0.28	0.28	0.18	0.29	0.23	0.20	0.33	0.23	0.11	0.30	0.30
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	16.4	34.9	34.9	21.5	40.0	40.0	24.5	46.4	62.8	15.2	37.1	37.1
Volume/Cap:	0.94	1.06	1.06	1.06	0.94	0.74	1.06	0.94	0.47	0.94	1.06	1.06
Delay/Veh:	86.3	89.4	89.4	111.3	54.1	45.5	107.4	52.8	22.9	88.2	92.3	92.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.3	89.4	89.4	111.3	54.1	45.5	107.4	52.8	22.9	88.2	92.3	92.3
LOS by Move:	F	F	F	F	D	D	F	D	C	F	F	F
HCM2kAvgQ:	13	30	30	20	26	16	22	29	11	12	32	32

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real			Page Mill Rd/Oregon Expwy		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	371	1154	437	560	1633	443	644	1313	393	334	947	222
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	371	1154	437	560	1633	443	644	1313	393	334	947	222
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	371	1154	437	560	1633	443	644	1313	393	334	947	222
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	371	1154	437	560	1633	443	644	1313	393	334	947	222
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	371	1154	437	560	1633	443	644	1313	393	334	947	222
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	371	1154	437	560	1633	443	644	1313	393	334	947	222

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.15	0.85	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.61	0.39
Final Sat.:	3150	4060	1537	3150	5700	1750	3150	3800	1750	3150	2997	703

Capacity Analysis Module:

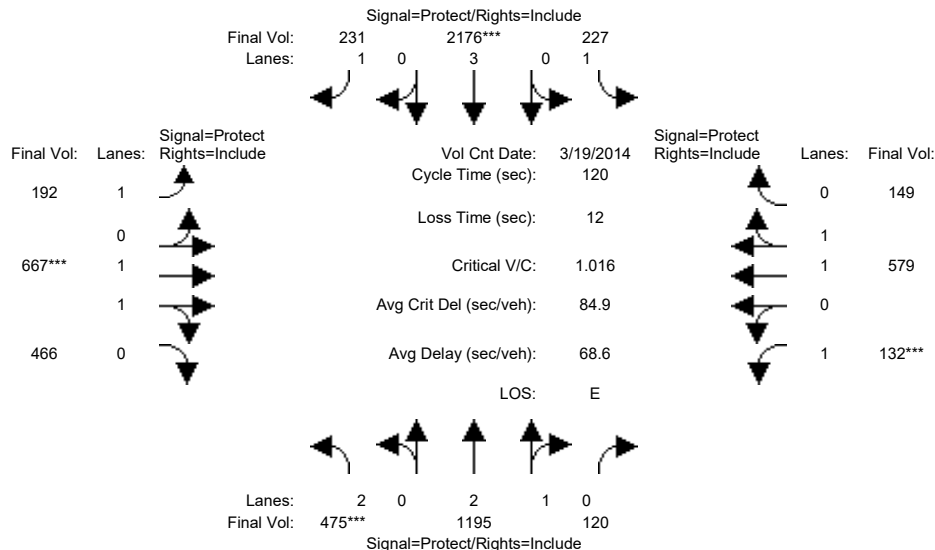
Vol/Sat:	0.12	0.28	0.28	0.18	0.29	0.25	0.20	0.35	0.22	0.11	0.32	0.32
Crit Moves:	****			****			****			****		
Green Time:	16.2	34.1	34.1	21.4	39.3	39.3	24.6	47.8	64.0	14.7	38.0	38.0
Volume/Cap:	0.95	1.08	1.08	1.08	0.95	0.84	1.08	0.94	0.46	0.94	1.08	1.08
Delay/Veh:	88.6	97.1	97.1	118.0	55.8	53.5	113.9	52.0	22.0	89.5	98.6	98.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.6	97.1	97.1	118.0	55.8	53.5	113.9	52.0	22.0	89.5	98.6	98.6
LOS by Move:	F	F	F	F	E	D	F	D	C	F	F	F
HCM2kAvgQ:	13	31	31	20	26	20	23	30	11	11	34	34

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 19 Mar 2014 << 5:00 PM - 6:00 PM												
Base Vol:	475	1195	120	227	2176	231	192	667	466	132	579	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	1195	120	227	2176	231	192	667	466	132	579	149
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	475	1195	120	227	2176	231	192	667	466	132	579	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	475	1195	120	227	2176	231	192	667	466	132	579	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	475	1195	120	227	2176	231	192	667	466	132	579	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	475	1195	120	227	2176	231	192	667	466	132	579	149

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.72	0.28	1.00	3.00	1.00	1.00	1.15	0.85	1.00	1.58	0.42
Final Sat.:	3150	5088	511	1750	5700	1750	1750	2177	1521	1750	2942	757

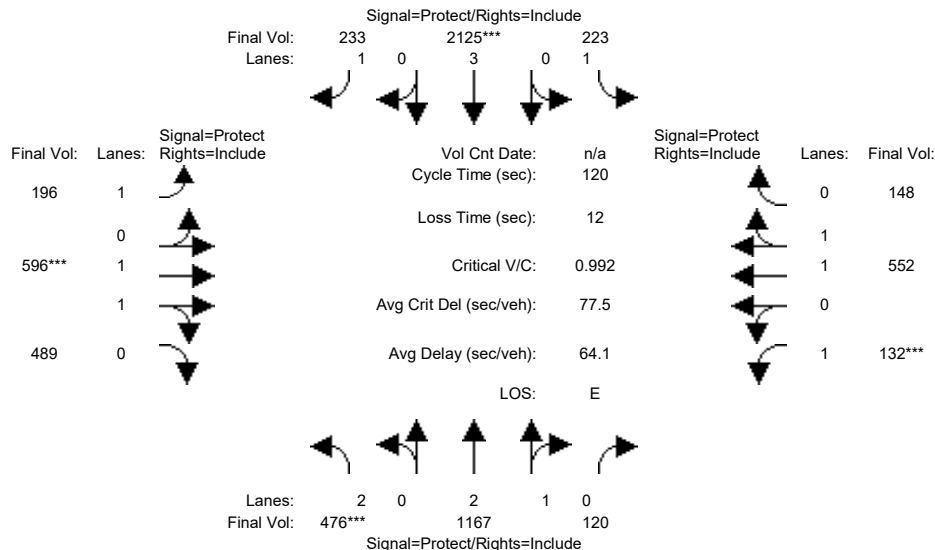
Capacity Analysis Module:												
Vol/Sat:	0.15	0.23	0.23	0.13	0.38	0.13	0.11	0.31	0.31	0.08	0.20	0.20
Crit Moves:	***			***			***			***		
Green Time:	17.8	40.5	40.5	22.4	45.1	45.1	16.1	36.2	36.2	8.9	29.0	29.0
Volume/Cap:	1.02	0.70	0.70	0.70	1.02	0.35	0.82	1.02	1.02	1.02	0.82	0.82
Delay/Veh:	96.8	35.5	35.5	52.0	61.0	27.3	69.8	72.9	72.9	138.8	48.9	48.9
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	96.8	35.5	35.5	72.8	85.4	38.2	69.8	72.9	72.9	138.8	48.9	48.9
LOS by Move:	F	D	D	E	F	D	E	E	E	F	D	D
HCM2kAvgQ:	16	15	15	10	34	7	10	29	29	9	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	476	1167	120	223	2125	233	196	596	489	132	552	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	476	1167	120	223	2125	233	196	596	489	132	552	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	476	1167	120	223	2125	233	196	596	489	132	552	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	476	1167	120	223	2125	233	196	596	489	132	552	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	476	1167	120	223	2125	233	196	596	489	132	552	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	476	1167	120	223	2125	233	196	596	489	132	552	148

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.71	0.29	1.00	3.00	1.00	1.00	1.07	0.93	1.00	1.57	0.43
Final Sat.:	3150	5077	522	1750	5700	1750	1750	2031	1667	1750	2917	782

Capacity Analysis Module:

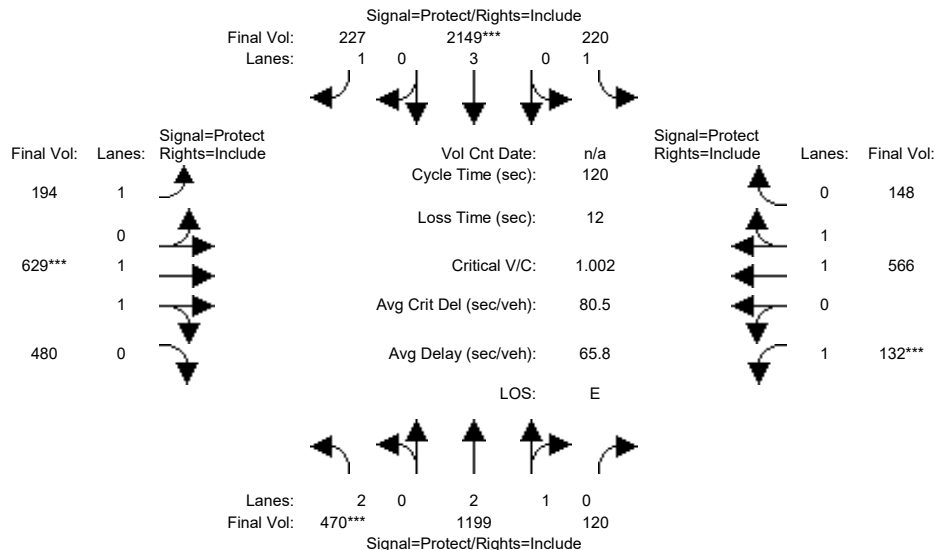
Vol/Sat:	0.15	0.23	0.23	0.13	0.37	0.13	0.11	0.29	0.29	0.08	0.19	0.19
Crit Moves:	***				***		***			***		
Green Time:	18.3	40.8	40.8	22.6	45.1	45.1	16.6	35.5	35.5	9.1	28.0	28.0
Volume/Cap:	0.99	0.68	0.68	0.68	0.99	0.35	0.81	0.99	0.99	0.99	0.81	0.81
Delay/Veh:	89.7	34.9	34.9	50.8	54.8	27.3	68.4	67.3	67.3	130.8	49.3	49.3
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.7	34.9	34.9	71.1	76.7	38.2	68.4	67.3	67.3	130.8	49.3	49.3
LOS by Move:	F	C	C	E	E	D	E	E	E	F	D	D
HCM2kAvgQ:	15	14	14	9	33	7	10	27	27	9	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	470	1199	120	220	2149	227	194	629	480	132	566	148
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	470	1199	120	220	2149	227	194	629	480	132	566	148
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	470	1199	120	220	2149	227	194	629	480	132	566	148
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	470	1199	120	220	2149	227	194	629	480	132	566	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	470	1199	120	220	2149	227	194	629	480	132	566	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	470	1199	120	220	2149	227	194	629	480	132	566	148

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.72	0.28	1.00	3.00	1.00	1.00	1.11	0.89	1.00	1.57	0.43
Final Sat.:	3150	5090	509	1750	5700	1750	1750	2097	1601	1750	2932	767

Capacity Analysis Module:

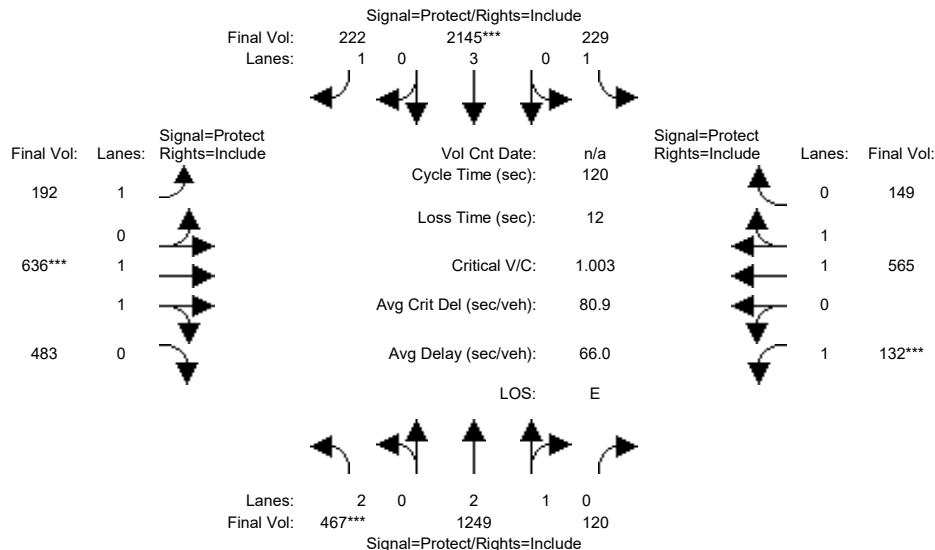
Vol/Sat:	0.15	0.24	0.24	0.13	0.38	0.13	0.11	0.30	0.30	0.08	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	17.9	41.1	41.1	21.9	45.2	45.2	16.4	35.9	35.9	9.0	28.6	28.6
Volume/Cap:	1.00	0.69	0.69	0.69	1.00	0.34	0.81	1.00	1.00	1.00	0.81	0.81
Delay/Veh:	93.0	35.0	35.0	52.0	57.3	27.1	68.8	69.5	69.5	134.3	48.9	48.9
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.0	35.0	35.0	72.8	80.2	38.0	68.8	69.5	69.5	134.3	48.9	48.9
LOS by Move:	F	C	C	E	F	D	E	E	E	F	D	D
HCM2kAvgQ:	15	15	15	9	33	6	10	27	27	9	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	467	1249	120	229	2145	222	192	636	483	132	565	149
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	467	1249	120	229	2145	222	192	636	483	132	565	149
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	467	1249	120	229	2145	222	192	636	483	132	565	149
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	467	1249	120	229	2145	222	192	636	483	132	565	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	467	1249	120	229	2145	222	192	636	483	132	565	149
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	467	1249	120	229	2145	222	192	636	483	132	565	149

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.73	0.27	1.00	3.00	1.00	1.00	1.11	0.89	1.00	1.57	0.43
Final Sat.:	3150	5108	491	1750	5700	1750	1750	2102	1596	1750	2927	772

Capacity Analysis Module:

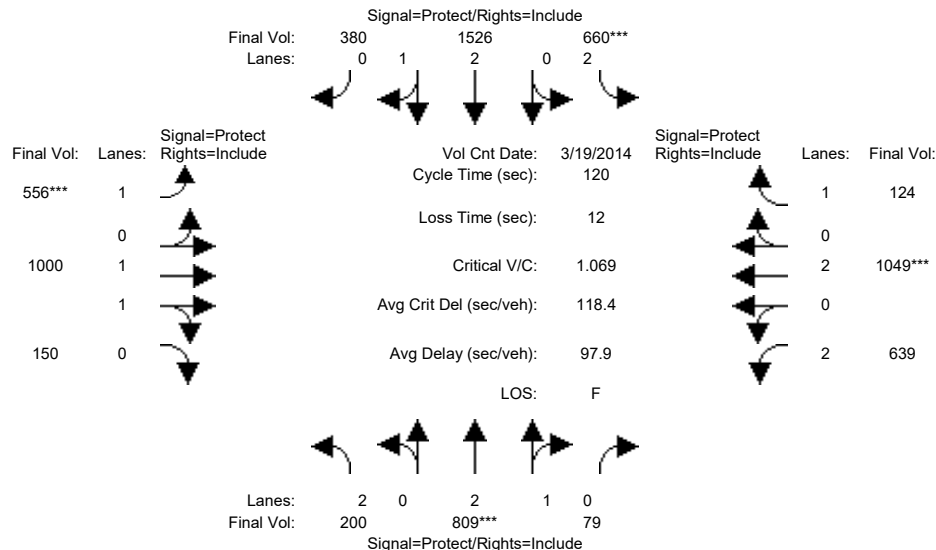
Vol/Sat:	0.15	0.24	0.24	0.13	0.38	0.13	0.11	0.30	0.30	0.08	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	17.7	40.9	40.9	21.9	45.0	45.0	16.4	36.2	36.2	9.0	28.8	28.8
Volume/Cap:	1.00	0.72	0.72	0.72	1.00	0.34	0.80	1.00	1.00	1.00	0.80	0.80
Delay/Veh:	93.6	35.9	35.9	53.8	57.6	27.1	67.8	69.5	69.5	134.7	48.2	48.2
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.6	35.9	35.9	75.3	80.7	38.0	67.8	69.5	69.5	134.7	48.2	48.2
LOS by Move:	F	D	D	E	F	D	E	E	E	F	D	D
HCM2kAvgQ:	15	16	16	10	33	6	10	28	28	9	15	15

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

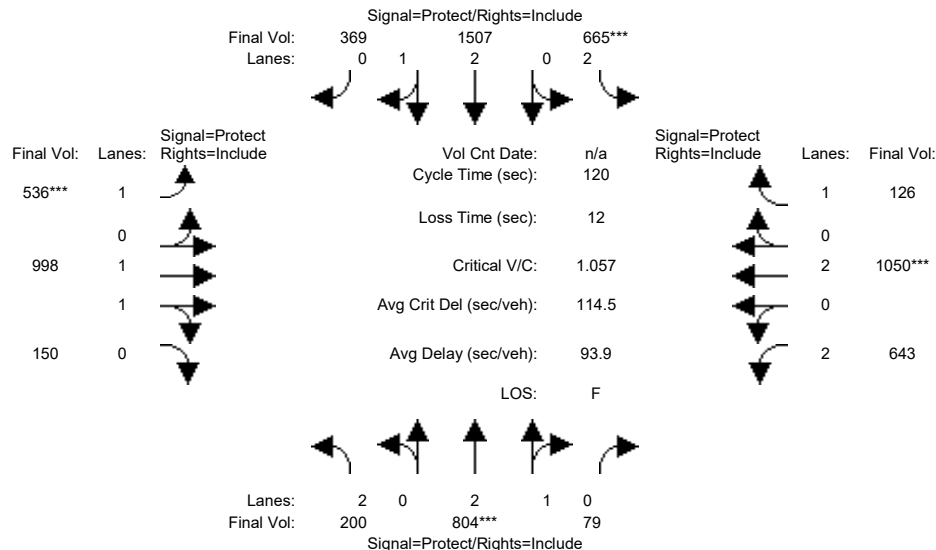


Street Name:				El Camino Real				San Antonio Road																
Approach:				North Bound			South Bound			East Bound		West Bound												
Movement:				L	-	T	-	R	L	-	T	-	R	L	-	T	-	R						
				-----				-----				-----				-----								
Min. Green:				10		28		0	10		28		0	10		30		0						
Y+R:				4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0						
				-----				-----				-----				-----								
Volume Module: >> Count Date:				19 Mar 2014 << 4:45 PM - 5:45 PM																				
Base Vol:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
Growth Adj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
Initial Bse:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
Added Vol:				0		0		0	0		0		0	0		0		0	0		0		0	
PasserByVol:				0		0		0	0		0		0	0		0		0	0		0		0	
Initial Fut:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
User Adj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
PHF Adj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
PHF Volume:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
Reduct Vol:				0		0		0	0		0		0	0		0		0	0		0		0	
Reduced Vol:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
PCE Adj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
MLF Adj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
FinalVolume:				200		809		79	660		1526		380	556		1000		150	639		1049		124	
				-----				-----				-----				-----								
Saturation Flow Module:																								
Sat/Lane:				1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	
Adjustment:				0.83		0.99		0.95	0.83		0.99		0.95	0.92		0.98		0.95	0.83		1.00		0.92	
Lanes:				2.00		2.72		0.28	2.00		2.38		0.62	1.00		1.73		0.27	2.00		2.00		1.00	
Final Sat.:				3150		5101		498	3150		4482		1116	1750		3217		483	3150		3800		1750	
				-----				-----				-----				-----								
Capacity Analysis Module:																								
Vol/Sat:				0.06		0.16		0.16	0.21		0.34		0.34	0.32		0.31		0.31	0.20		0.28		0.07	
Crit Moves:				****			****			****			****			****			****					
Green Time:				10.0		28.0		28.0	19.9		37.9		37.9	30.1		36.4		36.4	23.7		30.0		30.0	
Volume/Cap:				0.76		0.68		0.68	1.27		1.08		1.08	1.27		1.03		1.03	1.03		1.10		0.28	
Delay/Veh:				66.2		43.4		43.4	184.1		87.3		87.3	181.4		75.3		75.3	90.7		107		36.7	
User DelAdj:				1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	
AdjDel/Veh:				66.2		43.4		43.4	184.1		87.3		87.3	181.4		75.3		75.3	90.7		107		36.7	
LOS by Move:				E		D		D	F		F		F	F		E		E	F		F		D	
HCM2kAvgQ:				6		11		11	27		34		34	40		29		29	20		29		4	
Note: Queue reported is the number of cars per lane.																								

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



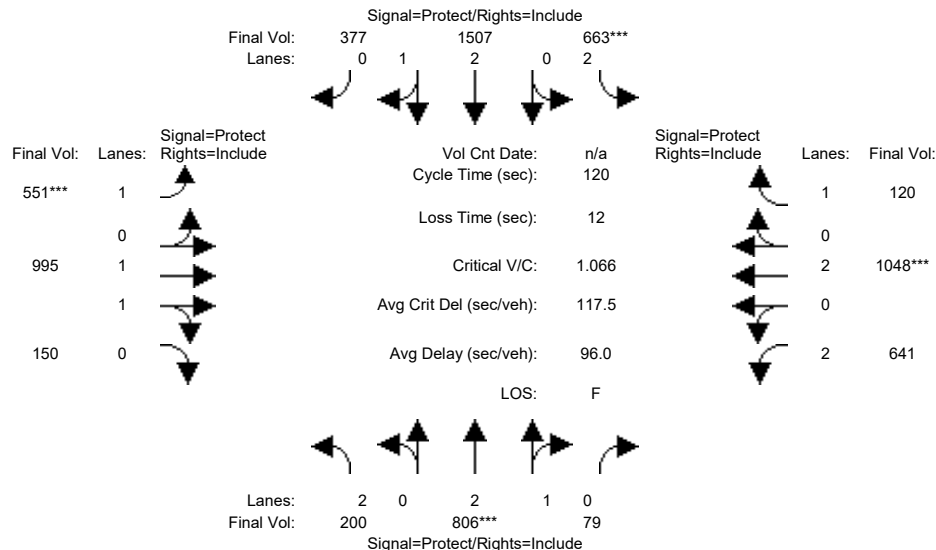
Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	804	79	665	1507	369	536	998	150	643	1050	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	804	79	665	1507	369	536	998	150	643	1050	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	804	79	665	1507	369	536	998	150	643	1050	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	804	79	665	1507	369	536	998	150	643	1050	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	804	79	665	1507	369	536	998	150	643	1050	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	804	79	665	1507	369	536	998	150	643	1050	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.39	0.61	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5098	501	3150	4497	1101	1750	3216	483	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.34	0.34	0.31	0.31	0.31	0.20	0.28	0.07
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	20.4	38.4	38.4	29.6	35.9	35.9	23.6	30.0	30.0
Volume/Cap:	0.76	0.68	0.68	1.24	1.05	1.05	1.24	1.04	1.04	1.04	1.11	0.29
Delay/Veh:	66.2	43.3	43.3	173.7	75.6	75.6	172.3	78.7	78.7	93.9	107	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.3	43.3	173.7	75.6	75.6	172.3	78.7	78.7	93.9	107	36.7
LOS by Move:	E	D	D	F	E	E	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	27	32	32	38	30	30	21	29	4

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

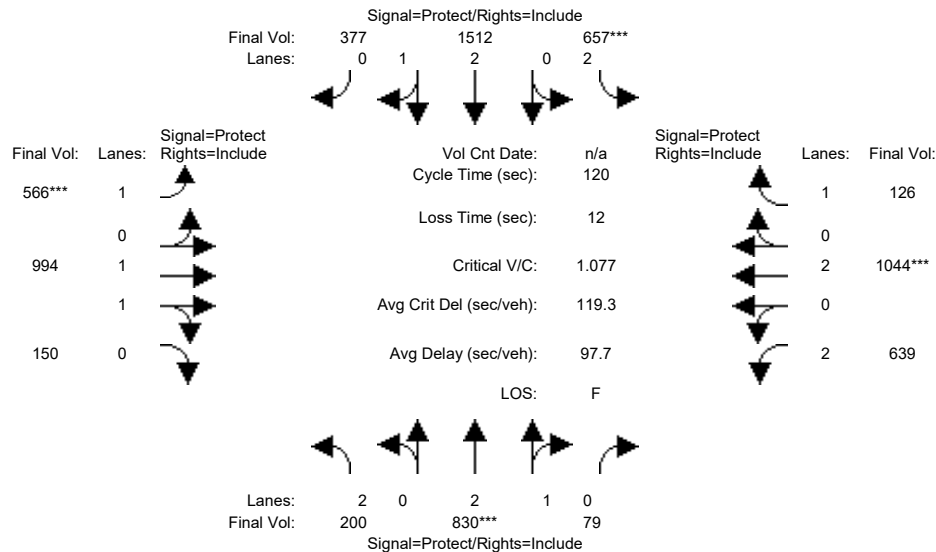


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	806	79	663	1507	377	551	995	150	641	1048	120
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	806	79	663	1507	377	551	995	150	641	1048	120
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	806	79	663	1507	377	551	995	150	641	1048	120
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	806	79	663	1507	377	551	995	150	641	1048	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	806	79	663	1507	377	551	995	150	641	1048	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	806	79	663	1507	377	551	995	150	641	1048	120
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.38	0.62	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5099	500	3150	4478	1120	1750	3215	485	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.34	0.34	0.31	0.31	0.31	0.20	0.28	0.07
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	20.0	38.0	38.0	30.0	36.2	36.2	23.8	30.0	30.0
Volume/Cap:	0.76	0.68	0.68	1.26	1.06	1.06	1.26	1.03	1.03	1.03	1.10	0.27
Delay/Veh:	66.2	43.3	43.3	182.0	80.9	80.9	179.7	75.8	75.8	91.1	107	36.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.3	43.3	182.0	80.9	80.9	179.7	75.8	75.8	91.1	107	36.6
LOS by Move:	E	D	D	F	F	F	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	27	33	33	39	29	29	20	29	4
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)



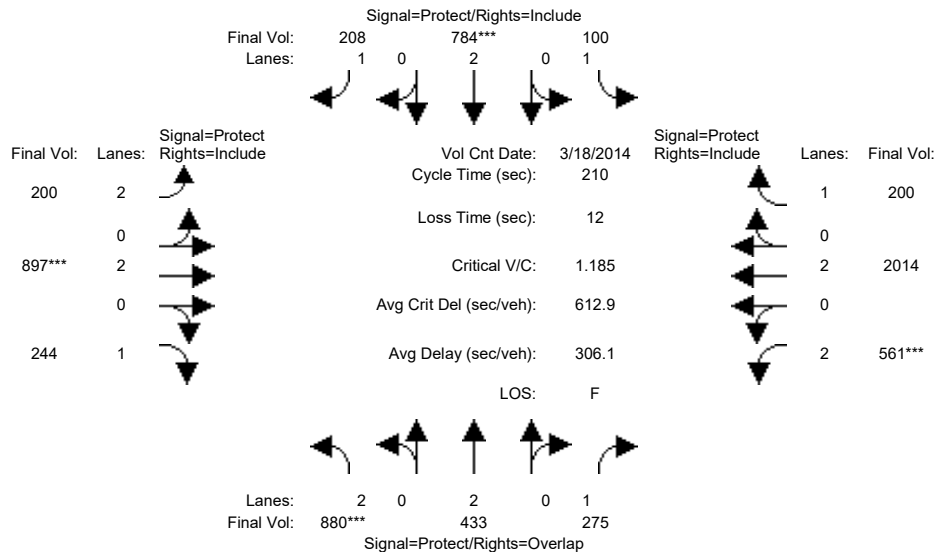
Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	830	79	657	1512	377	566	994	150	639	1044	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	830	79	657	1512	377	566	994	150	639	1044	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	830	79	657	1512	377	566	994	150	639	1044	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	830	79	657	1512	377	566	994	150	639	1044	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	830	79	657	1512	377	566	994	150	639	1044	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	830	79	657	1512	377	566	994	150	639	1044	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.73	0.27	2.00	2.38	0.62	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5113	487	3150	4481	1117	1750	3214	485	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.34	0.34	0.32	0.31	0.31	0.20	0.27	0.07
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	19.6	37.6	37.6	30.4	36.5	36.5	23.9	30.0	30.0
Volume/Cap:	0.76	0.70	0.70	1.28	1.08	1.08	1.28	1.02	1.02	1.02	1.10	0.29
Delay/Veh:	66.2	43.8	43.8	189.2	86.7	86.7	185.9	73.0	73.0	88.4	105	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.8	43.8	189.2	86.7	86.7	185.9	73.0	73.0	88.4	105	36.7
LOS by Move:	E	D	D	F	F	F	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	27	34	34	41	29	29	20	29	4

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Movement	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module: >> Count Date: 18 Mar 2014 << 4:45 PM - 5:45 PM

Module	Count	18 Mar 2014	4:45 PM	5:45 PM
Base Vol:	880 433 275 100 784 347	200 897 244	561 2014 200	
Growth Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Initial Bse:	880 433 275 100 784 347	200 897 244	561 2014 200	
Added Vol:	0 0 0 0 0 0	0 0 0	0 0 0	
PasserByVol:	0 0 0 0 0 0	0 0 0	0 0 0	
Initial Fut:	880 433 275 100 784 347	200 897 244	561 2014 200	
User Adj:	1.00 1.00 1.00 1.00 1.00 0.60	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
PHF Volume:	880 433 275 100 784 208	200 897 244	561 2014 200	
Reduct Vol:	0 0 0 0 0 0	0 0 0	0 0 0	
Reduced Vol:	880 433 275 100 784 208	200 897 244	561 2014 200	
PCE Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
MLF Adj:	1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	
Final Volume:	880 433 275 100 784 208	200 897 244	561 2014 200	

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

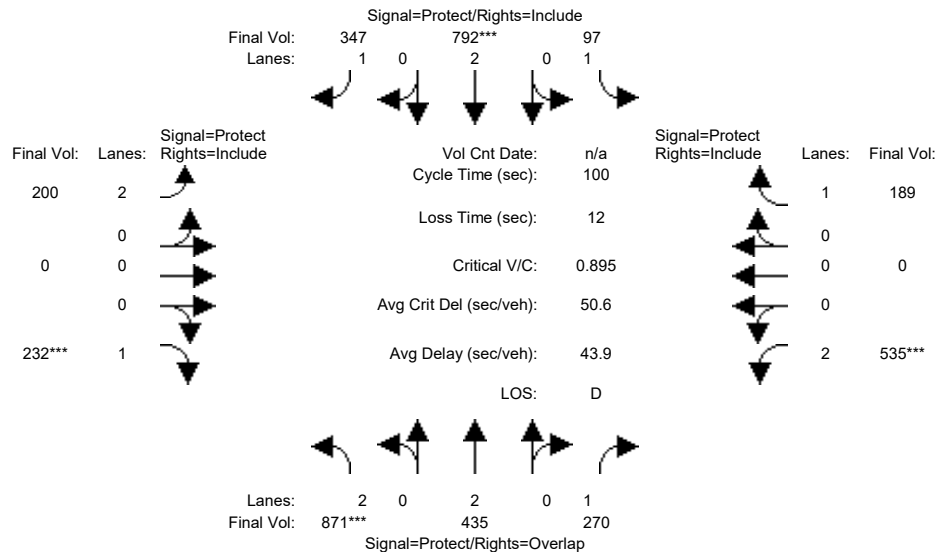
Vol/Sat:	0.28	0.11	0.16	0.11	0.41	0.12	0.06	0.24	0.14	0.18	0.53	0.11
Crit Moves:	***				***			***			***	
Green Time:	20.7	25.6	42.0	25.7	30.6	30.6	14.6	128	128.3	16.3	130	130.1
Volume/Cap:	2.83	0.93	0.79	0.93	2.83	0.82	0.92	0.39	0.23	2.29	0.86	0.18
Delay/Veh:	913.9	104	79.6	144.2	911	92.7	121.5	17.9	15.9	676.2	17.9	7.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	913.9	104	79.6	144.2	911	92.7	121.5	17.9	15.9	676.2	17.9	7.8
LOS by Move:	F	F	E	F	F	F	F	B	B	F	B	A
HCM2kAvgQ:	71	15	18	9	53	14	9	12	6	42	35	2

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name:	Foothill Expressway - Junipero Se						Page Mill Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	871	435	270	97	792	347	200	0	232	535	0	189
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	871	435	270	97	792	347	200	0	232	535	0	189
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	871	435	270	97	792	347	200	0	232	535	0	189
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	871	435	270	97	792	347	200	0	232	535	0	189
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	871	435	270	97	792	347	200	0	232	535	0	189
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	871	435	270	97	792	347	200	0	232	535	0	189

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	0.00	1.00	2.00	0.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	0	1750	3150	0	1750

Capacity Analysis Module:

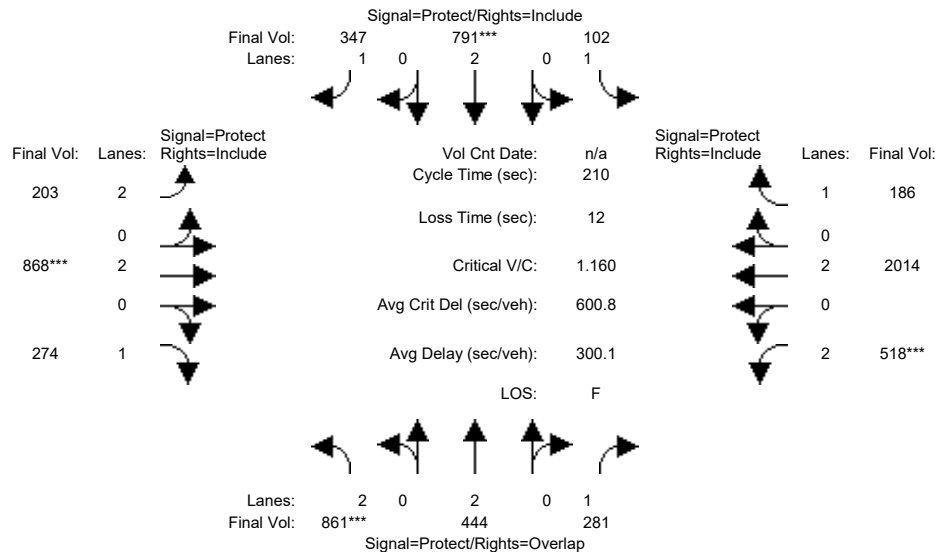
Vol/Sat:	0.28	0.11	0.15	0.06	0.21	0.20	0.06	0.00	0.13	0.17	0.00	0.11
Crit Moves:	***				***				***	***		
Green Time:	30.9	33.6	52.6	20.6	23.3	23.3	13.3	0.0	14.8	19.0	0.0	20.5
Volume/Cap:	0.89	0.34	0.29	0.27	0.89	0.85	0.48	0.00	0.89	0.89	0.00	0.53
Delay/Veh:	43.7	25.0	13.5	33.8	48.7	52.3	41.0	0.0	71.8	55.5	0.0	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	25.0	13.5	33.8	48.7	52.3	41.0	0.0	71.8	55.5	0.0	36.9
LOS by Move:	D	C	B	C	D	D	D	A	E	E	A	D
HCM2kAvgQ:	20	6	7	3	16	14	4	0	11	13	0	6

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	861	444	281	102	791	347	203	868	274	518	2014	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	861	444	281	102	791	347	203	868	274	518	2014	186
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	861	444	281	102	791	347	203	868	274	518	2014	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	861	444	281	102	791	347	203	868	274	518	2014	186
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	861	444	281	102	791	347	203	868	274	518	2014	186
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	861	444	281	102	791	347	203	868	274	518	2014	186

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

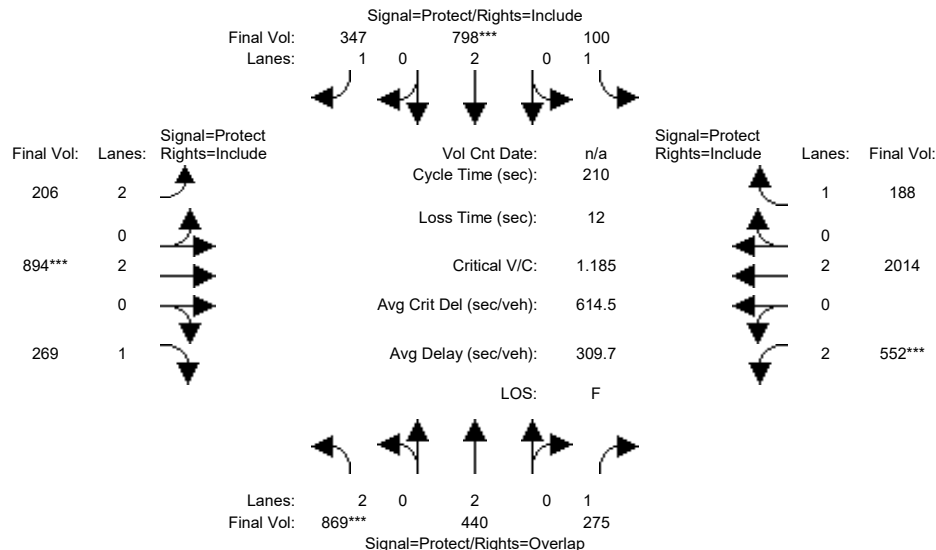
Vol/Sat:	0.27	0.12	0.16	0.12	0.42	0.20	0.06	0.23	0.16	0.16	0.53	0.11
Crit Moves:	***				***			***			***	
Green Time:	20.3	25.7	42.0	25.6	31.0	31.0	14.6	128	128.3	16.3	130	130.1
Volume/Cap:	2.82	0.95	0.80	0.95	2.82	1.34	0.93	0.37	0.26	2.11	0.86	0.17
Delay/Veh:	909.9	109	81.1	151.0	906	255.0	124.8	17.7	16.3	598.0	17.9	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	909.9	109	81.1	151.0	906	255.0	124.8	17.7	16.3	598.0	17.9	7.7
LOS by Move:	F	F	F	F	F	F	F	B	B	F	B	A
HCM2kAvgQ:	69	16	18	9	53	34	9	12	7	38	35	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 14 10 10 14 10 10 14 110 10 14 125 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module:

Base Vol: 869 440 275 100 798 347 206 894 269 552 2014 188

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 869 440 275 100 798 347 206 894 269 552 2014 188

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 869 440 275 100 798 347 206 894 269 552 2014 188

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 869 440 275 100 798 347 206 894 269 552 2014 188

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 869 440 275 100 798 347 206 894 269 552 2014 188

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 869 440 275 100 798 347 206 894 269 552 2014 188

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.83 1.00 0.92 0.46 0.50 0.92 0.83 1.00 0.92 0.83 1.00 0.92

Lanes: 2.00 2.00 1.00 1.00 2.00 1.00 2.00 2.00 1.00 2.00 2.00 1.00

Final Sat.: 3150 3800 1750 875 1900 1750 3150 3800 1750 3150 3800 1750

Capacity Analysis Module:

Vol/Sat: 0.28 0.12 0.16 0.11 0.42 0.20 0.07 0.24 0.15 0.18 0.53 0.11

Crit Moves: **** **** ****

Green Time: 20.4 25.8 42.2 25.5 31.0 31.0 14.6 128 128.3 16.3 130 130.1

Volume/Cap: 2.85 0.94 0.78 0.94 2.85 1.34 0.94 0.38 0.25 2.25 0.86 0.17

Delay/Veh: 921.3 106 79.1 146.9 918 255.1 128.3 17.9 16.2 659.8 17.9 7.8

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 921.3 106 79.1 146.9 918 255.1 128.3 17.9 16.2 659.8 17.9 7.8

LOS by Move: F F E F F F F B B F B A

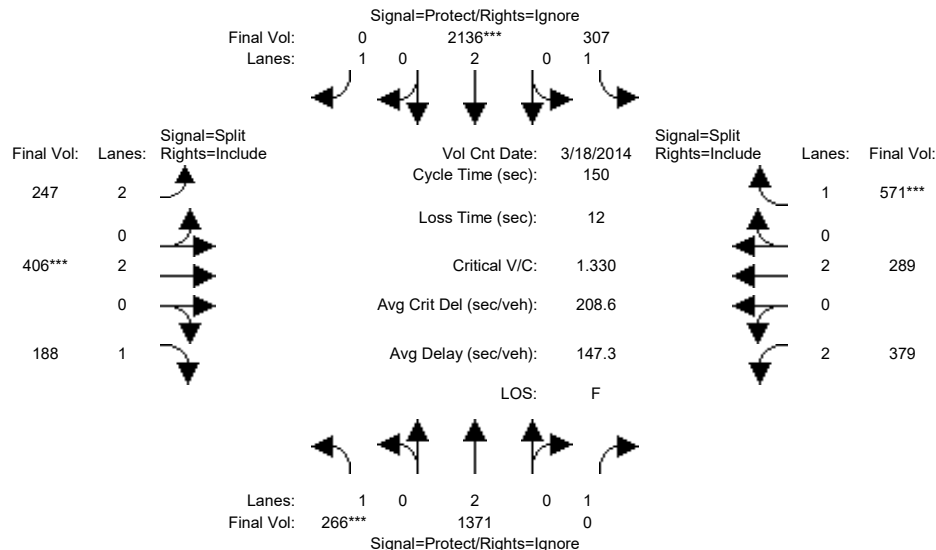
HCM2kAvgQ: 70 15 18 9 54 34 10 12 7 41 35 2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #10: Foothill & Arastradero (CMP #5207)

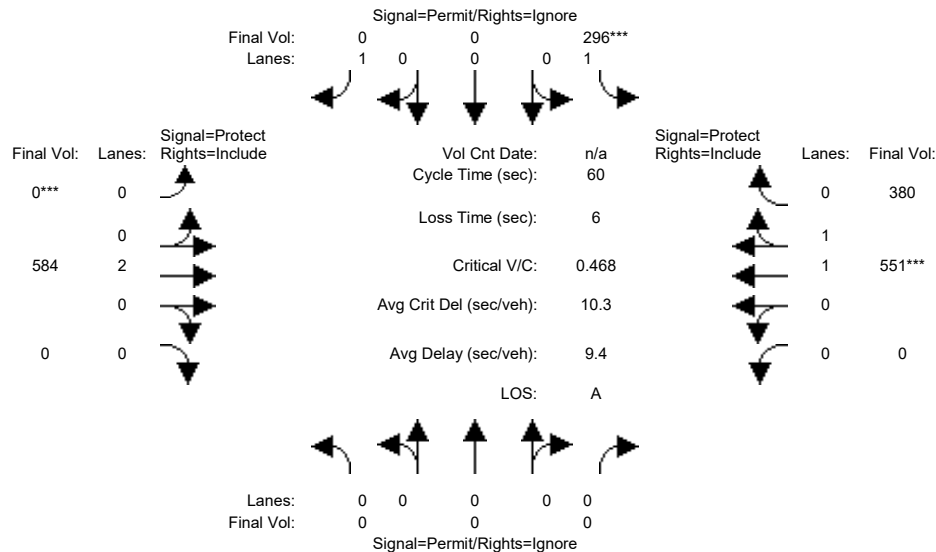


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	266	1371	59	307	2136	41	247	406	188	379	289	571
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	1371	59	307	2136	41	247	406	188	379	289	571
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	1371	59	307	2136	41	247	406	188	379	289	571
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	1371	0	307	2136	0	247	406	188	379	289	571
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	1371	0	307	2136	0	247	406	188	379	289	571
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	266	1371	0	307	2136	0	247	406	188	379	289	571
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.18	0.56	0.00	0.11	0.18	0.11	0.17	0.13	0.33
Crit Moves:	***				***		***					***
Green Time:	17.1	54.2	0.0	26.4	63.4	0.0	20.6	20.6	20.6	36.8	36.8	36.8
Volume/Cap:	1.33	1.00	0.00	1.00	1.33	0.00	0.81	1.33	0.78	0.70	0.53	1.33
Delay/Veh:	245.0	71.8	0.0	112.7	196	0.0	78.2	234	77.6	55.7	50.1	220.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	245.0	71.8	0.0	112.7	196	0.0	78.2	234	77.6	55.7	50.1	220.3
LOS by Move:	F	E	A	F	F	A	E	F	E	E	D	F
HCM2kAvgQ:	24	38	0	20	81	0	9	18	11	11	7	48
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #10: Foothill & Arastradero (CMP #5207)



Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	0	0	0	296	0	39	0	584	0	0	551	380
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	296	0	39	0	584	0	0	551	380
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	296	0	39	0	584	0	0	551	380
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	296	0	0	0	584	0	0	551	380
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	296	0	0	0	584	0	0	551	380
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	296	0	0	0	584	0	0	551	380

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	0.00	0.00	1.16	0.84
Final Sat.:	0	0	0	1750	0	1750	0	3800	0	0	2189	1509

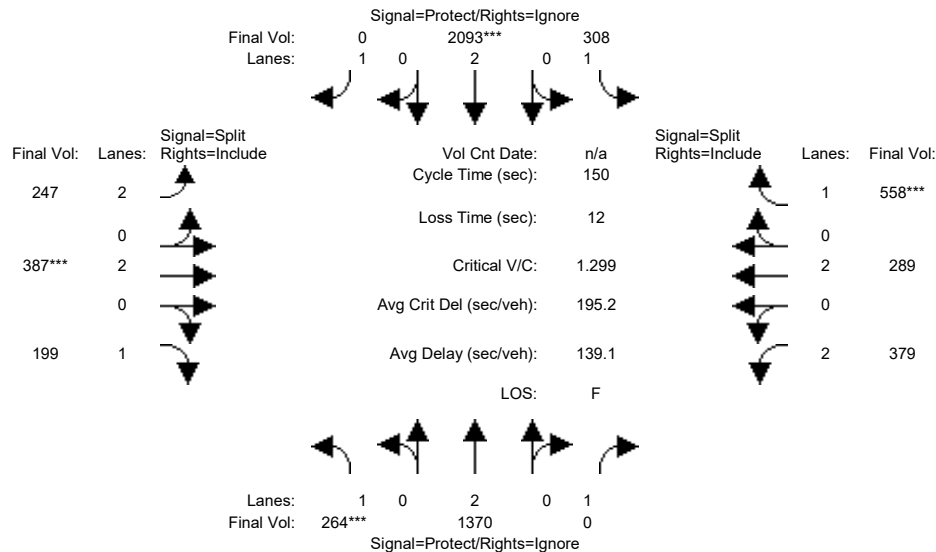
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.15	0.00	0.00	0.25	0.25
Crit Moves:				****			****				****	
Green Time:	0.0	0.0	0.0	21.7	0.0	0.0	0.0	32.3	0.0	0.0	32.3	32.3
Volume/Cap:	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.29	0.00	0.00	0.47	0.47
Delay/Veh:	0.0	0.0	0.0	15.3	0.0	0.0	0.0	7.6	0.0	0.0	8.7	8.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	15.3	0.0	0.0	0.0	7.6	0.0	0.0	8.7	8.7
LOS by Move:	A	A	A	B	A	A	A	A	A	A	A	A
HCM2kAvgQ:	0	0	0	5	0	0	0	5	0	0	8	8

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #10: Foothill & Arastradero (CMP #5207)



Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:												
Base Vol:	264	1370	58	308	2093	40	247	387	199	379	289	558
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	264	1370	58	308	2093	40	247	387	199	379	289	558
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	264	1370	58	308	2093	40	247	387	199	379	289	558
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	264	1370	0	308	2093	0	247	387	199	379	289	558
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	264	1370	0	308	2093	0	247	387	199	379	289	558
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	264	1370	0	308	2093	0	247	387	199	379	289	558

Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750

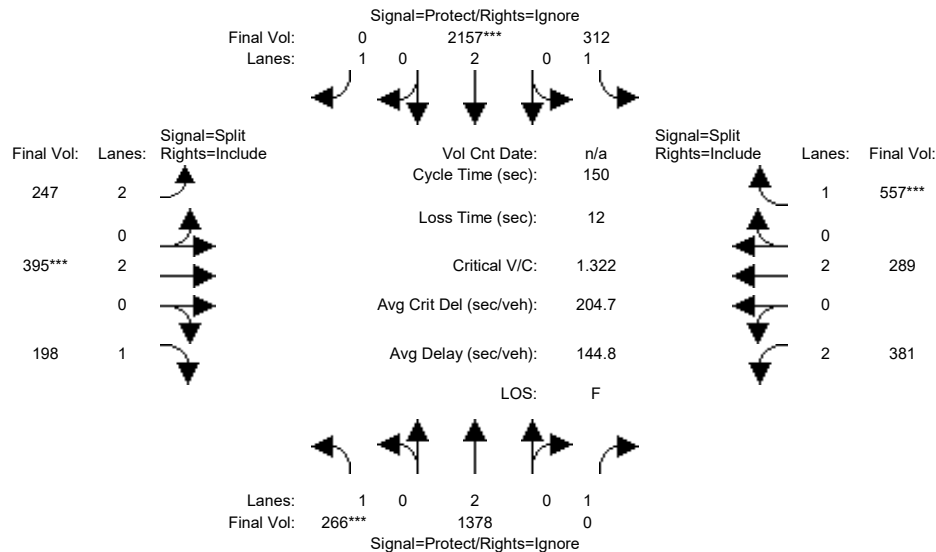
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.18	0.55	0.00	0.11	0.17	0.11	0.17	0.13	0.32
Crit Moves:	***				***		***					***
Green Time:	17.4	54.4	0.0	26.6	63.6	0.0	20.1	20.1	20.1	36.8	36.8	36.8
Volume/Cap:	1.30	0.99	0.00	0.99	1.30	0.00	0.83	1.30	0.85	0.70	0.53	1.30
Delay/Veh:	232.0	70.1	0.0	110.8	182	0.0	81.4	222	87.2	55.6	50.1	207.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	232.0	70.1	0.0	110.8	182	0.0	81.4	222	87.2	55.6	50.1	207.3
LOS by Move:	F	E	A	F	F	A	F	F	F	E	D	F
HCM2kAvgQ:	23	37	0	20	78	0	9	16	12	11	7	46

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #10: Foothill & Arastradero (CMP #5207)



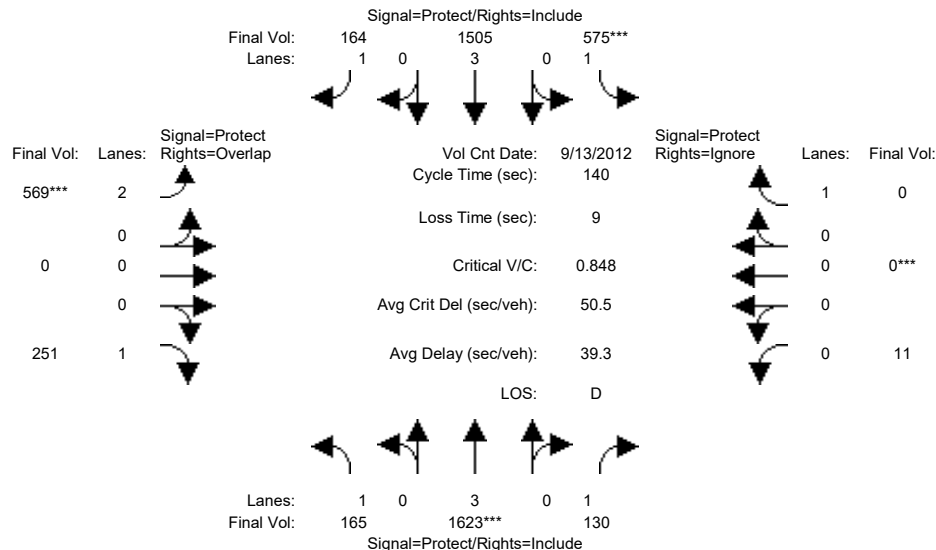
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	266	1378	60	312	2157	40	247	395	198	381	289	557
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	266	1378	60	312	2157	40	247	395	198	381	289	557
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	266	1378	60	312	2157	40	247	395	198	381	289	557
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	266	1378	0	312	2157	0	247	395	198	381	289	557
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	266	1378	0	312	2157	0	247	395	198	381	289	557
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	266	1378	0	312	2157	0	247	395	198	381	289	557
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.18	0.57	0.00	0.11	0.18	0.11	0.17	0.13	0.32
Crit Moves:	***				***		***					***
Green Time:	17.3	54.8	0.0	26.9	64.4	0.0	20.2	20.2	20.2	36.1	36.1	36.1
Volume/Cap:	1.32	0.99	0.00	0.99	1.32	0.00	0.83	1.32	0.84	0.72	0.54	1.32
Delay/Veh:	241.5	70.0	0.0	110.4	192	0.0	80.9	231	86.0	56.9	50.8	217.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	241.5	70.0	0.0	110.4	192	0.0	80.9	231	86.0	56.9	50.8	217.5
LOS by Move:	F	E	A	F	F	A	F	F	F	E	D	F
HCM2kAvgQ:	24	38	0	20	81	0	9	17	12	11	7	47

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

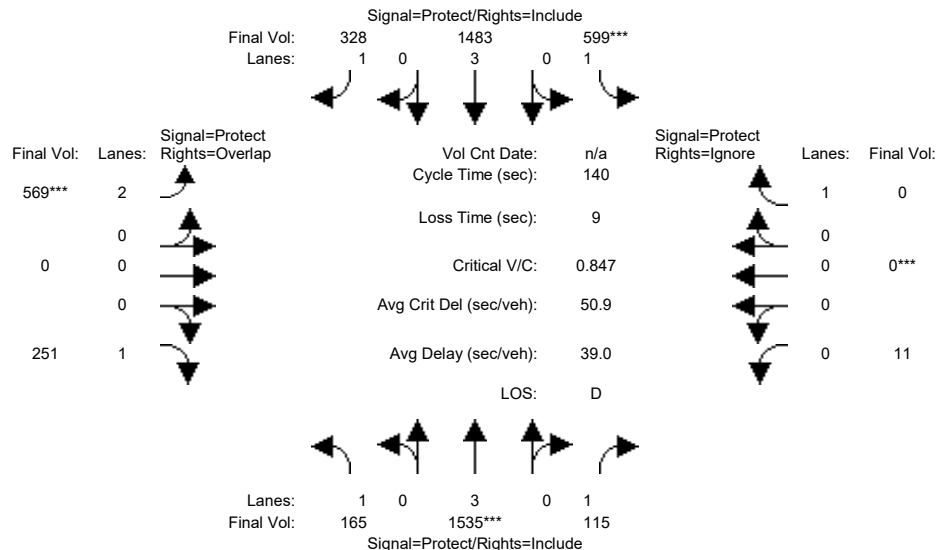


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << 5:00-6:00PM												
Base Vol:	165	1623	130	575	1505	328	569	0	251	11	0	1091
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1623	130	575	1505	328	569	0	251	11	0	1091
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1623	130	575	1505	328	569	0	251	11	0	1091
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1623	130	575	1505	164	569	0	251	11	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1623	130	575	1505	164	569	0	251	11	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1623	130	575	1505	164	569	0	251	11	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.28	0.07	0.33	0.26	0.09	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	26.6	47.0	47.0	54.2	74.6	74.6	29.8	0.0	53.1	3.4	0.0	0.0
Volume/Cap:	0.50	0.85	0.22	0.85	0.50	0.18	0.85	0.00	0.38	0.26	0.00	0.00
Delay/Veh:	51.8	47.0	33.6	49.0	20.9	17.0	62.9	0.0	31.9	70.3	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.8	47.0	33.6	49.0	20.9	17.0	62.9	0.0	31.9	70.3	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	24	4	26	13	4	17	0	8	1	0	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real			Alma St/Sand Hill Rd		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	165	1535	115	599	1483	328	569	0	251	11	0	1090
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1535	115	599	1483	328	569	0	251	11	0	1090
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1535	115	599	1483	328	569	0	251	11	0	1090
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1535	115	599	1483	328	569	0	251	11	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1535	115	599	1483	328	569	0	251	11	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1535	115	599	1483	328	569	0	251	11	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

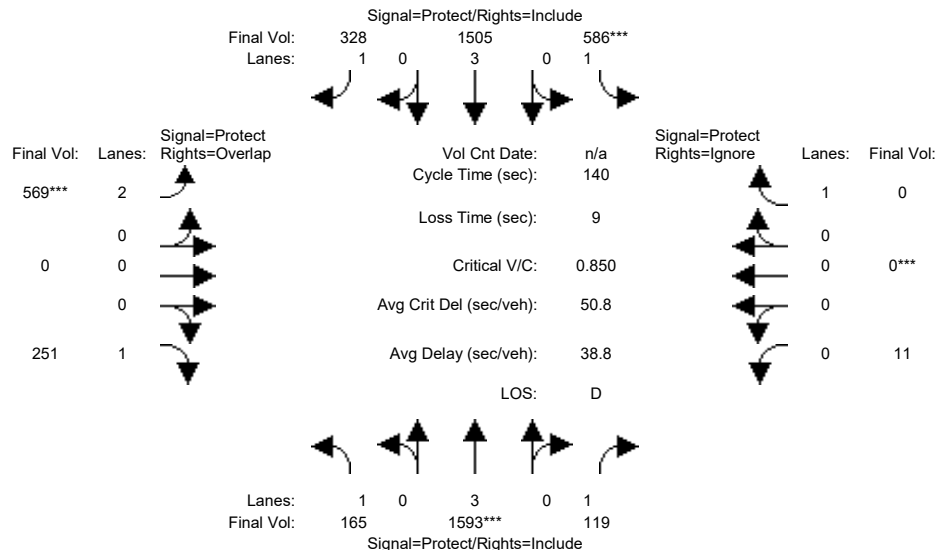
Vol/Sat:	0.09	0.27	0.07	0.34	0.26	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	26.9	44.5	44.5	56.6	74.2	74.2	29.9	0.0	53.4	3.4	0.0	0.0
Volume/Cap:	0.49	0.85	0.21	0.85	0.49	0.35	0.85	0.00	0.38	0.26	0.00	0.00
Delay/Veh:	51.6	48.5	35.0	47.1	21.0	19.2	62.6	0.0	31.6	70.3	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	48.5	35.0	47.1	21.0	19.2	62.6	0.0	31.6	70.3	0.0	0.0
LOS by Move:	D	D	D	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	23	4	27	13	9	17	0	8	1	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	165	1593	119	586	1505	328	569	0	251	11	0	1100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1593	119	586	1505	328	569	0	251	11	0	1100
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1593	119	586	1505	328	569	0	251	11	0	1100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1593	119	586	1505	328	569	0	251	11	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1593	119	586	1505	328	569	0	251	11	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1593	119	586	1505	328	569	0	251	11	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

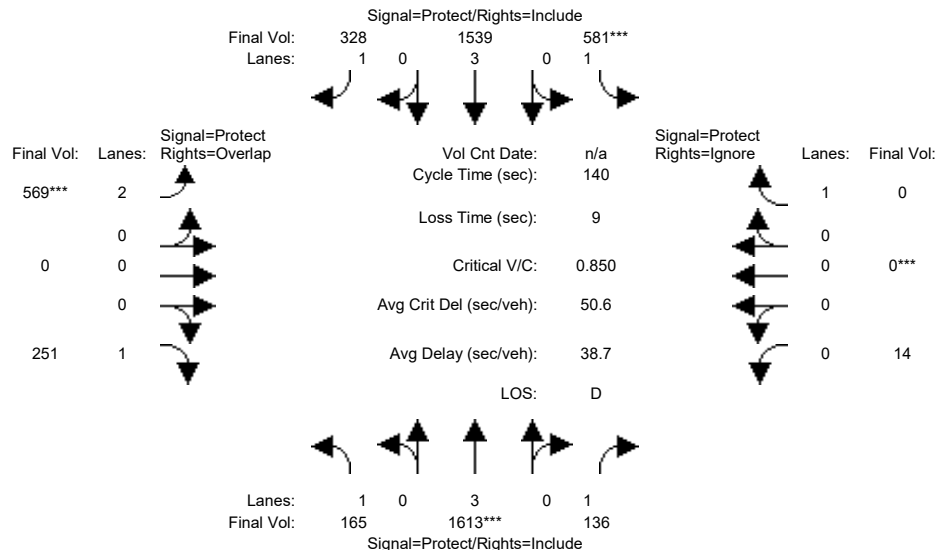
Vol/Sat:	0.09	0.28	0.07	0.33	0.26	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	26.6	46.1	46.1	55.2	74.6	74.6	29.8	0.0	53.0	3.4	0.0	0.0
Volume/Cap:	0.50	0.85	0.21	0.85	0.50	0.35	0.85	0.00	0.38	0.26	0.00	0.00
Delay/Veh:	51.8	47.6	34.0	48.4	20.9	19.0	63.0	0.0	31.9	70.4	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.8	47.6	34.0	48.4	20.9	19.0	63.0	0.0	31.9	70.4	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	23	4	27	13	9	17	0	8	1	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real			Alma St/Sand Hill Rd		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	165	1613	136	581	1539	328	569	0	251	14	0	1095
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1613	136	581	1539	328	569	0	251	14	0	1095
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1613	136	581	1539	328	569	0	251	14	0	1095
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1613	136	581	1539	328	569	0	251	14	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1613	136	581	1539	328	569	0	251	14	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1613	136	581	1539	328	569	0	251	14	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

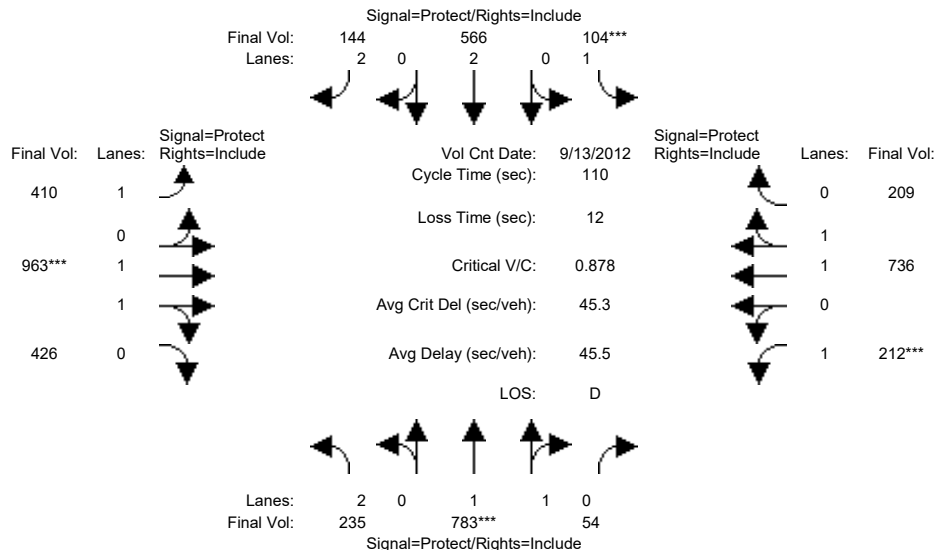
Vol/Sat:	0.09	0.28	0.08	0.33	0.27	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	26.2	46.6	46.6	54.7	75.1	75.1	29.7	0.0	51.8	4.2	0.0	0.0
Volume/Cap:	0.50	0.85	0.23	0.85	0.50	0.35	0.85	0.00	0.39	0.27	0.00	0.00
Delay/Veh:	52.3	47.3	34.0	48.9	20.8	18.8	63.1	0.0	32.8	69.2	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.3	47.3	34.0	48.9	20.8	18.8	63.1	0.0	32.8	69.2	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	24	4	27	14	8	17	0	8	1	0	0

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

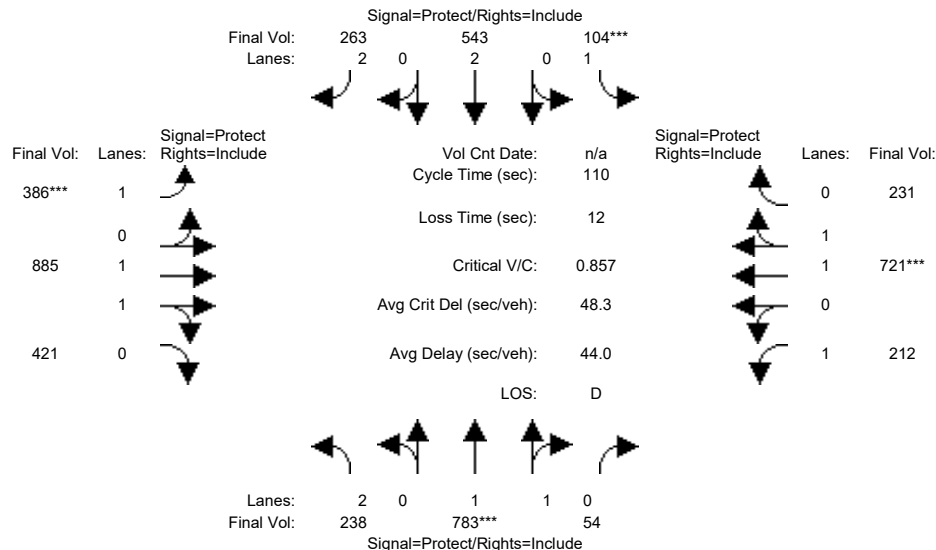


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << PM												
Base Vol:	235	783	54	104	566	288	410	963	426	212	736	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	566	288	410	963	426	212	736	209
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	566	288	410	963	426	212	736	209
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	566	144	410	963	426	212	736	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	566	144	410	963	426	212	736	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	566	144	410	963	426	212	736	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.37	0.63	1.00	1.55	0.45
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2564	1134	1750	2881	818
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.15	0.05	0.23	0.38	0.38	0.12	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	11.9	28.3	28.3	7.4	23.8	23.8	29.8	47.0	47.0	15.2	32.5	32.5
Volume/Cap:	0.69	0.88	0.88	0.88	0.69	0.21	0.87	0.88	0.88	0.88	0.87	0.87
Delay/Veh:	53.0	48.5	48.5	98.1	42.1	35.5	53.6	34.8	34.8	75.0	44.2	44.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.0	48.5	48.5	98.1	42.1	35.5	53.6	34.8	34.8	75.0	44.2	44.2
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	10	2	17	25	25	11	18	18
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	238	783	54	104	543	263	386	885	421	212	721	231
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	783	54	104	543	263	386	885	421	212	721	231
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	783	54	104	543	263	386	885	421	212	721	231
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	238	783	54	104	543	263	386	885	421	212	721	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	783	54	104	543	263	386	885	421	212	721	231
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	238	783	54	104	543	263	386	885	421	212	721	231

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.34	0.66	1.00	1.50	0.50
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2506	1192	1750	2802	898

Capacity Analysis Module:

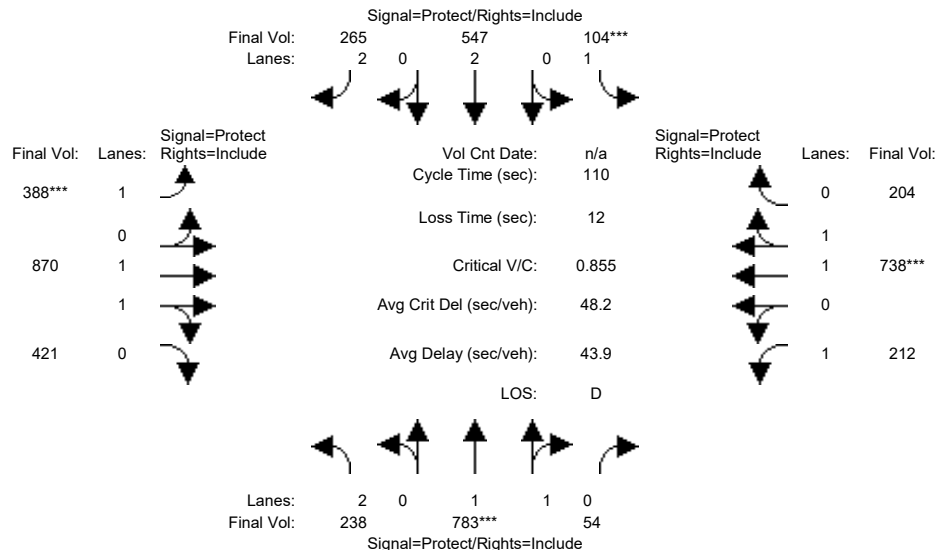
Vol/Sat:	0.08	0.23	0.23	0.06	0.14	0.08	0.22	0.35	0.35	0.12	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	12.7	29.0	29.0	7.6	24.0	24.0	28.3	45.7	45.7	15.7	33.0	33.0
Volume/Cap:	0.66	0.86	0.86	0.86	0.66	0.38	0.86	0.85	0.85	0.85	0.86	0.86
Delay/Veh:	50.9	46.1	46.1	92.3	41.2	37.1	53.9	33.8	33.8	69.2	43.0	43.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.9	46.1	46.1	92.3	41.2	37.1	53.9	33.8	33.8	69.2	43.0	43.0
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	9	5	16	23	23	10	18	18

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



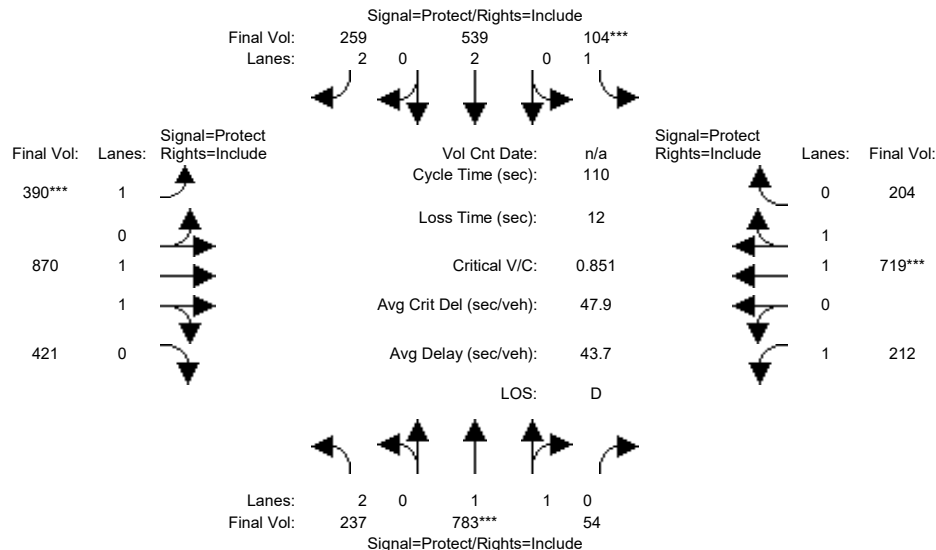
Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	238	783	54	104	547	265	388	870	421	212	738	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	238	783	54	104	547	265	388	870	421	212	738	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	238	783	54	104	547	265	388	870	421	212	738	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	238	783	54	104	547	265	388	870	421	212	738	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	238	783	54	104	547	265	388	870	421	212	738	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	238	783	54	104	547	265	388	870	421	212	738	204
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.33	0.67	1.00	1.55	0.45
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2493	1206	1750	2898	801
Capacity Analysis Module:												
Vol/Sat:	0.08	0.23	0.23	0.06	0.14	0.08	0.22	0.35	0.35	0.12	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	12.6	29.1	29.1	7.6	24.1	24.1	28.5	45.5	45.5	15.8	32.7	32.7
Volume/Cap:	0.66	0.86	0.86	0.86	0.66	0.38	0.86	0.84	0.84	0.84	0.86	0.86
Delay/Veh:	51.0	45.9	45.9	91.8	41.1	37.0	53.5	33.6	33.6	68.1	43.1	43.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.0	45.9	45.9	91.8	41.1	37.0	53.5	33.6	33.6	68.1	43.1	43.1
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	9	5	16	23	23	10	18	18

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

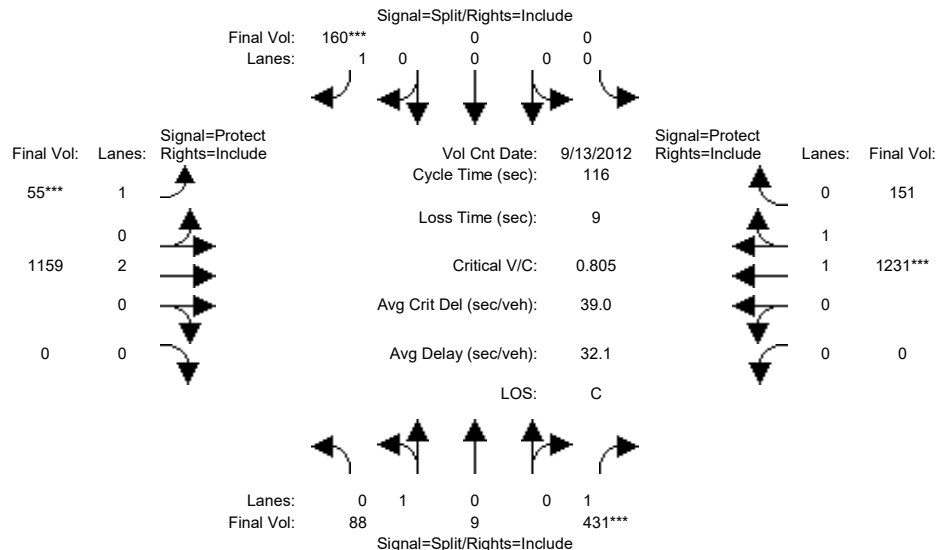


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	237	783	54	104	539	259	390	870	421	212	719	204
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	237	783	54	104	539	259	390	870	421	212	719	204
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	237	783	54	104	539	259	390	870	421	212	719	204
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	237	783	54	104	539	259	390	870	421	212	719	204
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	237	783	54	104	539	259	390	870	421	212	719	204
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	237	783	54	104	539	259	390	870	421	212	719	204
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.33	0.67	1.00	1.55	0.45
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2493	1206	1750	2882	818
Capacity Analysis Module:												
Vol/Sat:	0.08	0.23	0.23	0.06	0.14	0.08	0.22	0.35	0.35	0.12	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	12.8	29.2	29.2	7.7	24.1	24.1	28.8	45.3	45.3	15.7	32.3	32.3
Volume/Cap:	0.65	0.85	0.85	0.85	0.65	0.37	0.85	0.85	0.85	0.85	0.85	0.85
Delay/Veh:	50.4	45.5	45.5	90.6	40.8	36.9	52.6	33.8	33.8	68.6	43.2	43.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.4	45.5	45.5	90.6	40.8	36.9	52.6	33.8	33.8	68.6	43.2	43.2
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	16	16	6	9	5	16	23	23	10	18	18
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

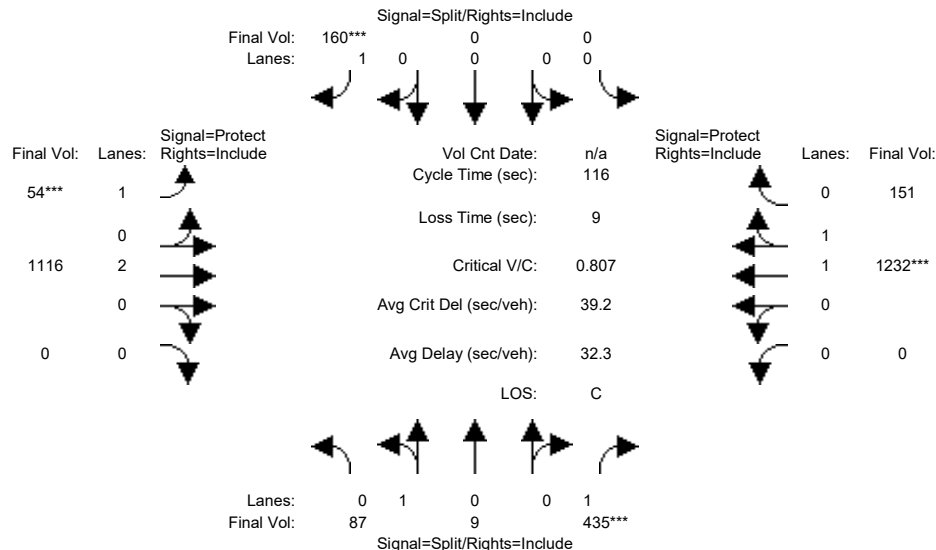


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << 4:30-5:30PM												
Base Vol:	88	9	431	0	0	160	55	1159	0	0	1231	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	9	431	0	0	160	55	1159	0	0	1231	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	9	431	0	0	160	55	1159	0	0	1231	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	9	431	0	0	160	55	1159	0	0	1231	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	9	431	0	0	160	55	1159	0	0	1231	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	88	9	431	0	0	160	55	1159	0	0	1231	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.91	0.09	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.78	0.22
Final Sat.:	1633	167	1750	0	0	1750	1750	3800	0	0	3295	404
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.31	0.00	0.00	0.37	0.37
Crit Moves:	****			****			****			****		
Green Time:	34.6	34.6	34.6	0.0	0.0	12.9	7.0	59.5	0.0	0.0	52.5	52.5
Volume/Cap:	0.18	0.18	0.83	0.00	0.00	0.83	0.52	0.59	0.00	0.00	0.83	0.83
Delay/Veh:	30.3	30.3	48.2	0.0	0.0	74.6	57.5	20.3	0.0	0.0	31.2	31.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.3	30.3	48.2	0.0	0.0	74.6	57.5	20.3	0.0	0.0	31.2	31.2
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	3	3	18	0	0	8	3	15	0	0	24	24
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - August 2015
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	87	9	435	0	0	160	54	1116	0	0	1232	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	9	435	0	0	160	54	1116	0	0	1232	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	9	435	0	0	160	54	1116	0	0	1232	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	9	435	0	0	160	54	1116	0	0	1232	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	9	435	0	0	160	54	1116	0	0	1232	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	87	9	435	0	0	160	54	1116	0	0	1232	151

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.91	0.09	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.78	0.22
Final Sat.:	1631	169	1750	0	0	1750	1750	3800	0	0	3296	404

Capacity Analysis Module:

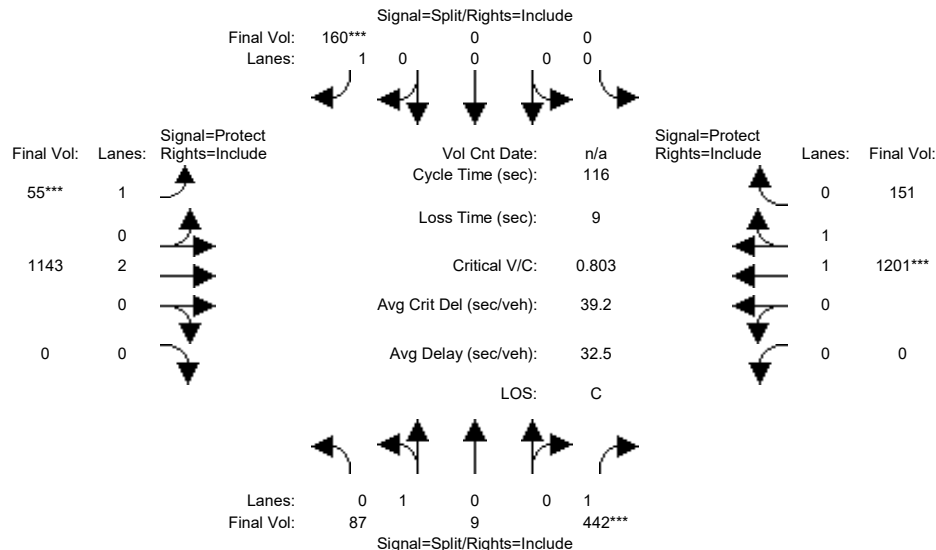
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.29	0.00	0.00	0.37	0.37
Crit Moves:	****			****			****			****		
Green Time:	34.8	34.8	34.8	0.0	0.0	12.8	7.0	59.4	0.0	0.0	52.4	52.4
Volume/Cap:	0.18	0.18	0.83	0.00	0.00	0.83	0.51	0.57	0.00	0.00	0.83	0.83
Delay/Veh:	30.2	30.2	48.3	0.0	0.0	75.2	57.0	20.0	0.0	0.0	31.5	31.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	30.2	30.2	48.3	0.0	0.0	75.2	57.0	20.0	0.0	0.0	31.5	31.5
LOS by Move:	C	C	D	A	A	E	E	B	A	A	C	C
HCM2kAvgQ:	3	3	18	0	0	8	3	14	0	0	24	24

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	87	9	442	0	0	160	55	1143	0	0	1201	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	87	9	442	0	0	160	55	1143	0	0	1201	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	9	442	0	0	160	55	1143	0	0	1201	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	87	9	442	0	0	160	55	1143	0	0	1201	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	9	442	0	0	160	55	1143	0	0	1201	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	87	9	442	0	0	160	55	1143	0	0	1201	151

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.91	0.09	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1631	169	1750	0	0	1750	1750	3800	0	0	3286	413

Capacity Analysis Module:

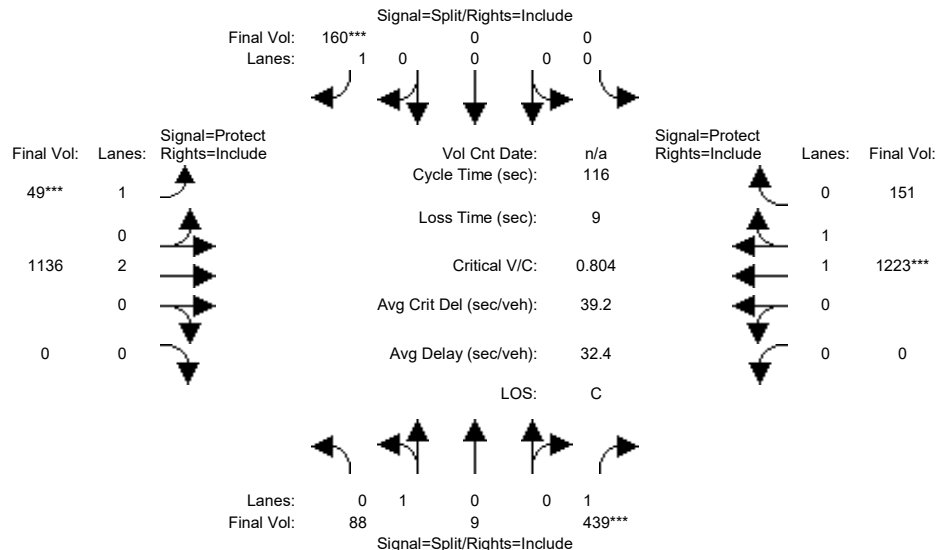
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.30	0.00	0.00	0.37	0.37
Crit Moves:	****			****			****			****		
Green Time:	35.6	35.6	35.6	0.0	0.0	12.9	7.0	58.5	0.0	0.0	51.5	51.5
Volume/Cap:	0.17	0.17	0.82	0.00	0.00	0.82	0.52	0.60	0.00	0.00	0.82	0.82
Delay/Veh:	29.6	29.6	47.2	0.0	0.0	74.2	57.5	20.9	0.0	0.0	31.7	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.6	29.6	47.2	0.0	0.0	74.2	57.5	20.9	0.0	0.0	31.7	31.7
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	3	3	18	0	0	8	3	14	0	0	23	23

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	88	9	439	0	0	160	49	1136	0	0	1223	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	88	9	439	0	0	160	49	1136	0	0	1223	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	88	9	439	0	0	160	49	1136	0	0	1223	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	88	9	439	0	0	160	49	1136	0	0	1223	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	9	439	0	0	160	49	1136	0	0	1223	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	88	9	439	0	0	160	49	1136	0	0	1223	151

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.91	0.09	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1633	167	1750	0	0	1750	1750	3800	0	0	3293	407

Capacity Analysis Module:

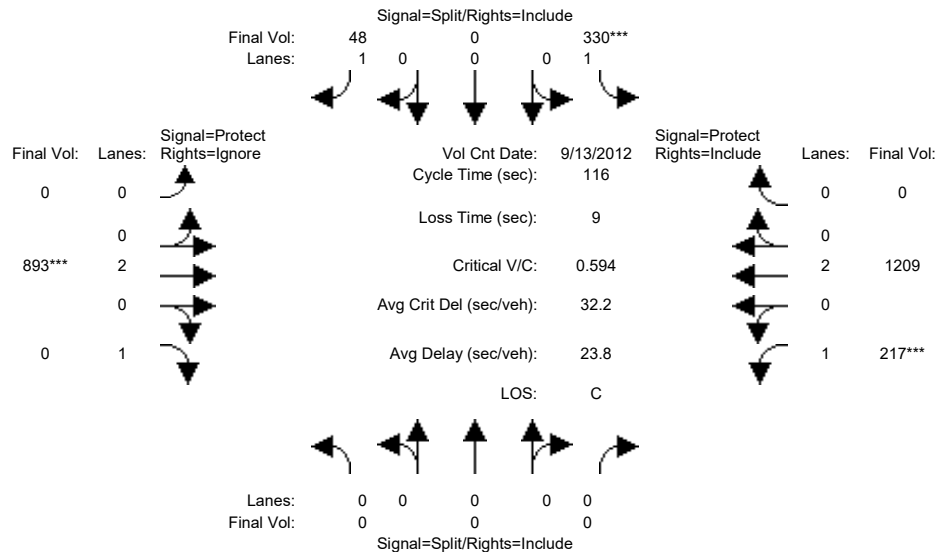
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.30	0.00	0.00	0.37	0.37
Crit Moves:	****			****			****			****		
Green Time:	35.2	35.2	35.2	0.0	0.0	12.8	7.0	59.0	0.0	0.0	52.0	52.0
Volume/Cap:	0.18	0.18	0.83	0.00	0.00	0.83	0.46	0.59	0.00	0.00	0.83	0.83
Delay/Veh:	29.9	29.9	48.0	0.0	0.0	75.1	55.9	20.4	0.0	0.0	31.7	31.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.9	29.9	48.0	0.0	0.0	75.1	55.9	20.4	0.0	0.0	31.7	31.7
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	3	3	18	0	0	8	2	14	0	0	24	24

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

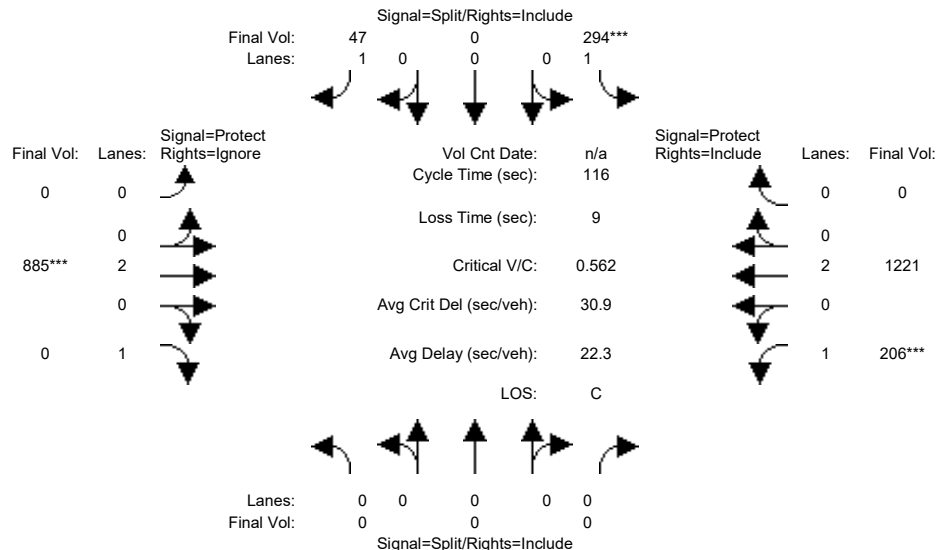


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 <<												
Base Vol:	0	0	0	330	0	48	0	893	218	217	1209	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	330	0	48	0	893	218	217	1209	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	330	0	48	0	893	218	217	1209	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	330	0	48	0	893	0	217	1209	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	330	0	48	0	893	0	217	1209	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	330	0	48	0	893	0	217	1209	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.19	0.00	0.03	0.00	0.24	0.00	0.12	0.32	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	36.8	0.0	36.8	0.0	45.9	0.0	24.2	70.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.59	0.00	0.09	0.00	0.59	0.00	0.59	0.53	0.00
Delay/Veh:	0.0	0.0	0.0	35.0	0.0	27.8	0.0	28.3	0.0	44.1	13.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.0	0.0	27.8	0.0	28.3	0.0	44.1	13.5	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	11	0	1	0	13	0	8	12	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

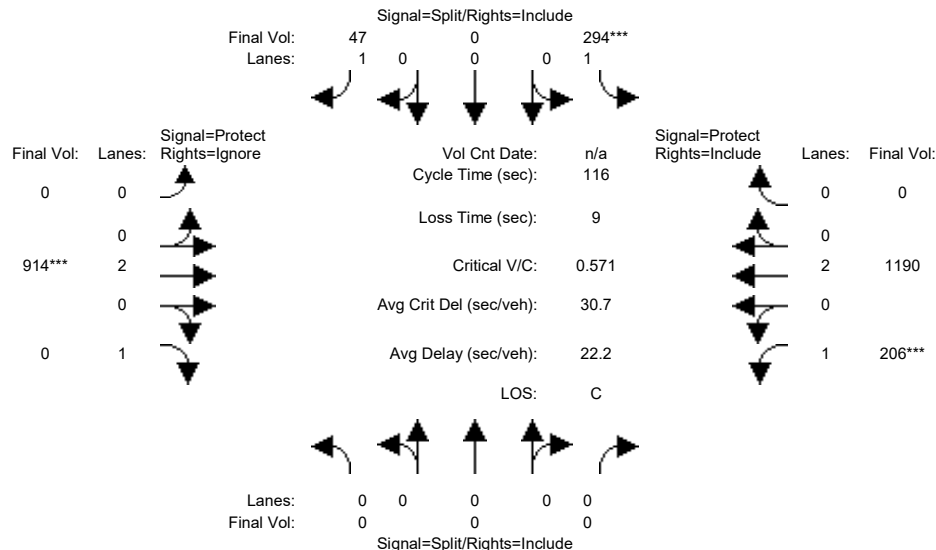


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	294	0	47	0	885	182	206	1221	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	294	0	47	0	885	182	206	1221	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	294	0	47	0	885	182	206	1221	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	294	0	47	0	885	0	206	1221	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	294	0	47	0	885	0	206	1221	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	294	0	47	0	885	0	206	1221	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.23	0.00	0.12	0.32	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	34.7	0.0	34.7	0.0	48.1	0.0	24.3	72.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.09	0.00	0.56	0.00	0.56	0.52	0.00
Delay/Veh:	0.0	0.0	0.0	35.7	0.0	29.4	0.0	26.4	0.0	43.1	12.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.7	0.0	29.4	0.0	26.4	0.0	43.1	12.3	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	12	0	8	12	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

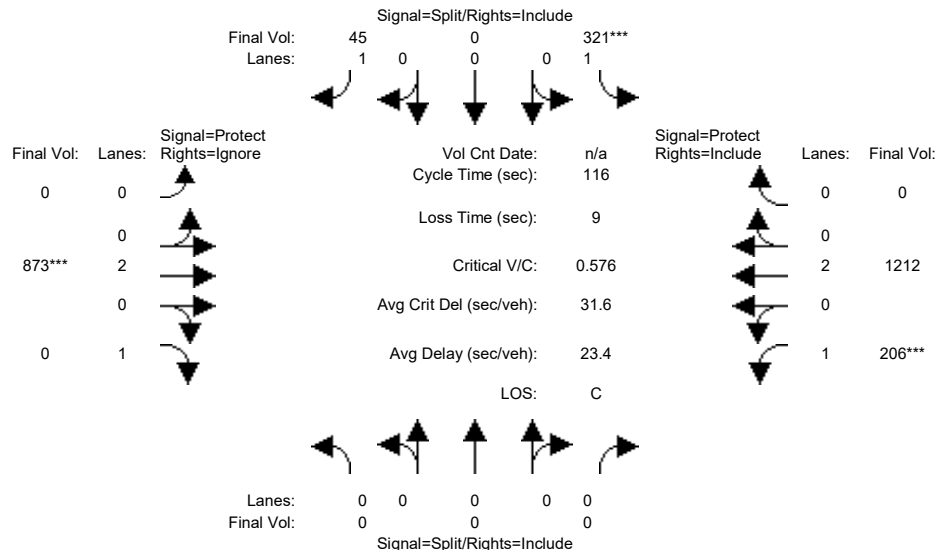


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	294	0	47	0	914	191	206	1190	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	294	0	47	0	914	191	206	1190	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	294	0	47	0	914	191	206	1190	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	294	0	47	0	914	0	206	1190	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	294	0	47	0	914	0	206	1190	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	294	0	47	0	914	0	206	1190	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.24	0.00	0.12	0.31	0.00
Crit Moves:				****			****			****		
Green Time:	0.0	0.0	0.0	34.2	0.0	34.2	0.0	48.9	0.0	23.9	72.8	0.0
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.09	0.00	0.57	0.00	0.57	0.50	0.00
Delay/Veh:	0.0	0.0	0.0	36.2	0.0	29.7	0.0	26.0	0.0	43.6	11.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	36.2	0.0	29.7	0.0	26.0	0.0	43.6	11.9	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	13	0	8	11	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	0	0	0	321	0	45	0	873	215	206	1212	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	321	0	45	0	873	215	206	1212	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	321	0	45	0	873	215	206	1212	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	321	0	45	0	873	0	206	1212	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	321	0	45	0	873	0	206	1212	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	321	0	45	0	873	0	206	1212	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0

Capacity Analysis Module:

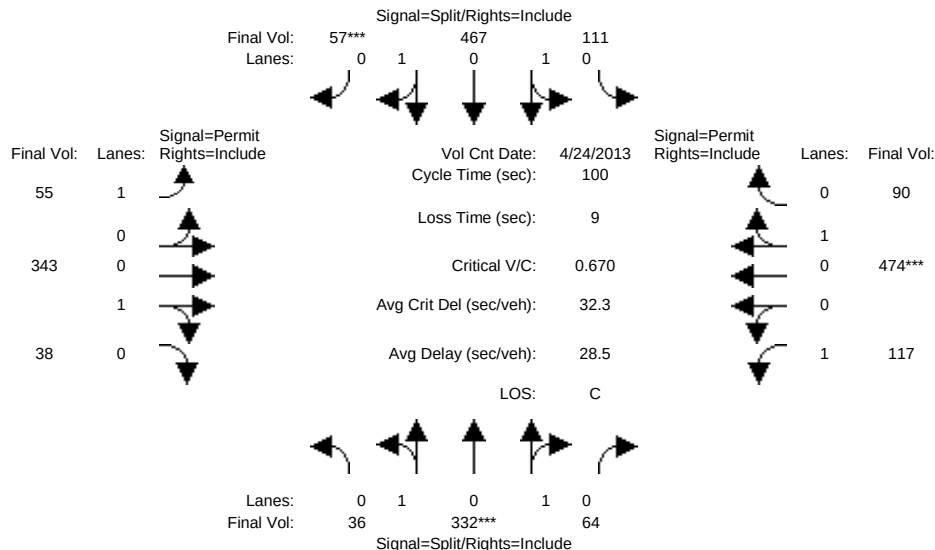
Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.03	0.00	0.23	0.00	0.12	0.32	0.00
Crit Moves:				****				****		****		
Green Time:	0.0	0.0	0.0	37.0	0.0	37.0	0.0	46.3	0.0	23.7	70.0	0.0
Volume/Cap:	0.00	0.00	0.00	0.58	0.00	0.08	0.00	0.58	0.00	0.58	0.53	0.00
Delay/Veh:	0.0	0.0	0.0	34.4	0.0	27.7	0.0	27.7	0.0	43.9	13.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	34.4	0.0	27.7	0.0	27.7	0.0	43.9	13.6	0.0
LOS by Move:	A	A	A	C	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	11	0	1	0	12	0	8	12	0

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #15: Middlefield Road & University Avenue

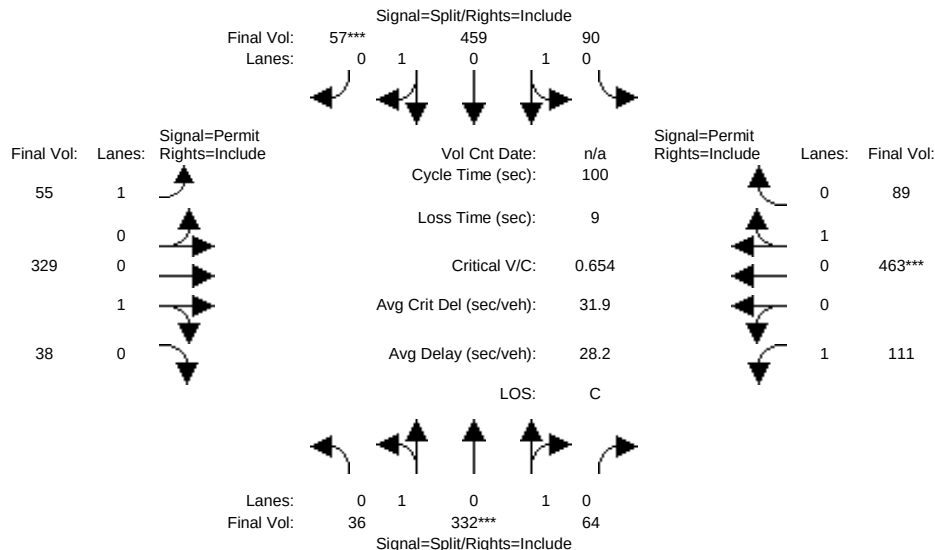


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Apr 2013 << PM												
Base Vol:	36	332	64	111	467	57	55	343	38	117	474	90
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	332	64	111	467	57	55	343	38	117	474	90
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	332	64	111	467	57	55	343	38	117	474	90
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	332	64	111	467	57	55	343	38	117	474	90
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	332	64	111	467	57	55	343	38	117	474	90
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	36	332	64	111	467	57	55	343	38	117	474	90
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.17	1.54	0.29	0.35	1.47	0.18	1.00	0.90	0.10	1.00	0.84	0.16
Final Sat.:	300	2767	533	629	2648	323	1750	1620	180	1750	1513	287
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.18	0.18	0.18	0.03	0.21	0.21	0.07	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	17.9	17.9	17.9	26.3	26.3	26.3	46.8	46.8	46.8	46.8	46.8	46.8
Volume/Cap:	0.67	0.67	0.67	0.67	0.67	0.67	0.07	0.45	0.45	0.14	0.67	0.67
Delay/Veh:	41.0	41.0	41.0	34.8	34.8	34.8	14.7	18.4	18.4	15.3	22.7	22.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.0	41.0	41.0	34.8	34.8	34.8	14.7	18.4	18.4	15.3	22.7	22.7
LOS by Move:	D	D	D	C	C	C	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	8	8	2	15	15
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #15: Middlefield Road & University Avenue

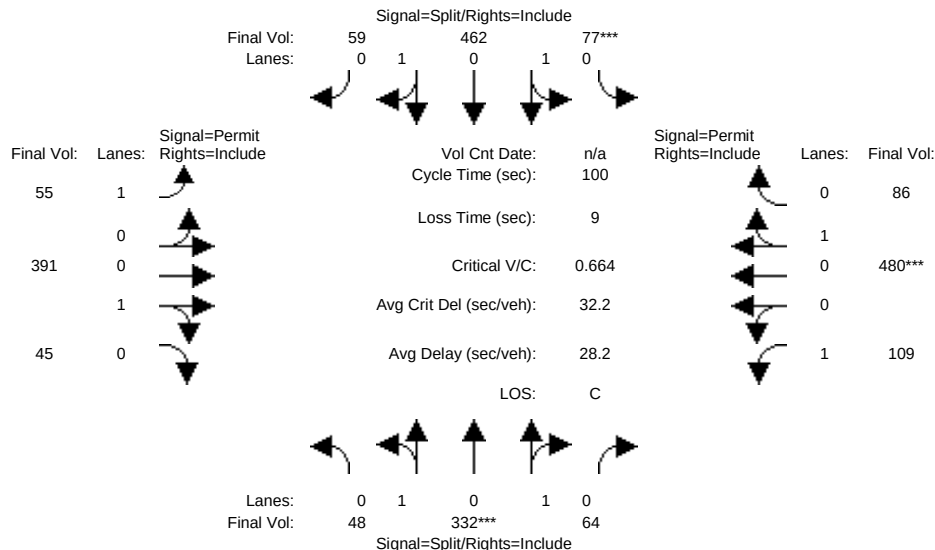


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	36	332	64	90	459	57	55	329	38	111	463	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	36	332	64	90	459	57	55	329	38	111	463	89
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	36	332	64	90	459	57	55	329	38	111	463	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	36	332	64	90	459	57	55	329	38	111	463	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	332	64	90	459	57	55	329	38	111	463	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	36	332	64	90	459	57	55	329	38	111	463	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.17	1.54	0.29	0.30	1.51	0.19	1.00	0.90	0.10	1.00	0.84	0.16
Final Sat.:	300	2767	533	535	2727	339	1750	1614	186	1750	1510	290
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.20	0.20	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	18.4	18.4	18.4	25.7	25.7	25.7	46.9	46.9	46.9	46.9	46.9	46.9
Volume/Cap:	0.65	0.65	0.65	0.65	0.65	0.65	0.07	0.43	0.43	0.14	0.65	0.65
Delay/Veh:	40.2	40.2	40.2	34.8	34.8	34.8	14.6	18.1	18.1	15.1	22.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.2	40.2	40.2	34.8	34.8	34.8	14.6	18.1	18.1	15.1	22.2	22.2
LOS by Move:	D	D	D	C	C	C	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	8	8	2	14	14
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #15: Middlefield Road & University Avenue



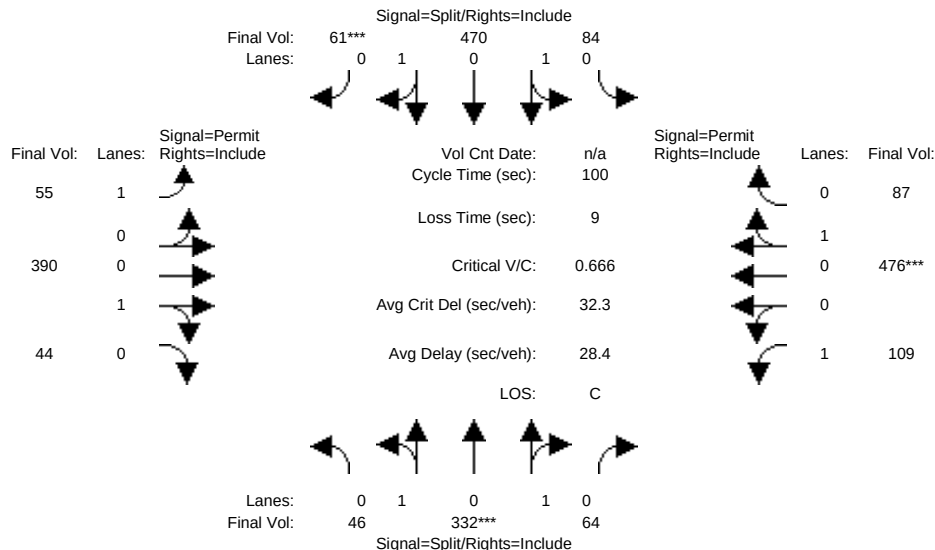
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	48	332	64	77	462	59	55	391	45	109	480	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	48	332	64	77	462	59	55	391	45	109	480	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	332	64	77	462	59	55	391	45	109	480	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	48	332	64	77	462	59	55	391	45	109	480	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	332	64	77	462	59	55	391	45	109	480	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	48	332	64	77	462	59	55	391	45	109	480	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.22	1.49	0.29	0.26	1.54	0.20	1.00	0.90	0.10	1.00	0.85	0.15
Final Sat.:	389	2692	519	464	2781	355	1750	1614	186	1750	1527	273
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.24	0.24	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	18.6	18.6	18.6	25.0	25.0	25.0	47.4	47.4	47.4	47.4	47.4	47.4
Volume/Cap:	0.66	0.66	0.66	0.66	0.66	0.66	0.07	0.51	0.51	0.13	0.66	0.66
Delay/Veh:	40.3	40.3	40.3	35.6	35.6	35.6	14.3	18.8	18.8	14.8	22.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.3	40.3	40.3	35.6	35.6	35.6	14.3	18.8	18.8	14.8	22.2	22.2
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	10	10	2	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #15: Middlefield Road & University Avenue

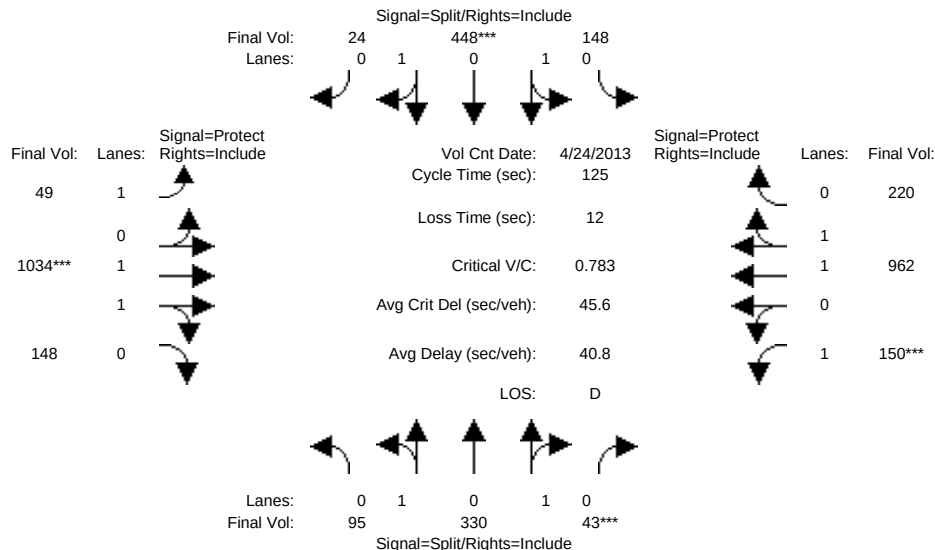


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	46	332	64	84	470	61	55	390	44	109	476	87
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	46	332	64	84	470	61	55	390	44	109	476	87
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	332	64	84	470	61	55	390	44	109	476	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	46	332	64	84	470	61	55	390	44	109	476	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	46	332	64	84	470	61	55	390	44	109	476	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	46	332	64	84	470	61	55	390	44	109	476	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.21	1.50	0.29	0.27	1.53	0.20	1.00	0.90	0.10	1.00	0.85	0.15
Final Sat.:	375	2704	521	492	2751	357	1750	1618	182	1750	1522	278
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.24	0.24	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	18.4	18.4	18.4	25.6	25.6	25.6	46.9	46.9	46.9	46.9	46.9	46.9
Volume/Cap:	0.67	0.67	0.67	0.67	0.67	0.67	0.07	0.51	0.51	0.13	0.67	0.67
Delay/Veh:	40.5	40.5	40.5	35.2	35.2	35.2	14.6	19.1	19.1	15.1	22.5	22.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.5	40.5	40.5	35.2	35.2	35.2	14.6	19.1	19.1	15.1	22.5	22.5
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	10	10	2	15	15
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]

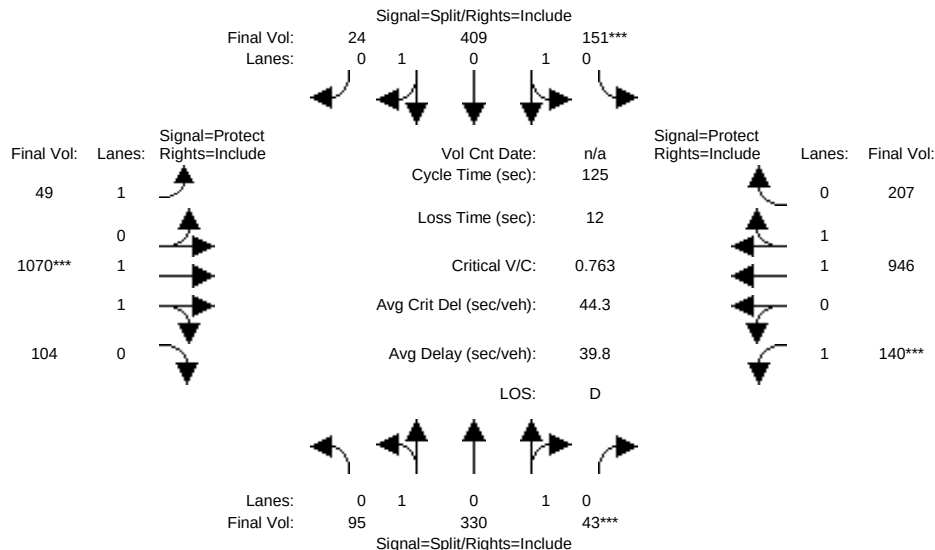


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 24 Apr 2013 << PM											
Base Vol:	95	330	43	148	448	24	49	1034	148	150	962	220
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	148	448	24	49	1034	148	150	962	220
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	148	448	24	49	1034	148	150	962	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	148	448	24	49	1034	148	150	962	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	148	448	24	49	1034	148	150	962	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	148	448	24	49	1034	148	150	962	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.48	1.44	0.08	1.00	1.74	0.26	1.00	1.62	0.38
Final Sat.:	731	2538	331	859	2601	139	1750	3236	463	1750	3011	689
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.17	0.17	0.17	0.03	0.32	0.32	0.09	0.32	0.32
Crit Moves:	****			****			****			****		
Green Time:	20.8	20.8	20.8	27.5	27.5	27.5	9.7	51.0	51.0	13.7	55.1	55.1
Volume/Cap:	0.78	0.78	0.78	0.78	0.78	0.78	0.36	0.78	0.78	0.78	0.73	0.73
Delay/Veh:	56.6	56.6	56.6	51.0	51.0	51.0	56.4	34.9	34.9	72.8	30.4	30.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.6	56.6	56.6	51.0	51.0	51.0	56.4	34.9	34.9	72.8	30.4	30.4
LOS by Move:	E	E	E	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	14	14	14	2	21	21	8	20	20
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



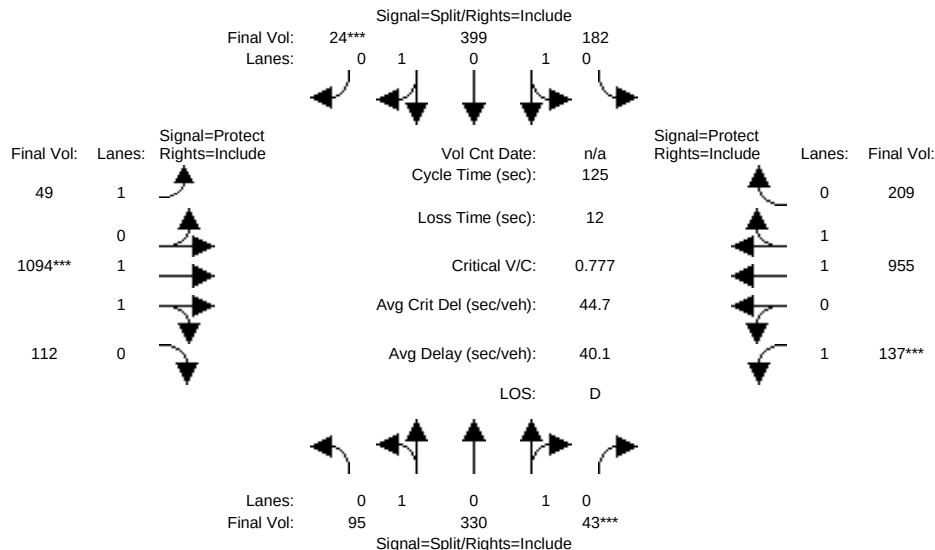
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	151	409	24	49	1070	104	140	946	207
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	151	409	24	49	1070	104	140	946	207
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	151	409	24	49	1070	104	140	946	207
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	151	409	24	49	1070	104	140	946	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	151	409	24	49	1070	104	140	946	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	151	409	24	49	1070	104	140	946	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.52	1.40	0.08	1.00	1.82	0.18	1.00	1.63	0.37
Final Sat.:	731	2538	331	931	2521	148	1750	3372	328	1750	3035	664
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.16	0.16	0.16	0.03	0.32	0.32	0.08	0.31	0.31
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	21.3	21.3	21.3	26.6	26.6	26.6	9.9	52.0	52.0	13.1	55.2	55.2
Volume/Cap:	0.76	0.76	0.76	0.76	0.76	0.76	0.35	0.76	0.76	0.76	0.71	0.71
Delay/Veh:	55.1	55.1	55.1	50.8	50.8	50.8	56.0	33.5	33.5	71.5	29.8	29.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.1	55.1	55.1	50.8	50.8	50.8	56.0	33.5	33.5	71.5	29.8	29.8
LOS by Move:	E	E	E	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	13	13	13	2	21	21	7	19	19

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



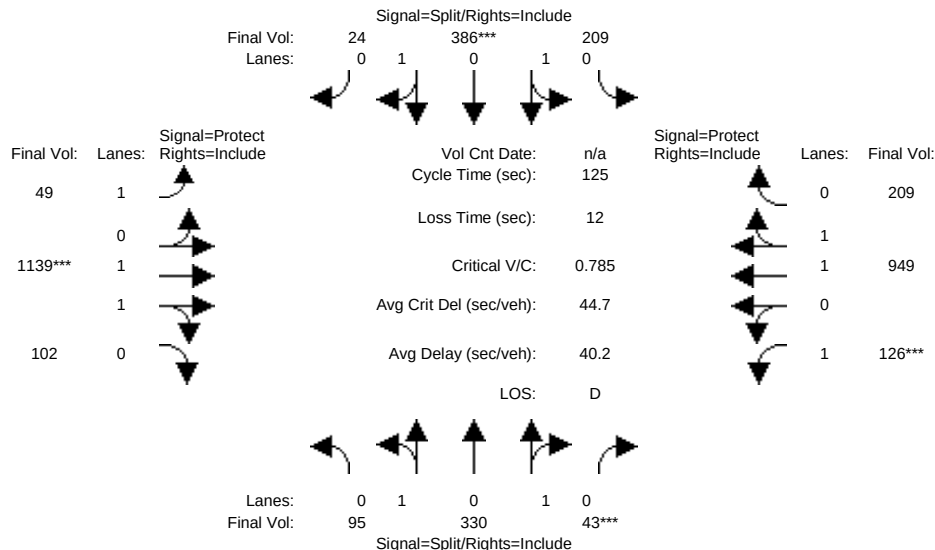
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	182	399	24	49	1094	112	137	955	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	182	399	24	49	1094	112	137	955	209
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	182	399	24	49	1094	112	137	955	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	182	399	24	49	1094	112	137	955	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	182	399	24	49	1094	112	137	955	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	182	399	24	49	1094	112	137	955	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.60	1.32	0.08	1.00	1.81	0.19	1.00	1.63	0.37
Final Sat.:	731	2538	331	1083	2374	143	1750	3356	344	1750	3035	664
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.17	0.17	0.17	0.03	0.33	0.33	0.08	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	20.9	20.9	20.9	27.0	27.0	27.0	9.8	52.4	52.4	12.6	55.2	55.2
Volume/Cap:	0.78	0.78	0.78	0.78	0.78	0.78	0.36	0.78	0.78	0.78	0.71	0.71
Delay/Veh:	56.1	56.1	56.1	51.1	51.1	51.1	56.2	33.8	33.8	74.1	29.9	29.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.1	56.1	56.1	51.1	51.1	51.1	56.2	33.8	33.8	74.1	29.9	29.9
LOS by Move:	E	E	E	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	13	13	13	2	22	22	7	19	19

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for scramble phase AM only]



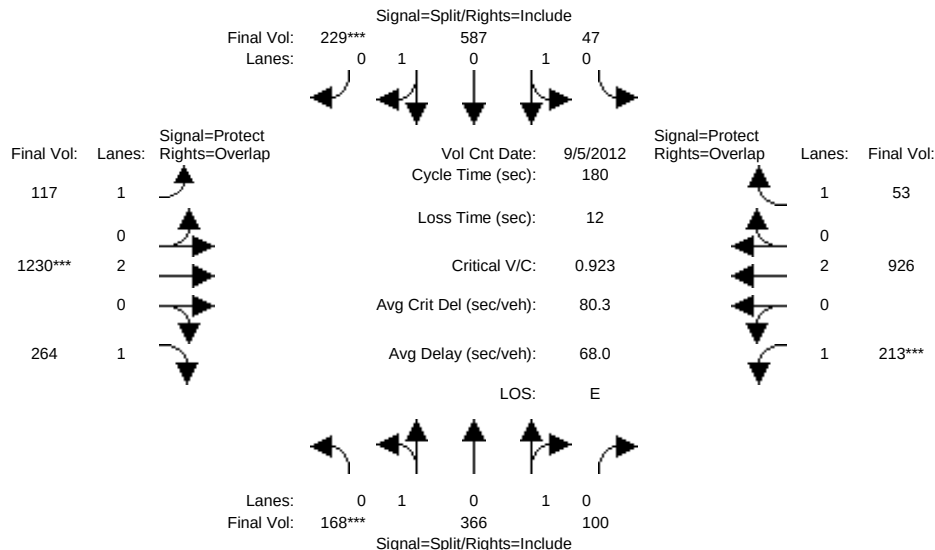
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	209	386	24	49	1139	102	126	949	209
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	209	386	24	49	1139	102	126	949	209
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	209	386	24	49	1139	102	126	949	209
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	209	386	24	49	1139	102	126	949	209
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	209	386	24	49	1139	102	126	949	209
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	209	386	24	49	1139	102	126	949	209
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.67	1.25	0.08	1.00	1.83	0.17	1.00	1.63	0.37
Final Sat.:	731	2538	331	1216	2245	140	1750	3396	304	1750	3032	668
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.17	0.17	0.17	0.03	0.34	0.34	0.07	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	20.7	20.7	20.7	27.4	27.4	27.4	9.8	53.4	53.4	11.5	55.1	55.1
Volume/Cap:	0.78	0.78	0.78	0.78	0.78	0.78	0.36	0.78	0.78	0.78	0.71	0.71
Delay/Veh:	56.8	56.8	56.8	51.2	51.2	51.2	56.1	33.5	33.5	77.5	30.0	30.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	56.8	56.8	56.8	51.2	51.2	51.2	56.1	33.5	33.5	77.5	30.0	30.0
LOS by Move:	E	E	E	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	14	14	14	2	22	22	7	19	19

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

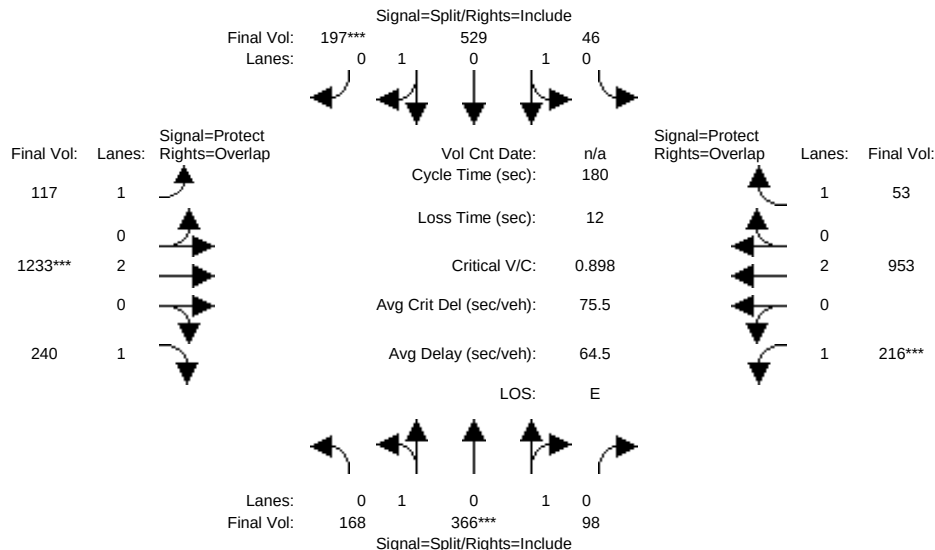


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2012 << 5:30-6:30PM												
Base Vol:	168	366	100	47	587	229	117	1230	264	213	926	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	100	47	587	229	117	1230	264	213	926	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	100	47	587	229	117	1230	264	213	926	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	100	47	587	229	117	1230	264	213	926	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	100	47	587	229	117	1230	264	213	926	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	100	47	587	229	117	1230	264	213	926	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.15	0.32	0.11	1.36	0.53	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	954	2078	568	196	2449	955	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.24	0.24	0.24	0.07	0.32	0.15	0.12	0.24	0.03
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	33.1	33.1	33.1	45.0	45.0	45.0	15.3	67.0	100.1	22.9	74.5	119.6
Volume/Cap:	0.96	0.96	0.96	0.96	0.96	0.96	0.78	0.87	0.27	0.96	0.59	0.05
Delay/Veh:	97.7	97.7	97.7	87.0	87.0	87.0	104.0	58.5	21.0	126.5	41.4	10.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.7	97.7	97.7	87.0	87.0	87.0	104.0	58.5	21.0	126.5	41.4	10.5
LOS by Move:	F	F	F	F	F	F	F	E	C	F	D	B
HCM2kAvgQ:	22	22	22	29	29	29	9	33	8	16	19	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



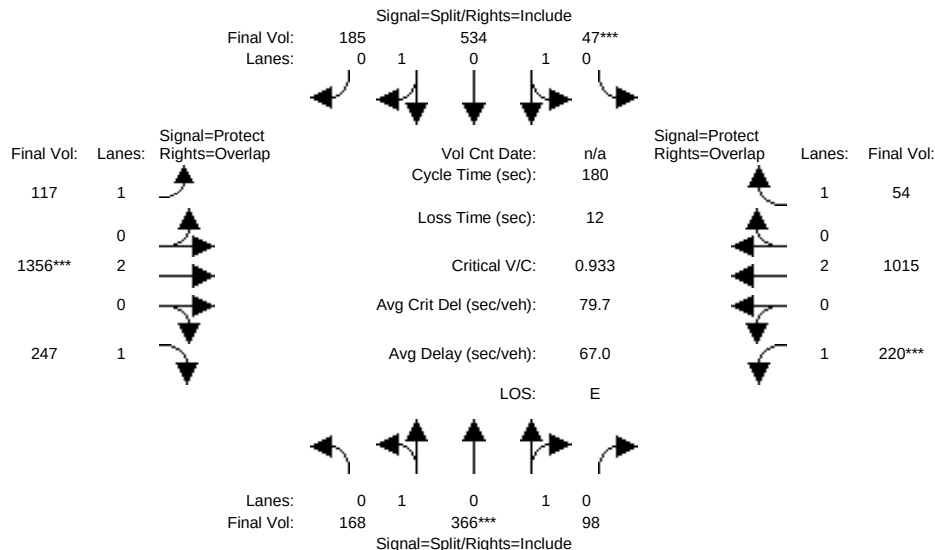
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	46	529	197	117	1233	240	216	953	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	46	529	197	117	1233	240	216	953	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	46	529	197	117	1233	240	216	953	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	46	529	197	117	1233	240	216	953	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	46	529	197	117	1233	240	216	953	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	46	529	197	117	1233	240	216	953	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.12	1.37	0.51	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	215	2467	919	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.21	0.21	0.21	0.07	0.32	0.14	0.12	0.25	0.03
Crit Moves:	****			****			****			****		
Green Time:	34.5	34.5	34.5	42.2	42.2	42.2	15.6	67.0	101.5	24.3	75.7	117.9
Volume/Cap:	0.92	0.92	0.92	0.92	0.92	0.92	0.77	0.87	0.24	0.92	0.60	0.05
Delay/Veh:	88.1	88.1	88.1	81.6	81.6	81.6	101.8	58.7	19.9	113.2	41.0	11.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.1	88.1	88.1	81.6	81.6	81.6	101.8	58.7	19.9	113.2	41.0	11.1
LOS by Move:	F	F	F	F	F	F	F	E	B	F	D	B
HCM2kAvgQ:	21	21	21	25	25	25	8	33	7	16	20	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

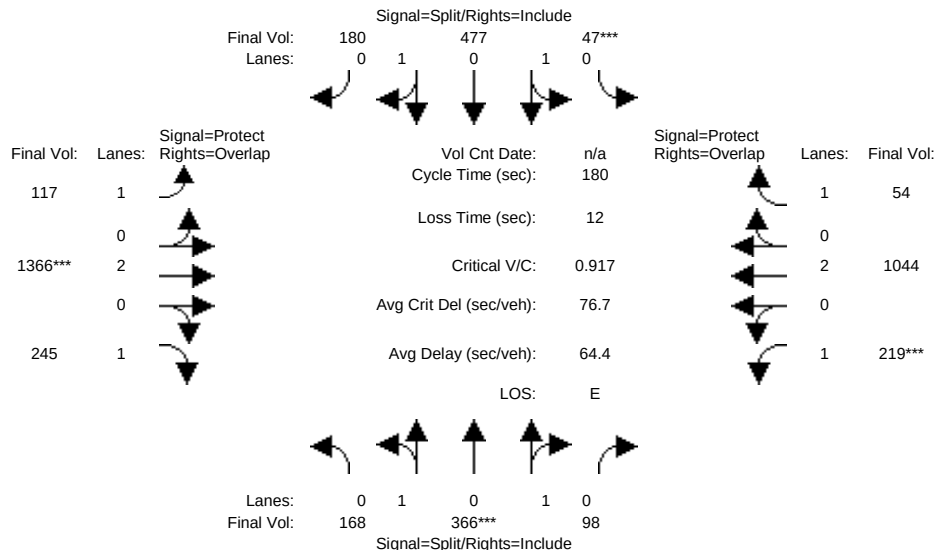


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	47	534	185	117	1356	247	220	1015	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	47	534	185	117	1356	247	220	1015	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	47	534	185	117	1356	247	220	1015	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	47	534	185	117	1356	247	220	1015	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	47	534	185	117	1356	247	220	1015	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	47	534	185	117	1356	247	220	1015	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.12	1.40	0.48	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	221	2510	869	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.21	0.21	0.21	0.07	0.36	0.14	0.13	0.27	0.03
Crit Moves:	****			****			****			****		
Green Time:	33.9	33.9	33.9	41.0	41.0	41.0	15.9	68.8	102.7	24.3	77.2	118.2
Volume/Cap:	0.93	0.93	0.93	0.93	0.93	0.93	0.76	0.93	0.25	0.93	0.62	0.05
Delay/Veh:	91.9	91.9	91.9	85.5	85.5	85.5	99.3	64.6	19.5	117.6	40.8	10.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.9	91.9	91.9	85.5	85.5	85.5	99.3	64.6	19.5	117.6	40.8	10.9
LOS by Move:	F	F	F	F	F	F	F	E	B	F	D	B
HCM2kAvgQ:	22	22	22	26	26	26	8	39	7	16	21	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



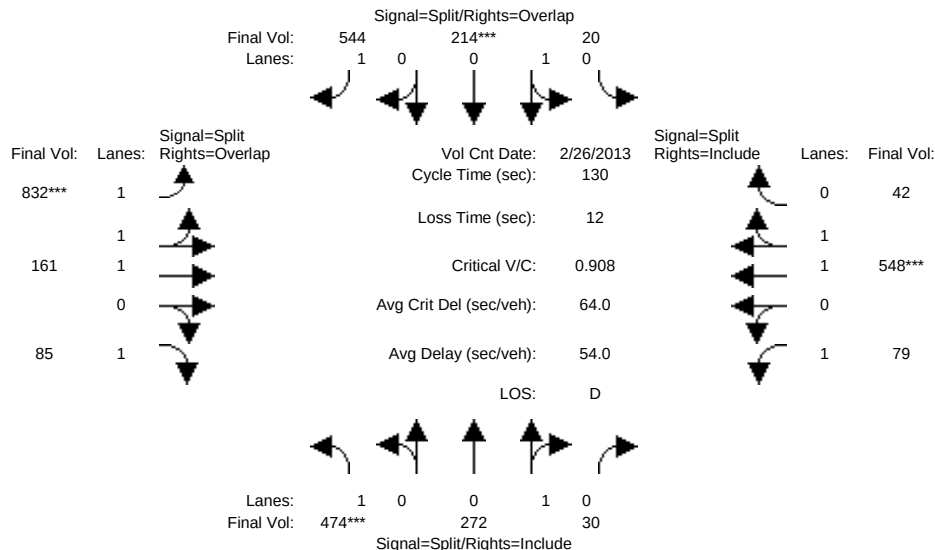
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	47	477	180	117	1366	245	219	1044	54
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	47	477	180	117	1366	245	219	1044	54
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	47	477	180	117	1366	245	219	1044	54
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	47	477	180	117	1366	245	219	1044	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	47	477	180	117	1366	245	219	1044	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	47	477	180	117	1366	245	219	1044	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.13	1.36	0.51	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	240	2439	920	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.20	0.20	0.20	0.07	0.36	0.14	0.13	0.27	0.03
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	34.5	34.5	34.5	38.4	38.4	38.4	16.2	70.6	105.0	24.6	78.9	117.3
Volume/Cap:	0.92	0.92	0.92	0.92	0.92	0.92	0.74	0.92	0.24	0.92	0.63	0.05
Delay/Veh:	88.5	88.5	88.5	85.0	85.0	85.0	96.8	61.2	18.3	113.2	39.9	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.5	88.5	88.5	85.0	85.0	85.0	96.8	61.2	18.3	113.2	39.9	11.3
LOS by Move:	F	F	F	F	F	F	F	E	B	F	D	B
HCM2kAvgQ:	21	21	21	23	23	23	8	39	7	16	22	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 1 PM

Intersection #18: Bayshore Road & Embarcadero Road

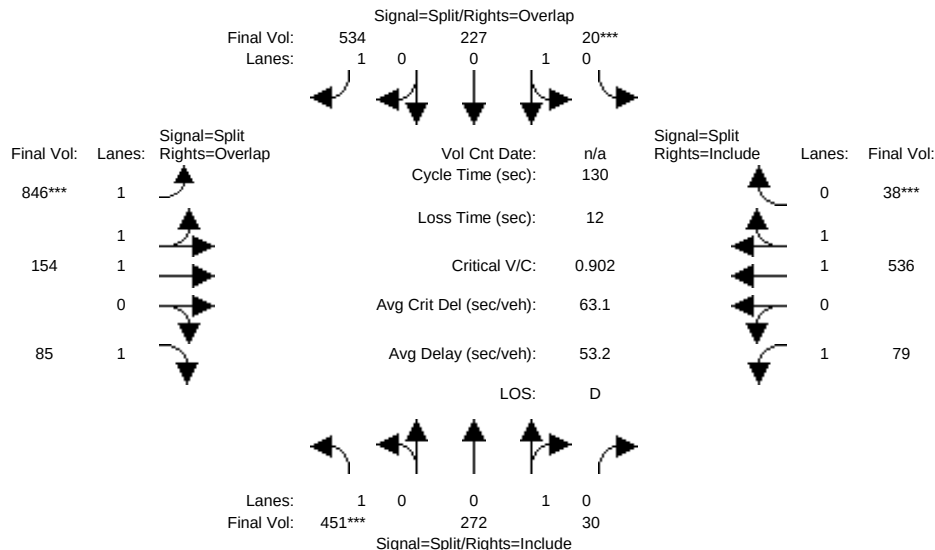


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10		10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 26 Feb 2013 << PM											
Base Vol:	474	272	30	20	214	544	832	161	85	79	548	42
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	474	272	30	20	214	544	832	161	85	79	548	42
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	474	272	30	20	214	544	832	161	85	79	548	42
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	474	272	30	20	214	544	832	161	85	79	548	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	474	272	30	20	214	544	832	161	85	79	548	42
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	474	272	30	20	214	544	832	161	85	79	548	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.09	0.91	1.00	2.00	1.00	1.00	1.00	1.85	0.15
Final Sat.:	1750	1621	179	154	1646	1750	3150	1900	1750	1750	3436	263
Capacity Analysis Module:												
Vol/Sat:	0.27	0.17	0.17	0.13	0.13	0.31	0.26	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***				***		***				***	
Green Time:	38.8	38.8	38.8	18.6	18.6	56.4	37.8	37.8	76.6	22.8	22.8	22.8
Volume/Cap:	0.91	0.56	0.56	0.91	0.91	0.72	0.91	0.29	0.08	0.26	0.91	0.91
Delay/Veh:	63.6	39.8	39.8	87.7	87.7	33.5	55.4	35.8	11.6	46.7	69.2	69.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.6	39.8	39.8	87.7	87.7	33.5	55.4	35.8	11.6	46.7	69.2	69.2
LOS by Move:	E	D	D	F	F	C	E	D	B	D	E	E
HCM2kAvgQ:	23	11	11	13	13	20	23	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 2 PM

Intersection #18: Bayshore Road & Embarcadero Road

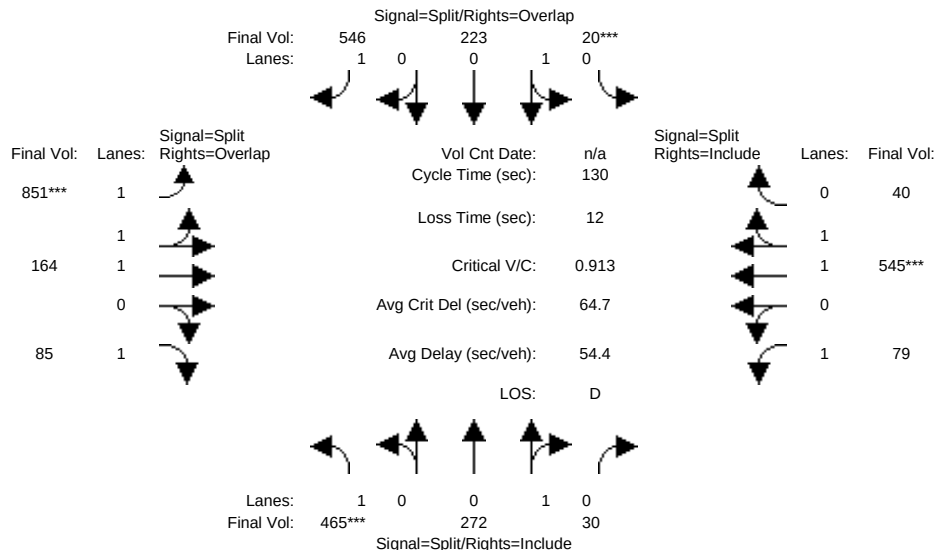


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	451	272	30	20	227	534	846	154	85	79	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	451	272	30	20	227	534	846	154	85	79	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	451	272	30	20	227	534	846	154	85	79	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	451	272	30	20	227	534	846	154	85	79	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	451	272	30	20	227	534	846	154	85	79	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	451	272	30	20	227	534	846	154	85	79	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	146	1654	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.26	0.17	0.17	0.14	0.14	0.31	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	37.1	37.1	37.1	19.8	19.8	58.5	38.7	38.7	75.9	22.4	22.4	22.4
Volume/Cap:	0.90	0.59	0.59	0.90	0.90	0.68	0.90	0.27	0.08	0.26	0.90	0.90
Delay/Veh:	64.1	41.6	41.6	84.4	84.4	30.7	54.0	34.9	11.9	47.1	68.8	68.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.1	41.6	41.6	84.4	84.4	30.7	54.0	34.9	11.9	47.1	68.8	68.8
LOS by Move:	E	D	D	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	22	11	11	13	13	19	23	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 3 PM

Intersection #18: Bayshore Road & Embarcadero Road

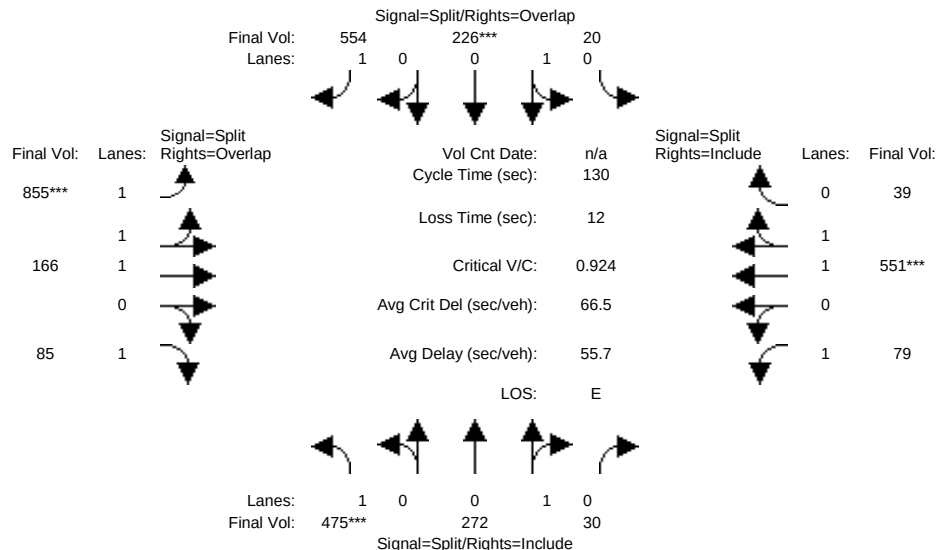


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	465	272	30	20	223	546	851	164	85	79	545	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	465	272	30	20	223	546	851	164	85	79	545	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	465	272	30	20	223	546	851	164	85	79	545	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	465	272	30	20	223	546	851	164	85	79	545	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	465	272	30	20	223	546	851	164	85	79	545	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	465	272	30	20	223	546	851	164	85	79	545	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	148	1652	1750	3150	1900	1750	1750	3447	253
Capacity Analysis Module:												
Vol/Sat:	0.27	0.17	0.17	0.14	0.14	0.31	0.27	0.09	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***				***	
Green Time:	37.8	37.8	37.8	19.2	19.2	57.7	38.5	38.5	76.3	22.5	22.5	22.5
Volume/Cap:	0.91	0.58	0.58	0.91	0.91	0.70	0.91	0.29	0.08	0.26	0.91	0.91
Delay/Veh:	65.4	40.9	40.9	87.7	87.7	32.2	55.5	35.3	11.7	47.0	70.4	70.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.4	40.9	40.9	87.7	87.7	32.2	55.5	35.3	11.7	47.0	70.4	70.4
LOS by Move:	E	D	D	F	F	C	E	D	B	D	E	E
HCM2kAvgQ:	23	11	11	13	13	20	23	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 4 PM

Intersection #18: Bayshore Road & Embarcadero Road

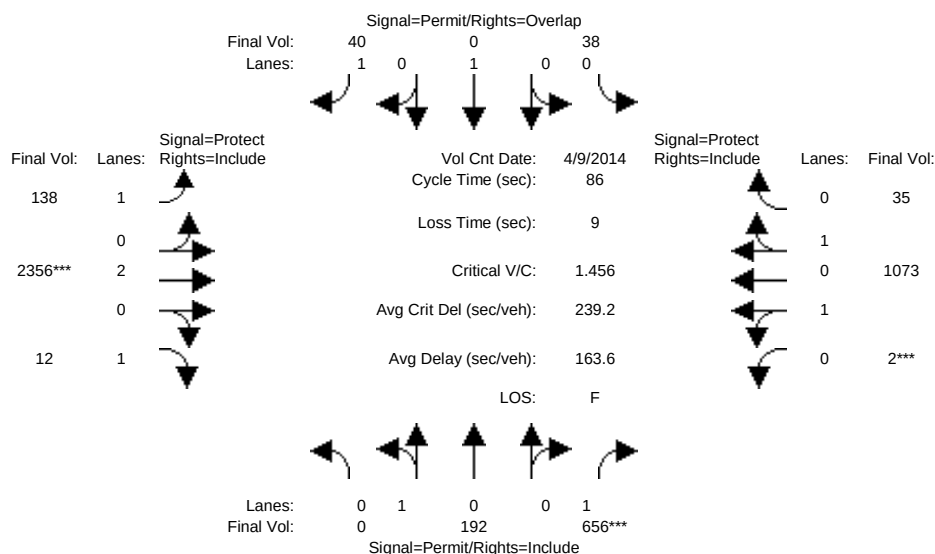


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	475	272	30	20	226	554	855	166	85	79	551	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	475	272	30	20	226	554	855	166	85	79	551	39
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	475	272	30	20	226	554	855	166	85	79	551	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	475	272	30	20	226	554	855	166	85	79	551	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	475	272	30	20	226	554	855	166	85	79	551	39
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	475	272	30	20	226	554	855	166	85	79	551	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	146	1654	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.27	0.17	0.17	0.14	0.14	0.32	0.27	0.09	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***				***	
Green Time:	38.2	38.2	38.2	19.2	19.2	57.4	38.2	38.2	76.4	22.4	22.4	22.4
Volume/Cap:	0.92	0.57	0.57	0.92	0.92	0.72	0.92	0.30	0.08	0.26	0.92	0.92
Delay/Veh:	67.1	40.5	40.5	90.2	90.2	32.9	57.2	35.6	11.7	47.1	72.3	72.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.1	40.5	40.5	90.2	90.2	32.9	57.2	35.6	11.7	47.1	72.3	72.3
LOS by Move:	E	D	D	F	F	C	E	D	B	D	E	E
HCM2kAvgQ:	24	11	11	14	14	20	24	5	2	3	16	16
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

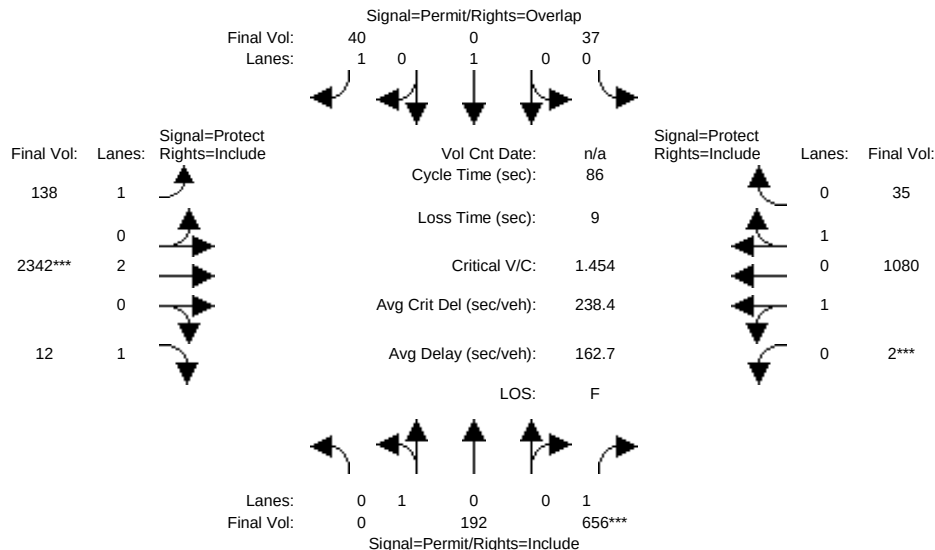


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 9 Apr 2014 << 7:45 AM - 8:45 AM											
Base Vol:	0	192	656	38	0	40	138	2356	12	2	1073	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	38	0	40	138	2356	12	2	1073	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	38	0	40	138	2356	12	2	1073	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	38	0	40	138	2356	12	2	1073	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	38	0	40	138	2356	12	2	1073	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	38	0	40	138	2356	12	2	1073	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3480	114
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:	*****											
Green Time:	0.0	22.1	22.1	22.1	0.0	33.6	11.5	36.6	36.6	18.2	43.4	43.4
Volume/Cap:	0.00	0.41	1.46	0.08	0.00	0.06	0.59	1.46	0.02	1.46	0.61	0.61
Delay/Veh:	0.0	27.1	249.0	24.3	0.0	16.4	39.1	233	14.3	246.2	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	249.0	24.3	0.0	16.4	39.1	233	14.3	246.2	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	77	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

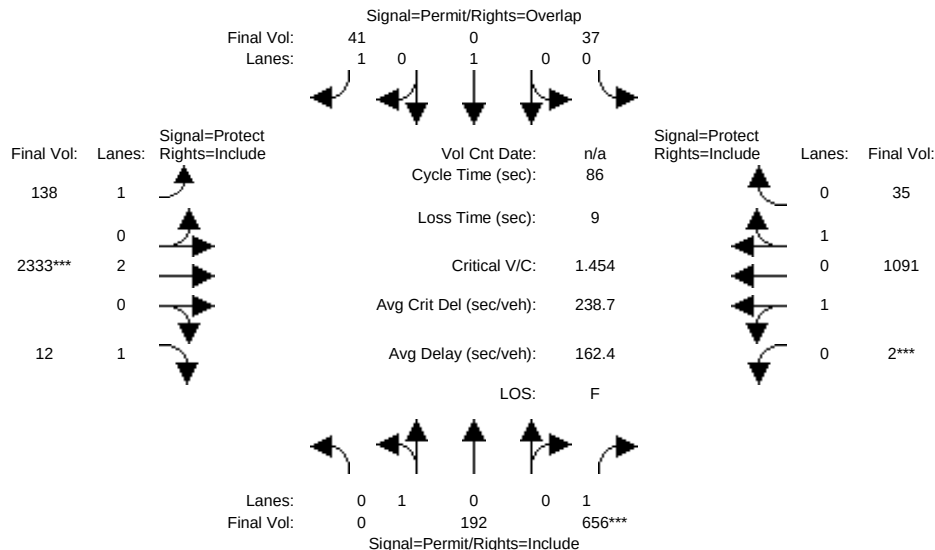


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	37	0	40	138	2342	12	2	1080	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	40	138	2342	12	2	1080	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	40	138	2342	12	2	1080	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	40	138	2342	12	2	1080	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	40	138	2342	12	2	1080	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	40	138	2342	12	2	1080	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3481	113
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.62	0.01	0.31	0.31	0.31
Crit Moves:			****					****		****		
Green Time:	0.0	22.2	22.2	22.2	0.0	33.6	11.4	36.5	36.5	18.4	43.4	43.4
Volume/Cap:	0.00	0.41	1.45	0.08	0.00	0.06	0.60	1.45	0.02	1.45	0.61	0.61
Delay/Veh:	0.0	27.1	248.1	24.3	0.0	16.4	39.3	232	14.4	245.2	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	248.1	24.3	0.0	16.4	39.3	232	14.4	245.2	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	77	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

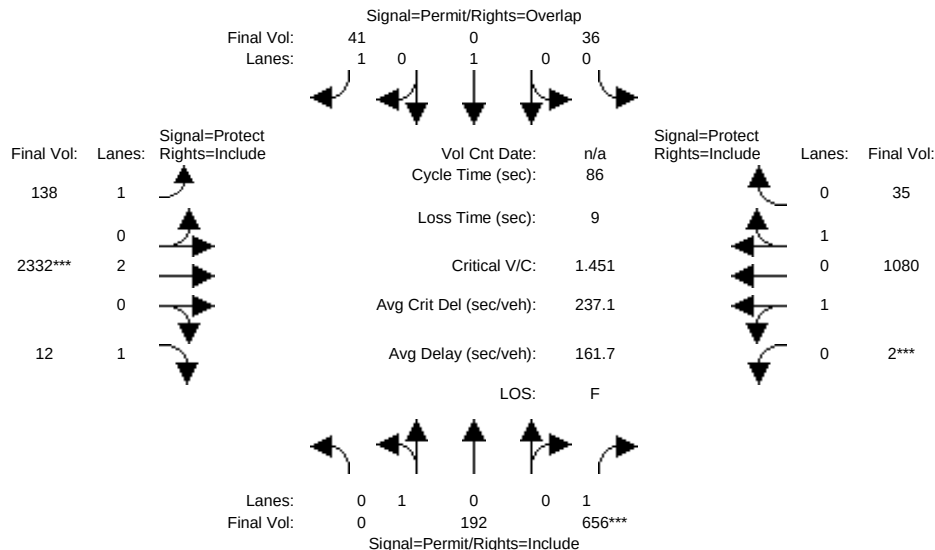


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	37	0	41	138	2333	12	2	1091	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	41	138	2333	12	2	1091	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	41	138	2333	12	2	1091	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	41	138	2333	12	2	1091	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	41	138	2333	12	2	1091	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	41	138	2333	12	2	1091	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3482	112
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.61	0.01	0.31	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	0.0	22.2	22.2	22.2	0.0	33.5	11.3	36.3	36.3	18.5	43.5	43.5
Volume/Cap:	0.00	0.41	1.45	0.08	0.00	0.06	0.60	1.45	0.02	1.45	0.62	0.62
Delay/Veh:	0.0	27.1	248.4	24.3	0.0	16.5	39.6	233	14.5	245.4	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	248.4	24.3	0.0	16.5	39.6	233	14.5	245.4	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	76	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

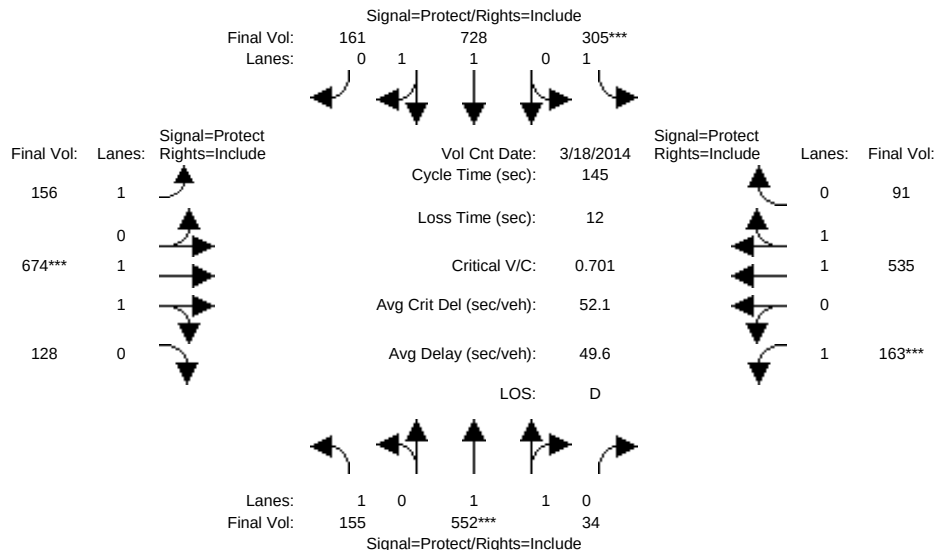


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	36	0	41	138	2332	12	2	1080	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	36	0	41	138	2332	12	2	1080	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	36	0	41	138	2332	12	2	1080	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	36	0	41	138	2332	12	2	1080	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	36	0	41	138	2332	12	2	1080	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	36	0	41	138	2332	12	2	1080	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	6	3481	113
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.61	0.01	0.31	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	0.0	22.2	22.2	22.2	0.0	33.6	11.4	36.4	36.4	18.4	43.4	43.4
Volume/Cap:	0.00	0.41	1.45	0.08	0.00	0.06	0.60	1.45	0.02	1.45	0.61	0.61
Delay/Veh:	0.0	27.1	246.8	24.2	0.0	16.4	39.3	231	14.4	243.9	15.9	15.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	27.1	246.8	24.2	0.0	16.4	39.3	231	14.4	243.9	15.9	15.9
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	48	1	0	1	5	76	0	40	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #2: Middlefield Road & Charleston Road

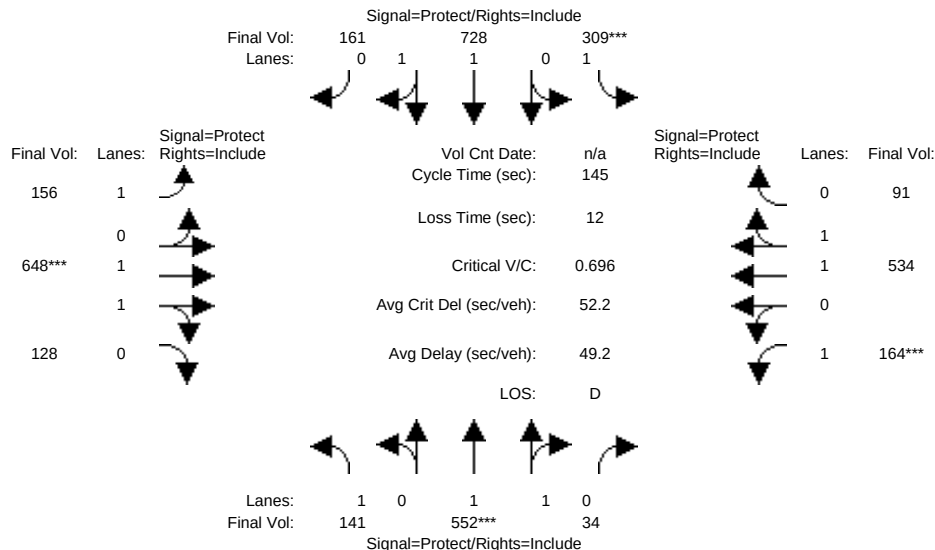


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	155	552	34	305	728	161	156	674	128	163	535	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	155	552	34	305	728	161	156	674	128	163	535	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	155	552	34	305	728	161	156	674	128	163	535	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	155	552	34	305	728	161	156	674	128	163	535	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	155	552	34	305	728	161	156	674	128	163	535	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	155	552	34	305	728	161	156	674	128	163	535	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.67	0.33	1.00	1.70	0.30
Final Sat.:	1750	3485	215	1750	3029	670	1750	3109	590	1750	3162	538
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.16	0.17	0.24	0.24	0.09	0.22	0.22	0.09	0.17	0.17
Crit Moves:	****			****			****			****		
Green Time:	18.5	32.8	32.8	36.1	50.3	50.3	22.1	44.9	44.9	19.3	42.0	42.0
Volume/Cap:	0.69	0.70	0.70	0.70	0.69	0.69	0.58	0.70	0.70	0.70	0.58	0.58
Delay/Veh:	69.5	54.3	54.3	54.6	42.3	42.3	60.4	46.1	46.1	69.3	44.9	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.5	54.3	54.3	54.6	42.3	42.3	60.4	46.1	46.1	69.3	44.9	44.9
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	8	13	13	14	18	18	8	17	17	9	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #2: Middlefield Road & Charleston Road

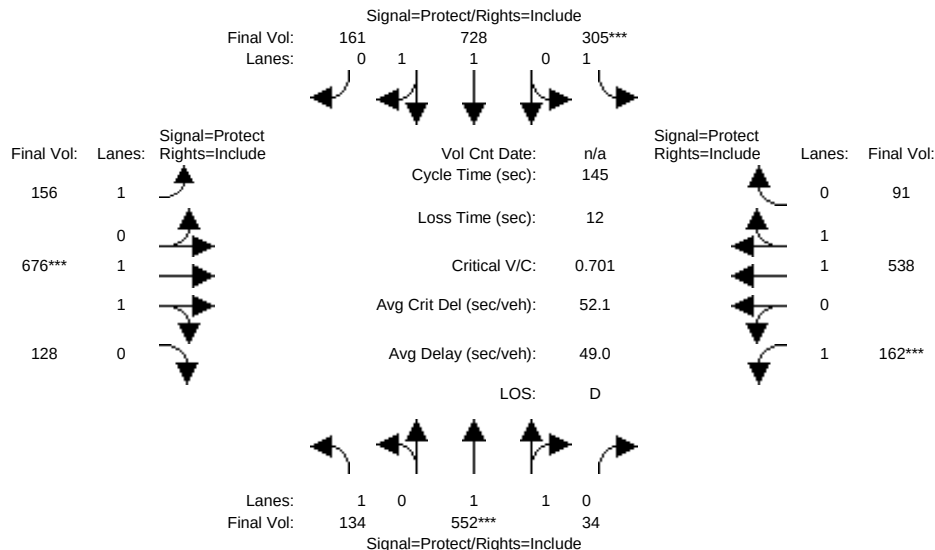


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	141	552	34	309	728	161	156	648	128	164	534	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	141	552	34	309	728	161	156	648	128	164	534	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	552	34	309	728	161	156	648	128	164	534	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	552	34	309	728	161	156	648	128	164	534	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	552	34	309	728	161	156	648	128	164	534	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	141	552	34	309	728	161	156	648	128	164	534	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.66	0.34	1.00	1.70	0.30
Final Sat.:	1750	3485	215	1750	3029	670	1750	3089	610	1750	3161	539
Capacity Analysis Module:												
Vol/Sat:	0.08	0.16	0.16	0.18	0.24	0.24	0.09	0.21	0.21	0.09	0.17	0.17
Crit Moves:	****			****			****			****		
Green Time:	17.5	33.0	33.0	36.8	52.3	52.3	21.8	43.7	43.7	19.5	41.4	41.4
Volume/Cap:	0.67	0.70	0.70	0.70	0.67	0.67	0.59	0.70	0.70	0.70	0.59	0.59
Delay/Veh:	68.8	54.0	54.0	53.8	40.3	40.3	61.0	46.7	46.7	68.7	45.5	45.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8	54.0	54.0	53.8	40.3	40.3	61.0	46.7	46.7	68.7	45.5	45.5
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	8	13	13	14	17	17	8	16	16	9	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #2: Middlefield Road & Charleston Road

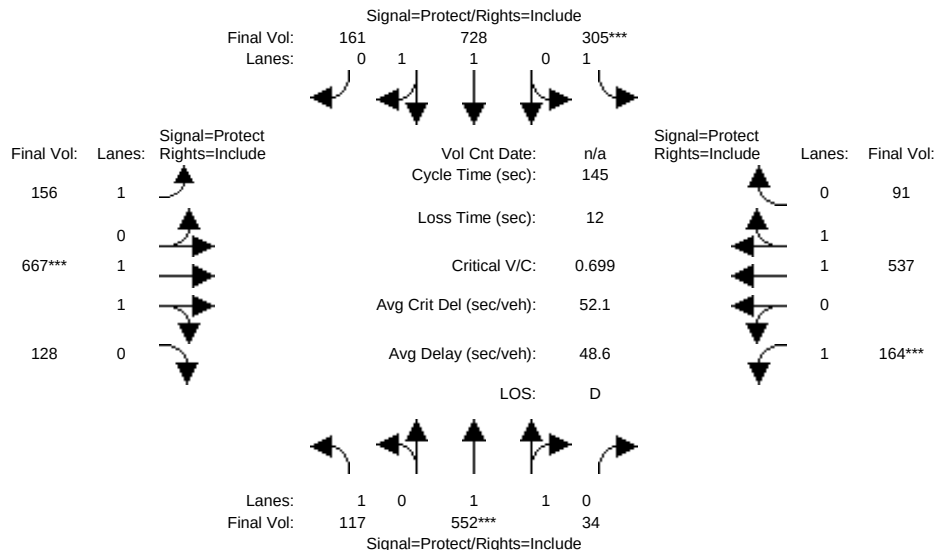


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	134	552	34	305	728	161	156	676	128	162	538	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	134	552	34	305	728	161	156	676	128	162	538	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	134	552	34	305	728	161	156	676	128	162	538	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	134	552	34	305	728	161	156	676	128	162	538	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	552	34	305	728	161	156	676	128	162	538	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	134	552	34	305	728	161	156	676	128	162	538	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.67	0.33	1.00	1.70	0.30
Final Sat.:	1750	3485	215	1750	3029	670	1750	3111	589	1750	3164	535
Capacity Analysis Module:												
Vol/Sat:	0.08	0.16	0.16	0.17	0.24	0.24	0.09	0.22	0.22	0.09	0.17	0.17
Crit Moves:	****			****			****			****		
Green Time:	16.6	32.8	32.8	36.1	52.2	52.2	22.1	45.0	45.0	19.2	42.1	42.1
Volume/Cap:	0.67	0.70	0.70	0.70	0.67	0.67	0.59	0.70	0.70	0.70	0.59	0.59
Delay/Veh:	69.8	54.3	54.3	54.6	40.4	40.4	60.6	46.0	46.0	69.4	44.9	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	54.3	54.3	54.6	40.4	40.4	60.6	46.0	46.0	69.4	44.9	44.9
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	7	13	13	14	17	17	8	17	17	9	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #2: Middlefield Road & Charleston Road

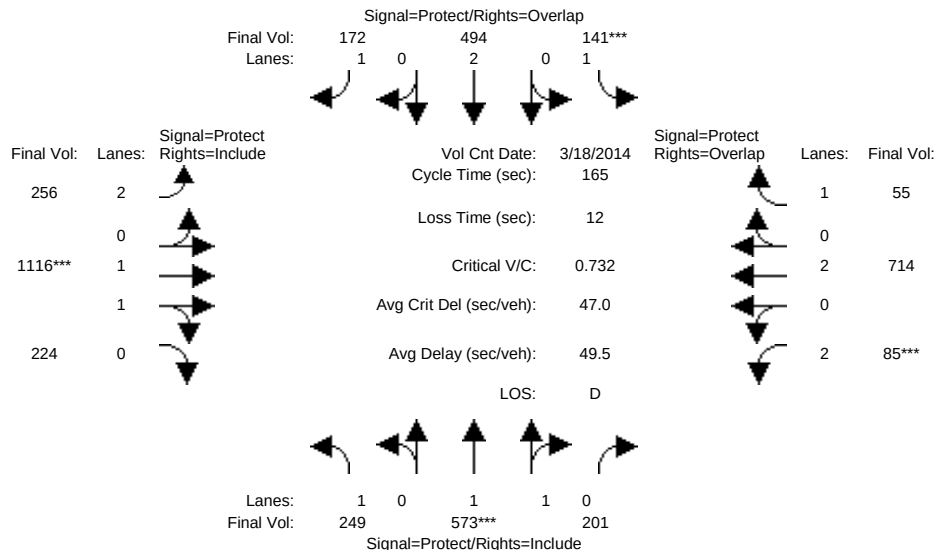


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	117	552	34	305	728	161	156	667	128	164	537	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	552	34	305	728	161	156	667	128	164	537	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	552	34	305	728	161	156	667	128	164	537	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	552	34	305	728	161	156	667	128	164	537	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	552	34	305	728	161	156	667	128	164	537	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	117	552	34	305	728	161	156	667	128	164	537	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.67	0.33	1.00	1.70	0.30
Final Sat.:	1750	3485	215	1750	3029	670	1750	3104	596	1750	3163	536
Capacity Analysis Module:												
Vol/Sat:	0.07	0.16	0.16	0.17	0.24	0.24	0.09	0.21	0.21	0.09	0.17	0.17
Crit Moves:	****			****			****			****		
Green Time:	15.0	32.8	32.8	36.1	54.0	54.0	22.0	44.6	44.6	19.4	42.0	42.0
Volume/Cap:	0.65	0.70	0.70	0.70	0.65	0.65	0.59	0.70	0.70	0.70	0.59	0.59
Delay/Veh:	70.2	54.2	54.2	54.5	38.7	38.7	60.6	46.3	46.3	69.0	44.9	44.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.2	54.2	54.2	54.5	38.7	38.7	60.6	46.3	46.3	69.0	44.9	44.9
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	6	13	13	14	17	17	8	17	17	9	12	12
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

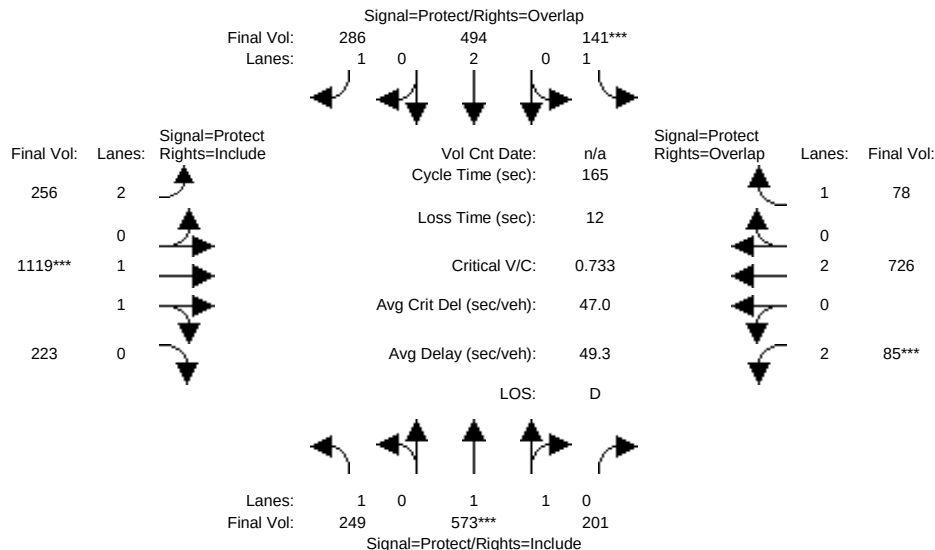


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	249	573	201	141	494	286	256	1116	224	85	714	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	141	494	286	256	1116	224	85	714	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	141	494	286	256	1116	224	85	714	78
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	141	494	172	256	1116	224	85	714	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	141	494	172	256	1116	224	85	714	55
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	141	494	172	256	1116	224	85	714	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	3081	618	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.10	0.08	0.36	0.36	0.03	0.19	0.03
Crit Moves:	****			****			****			****		
Green Time:	33.9	46.9	46.9	18.0	31.0	57.6	26.6	81.1	81.1	7.0	61.5	79.5
Volume/Cap:	0.69	0.74	0.74	0.74	0.69	0.28	0.50	0.74	0.74	0.64	0.50	0.06
Delay/Veh:	66.4	56.3	56.3	85.1	65.5	39.0	64.0	35.1	35.1	87.5	40.3	22.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.4	56.3	56.3	85.1	65.5	39.0	64.0	35.1	35.1	87.5	40.3	22.9
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	19	19	9	13	7	7	28	28	4	14	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

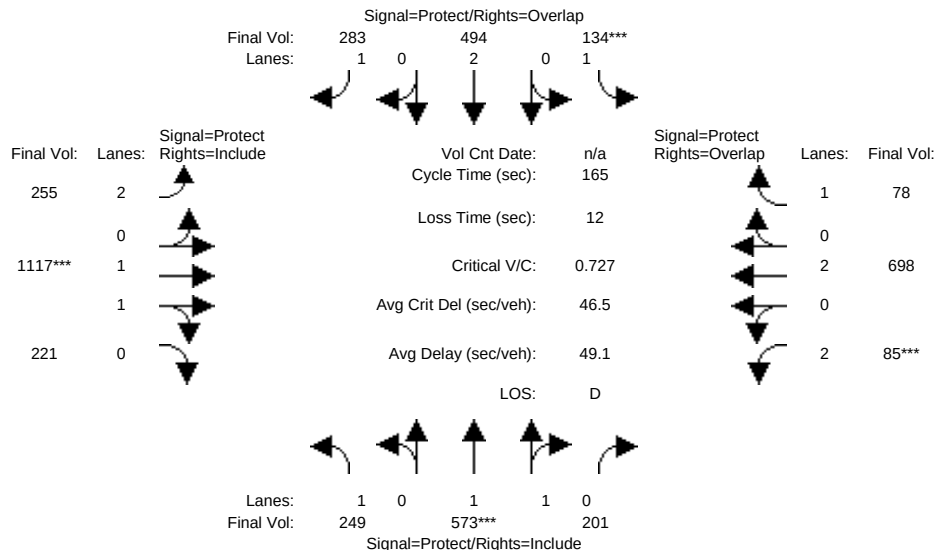


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	249	573	201	141	494	286	256	1119	223	85	726	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	141	494	286	256	1119	223	85	726	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	141	494	286	256	1119	223	85	726	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	141	494	286	256	1119	223	85	726	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	141	494	286	256	1119	223	85	726	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	141	494	286	256	1119	223	85	726	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	3085	615	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.16	0.08	0.36	0.36	0.03	0.19	0.04
Crit Moves:	****			****			****			****		
Green Time:	33.9	46.8	46.8	18.0	31.0	57.3	26.3	81.2	81.2	7.0	61.8	79.9
Volume/Cap:	0.69	0.74	0.74	0.74	0.69	0.47	0.51	0.74	0.74	0.64	0.51	0.09
Delay/Veh:	66.5	56.3	56.3	85.2	65.5	42.6	64.3	35.1	35.1	87.5	40.2	23.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	56.3	56.3	85.2	65.5	42.6	64.3	35.1	35.1	87.5	40.2	23.0
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	19	19	9	13	12	7	28	28	4	14	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

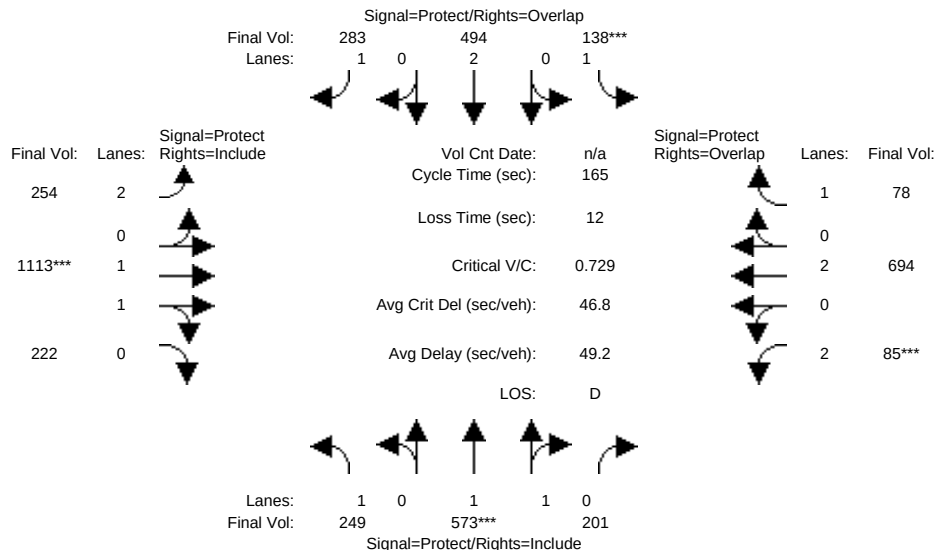


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	249	573	201	134	494	283	255	1117	221	85	698	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	134	494	283	255	1117	221	85	698	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	134	494	283	255	1117	221	85	698	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	134	494	283	255	1117	221	85	698	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	134	494	283	255	1117	221	85	698	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	134	494	283	255	1117	221	85	698	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	3088	611	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.16	0.08	0.36	0.36	0.03	0.18	0.04
Crit Moves:	****			****			****			****		
Green Time:	33.7	47.2	47.2	17.3	30.8	57.9	27.1	81.6	81.6	7.0	61.5	78.7
Volume/Cap:	0.70	0.73	0.73	0.73	0.70	0.46	0.49	0.73	0.73	0.64	0.49	0.09
Delay/Veh:	66.9	55.8	55.8	85.7	65.8	42.0	63.5	34.6	34.6	87.5	40.1	23.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.9	55.8	55.8	85.7	65.8	42.0	63.5	34.6	34.6	87.5	40.1	23.7
LOS by Move:	E	E	E	F	E	D	E	C	C	F	D	C
HCM2kAvgQ:	14	19	19	9	13	12	7	27	27	4	13	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

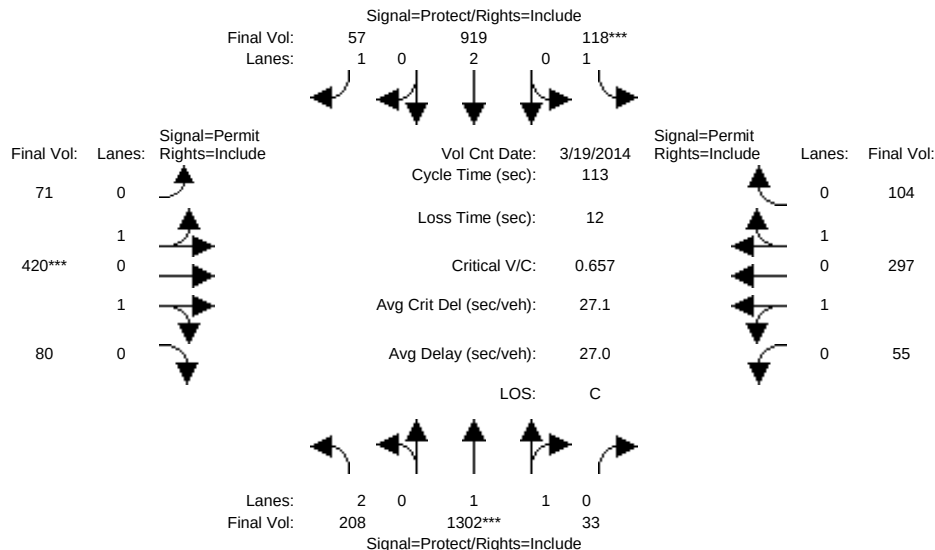


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	249	573	201	138	494	283	254	1113	222	85	694	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	138	494	283	254	1113	222	85	694	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	138	494	283	254	1113	222	85	694	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	138	494	283	254	1113	222	85	694	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	138	494	283	254	1113	222	85	694	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	138	494	283	254	1113	222	85	694	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.66	0.34	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	3084	615	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.16	0.08	0.36	0.36	0.03	0.18	0.04
Crit Moves:	****			****			****			****		
Green Time:	33.9	47.1	47.1	17.7	30.9	58.0	27.0	81.2	81.2	7.0	61.2	78.9
Volume/Cap:	0.69	0.73	0.73	0.73	0.69	0.46	0.49	0.73	0.73	0.64	0.49	0.09
Delay/Veh:	66.5	56.0	56.0	85.2	65.5	42.0	63.5	34.9	34.9	87.5	40.2	23.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	56.0	56.0	85.2	65.5	42.0	63.5	34.9	34.9	87.5	40.2	23.6
LOS by Move:	E	E	E	F	E	D	E	C	C	F	D	C
HCM2kAvgQ:	13	19	19	9	13	12	7	28	28	4	13	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #4: Alma Street & Charleston Road

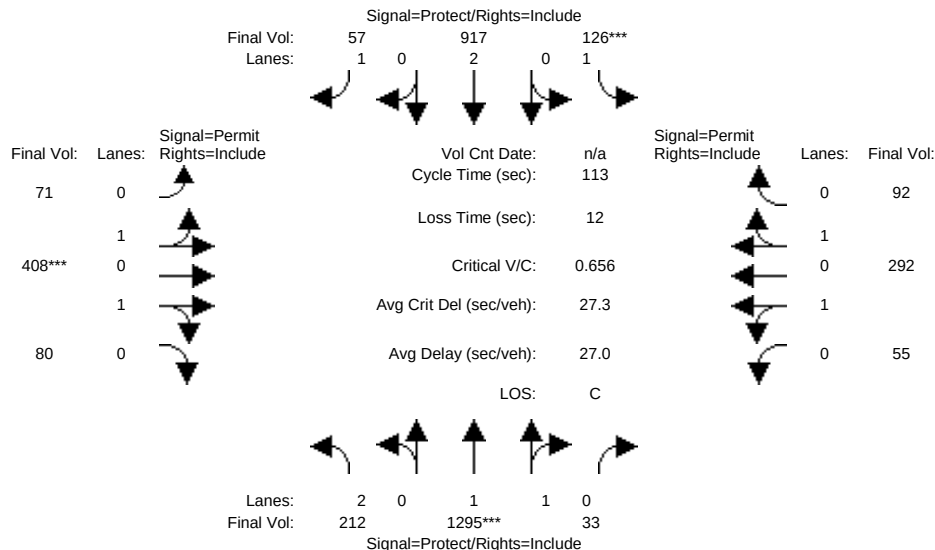


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 19 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	208	1302	33	118	919	57	71	420	80	55	297	104
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	208	1302	33	118	919	57	71	420	80	55	297	104
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	208	1302	33	118	919	57	71	420	80	55	297	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	208	1302	33	118	919	57	71	420	80	55	297	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	208	1302	33	118	919	57	71	420	80	55	297	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	208	1302	33	118	919	57	71	420	80	55	297	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.47	0.28	0.24	1.30	0.46
Final Sat.:	3150	3608	91	1750	3800	1750	448	2648	504	434	2345	821
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.36	0.07	0.24	0.03	0.16	0.16	0.16	0.13	0.13	0.13
Crit Moves:	****			****			****			****		
Green Time:	15.8	62.1	62.1	11.6	57.9	57.9	27.3	27.3	27.3	27.3	27.3	27.3
Volume/Cap:	0.47	0.66	0.66	0.66	0.47	0.06	0.66	0.66	0.66	0.52	0.52	0.52
Delay/Veh:	45.6	18.7	18.7	57.3	17.9	13.9	40.5	40.5	40.5	37.8	37.8	37.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	18.7	18.7	57.3	17.9	13.9	40.5	40.5	40.5	37.8	37.8	37.8
LOS by Move:	D	B	B	E	B	B	D	D	D	D	D	D
HCM2kAvgQ:	4	17	17	5	10	1	10	10	10	8	8	8
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #4: Alma Street & Charleston Road

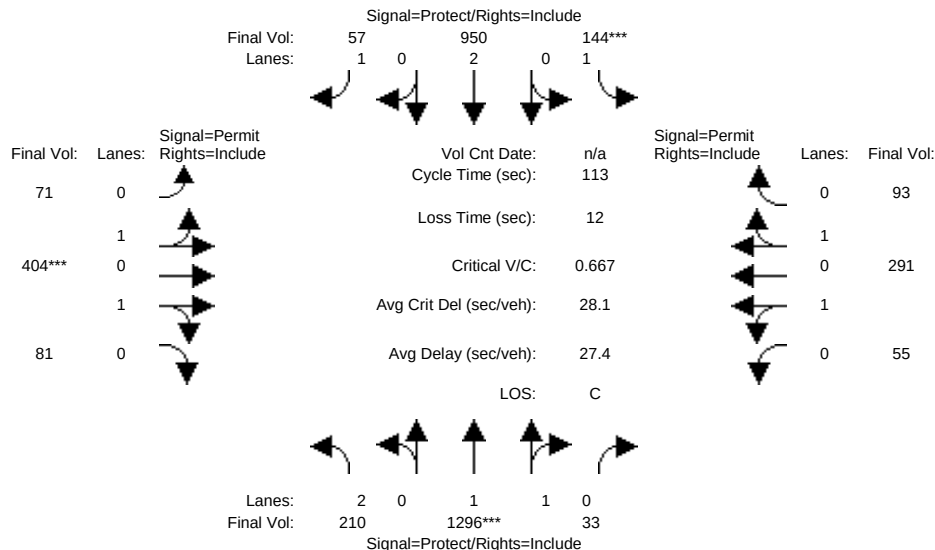


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	212	1295	33	126	917	57	71	408	80	55	292	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	212	1295	33	126	917	57	71	408	80	55	292	92
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	212	1295	33	126	917	57	71	408	80	55	292	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	212	1295	33	126	917	57	71	408	80	55	292	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	212	1295	33	126	917	57	71	408	80	55	292	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	212	1295	33	126	917	57	71	408	80	55	292	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.46	0.29	0.25	1.33	0.42
Final Sat.:	3150	3608	92	1750	3800	1750	457	2628	515	451	2395	754
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.36	0.07	0.24	0.03	0.16	0.16	0.16	0.12	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	16.2	61.8	61.8	12.4	58.1	58.1	26.8	26.8	26.8	26.8	26.8	26.8
Volume/Cap:	0.47	0.66	0.66	0.66	0.47	0.06	0.66	0.66	0.66	0.52	0.52	0.52
Delay/Veh:	45.2	18.9	18.9	56.2	17.8	13.8	40.8	40.8	40.8	38.0	38.0	38.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.2	18.9	18.9	56.2	17.8	13.8	40.8	40.8	40.8	38.0	38.0	38.0
LOS by Move:	D	B	B	E	B	B	D	D	D	D	D	D
HCM2kAvgQ:	5	17	17	6	10	1	10	10	10	7	7	7
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #4: Alma Street & Charleston Road

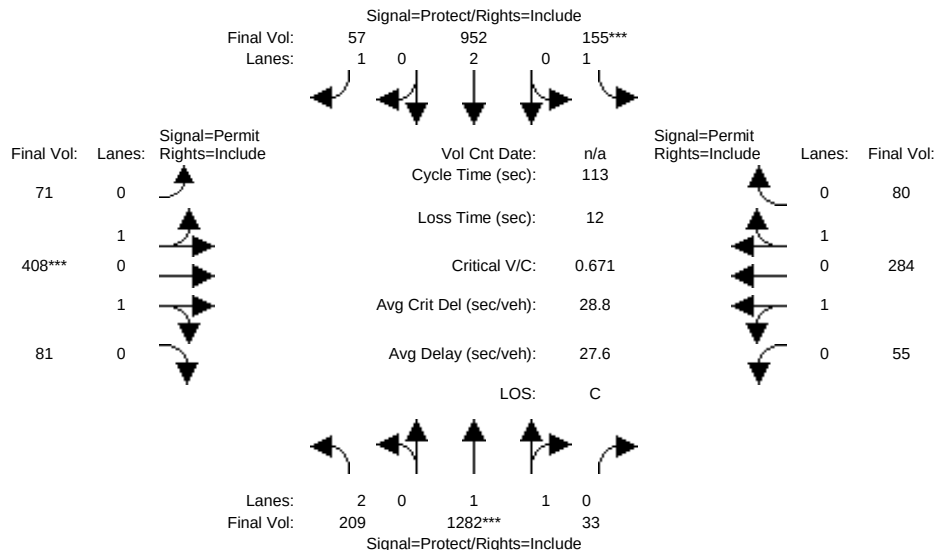


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	210	1296	33	144	950	57	71	404	81	55	291	93
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	210	1296	33	144	950	57	71	404	81	55	291	93
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	210	1296	33	144	950	57	71	404	81	55	291	93
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	210	1296	33	144	950	57	71	404	81	55	291	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	210	1296	33	144	950	57	71	404	81	55	291	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	210	1296	33	144	950	57	71	404	81	55	291	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.26	1.45	0.29	0.25	1.33	0.42
Final Sat.:	3150	3608	92	1750	3800	1750	460	2616	524	451	2386	763
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.36	0.08	0.25	0.03	0.15	0.15	0.15	0.12	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	15.8	60.9	60.9	13.9	59.1	59.1	26.2	26.2	26.2	26.2	26.2	26.2
Volume/Cap:	0.48	0.67	0.67	0.67	0.48	0.06	0.67	0.67	0.67	0.53	0.53	0.53
Delay/Veh:	45.7	19.6	19.6	55.0	17.3	13.3	41.5	41.5	41.5	38.6	38.6	38.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	19.6	19.6	55.0	17.3	13.3	41.5	41.5	41.5	38.6	38.6	38.6
LOS by Move:	D	B	B	E	B	B	D	D	D	D	D	D
HCM2kAvgQ:	5	17	17	6	10	1	10	10	10	7	7	7
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #4: Alma Street & Charleston Road

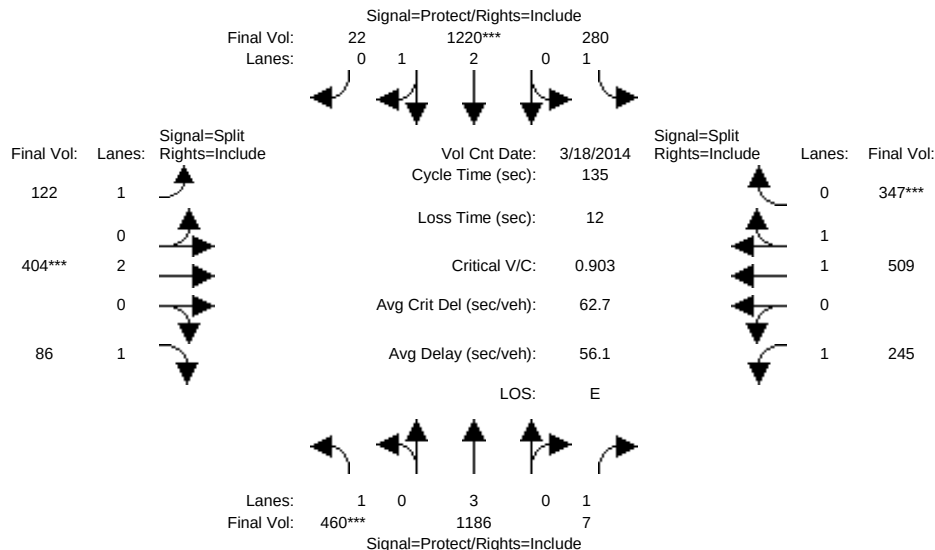


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	209	1282	33	155	952	57	71	408	81	55	284	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	209	1282	33	155	952	57	71	408	81	55	284	80
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	209	1282	33	155	952	57	71	408	81	55	284	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	209	1282	33	155	952	57	71	408	81	55	284	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	209	1282	33	155	952	57	71	408	81	55	284	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	209	1282	33	155	952	57	71	408	81	55	284	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.46	0.29	0.26	1.36	0.38
Final Sat.:	3150	3607	93	1750	3800	1750	456	2623	521	473	2440	687
Capacity Analysis Module:												
Vol/Sat:	0.07	0.36	0.36	0.09	0.25	0.03	0.16	0.16	0.16	0.12	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	15.7	59.9	59.9	14.9	59.1	59.1	26.2	26.2	26.2	26.2	26.2	26.2
Volume/Cap:	0.48	0.67	0.67	0.67	0.48	0.06	0.67	0.67	0.67	0.50	0.50	0.50
Delay/Veh:	45.7	20.3	20.3	54.2	17.3	13.3	41.6	41.6	41.6	38.2	38.2	38.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	20.3	20.3	54.2	17.3	13.3	41.6	41.6	41.6	38.2	38.2	38.2
LOS by Move:	D	C	C	D	B	B	D	D	D	D	D	D
HCM2kAvgQ:	5	17	17	7	10	1	10	10	10	7	7	7
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

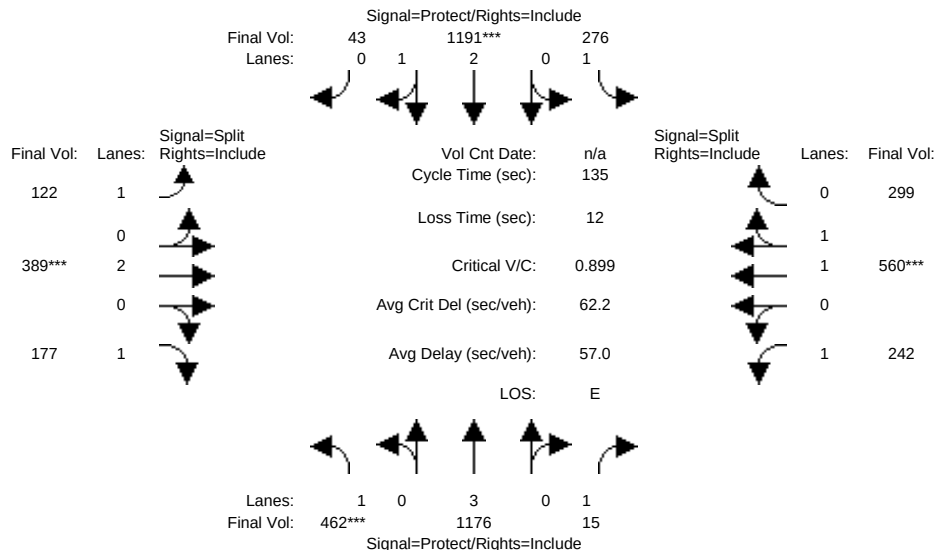


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM												
Base Vol:	460	1186	14	280	1220	43	122	404	172	245	509	347
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	460	1186	14	280	1220	43	122	404	172	245	509	347
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	460	1186	14	280	1220	43	122	404	172	245	509	347
User Adj:	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	460	1186	7	280	1220	22	122	404	86	245	509	347
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	460	1186	7	280	1220	22	122	404	86	245	509	347
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	460	1186	7	280	1220	22	122	404	86	245	509	347
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.17	0.83
Final Sat.:	1750	5700	1750	1750	5503	97	1750	3800	1750	1750	2199	1499
Capacity Analysis Module:												
Vol/Sat:	0.26	0.21	0.00	0.16	0.22	0.22	0.07	0.11	0.05	0.14	0.23	0.23
Crit Moves:	***			***			***					***
Green Time:	39.3	41.0	41.0	31.5	33.2	33.2	15.9	15.9	15.9	34.6	34.6	34.6
Volume/Cap:	0.90	0.69	0.01	0.69	0.90	0.90	0.59	0.90	0.42	0.55	0.90	0.90
Delay/Veh:	65.2	42.5	32.9	52.0	57.9	57.9	61.0	80.0	56.6	44.8	60.3	60.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.2	42.5	32.9	52.0	57.9	57.9	61.0	80.0	56.6	44.8	60.3	60.3
LOS by Move:	E	D	C	D	E	E	E	E	E	D	E	E
HCM2kAvgQ:	23	15	0	12	20	20	6	11	4	10	21	21
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

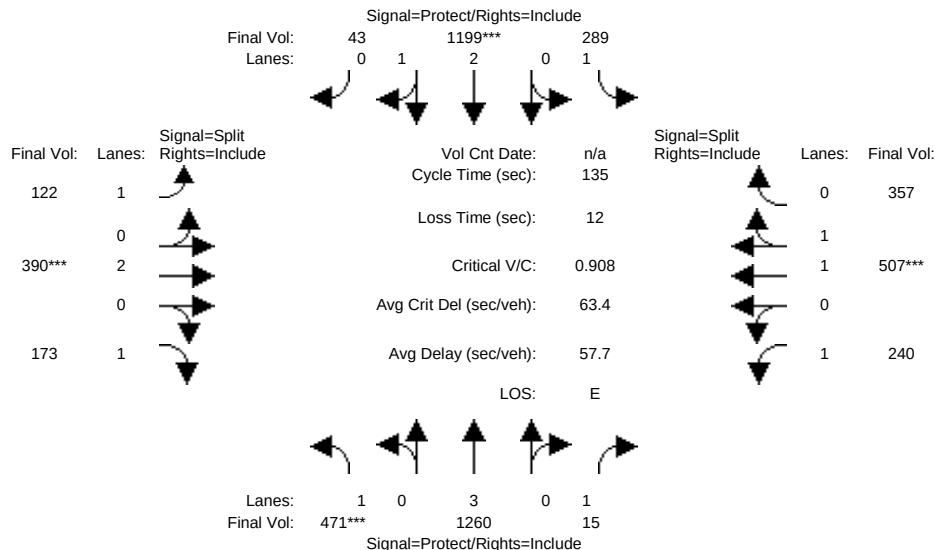


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	462	1176	15	276	1191	43	122	389	177	242	560	299
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	462	1176	15	276	1191	43	122	389	177	242	560	299
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	462	1176	15	276	1191	43	122	389	177	242	560	299
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	462	1176	15	276	1191	43	122	389	177	242	560	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	462	1176	15	276	1191	43	122	389	177	242	560	299
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	462	1176	15	276	1191	43	122	389	177	242	560	299
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.28	0.72
Final Sat.:	1750	5700	1750	1750	5405	195	1750	3800	1750	1750	2411	1287
Capacity Analysis Module:												
Vol/Sat:	0.26	0.21	0.01	0.16	0.22	0.22	0.07	0.10	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***			***		
Green Time:	39.6	41.2	41.2	31.5	33.1	33.1	15.4	15.4	15.4	34.9	34.9	34.9
Volume/Cap:	0.90	0.68	0.03	0.68	0.90	0.90	0.61	0.90	0.89	0.54	0.90	0.90
Delay/Veh:	64.3	42.1	32.9	51.5	57.6	57.6	62.5	80.2	93.8	44.3	59.6	59.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.3	42.1	32.9	51.5	57.6	57.6	62.5	80.2	93.8	44.3	59.6	59.6
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	23	15	0	12	20	20	6	11	11	10	21	21
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)



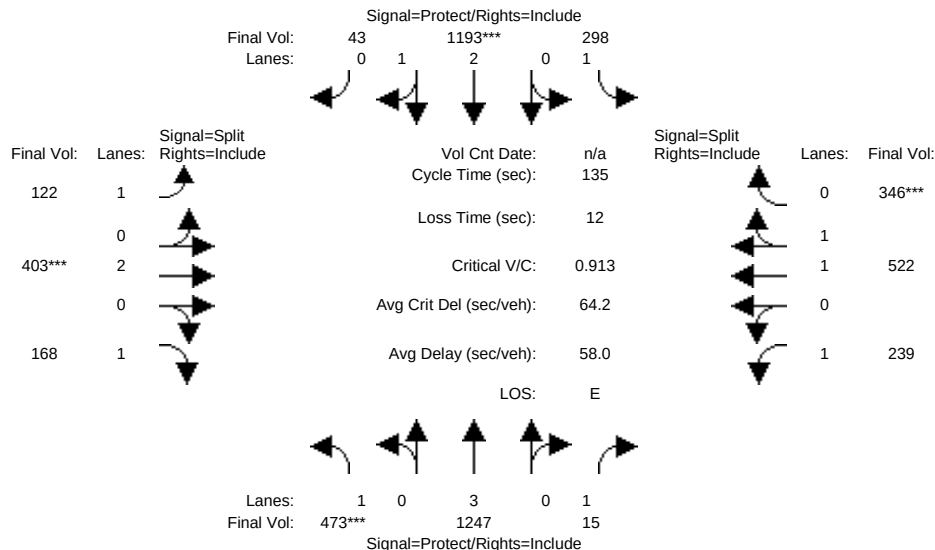
Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	471	1260	15	289	1199	43	122	390	173	240	507	357
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	471	1260	15	289	1199	43	122	390	173	240	507	357
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	471	1260	15	289	1199	43	122	390	173	240	507	357
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	471	1260	15	289	1199	43	122	390	173	240	507	357
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	471	1260	15	289	1199	43	122	390	173	240	507	357
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	471	1260	15	289	1199	43	122	390	173	240	507	357
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.15	0.85
Final Sat.:	1750	5700	1750	1750	5406	194	1750	3800	1750	1750	2170	1528
Capacity Analysis Module:												
Vol/Sat:	0.27	0.22	0.01	0.17	0.22	0.22	0.07	0.10	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***			***		
Green Time:	40.0	41.8	41.8	31.2	33.0	33.0	15.3	15.3	15.3	34.7	34.7	34.7
Volume/Cap:	0.91	0.71	0.03	0.71	0.91	0.91	0.62	0.91	0.87	0.53	0.91	0.91
Delay/Veh:	65.5	42.7	32.5	53.7	58.6	58.6	62.8	81.9	91.2	44.4	60.8	60.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	42.7	32.5	53.7	58.6	58.6	62.8	81.9	91.2	44.4	60.8	60.8
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	24	16	0	13	20	20	6	11	10	10	21	21

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

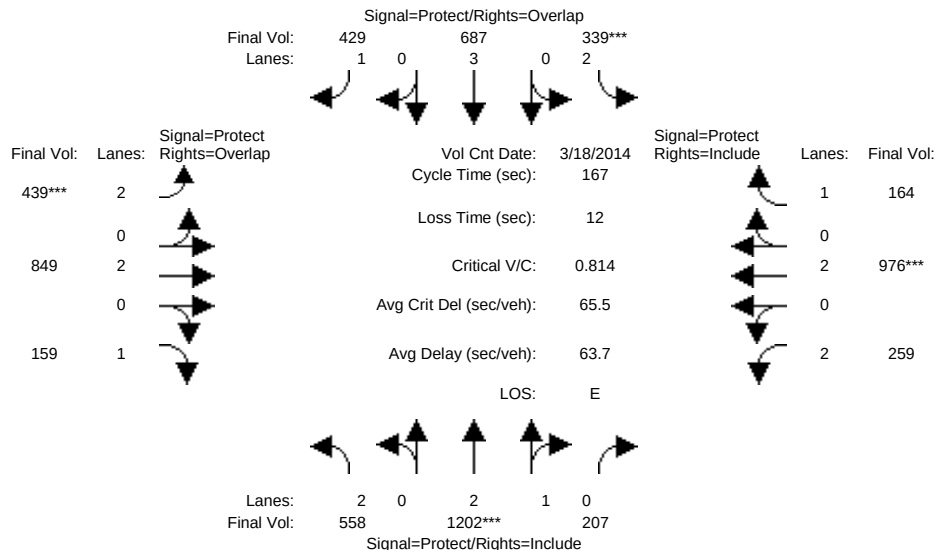


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	473	1247	15	298	1193	43	122	403	168	239	522	346
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	473	1247	15	298	1193	43	122	403	168	239	522	346
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	473	1247	15	298	1193	43	122	403	168	239	522	346
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	473	1247	15	298	1193	43	122	403	168	239	522	346
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	473	1247	15	298	1193	43	122	403	168	239	522	346
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	473	1247	15	298	1193	43	122	403	168	239	522	346
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.18	0.82
Final Sat.:	1750	5700	1750	1750	5405	195	1750	3800	1750	1750	2224	1474
Capacity Analysis Module:												
Vol/Sat:	0.27	0.22	0.01	0.17	0.22	0.22	0.07	0.11	0.10	0.14	0.23	0.23
Crit Moves:	***			***			***					***
Green Time:	40.0	40.8	40.8	31.8	32.6	32.6	15.7	15.7	15.7	34.7	34.7	34.7
Volume/Cap:	0.91	0.72	0.03	0.72	0.91	0.91	0.60	0.91	0.83	0.53	0.91	0.91
Delay/Veh:	66.4	43.6	33.2	53.8	59.4	59.4	61.6	82.1	81.7	44.4	61.5	61.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.4	43.6	33.2	53.8	59.4	59.4	61.6	82.1	81.7	44.4	61.5	61.5
LOS by Move:	E	D	C	D	E	E	E	F	F	D	E	E
HCM2kAvgQ:	24	16	0	13	20	20	6	11	10	9	22	22
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

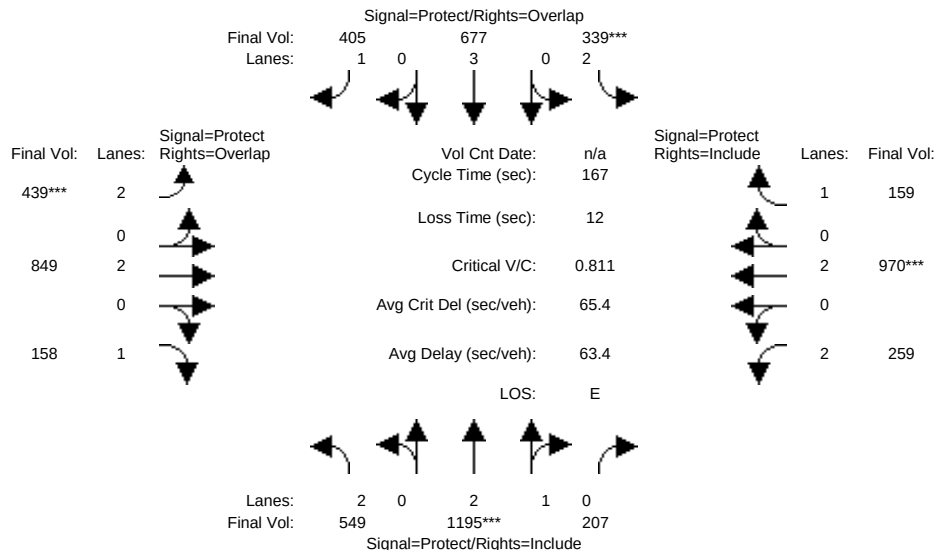


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 18 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	558	1202	207	339	687	429	439	849	159	259	976	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	558	1202	207	339	687	429	439	849	159	259	976	164
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	558	1202	207	339	687	429	439	849	159	259	976	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	558	1202	207	339	687	429	439	849	159	259	976	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	558	1202	207	339	687	429	439	849	159	259	976	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	558	1202	207	339	687	429	439	849	159	259	976	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.54	0.46	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	4776	823	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.25	0.25	0.11	0.12	0.25	0.14	0.22	0.09	0.08	0.26	0.09
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	43.9	51.6	51.6	22.1	29.8	58.4	28.6	59.4	103.3	21.9	52.7	52.7
Volume/Cap:	0.67	0.81	0.81	0.81	0.67	0.70	0.81	0.63	0.15	0.63	0.81	0.30
Delay/Veh:	57.4	56.3	56.3	82.1	65.8	50.4	75.9	45.6	13.4	71.8	57.0	43.5
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.4	56.3	56.3	115.0	92.2	70.5	75.9	45.6	13.4	71.8	57.0	43.5
LOS by Move:	E	E	E	F	F	E	E	D	B	E	E	D
HCM2kAvgQ:	16	24	24	12	12	21	15	18	4	8	24	7
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	549	1195	207	339	677	405	439	849	158	259	970	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	549	1195	207	339	677	405	439	849	158	259	970	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	549	1195	207	339	677	405	439	849	158	259	970	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	549	1195	207	339	677	405	439	849	158	259	970	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	549	1195	207	339	677	405	439	849	158	259	970	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	549	1195	207	339	677	405	439	849	158	259	970	159

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.54	0.46	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	4772	827	3150	5700	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

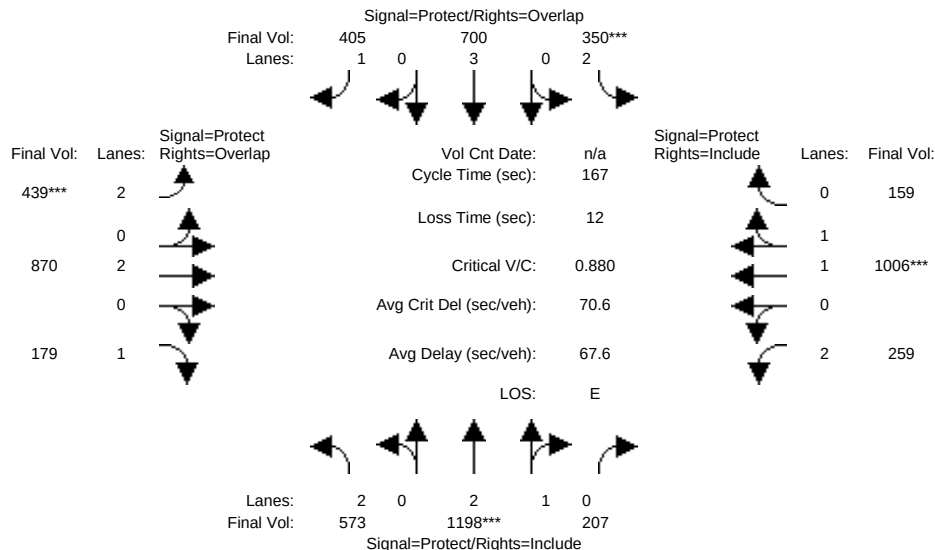
Vol/Sat:	0.17	0.25	0.25	0.11	0.12	0.23	0.14	0.22	0.09	0.08	0.26	0.09
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	43.8	51.6	51.6	22.2	29.9	58.6	28.7	59.4	103.3	21.9	52.6	52.6
Volume/Cap:	0.66	0.81	0.81	0.81	0.66	0.66	0.81	0.63	0.15	0.63	0.81	0.29
Delay/Veh:	57.0	56.2	56.2	81.7	65.5	48.4	75.5	45.6	13.4	71.8	56.9	43.4
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.0	56.2	56.2	114.4	91.8	67.8	75.5	45.6	13.4	71.8	56.9	43.4
LOS by Move:	E	E	E	F	F	E	E	D	B	E	E	D
HCM2kAvgQ:	16	24	24	12	12	19	15	18	4	8	24	6

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	573	1198	207	350	700	405	439	870	179	259	1006	159
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	573	1198	207	350	700	405	439	870	179	259	1006	159
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	573	1198	207	350	700	405	439	870	179	259	1006	159
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	573	1198	207	350	700	405	439	870	179	259	1006	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	573	1198	207	350	700	405	439	870	179	259	1006	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	573	1198	207	350	700	405	439	870	179	259	1006	159

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.54	0.46	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.72	0.28
Final Sat.:	3150	4774	825	3150	5700	1750	3150	3800	1750	3150	3195	505

Capacity Analysis Module:

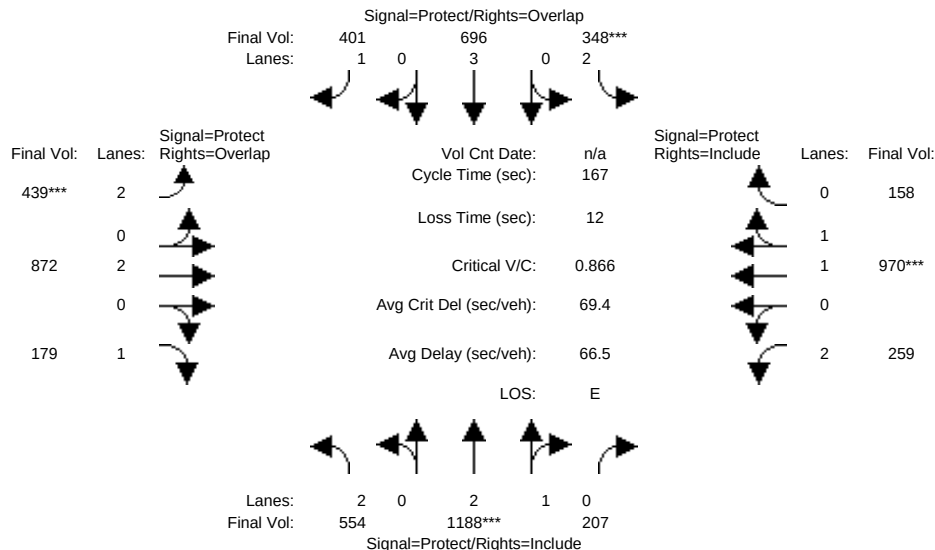
Vol/Sat:	0.18	0.25	0.25	0.11	0.12	0.23	0.14	0.23	0.10	0.08	0.31	0.31
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	41.0	47.6	47.6	21.1	27.7	54.2	26.5	63.5	104.5	22.8	59.8	59.8
Volume/Cap:	0.74	0.88	0.88	0.88	0.74	0.71	0.88	0.60	0.16	0.60	0.88	0.88
Delay/Veh:	61.9	62.9	62.9	91.3	69.4	53.9	85.0	42.3	13.1	70.2	57.3	57.3
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.9	62.9	62.9	127.8	97.1	75.4	85.0	42.3	13.1	70.2	57.3	57.3
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	17	26	26	13	13	20	16	18	4	8	31	31

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

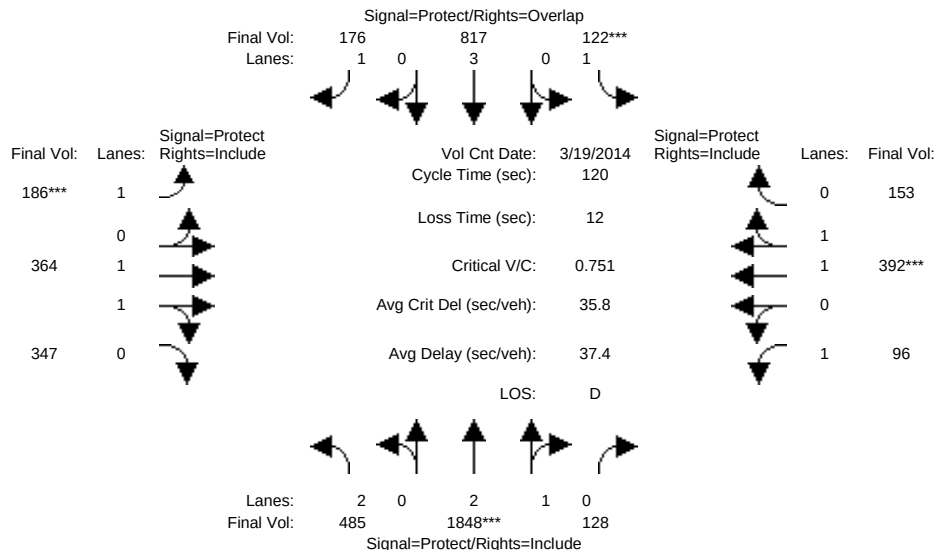


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	554	1188	207	348	696	401	439	872	179	259	970	158
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	554	1188	207	348	696	401	439	872	179	259	970	158
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	554	1188	207	348	696	401	439	872	179	259	970	158
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	554	1188	207	348	696	401	439	872	179	259	970	158
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	554	1188	207	348	696	401	439	872	179	259	970	158
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	554	1188	207	348	696	401	439	872	179	259	970	158
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.54	0.46	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	4768	831	3150	5700	1750	3150	3800	1750	3150	3181	518
Capacity Analysis Module:												
Vol/Sat:	0.18	0.25	0.25	0.11	0.12	0.23	0.14	0.23	0.10	0.08	0.30	0.30
Crit Moves:	****			****			****			****		
Green Time:	40.9	48.0	48.0	21.3	28.4	55.3	26.9	63.1	104.0	22.6	58.8	58.8
Volume/Cap:	0.72	0.87	0.87	0.87	0.72	0.69	0.87	0.61	0.16	0.61	0.87	0.87
Delay/Veh:	61.0	61.7	61.7	89.1	68.1	52.1	82.9	42.7	13.3	70.6	56.8	56.8
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.0	61.7	61.7	124.7	95.4	72.9	82.9	42.7	13.3	70.6	56.8	56.8
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	16	25	25	13	12	20	16	18	4	8	30	30
Note: Queue reported is the number of cars per lane.												

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Scenario 5 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)

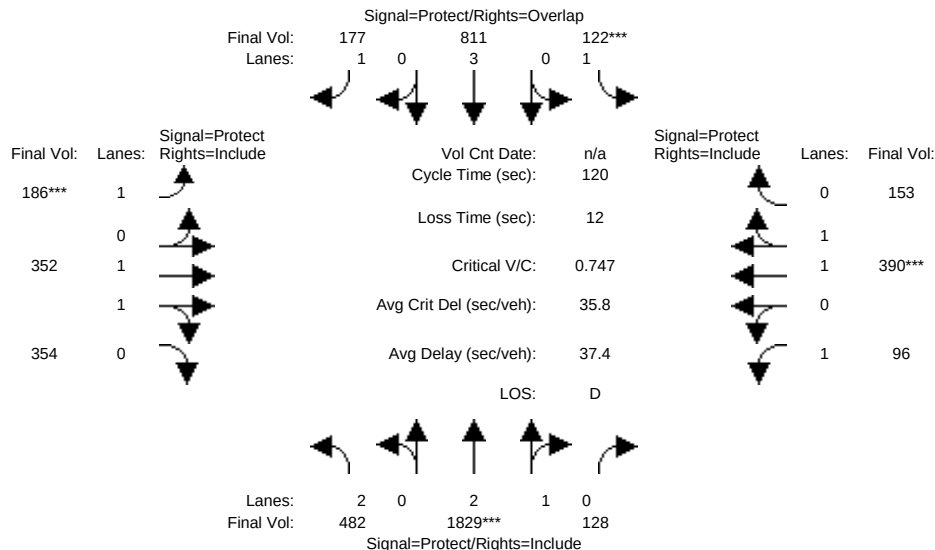


Street Name:	El Camino Real			Arastradero Rd/Charleston Rd		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 19 Mar 2014 << 8:00 AM - 9:00 AM					
Base Vol:	485	1848	128	122	817	176
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	485	1848	128	122	817	176
Added Vol:	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	485	1848	128	122	817	176
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	485	1848	128	122	817	176
Reduct Vol:	0	0	0	0	0	0
Reduced Vol:	485	1848	128	122	817	176
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	485	1848	128	122	817	176
Saturation Flow Module:						
Sat/Lane:	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00
Final Sat.:	3150	5237	363	1750	5700	1750
Capacity Analysis Module:						
Vol/Sat:	0.15	0.35	0.35	0.07	0.14	0.10
Crit Moves:	****	****	****	****	****	****
Green Time:	35.0	56.4	56.4	11.1	32.5	49.5
Volume/Cap:	0.53	0.75	0.75	0.75	0.53	0.24
Delay/Veh:	36.2	27.3	27.3	70.8	37.6	23.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.2	27.3	27.3	70.8	37.6	23.2
LOS by Move:	D	C	C	E	D	C
HCM2kAvgQ:	9	21	21	6	9	4
Note: Queue reported is the number of cars per lane.						

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	482	1829	128	122	811	177	186	352	354	96	390	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	1829	128	122	811	177	186	352	354	96	390	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	482	1829	128	122	811	177	186	352	354	96	390	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	482	1829	128	122	811	177	186	352	354	96	390	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	482	1829	128	122	811	177	186	352	354	96	390	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	482	1829	128	122	811	177	186	352	354	96	390	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.42	0.58
Final Sat.:	3150	5233	366	1750	5700	1750	1750	1900	1750	1750	2657	1042

Capacity Analysis Module:

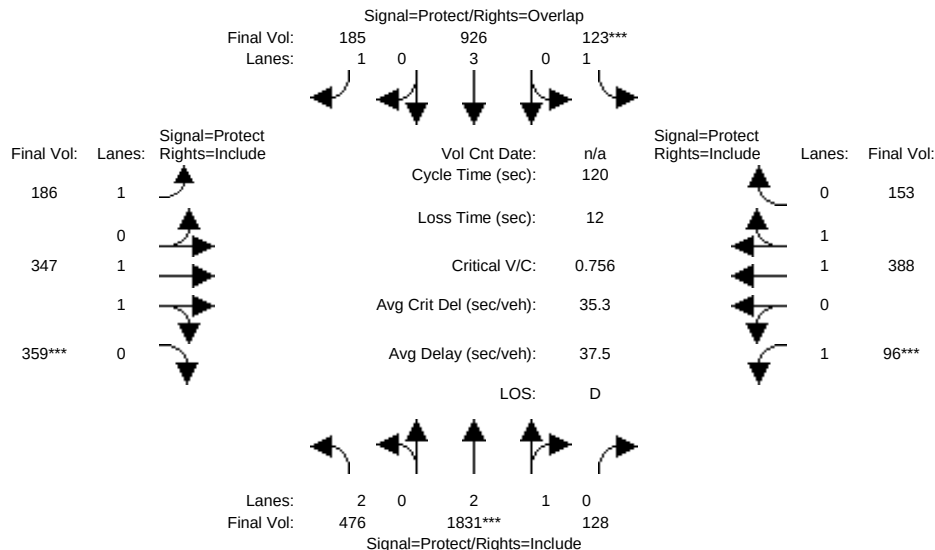
Vol/Sat:	0.15	0.35	0.35	0.07	0.14	0.10	0.11	0.19	0.20	0.05	0.15	0.15
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	34.9	56.1	56.1	11.2	32.4	49.5	17.1	31.6	31.6	9.1	23.6	23.6
Volume/Cap:	0.53	0.75	0.75	0.75	0.53	0.25	0.75	0.70	0.77	0.72	0.75	0.75
Delay/Veh:	36.2	27.3	27.3	70.2	37.6	23.2	61.1	42.3	44.9	72.0	49.7	49.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.2	27.3	27.3	70.2	37.6	23.2	61.1	42.3	44.9	72.0	49.7	49.7
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	9	21	21	6	9	5	9	13	15	5	11	11

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	476	1831	128	123	926	185	186	347	359	96	388	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	476	1831	128	123	926	185	186	347	359	96	388	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	476	1831	128	123	926	185	186	347	359	96	388	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	476	1831	128	123	926	185	186	347	359	96	388	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	476	1831	128	123	926	185	186	347	359	96	388	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	476	1831	128	123	926	185	186	347	359	96	388	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	2.00	2.80	0.20	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.42	0.58
Final Sat.:	3150	5234	366	1750	5700	1750	1750	1900	1750	1750	2653	1046

Capacity Analysis Module:

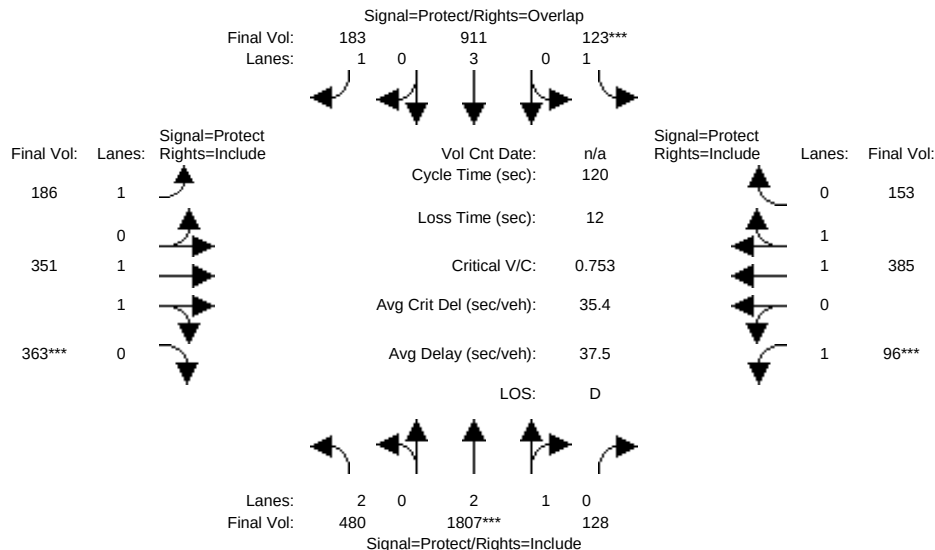
Vol/Sat:	0.15	0.35	0.35	0.07	0.16	0.11	0.11	0.18	0.21	0.05	0.15	0.15
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	32.2	55.6	55.6	11.2	34.6	51.9	17.4	32.6	32.6	8.7	23.9	23.9
Volume/Cap:	0.56	0.76	0.76	0.76	0.56	0.24	0.73	0.67	0.76	0.76	0.73	0.73
Delay/Veh:	38.8	27.9	27.9	71.2	36.8	21.8	59.7	40.7	43.6	77.1	48.9	48.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.8	27.9	27.9	71.2	36.8	21.8	59.7	40.7	43.6	77.1	48.9	48.9
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	9	21	21	7	10	5	9	12	15	5	11	11

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real			Arastradero Rd/Charleston Rd		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	480	1807	128	123	911	183	186	351	363	96	385	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	480	1807	128	123	911	183	186	351	363	96	385	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	480	1807	128	123	911	183	186	351	363	96	385	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	480	1807	128	123	911	183	186	351	363	96	385	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	480	1807	128	123	911	183	186	351	363	96	385	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	480	1807	128	123	911	183	186	351	363	96	385	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	2.00	2.79	0.21	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.42	0.58
Final Sat.:	3150	5229	370	1750	5700	1750	1750	1900	1750	1750	2647	1052

Capacity Analysis Module:

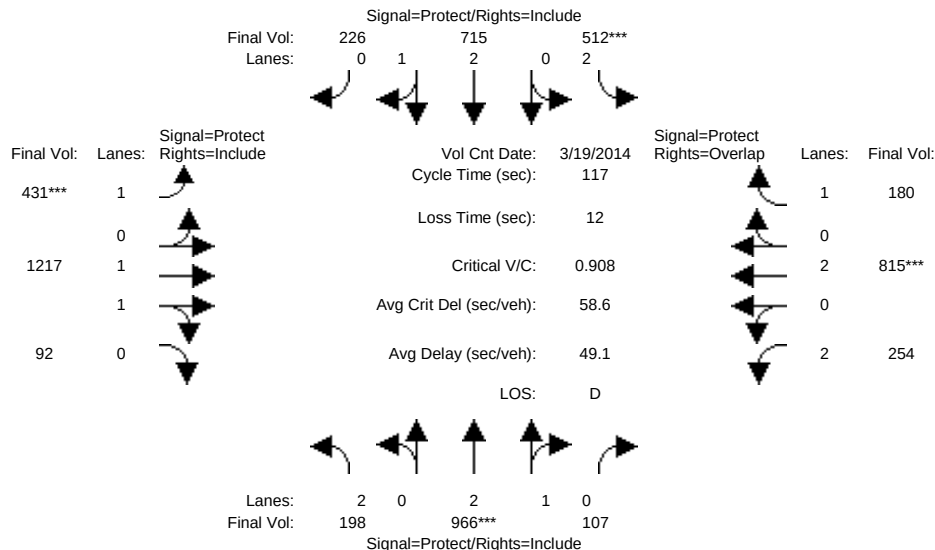
Vol/Sat:	0.15	0.35	0.35	0.07	0.16	0.10	0.11	0.18	0.21	0.05	0.15	0.15
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	32.3	55.0	55.0	11.2	33.9	51.5	17.6	33.0	33.0	8.7	24.1	24.1
Volume/Cap:	0.57	0.75	0.75	0.75	0.57	0.24	0.72	0.67	0.75	0.75	0.72	0.72
Delay/Veh:	38.7	28.2	28.2	70.9	37.2	22.0	58.6	40.3	43.2	76.7	48.3	48.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	28.2	28.2	70.9	37.2	22.0	58.6	40.3	43.2	76.7	48.3	48.3
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	10	21	21	7	10	5	9	12	15	5	11	11

Note: Queue reported is the number of cars per lane.

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Scenario 5 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

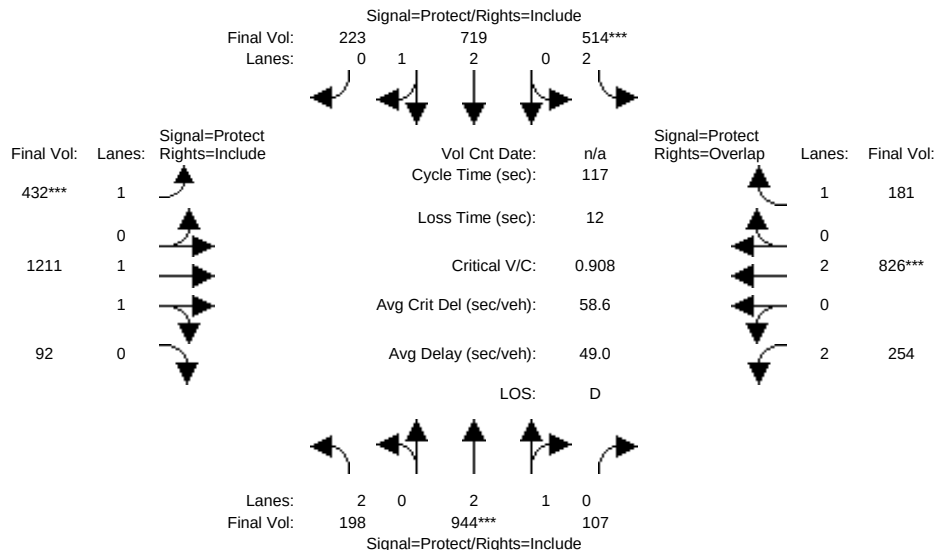


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 19 Mar 2014 << 8:00 AM - 9:00 AM											
Base Vol:	198	966	107	512	715	226	431	1217	92	254	815	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	966	107	512	715	226	431	1217	92	254	815	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	966	107	512	715	226	431	1217	92	254	815	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	966	107	512	715	226	431	1217	92	254	815	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	966	107	512	715	226	431	1217	92	254	815	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	966	107	512	715	226	431	1217	92	254	815	180
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	2.25	0.75	1.00	1.86	0.14	2.00	2.00	1.00
Final Sat.:	3150	5041	558	3150	4253	1344	1750	3440	260	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.16	0.17	0.17	0.25	0.35	0.35	0.08	0.21	0.10
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	12.4	24.7	24.7	20.9	33.2	33.2	31.7	48.3	48.3	11.0	27.6	48.6
Volume/Cap:	0.59	0.91	0.91	0.91	0.59	0.59	0.91	0.86	0.86	0.86	0.91	0.25
Delay/Veh:	52.7	55.3	55.3	65.6	36.7	36.7	62.4	36.2	36.2	73.2	56.3	22.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.7	55.3	55.3	65.6	36.7	36.7	62.4	36.2	36.2	73.2	56.3	22.5
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	16	16	14	10	10	20	24	24	8	18	4
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

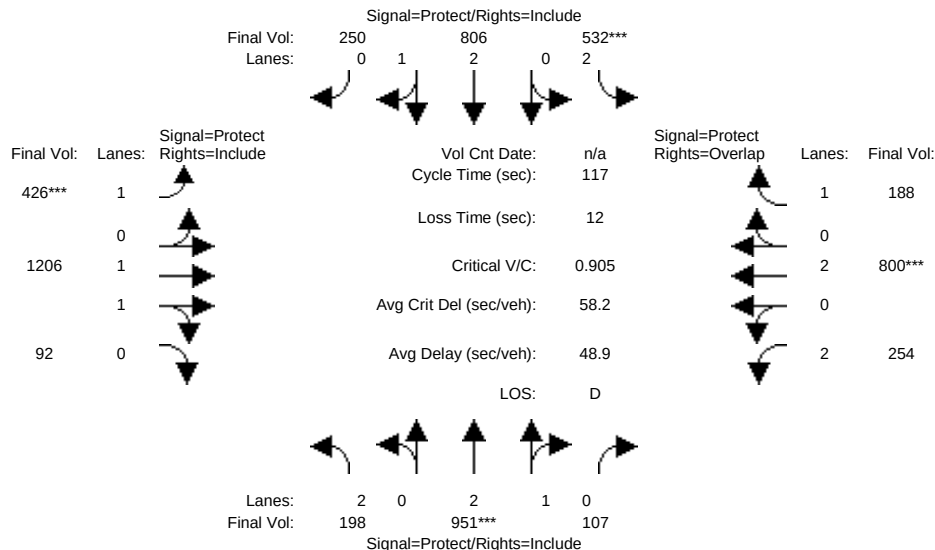


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	198	944	107	514	719	223	432	1211	92	254	826	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	944	107	514	719	223	432	1211	92	254	826	181
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	944	107	514	719	223	432	1211	92	254	826	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	944	107	514	719	223	432	1211	92	254	826	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	944	107	514	719	223	432	1211	92	254	826	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	944	107	514	719	223	432	1211	92	254	826	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.68	0.32	2.00	2.26	0.74	1.00	1.85	0.15	2.00	2.00	1.00
Final Sat.:	3150	5029	570	3150	4273	1325	1750	3439	261	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.16	0.17	0.17	0.25	0.35	0.35	0.08	0.22	0.10
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	12.3	24.2	24.2	21.0	32.9	32.9	31.8	48.7	48.7	11.1	28.0	49.0
Volume/Cap:	0.60	0.91	0.91	0.91	0.60	0.60	0.91	0.85	0.85	0.85	0.91	0.25
Delay/Veh:	53.0	55.8	55.8	65.6	37.0	37.0	62.3	35.4	35.4	71.6	56.0	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.0	55.8	55.8	65.6	37.0	37.0	62.3	35.4	35.4	71.6	56.0	22.2
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	16	16	14	10	10	20	24	24	8	18	4
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

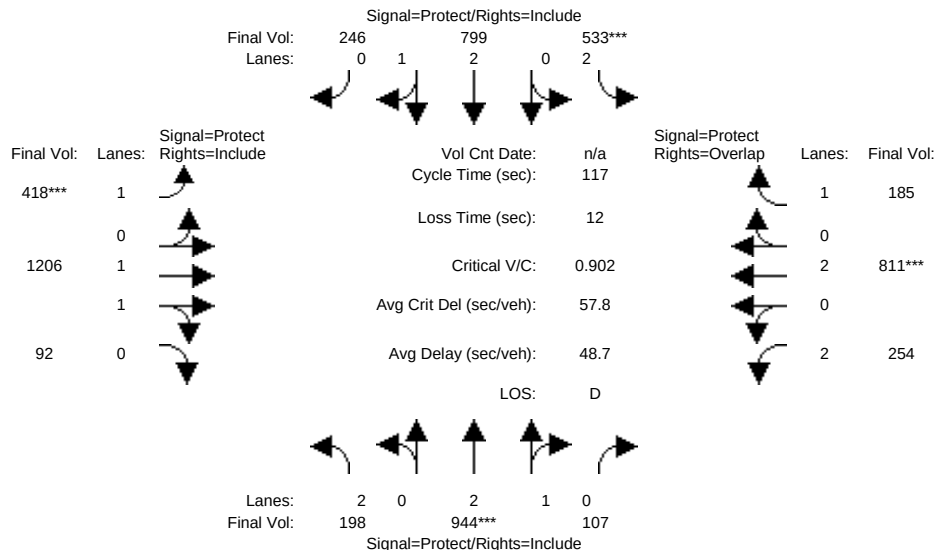


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	198	951	107	532	806	250	426	1206	92	254	800	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	951	107	532	806	250	426	1206	92	254	800	188
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	951	107	532	806	250	426	1206	92	254	800	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	951	107	532	806	250	426	1206	92	254	800	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	951	107	532	806	250	426	1206	92	254	800	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	951	107	532	806	250	426	1206	92	254	800	188
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.69	0.31	2.00	2.26	0.74	1.00	1.85	0.15	2.00	2.00	1.00
Final Sat.:	3150	5033	566	3150	4273	1325	1750	3438	262	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.17	0.19	0.19	0.24	0.35	0.35	0.08	0.21	0.11
Crit Moves:	****			****			****			****		
Green Time:	11.6	24.4	24.4	21.8	34.7	34.7	31.5	47.7	47.7	11.0	27.2	49.1
Volume/Cap:	0.64	0.90	0.90	0.90	0.64	0.64	0.90	0.86	0.86	0.86	0.90	0.26
Delay/Veh:	55.0	55.2	55.2	64.0	36.5	36.5	62.0	36.8	36.8	73.8	56.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.0	55.2	55.2	64.0	36.5	36.5	62.0	36.8	36.8	73.8	56.3	22.3
LOS by Move:	D	E	E	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	16	16	15	12	12	20	24	24	8	18	5
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

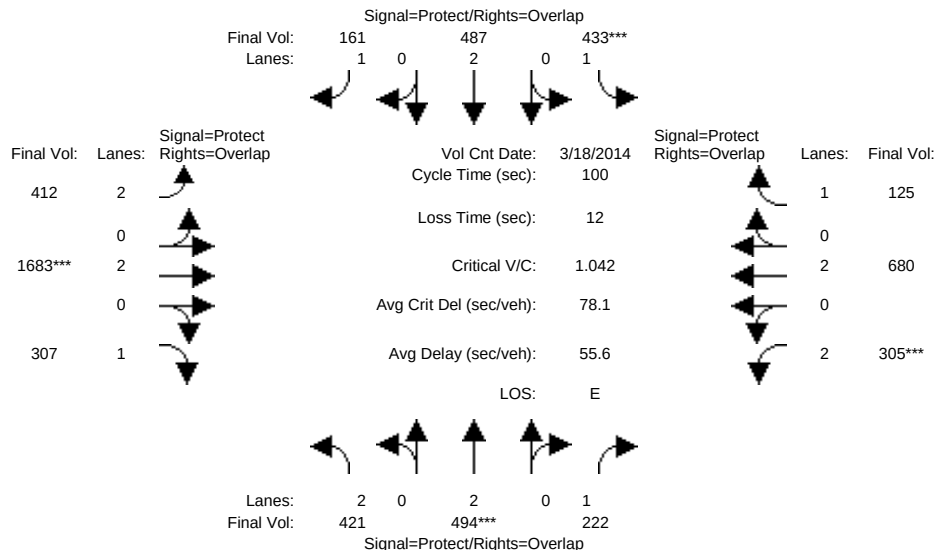


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	198	944	107	533	799	246	418	1206	92	254	811	185
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	944	107	533	799	246	418	1206	92	254	811	185
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	944	107	533	799	246	418	1206	92	254	811	185
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	944	107	533	799	246	418	1206	92	254	811	185
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	944	107	533	799	246	418	1206	92	254	811	185
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	944	107	533	799	246	418	1206	92	254	811	185
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.68	0.32	2.00	2.27	0.73	1.00	1.85	0.15	2.00	2.00	1.00
Final Sat.:	3150	5029	570	3150	4280	1318	1750	3438	262	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.19	0.19	0.17	0.19	0.19	0.24	0.35	0.35	0.08	0.21	0.11
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	11.7	24.4	24.4	22.0	34.6	34.6	31.0	47.7	47.7	11.0	27.7	49.6
Volume/Cap:	0.63	0.90	0.90	0.90	0.63	0.63	0.90	0.86	0.86	0.86	0.90	0.25
Delay/Veh:	54.7	54.9	54.9	63.5	36.4	36.4	62.0	36.9	36.9	73.9	55.5	21.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.7	54.9	54.9	63.5	36.4	36.4	62.0	36.9	36.9	73.9	55.5	21.9
LOS by Move:	D	D	D	E	D	D	E	D	D	E	E	C
HCM2kAvgQ:	5	16	16	15	12	12	19	24	24	8	18	5
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Min. Green: 7 10 10 7 10 10 7 0 10 7 0 10

Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0

Volume Module: >> Count Date: 18 Mar 2014 << 8:00 AM - 9:00 AM

Base Vol: 421 494 222 433 487 161 412 1683 307 305 680 125

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 421 494 222 433 487 161 412 1683 307 305 680 125

Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0

PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0

Initial Fut: 421 494 222 433 487 161 412 1683 307 305 680 125

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 421 494 222 433 487 161 412 1683 307 305 680 125

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 421 494 222 433 487 161 412 1683 307 305 680 125

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Final Volume: 421 494 222 433 487 161 412 1683 307 305 680 125

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900

Adjustment: 0.83 1.00 0.92 0.92 1.00 0.92 0.83 1.00 0.92 0.83 1.00 0.92

Lanes: 2.00 2.00 1.00 1.00 2.00 1.00 2.00 2.00 1.00 2.00 2.00 1.00

Final Sat.: 3150 3800 1750 1750 3800 1750 3150 3800 1750 3150 3800 1750

Capacity Analysis Module:

Vol/Sat: 0.13 0.13 0.13 0.25 0.13 0.09 0.13 0.44 0.18 0.10 0.18 0.07

Crit Moves: ****

Green Time: 18.5 12.5 21.8 23.7 17.7 39.6 21.9 42.5 61.0 9.3 29.9 53.7

Volume/Cap: 0.72 1.04 0.58 1.04 0.72 0.23 0.60 1.04 0.29 1.04 0.60 0.13

Delay/Veh: 42.8 96.5 37.4 93.7 42.7 20.3 36.6 63.0 9.4 109.4 30.8 11.6

User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 42.8 96.5 37.4 93.7 42.7 20.3 36.6 63.0 9.4 109.4 30.8 11.6

LOS by Move: D F D F D C D E A F C B

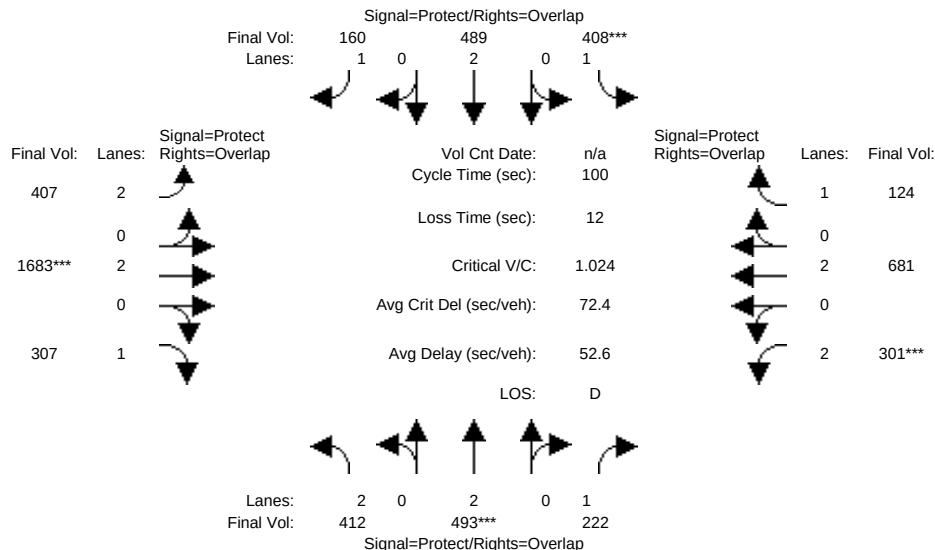
HCM2kAvgQ: 9 13 7 22 9 4 8 36 5 10 9 2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	7	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	412	493	222	408	489	160	407	1683	307	301	681	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	412	493	222	408	489	160	407	1683	307	301	681	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	412	493	222	408	489	160	407	1683	307	301	681	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	412	493	222	408	489	160	407	1683	307	301	681	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	412	493	222	408	489	160	407	1683	307	301	681	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	412	493	222	408	489	160	407	1683	307	301	681	124

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

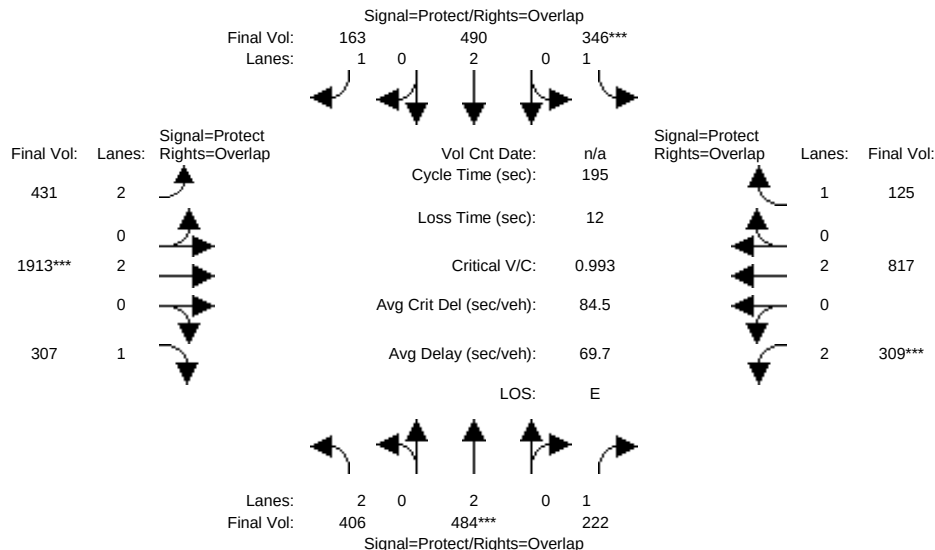
Vol/Sat:	0.13	0.13	0.13	0.23	0.13	0.09	0.13	0.44	0.18	0.10	0.18	0.07
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	17.9	12.7	22.0	22.8	17.6	39.6	22.0	43.2	61.1	9.3	30.5	53.3
Volume/Cap:	0.73	1.02	0.58	1.02	0.73	0.23	0.59	1.02	0.29	1.02	0.59	0.13
Delay/Veh:	43.7	91.0	37.0	90.0	43.2	20.3	36.2	57.0	9.3	104.2	30.2	11.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.7	91.0	37.0	90.0	43.2	20.3	36.2	57.0	9.3	104.2	30.2	11.8
LOS by Move:	D	F	D	F	D	C	D	E	A	F	C	B
HCM2kAvgQ:	9	13	7	20	9	4	7	35	5	10	9	2

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name:Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	406	484	222	346	490	163	431	1913	307	309	817	125
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	406	484	222	346	490	163	431	1913	307	309	817	125
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	406	484	222	346	490	163	431	1913	307	309	817	125
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	406	484	222	346	490	163	431	1913	307	309	817	125
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	406	484	222	346	490	163	431	1913	307	309	817	125
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	406	484	222	346	490	163	431	1913	307	309	817	125

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

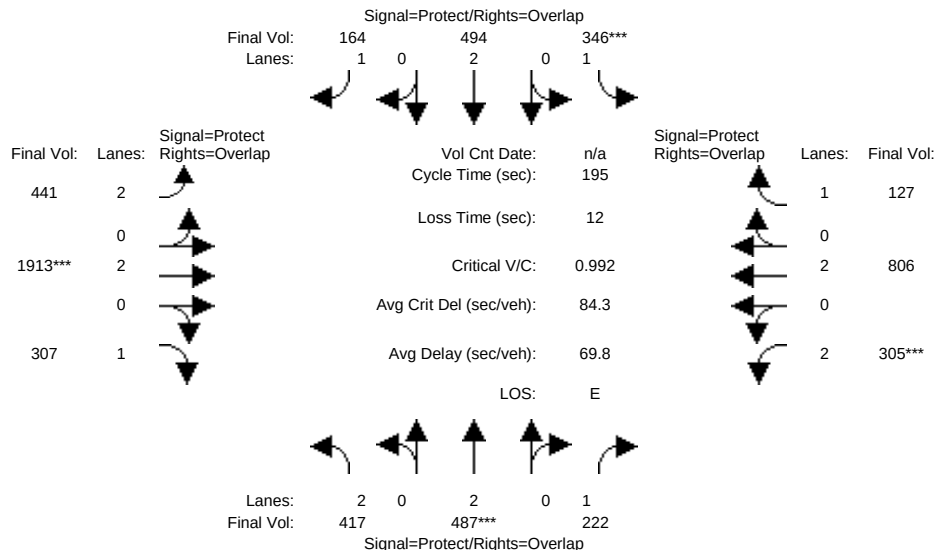
Vol/Sat:	0.13	0.13	0.13	0.20	0.13	0.09	0.14	0.50	0.18	0.10	0.22	0.07
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	31.9	25.0	44.3	38.8	31.9	77.9	45.9	98.9	130.8	19.3	72.2	111.0
Volume/Cap:	0.79	0.99	0.56	0.99	0.79	0.23	0.58	0.99	0.26	0.99	0.58	0.13
Delay/Veh:	80.2	117	63.4	118.1	78.9	36.0	62.1	62.8	12.0	130.0	46.1	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.2	117	63.4	118.1	78.9	36.0	62.1	62.8	12.0	130.0	46.1	18.0
LOS by Move:	F	F	E	F	E	D	E	E	B	F	D	B
HCM2kAvgQ:	15	17	12	25	15	6	13	58	7	14	18	3

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	417	487	222	346	494	164	441	1913	307	305	806	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	417	487	222	346	494	164	441	1913	307	305	806	127
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	417	487	222	346	494	164	441	1913	307	305	806	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	417	487	222	346	494	164	441	1913	307	305	806	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	417	487	222	346	494	164	441	1913	307	305	806	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	417	487	222	346	494	164	441	1913	307	305	806	127

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

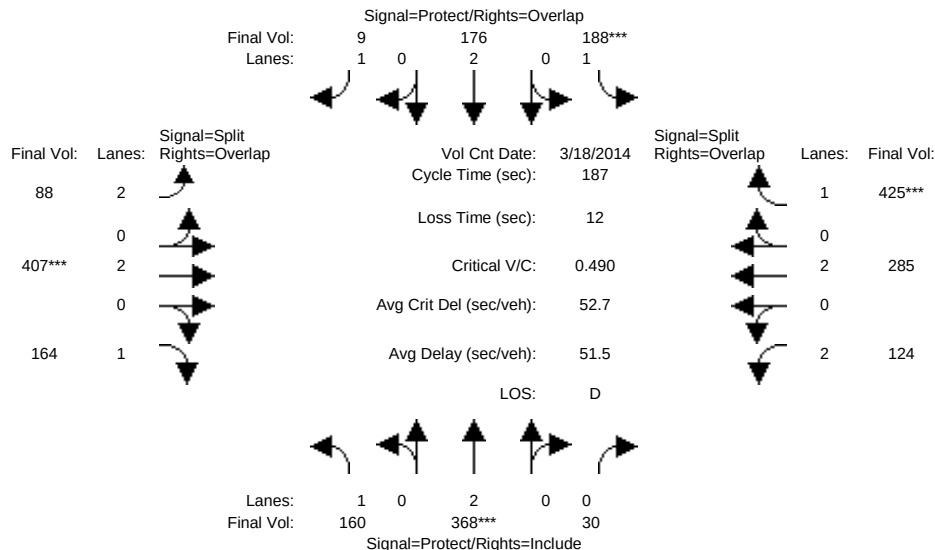
Vol/Sat:	0.13	0.13	0.13	0.20	0.13	0.09	0.14	0.50	0.18	0.10	0.21	0.07
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	32.3	25.2	44.2	38.9	31.7	78.6	46.9	98.9	131.2	19.0	71.1	109.9
Volume/Cap:	0.80	0.99	0.56	0.99	0.80	0.23	0.58	0.99	0.26	0.99	0.58	0.13
Delay/Veh:	80.7	117	63.4	117.9	79.8	35.5	61.5	62.6	11.8	130.3	46.8	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	80.7	117	63.4	117.9	79.8	35.5	61.5	62.6	11.8	130.3	46.8	18.5
LOS by Move:	F	F	E	F	E	D	E	E	B	F	D	B
HCM2kAvgQ:	15	18	12	25	15	6	13	58	7	14	18	3

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #10: Foothill & Arastradero (CMP #5207)

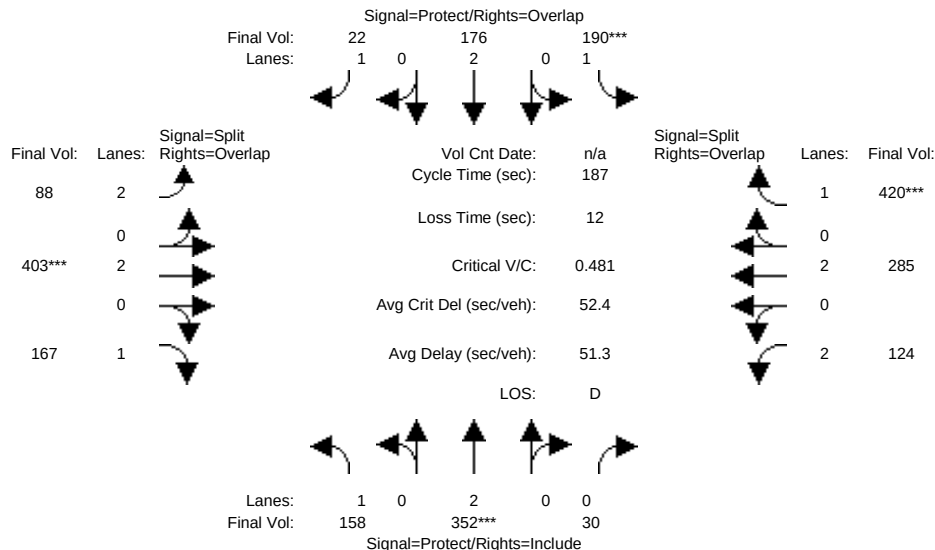


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 18 Mar 2014 << 7:30 AM - 8:30 AM											
Base Vol:	160	368	30	188	176	23	88	407	164	124	285	425
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	368	30	188	176	23	88	407	164	124	285	425
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	368	30	188	176	23	88	407	164	124	285	425
User Adj:	1.00	1.00	1.00	1.00	1.00	0.40	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	368	30	188	176	9	88	407	164	124	285	425
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	368	30	188	176	9	88	407	164	124	285	425
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	160	368	30	188	176	9	88	407	164	124	285	425
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.85	0.15	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3421	279	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.11	0.11	0.11	0.05	0.01	0.03	0.11	0.09	0.04	0.08	0.24
Crit Moves:	****			****			****			****		
Green Time:	51.0	41.0	41.0	41.0	31.0	71.9	40.9	40.9	91.9	51.7	51.7	92.6
Volume/Cap:	0.34	0.49	0.49	0.49	0.28	0.01	0.13	0.49	0.19	0.14	0.27	0.49
Delay/Veh:	52.8	61.9	61.9	62.5	65.9	34.3	56.6	62.0	25.8	49.1	51.1	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.8	61.9	61.9	62.5	65.9	34.3	56.6	62.0	25.8	49.1	51.1	30.7
LOS by Move:	D	E	E	E	E	C	E	E	C	D	D	C
HCM2kAvgQ:	7	10	10	10	4	0	2	10	5	3	6	16
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #10: Foothill & Arastradero (CMP #5207)

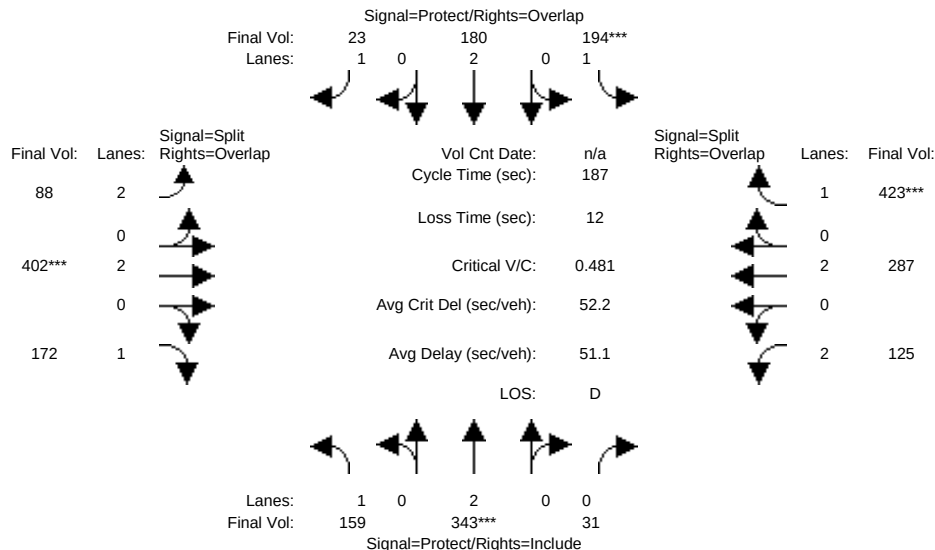


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	158	352	30	190	176	22	88	403	167	124	285	420
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	352	30	190	176	22	88	403	167	124	285	420
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	352	30	190	176	22	88	403	167	124	285	420
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	352	30	190	176	22	88	403	167	124	285	420
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	352	30	190	176	22	88	403	167	124	285	420
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	158	352	30	190	176	22	88	403	167	124	285	420
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3409	291	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.10	0.10	0.11	0.05	0.01	0.03	0.11	0.10	0.04	0.08	0.24
Crit Moves:	****			****			****			****		
Green Time:	50.9	40.1	40.1	42.2	31.3	72.5	41.2	41.2	92.1	51.1	51.1	93.2
Volume/Cap:	0.33	0.48	0.48	0.48	0.28	0.03	0.13	0.48	0.19	0.14	0.27	0.48
Delay/Veh:	52.8	62.4	62.4	61.5	65.6	34.2	56.4	61.6	25.7	49.6	51.6	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.8	62.4	62.4	61.5	65.6	34.2	56.4	61.6	25.7	49.6	51.6	30.2
LOS by Move:	D	E	E	E	E	C	E	E	C	D	D	C
HCM2kAvgQ:	7	9	9	10	4	1	2	10	5	3	6	16
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #10: Foothill & Arastradero (CMP #5207)



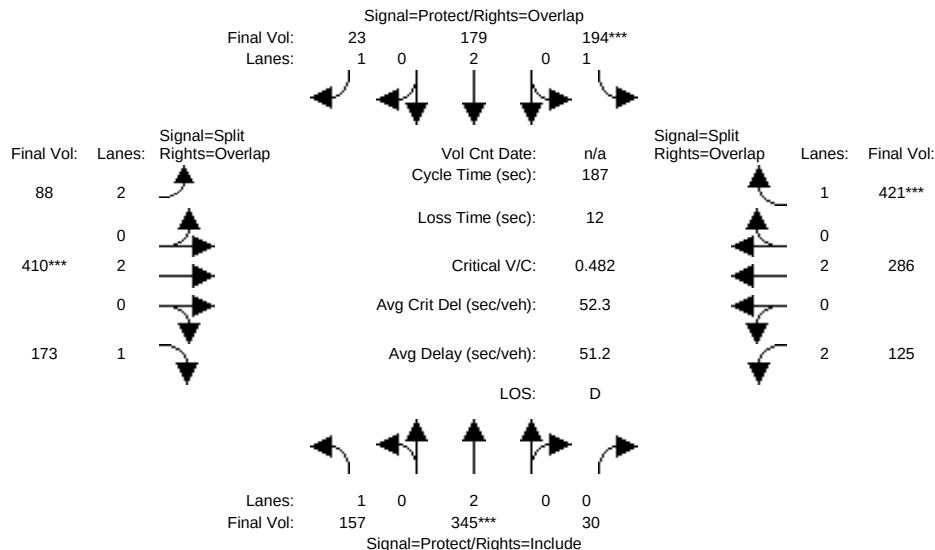
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	159	343	31	194	180	23	88	402	172	125	287	423
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	159	343	31	194	180	23	88	402	172	125	287	423
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	343	31	194	180	23	88	402	172	125	287	423
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	343	31	194	180	23	88	402	172	125	287	423
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	343	31	194	180	23	88	402	172	125	287	423
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	159	343	31	194	180	23	88	402	172	125	287	423
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.83	0.17	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3393	307	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.10	0.10	0.11	0.05	0.01	0.03	0.11	0.10	0.04	0.08	0.24
Crit Moves:	****			****			****			****		
Green Time:	51.2	39.3	39.3	43.1	31.3	72.4	41.2	41.2	92.3	50.9	50.9	94.0
Volume/Cap:	0.33	0.48	0.48	0.48	0.28	0.03	0.13	0.48	0.20	0.15	0.28	0.48
Delay/Veh:	52.6	62.9	62.9	60.8	65.8	34.2	56.4	61.7	25.7	49.7	51.7	29.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.6	62.9	62.9	60.8	65.8	34.2	56.4	61.7	25.7	49.7	51.7	29.7
LOS by Move:	D	E	E	E	E	C	E	E	C	D	D	C
HCM2kAvgQ:	7	9	9	10	4	1	2	10	5	3	6	16

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #10: Foothill & Arastradero (CMP #5207)



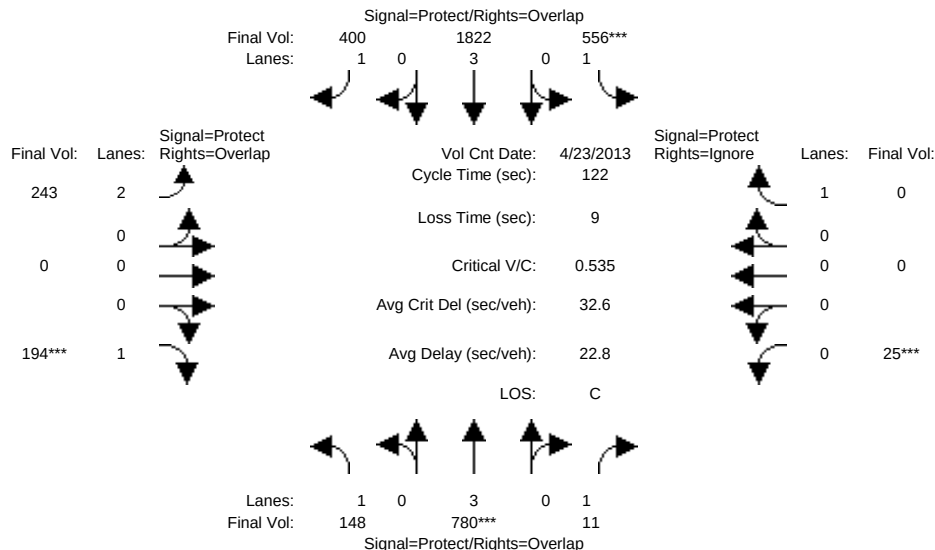
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	157	345	30	194	179	23	88	410	173	125	286	421
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	345	30	194	179	23	88	410	173	125	286	421
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	157	345	30	194	179	23	88	410	173	125	286	421
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	157	345	30	194	179	23	88	410	173	125	286	421
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	345	30	194	179	23	88	410	173	125	286	421
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	157	345	30	194	179	23	88	410	173	125	286	421
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.84	0.16	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3404	296	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.10	0.10	0.11	0.05	0.01	0.03	0.11	0.10	0.04	0.08	0.24
Crit Moves:	****			****			****			****		
Green Time:	50.9	39.3	39.3	43.0	31.5	73.4	41.9	41.9	92.7	50.3	50.3	93.3
Volume/Cap:	0.33	0.48	0.48	0.48	0.28	0.03	0.12	0.48	0.20	0.15	0.28	0.48
Delay/Veh:	52.8	62.9	62.9	60.9	65.6	33.7	55.9	61.2	25.5	50.1	52.1	30.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.8	62.9	62.9	60.9	65.6	33.7	55.9	61.2	25.5	50.1	52.1	30.1
LOS by Move:	D	E	E	E	E	C	E	E	C	D	D	C
HCM2kAvgQ:	7	9	9	10	4	1	2	10	6	3	6	16

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

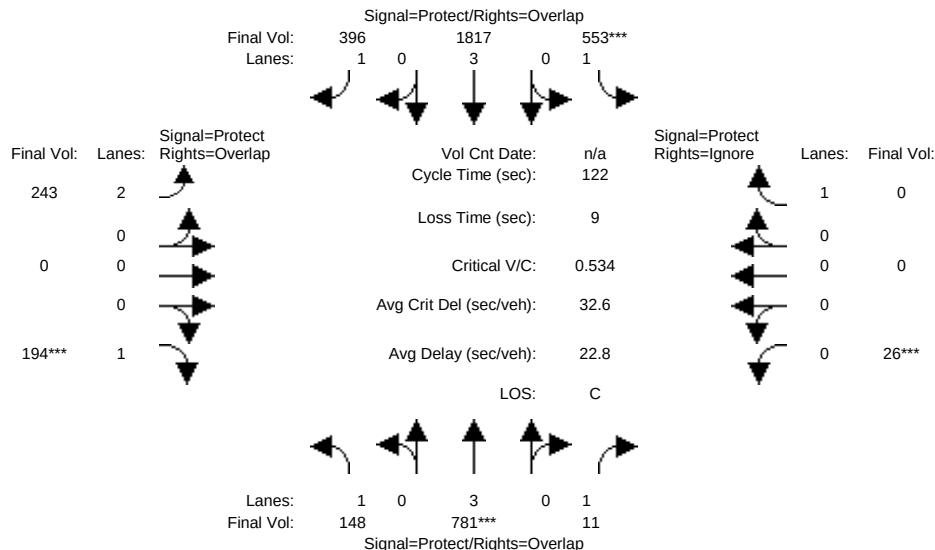


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 23 Apr 2013 << AM												
Base Vol:	148	780	11	556	1822	400	243	0	194	25	0	500
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	780	11	556	1822	400	243	0	194	25	0	500
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	780	11	556	1822	400	243	0	194	25	0	500
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	780	11	556	1822	400	243	0	194	25	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	780	11	556	1822	400	243	0	194	25	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	780	11	556	1822	400	243	0	194	25	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.01	0.32	0.32	0.23	0.08	0.00	0.11	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	21.0	30.2	37.2	70.0	79.2	92.0	12.8	0.0	26.8	7.0	0.0	0.0
Volume/Cap:	0.49	0.55	0.02	0.55	0.49	0.30	0.74	0.00	0.51	0.25	0.00	0.00
Delay/Veh:	47.0	40.5	29.7	16.9	11.1	4.9	61.3	0.0	42.9	56.3	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.0	40.5	29.7	16.9	11.1	4.9	61.3	0.0	42.9	56.3	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	14	12	5	7	0	7	1	0	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



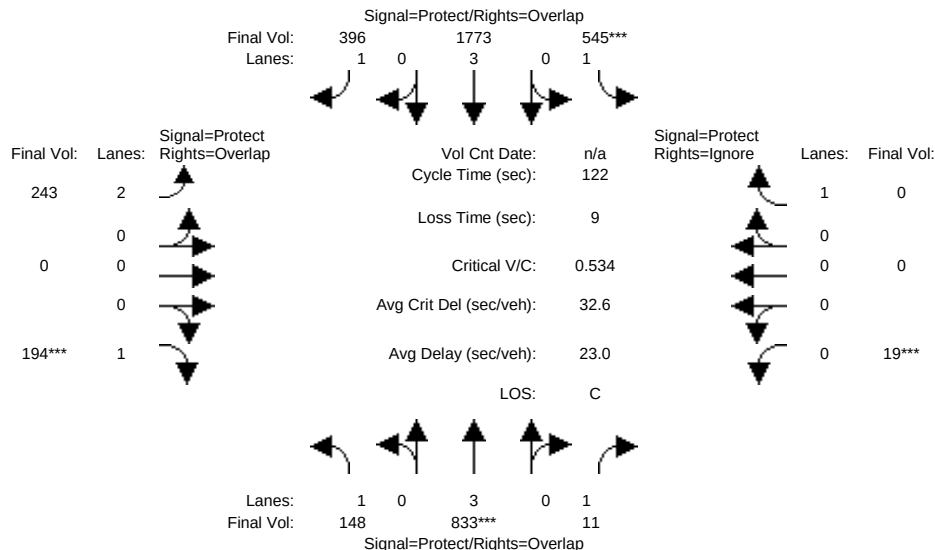
Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	148	781	11	553	1817	396	243	0	194	26	0	498
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	781	11	553	1817	396	243	0	194	26	0	498
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	781	11	553	1817	396	243	0	194	26	0	498
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	781	11	553	1817	396	243	0	194	26	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	781	11	553	1817	396	243	0	194	26	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	781	11	553	1817	396	243	0	194	26	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.14	0.01	0.32	0.32	0.23	0.08	0.00	0.11	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	21.0	30.3	37.3	69.9	79.2	92.0	12.8	0.0	26.8	7.0	0.0	0.0
Volume/Cap:	0.49	0.55	0.02	0.55	0.49	0.30	0.73	0.00	0.50	0.26	0.00	0.00
Delay/Veh:	46.9	40.4	29.6	16.9	11.1	4.9	61.2	0.0	42.8	56.4	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.9	40.4	29.6	16.9	11.1	4.9	61.2	0.0	42.8	56.4	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	14	12	5	7	0	7	1	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



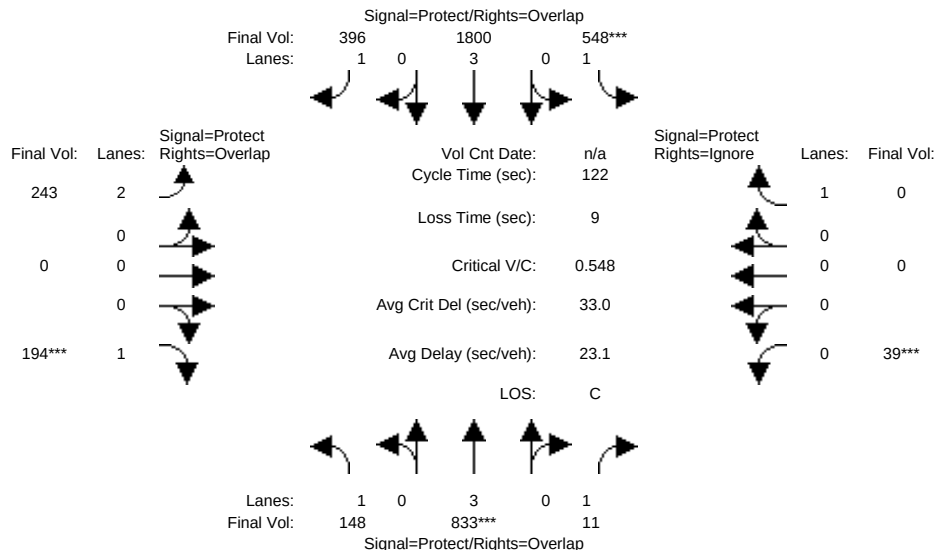
Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	148	833	11	545	1773	396	243	0	194	19	0	505
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	833	11	545	1773	396	243	0	194	19	0	505
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	833	11	545	1773	396	243	0	194	19	0	505
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	833	11	545	1773	396	243	0	194	19	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	833	11	545	1773	396	243	0	194	19	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	833	11	545	1773	396	243	0	194	19	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.15	0.01	0.31	0.31	0.23	0.08	0.00	0.11	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	21.4	32.0	39.0	68.2	78.8	91.6	12.8	0.0	27.2	7.0	0.0	0.0
Volume/Cap:	0.48	0.56	0.02	0.56	0.48	0.30	0.74	0.00	0.50	0.19	0.00	0.00
Delay/Veh:	46.5	39.3	28.4	17.9	11.2	5.0	61.5	0.0	42.4	55.7	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.5	39.3	28.4	17.9	11.2	5.0	61.5	0.0	42.4	55.7	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	14	11	5	7	0	7	1	0	0

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



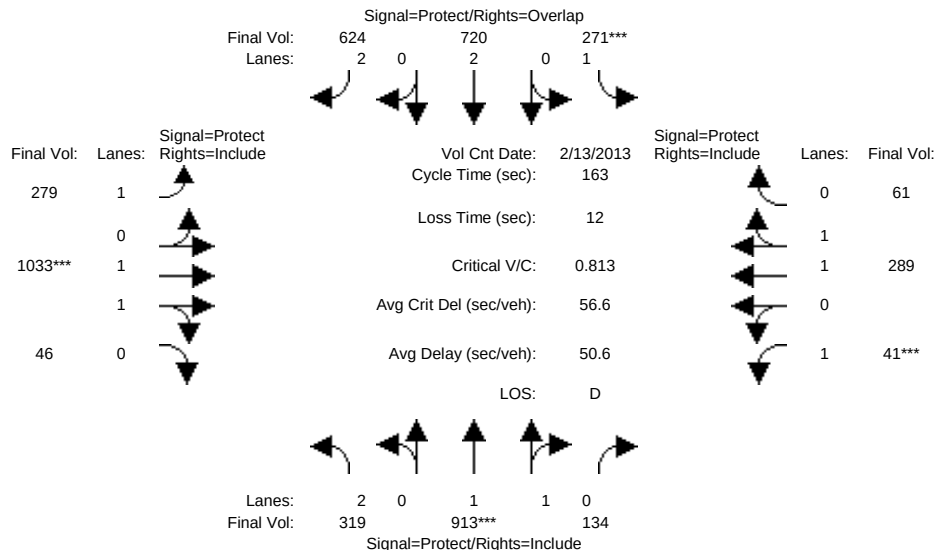
Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	148	833	11	548	1800	396	243	0	194	39	0	502
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	833	11	548	1800	396	243	0	194	39	0	502
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	833	11	548	1800	396	243	0	194	39	0	502
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	833	11	548	1800	396	243	0	194	39	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	833	11	548	1800	396	243	0	194	39	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	833	11	548	1800	396	243	0	194	39	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.15	0.01	0.31	0.32	0.23	0.08	0.00	0.11	0.02	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	21.2	31.9	38.9	68.4	79.1	91.8	12.7	0.0	26.9	7.0	0.0	0.0
Volume/Cap:	0.49	0.56	0.02	0.56	0.49	0.30	0.74	0.00	0.50	0.39	0.00	0.00
Delay/Veh:	46.7	39.4	28.5	17.9	11.1	5.0	61.6	0.0	42.7	57.9	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.7	39.4	28.5	17.9	11.1	5.0	61.6	0.0	42.7	57.9	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	E	A	A
HCM2kAvgQ:	6	9	0	14	11	5	7	0	7	2	0	0

Note: Queue reported is the number of cars per lane.

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Scenario 5 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

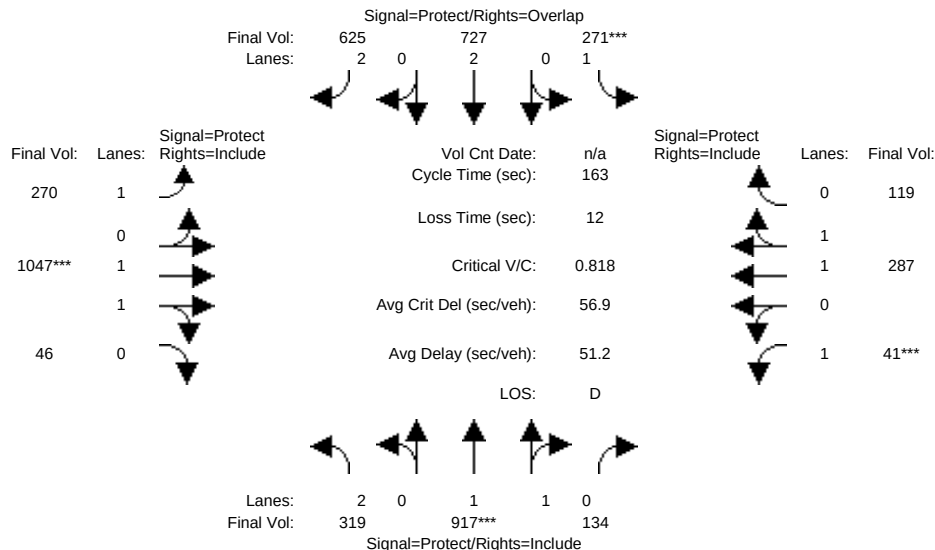


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Feb 2013 << AM												
Base Vol:	319	913	134	271	720	624	279	1033	46	41	289	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	319	913	134	271	720	624	279	1033	46	41	289	121
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	319	913	134	271	720	624	279	1033	46	41	289	121
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	319	913	134	271	720	624	279	1033	46	41	289	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	319	913	134	271	720	624	279	1033	46	41	289	61
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	319	913	134	271	720	624	279	1033	46	41	289	61
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.64	0.36
Final Sat.:	3150	3226	473	1750	3800	3150	1750	3542	158	1750	3059	640
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.15	0.19	0.20	0.16	0.29	0.29	0.02	0.09	0.09
Crit Moves:	****			****			****			****		
Green Time:	30.1	55.9	55.9	30.6	56.3	96.9	40.5	57.6	57.6	7.0	24.0	24.0
Volume/Cap:	0.55	0.83	0.83	0.83	0.55	0.33	0.64	0.83	0.83	0.55	0.64	0.64
Delay/Veh:	61.4	53.7	53.7	79.3	43.6	16.8	57.9	52.6	52.6	84.5	68.0	68.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.4	53.7	53.7	79.3	43.6	16.8	57.9	52.6	52.6	84.5	68.0	68.0
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	14	9	14	27	27	3	9	9
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



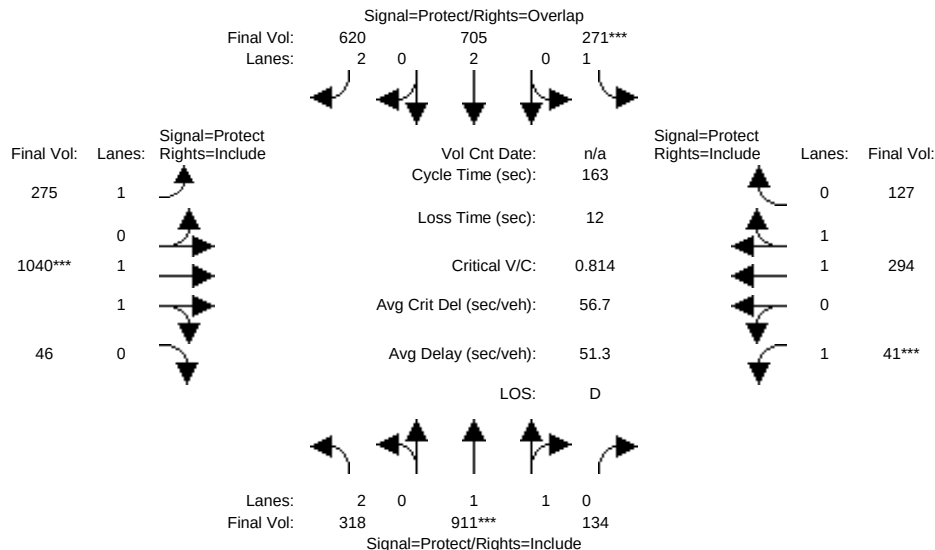
Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	319	917	134	271	727	625	270	1047	46	41	287	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	319	917	134	271	727	625	270	1047	46	41	287	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	319	917	134	271	727	625	270	1047	46	41	287	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	319	917	134	271	727	625	270	1047	46	41	287	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	319	917	134	271	727	625	270	1047	46	41	287	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	319	917	134	271	727	625	270	1047	46	41	287	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.40	0.60
Final Sat.:	3150	3228	472	1750	3800	3150	1750	3544	156	1750	2615	1084
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.15	0.19	0.20	0.15	0.30	0.30	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	29.8	55.7	55.7	30.4	56.3	94.2	37.9	57.9	57.9	7.0	27.0	27.0
Volume/Cap:	0.55	0.83	0.83	0.83	0.55	0.34	0.66	0.83	0.83	0.55	0.66	0.66
Delay/Veh:	61.7	54.1	54.1	80.2	43.7	18.2	60.8	52.7	52.7	84.5	66.5	66.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.7	54.1	54.1	80.2	43.7	18.2	60.8	52.7	52.7	84.5	66.5	66.5
LOS by Move:	E	D	D	F	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	15	10	14	27	27	3	11	11

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

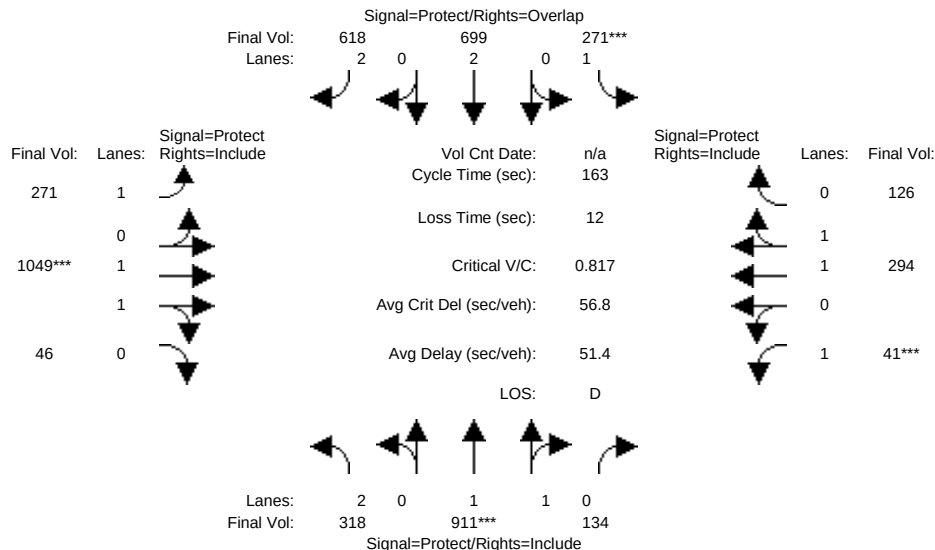


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	318	911	134	271	705	620	275	1040	46	41	294	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	318	911	134	271	705	620	275	1040	46	41	294	127
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	318	911	134	271	705	620	275	1040	46	41	294	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	318	911	134	271	705	620	275	1040	46	41	294	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	318	911	134	271	705	620	275	1040	46	41	294	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	318	911	134	271	705	620	275	1040	46	41	294	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.99	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.38	0.62
Final Sat.:	3150	3225	474	1750	3800	3150	1750	3543	157	1750	2583	1116
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.15	0.19	0.20	0.16	0.29	0.29	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	30.4	55.7	55.7	30.5	55.8	93.4	37.6	57.8	57.8	7.0	27.2	27.2
Volume/Cap:	0.54	0.83	0.83	0.83	0.54	0.34	0.68	0.83	0.83	0.55	0.68	0.68
Delay/Veh:	61.1	53.9	53.9	79.5	43.7	18.6	61.9	52.5	52.5	84.5	66.9	66.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.1	53.9	53.9	79.5	43.7	18.6	61.9	52.5	52.5	84.5	66.9	66.9
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	14	10	14	27	27	3	11	11
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)



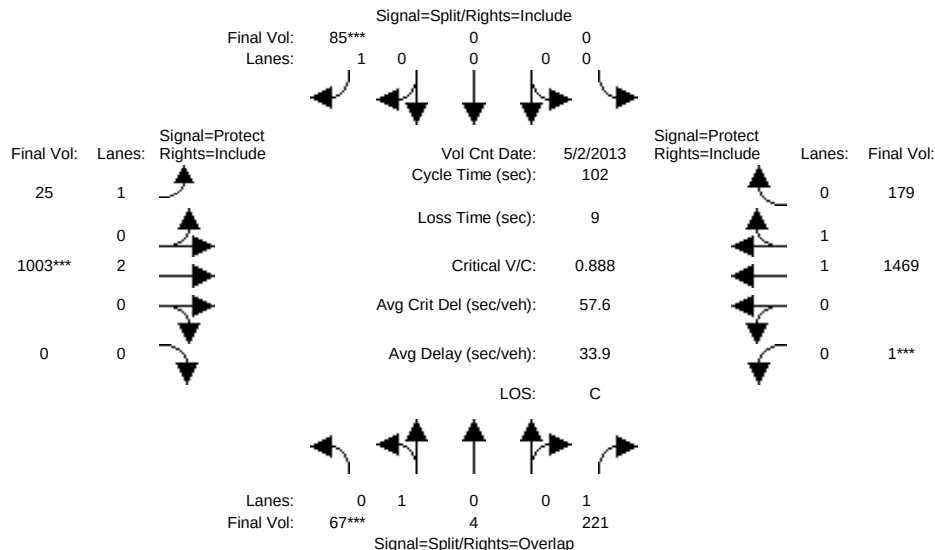
Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	318	911	134	271	699	618	271	1049	46	41	294	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	318	911	134	271	699	618	271	1049	46	41	294	126
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	318	911	134	271	699	618	271	1049	46	41	294	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	318	911	134	271	699	618	271	1049	46	41	294	126
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	318	911	134	271	699	618	271	1049	46	41	294	126
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	318	911	134	271	699	618	271	1049	46	41	294	126
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.38	0.62
Final Sat.:	3150	3225	474	1750	3800	3150	1750	3544	155	1750	2589	1110
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.15	0.18	0.20	0.15	0.30	0.30	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	30.4	55.5	55.5	30.4	55.4	93.0	37.6	58.1	58.1	7.0	27.5	27.5
Volume/Cap:	0.54	0.83	0.83	0.83	0.54	0.34	0.67	0.83	0.83	0.55	0.67	0.67
Delay/Veh:	61.0	54.2	54.2	80.0	43.9	18.8	61.5	52.5	52.5	84.5	66.4	66.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.0	54.2	54.2	80.0	43.9	18.8	61.5	52.5	52.5	84.5	66.4	66.4
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	14	10	14	27	27	3	11	11

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

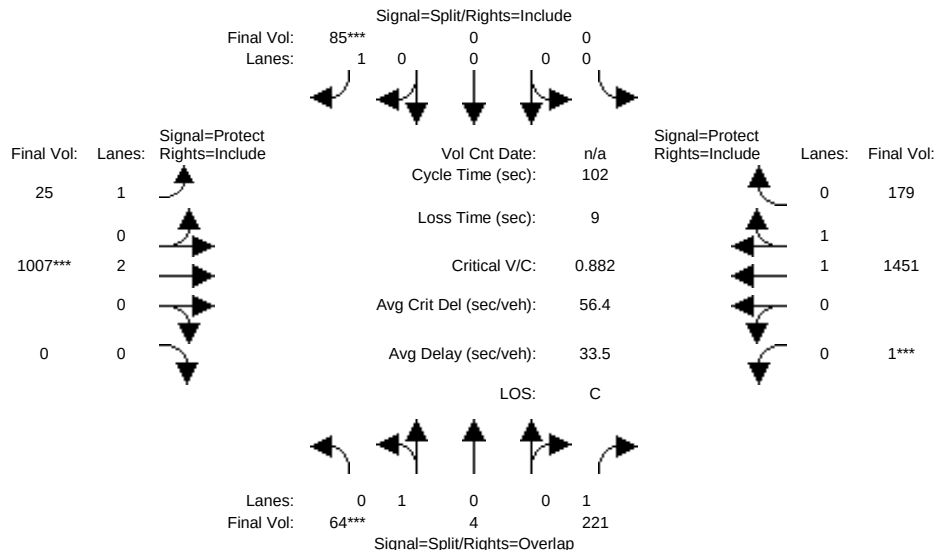


Street Name:	El Camino Real NB Ramps			University (east)		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 << AM						
Base Vol:	67	4	221	0	0	85
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	4	221	0	0	85
Added Vol:	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	67	4	221	0	0	85
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	4	221	0	0	85
Reduct Vol:	0	0	0	0	0	0
Reduced Vol:	67	4	221	0	0	85
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	67	4	221	0	0	85
Saturation Flow Module:						
Sat/Lane:	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00
Final Sat.:	1699	101	1750	0	0	1750
Capacity Analysis Module:						
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05
Crit Moves:	***	***	***	***	***	***
Green Time:	10.0	10.0	56.3	0.0	0.0	10.0
Volume/Cap:	0.40	0.40	0.23	0.00	0.00	0.50
Delay/Veh:	44.7	44.7	11.8	0.0	0.0	45.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.7	44.7	11.8	0.0	0.0	45.9
LOS by Move:	D	D	B	A	A	D
HCM2kAvgQ:	3	3	4	0	0	3
Note: Queue reported is the number of cars per lane.						

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

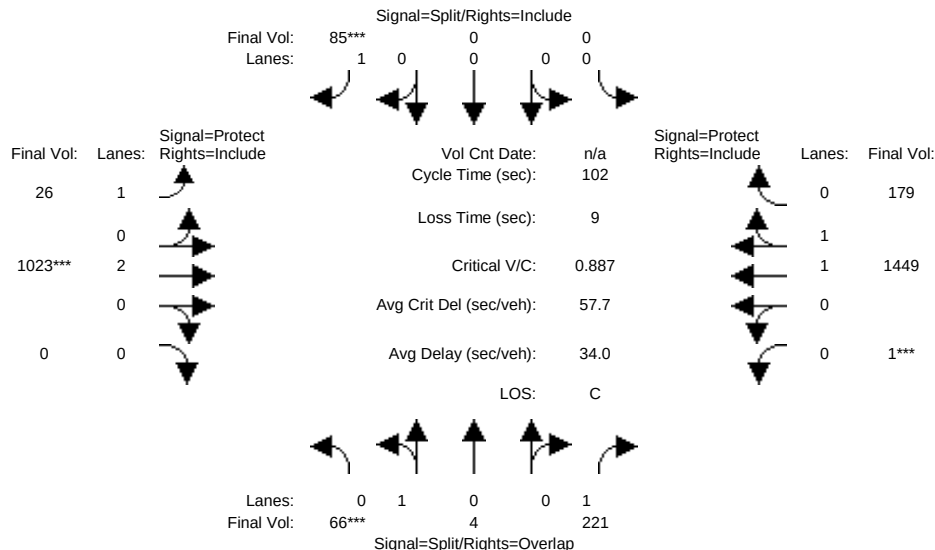


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	64	4	221	0	0	85	25	1007	0	1	1451	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	64	4	221	0	0	85	25	1007	0	1	1451	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	64	4	221	0	0	85	25	1007	0	1	1451	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	64	4	221	0	0	85	25	1007	0	1	1451	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	4	221	0	0	85	25	1007	0	1	1451	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	64	4	221	0	0	85	25	1007	0	1	1451	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.77	0.22
Final Sat.:	1694	106	1750	0	0	1750	1750	3800	0	2	3203	395
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.45	0.45	0.45
Crit Moves:	***					***		***		***		
Green Time:	10.0	10.0	56.1	0.0	0.0	10.0	9.6	26.9	0.0	46.1	63.4	63.4
Volume/Cap:	0.39	0.39	0.23	0.00	0.00	0.50	0.15	1.00	0.00	1.00	0.73	0.73
Delay/Veh:	44.5	44.5	12.0	0.0	0.0	45.9	42.9	66.7	0.0	51.1	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	44.5	12.0	0.0	0.0	45.9	42.9	66.7	0.0	51.1	14.6	14.6
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	22	0	35	19	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

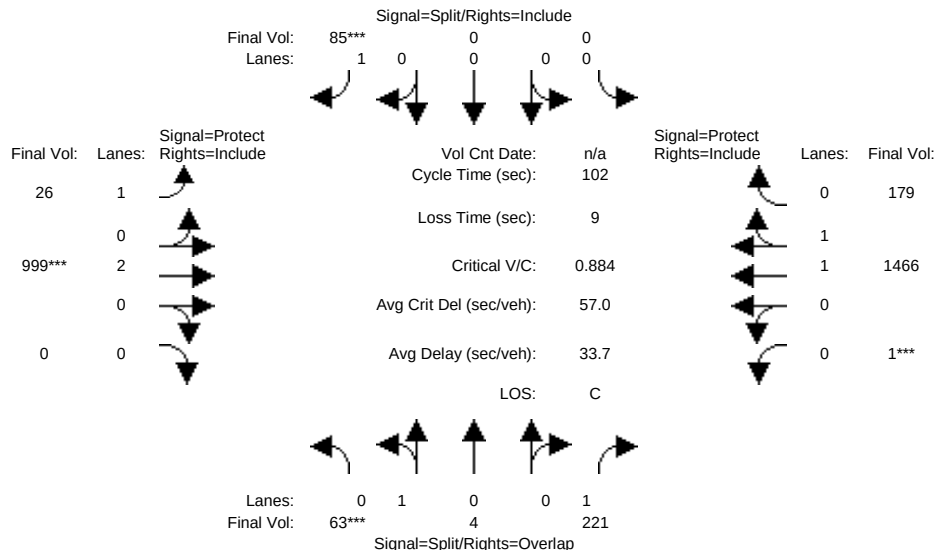


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	66	4	221	0	0	85	26	1023	0	1	1449	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	66	4	221	0	0	85	26	1023	0	1	1449	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	4	221	0	0	85	26	1023	0	1	1449	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	4	221	0	0	85	26	1023	0	1	1449	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	4	221	0	0	85	26	1023	0	1	1449	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	66	4	221	0	0	85	26	1023	0	1	1449	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.77	0.22
Final Sat.:	1697	103	1750	0	0	1750	1750	3800	0	2	3202	396
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.27	0.00	0.45	0.45	0.45
Crit Moves:	***					***		***		***		
Green Time:	10.0	10.0	55.8	0.0	0.0	10.0	9.6	27.2	0.0	45.8	63.4	63.4
Volume/Cap:	0.40	0.40	0.23	0.00	0.00	0.50	0.16	1.01	0.00	1.01	0.73	0.73
Delay/Veh:	44.6	44.6	12.1	0.0	0.0	45.9	42.9	67.7	0.0	52.6	14.6	14.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.6	44.6	12.1	0.0	0.0	45.9	42.9	67.7	0.0	52.6	14.6	14.6
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	23	0	35	19	19
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

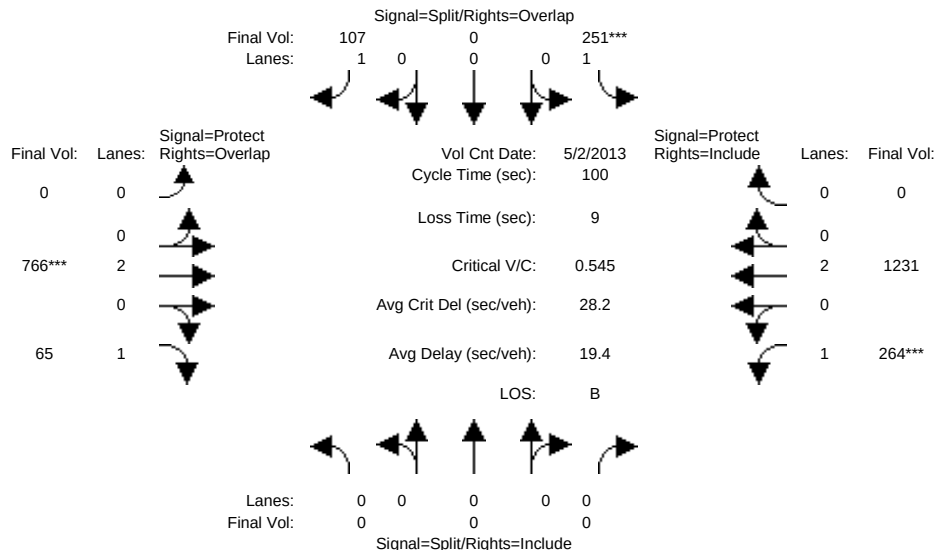


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	63	4	221	0	0	85	26	999	0	1	1466	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	63	4	221	0	0	85	26	999	0	1	1466	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	63	4	221	0	0	85	26	999	0	1	1466	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	63	4	221	0	0	85	26	999	0	1	1466	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	4	221	0	0	85	26	999	0	1	1466	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	63	4	221	0	0	85	26	999	0	1	1466	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.78	0.21
Final Sat.:	1693	107	1750	0	0	1750	1750	3800	0	2	3206	391
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.26	0.00	0.46	0.46	0.46
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	10.0	10.0	56.3	0.0	0.0	10.0	9.5	26.7	0.0	46.3	63.5	63.5
Volume/Cap:	0.38	0.38	0.23	0.00	0.00	0.50	0.16	1.01	0.00	1.01	0.73	0.73
Delay/Veh:	44.5	44.5	11.8	0.0	0.0	45.9	43.0	67.8	0.0	51.6	14.7	14.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	44.5	11.8	0.0	0.0	45.9	43.0	67.8	0.0	51.6	14.7	14.7
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	2	2	4	0	0	3	1	22	0	35	20	20
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



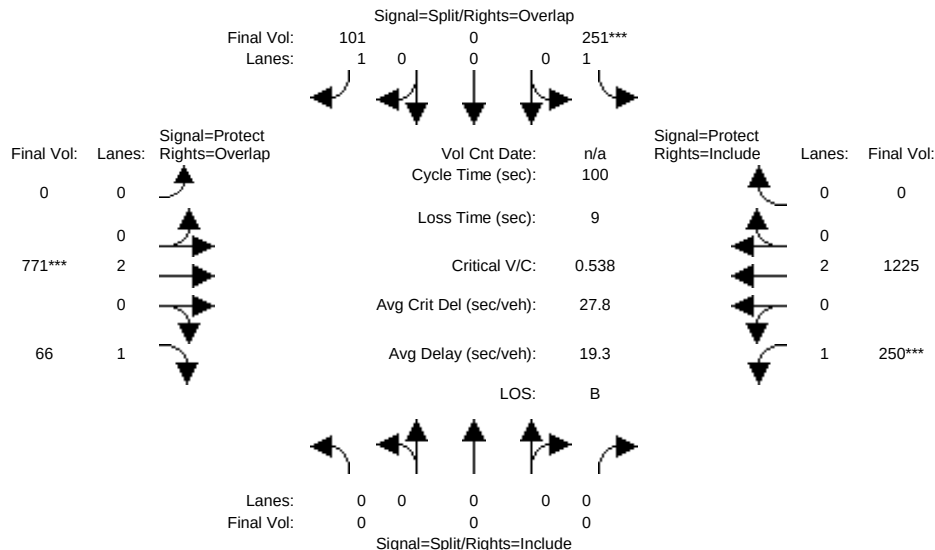
Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 2 May 2013 <<												
Base Vol:	0	0	0	251	0	107	0	766	65	264	1231	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	251	0	107	0	766	65	264	1231	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	251	0	107	0	766	65	264	1231	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	251	0	107	0	766	65	264	1231	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	251	0	107	0	766	65	264	1231	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	251	0	107	0	766	65	264	1231	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.06	0.00	0.20	0.04	0.15	0.32	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	26.3	0.0	26.3	0.0	37.0	37.0	27.7	64.7	0.0
Volume/Cap:	0.00	0.00	0.00	0.54	0.00	0.23	0.00	0.54	0.10	0.54	0.50	0.00
Delay/Veh:	0.0	0.0	0.0	33.0	0.0	29.2	0.0	25.3	20.7	32.1	9.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	33.0	0.0	29.2	0.0	25.3	20.7	32.1	9.4	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	8	0	3	0	10	1	8	10	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

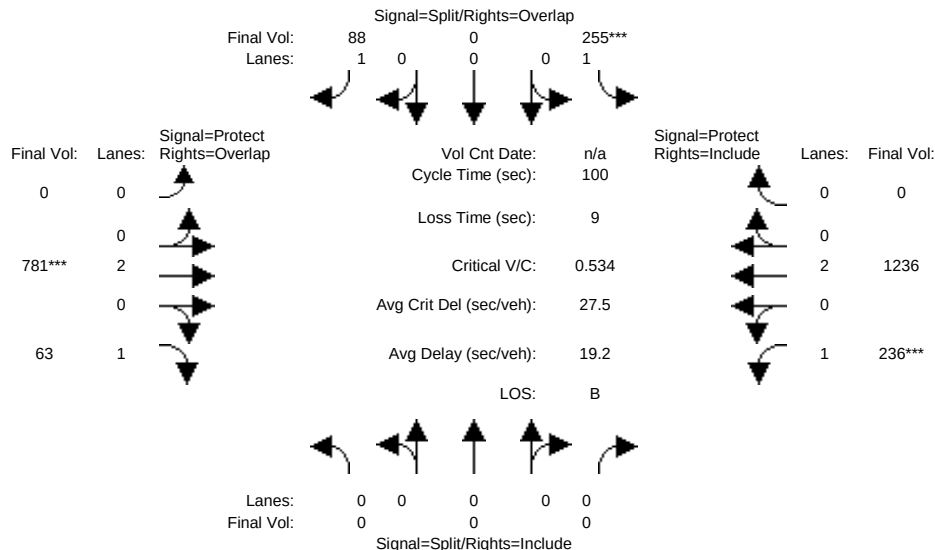


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	251	0	101	0	771	66	250	1225	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	251	0	101	0	771	66	250	1225	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	251	0	101	0	771	66	250	1225	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	251	0	101	0	771	66	250	1225	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	251	0	101	0	771	66	250	1225	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	251	0	101	0	771	66	250	1225	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.06	0.00	0.20	0.04	0.14	0.32	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	26.7	0.0	26.7	0.0	37.7	37.7	26.6	64.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.54	0.00	0.22	0.00	0.54	0.10	0.54	0.50	0.00
Delay/Veh:	0.0	0.0	0.0	32.6	0.0	28.8	0.0	24.7	20.2	32.7	9.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.6	0.0	28.8	0.0	24.7	20.2	32.7	9.6	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	A	A
HCM2kAvgQ:	0	0	0	8	0	3	0	9	1	8	10	0
Note: Queue reported is the number of cars per lane.												

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Scenario 6 AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



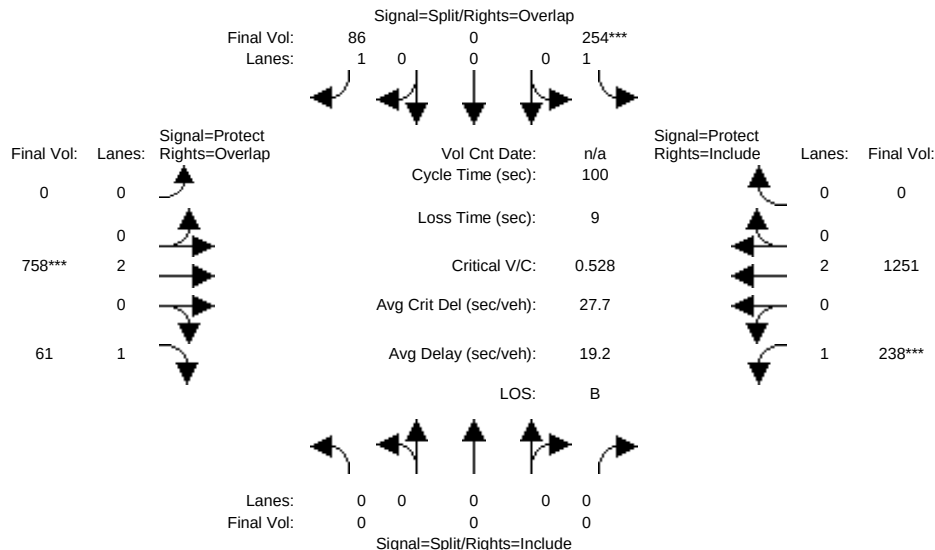
Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	255	0	88	0	781	63	236	1236	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	255	0	88	0	781	63	236	1236	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	255	0	88	0	781	63	236	1236	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	255	0	88	0	781	63	236	1236	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	255	0	88	0	781	63	236	1236	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	255	0	88	0	781	63	236	1236	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.05	0.00	0.21	0.04	0.13	0.33	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	27.3	0.0	27.3	0.0	38.5	38.5	25.2	63.7	0.0
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.18	0.00	0.53	0.09	0.53	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	32.1	0.0	28.0	0.0	24.2	19.7	33.6	9.9	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.1	0.0	28.0	0.0	24.2	19.7	33.6	9.9	0.0
LOS by Move:	A	A	A	C	A	C	A	C	B	C	A	A
HCM2kAvgQ:	0	0	0	8	0	2	0	10	1	7	10	0

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



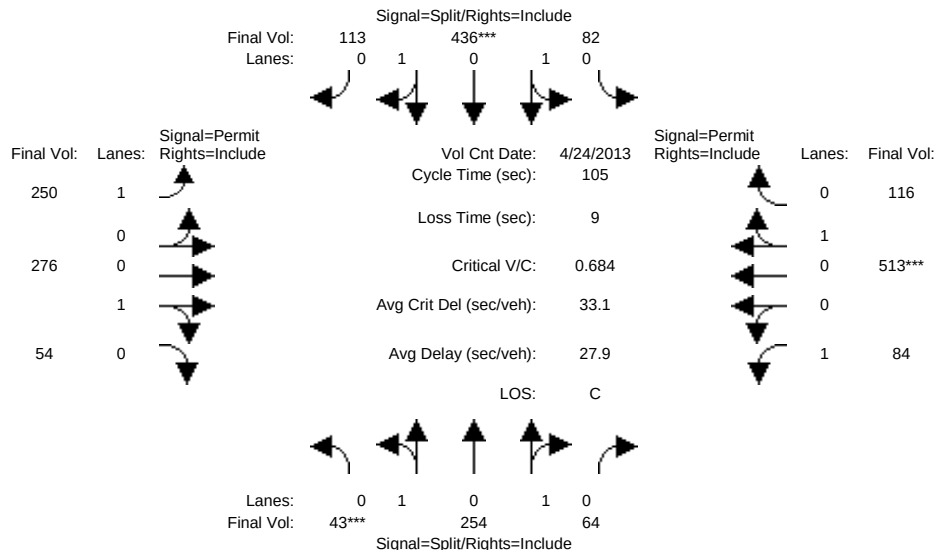
Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	254	0	86	0	758	61	238	1251	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	254	0	86	0	758	61	238	1251	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	254	0	86	0	758	61	238	1251	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	254	0	86	0	758	61	238	1251	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	254	0	86	0	758	61	238	1251	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	254	0	86	0	758	61	238	1251	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.15	0.00	0.05	0.00	0.20	0.03	0.14	0.33	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	27.5	0.0	27.5	0.0	37.8	37.8	25.8	63.5	0.0
Volume/Cap:	0.00	0.00	0.00	0.53	0.00	0.18	0.00	0.53	0.09	0.53	0.52	0.00
Delay/Veh:	0.0	0.0	0.0	31.9	0.0	27.8	0.0	24.6	20.1	33.1	10.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.9	0.0	27.8	0.0	24.6	20.1	33.1	10.1	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	B	A
HCM2kAvgQ:	0	0	0	8	0	2	0	9	1	7	11	0

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #15: Middlefield Road & University Avenue



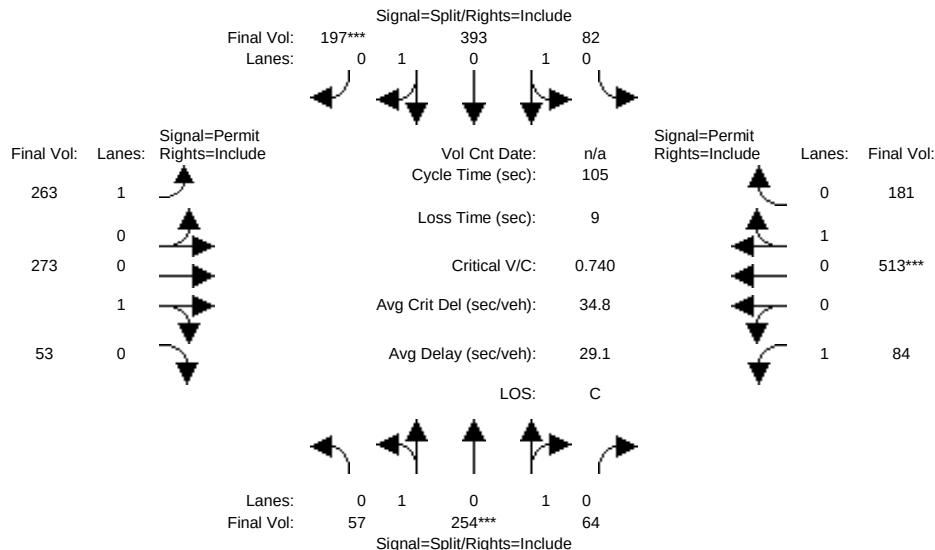
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 24 Apr 2013 << AM											
Base Vol:	43	254	64	82	436	113	250	276	54	84	513	116
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	254	64	82	436	113	250	276	54	84	513	116
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	254	64	82	436	113	250	276	54	84	513	116
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	254	64	82	436	113	250	276	54	84	513	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	254	64	82	436	113	250	276	54	84	513	116
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	43	254	64	82	436	113	250	276	54	84	513	116
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.24	1.41	0.35	0.26	1.38	0.36	1.00	0.84	0.16	1.00	0.82	0.18
Final Sat.:	429	2533	638	468	2487	645	1750	1505	295	1750	1468	332
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.18	0.18	0.18	0.14	0.18	0.18	0.05	0.35	0.35
Crit Moves:	***			***						***		
Green Time:	15.4	15.4	15.4	26.9	26.9	26.9	53.7	53.7	53.7	53.7	53.7	53.7
Volume/Cap:	0.68	0.68	0.68	0.68	0.68	0.68	0.28	0.36	0.36	0.09	0.68	0.68
Delay/Veh:	46.2	46.2	46.2	37.3	37.3	37.3	14.8	15.6	15.6	13.2	21.4	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.2	46.2	46.2	37.3	37.3	37.3	14.8	15.6	15.6	13.2	21.4	21.4
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	11	11	11	5	7	7	1	17	17

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #15: Middlefield Road & University Avenue



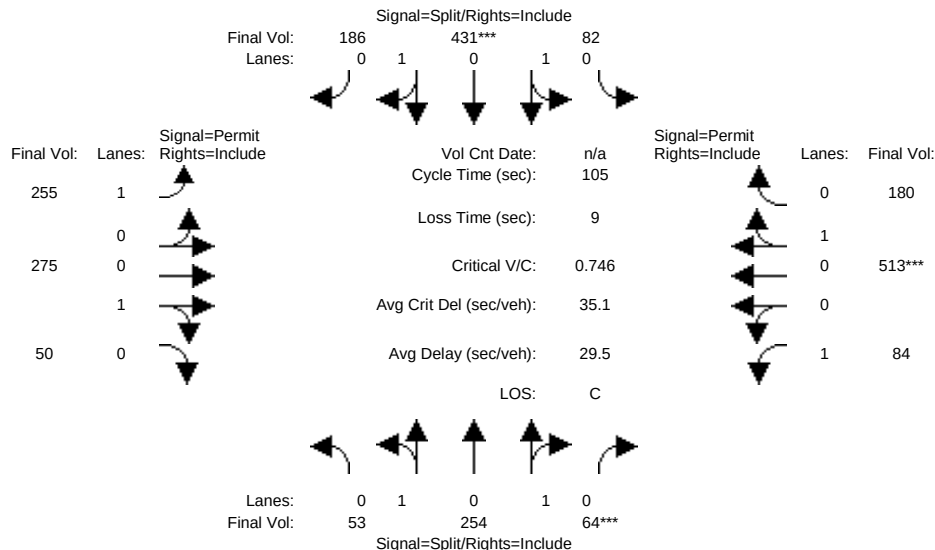
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	57	254	64	82	393	197	263	273	53	84	513	181
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	57	254	64	82	393	197	263	273	53	84	513	181
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	57	254	64	82	393	197	263	273	53	84	513	181
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	57	254	64	82	393	197	263	273	53	84	513	181
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	57	254	64	82	393	197	263	273	53	84	513	181
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	57	254	64	82	393	197	263	273	53	84	513	181
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.30	1.36	0.34	0.24	1.17	0.59	1.00	0.84	0.16	1.00	0.74	0.26
Final Sat.:	547	2438	614	439	2105	1055	1750	1507	293	1750	1331	469
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.15	0.18	0.18	0.05	0.39	0.39
Crit Moves:	****			****			****			****		
Green Time:	14.8	14.8	14.8	26.5	26.5	26.5	54.7	54.7	54.7	54.7	54.7	54.7
Volume/Cap:	0.74	0.74	0.74	0.74	0.74	0.74	0.29	0.35	0.35	0.09	0.74	0.74
Delay/Veh:	49.0	49.0	49.0	39.3	39.3	39.3	14.3	14.9	14.9	12.7	22.8	22.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.0	49.0	49.0	39.3	39.3	39.3	14.3	14.9	14.9	12.7	22.8	22.8
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	12	12	12	5	6	6	1	19	19

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #15: Middlefield Road & University Avenue



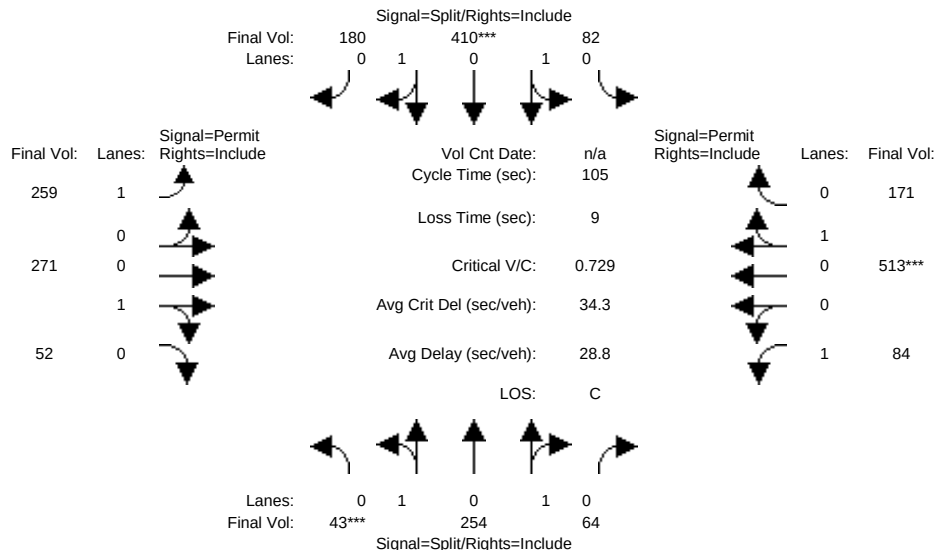
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	53	254	64	82	431	186	255	275	50	84	513	180
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	254	64	82	431	186	255	275	50	84	513	180
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	53	254	64	82	431	186	255	275	50	84	513	180
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	53	254	64	82	431	186	255	275	50	84	513	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	53	254	64	82	431	186	255	275	50	84	513	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	53	254	64	82	431	186	255	275	50	84	513	180
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.29	1.37	0.34	0.23	1.24	0.53	1.00	0.85	0.15	1.00	0.74	0.26
Final Sat.:	514	2465	621	422	2220	958	1750	1523	277	1750	1332	468
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.15	0.18	0.18	0.05	0.39	0.39
Crit Moves:	****			****			****			****		
Green Time:	14.5	14.5	14.5	27.3	27.3	27.3	54.2	54.2	54.2	54.2	54.2	54.2
Volume/Cap:	0.75	0.75	0.75	0.75	0.75	0.75	0.28	0.35	0.35	0.09	0.75	0.75
Delay/Veh:	49.6	49.6	49.6	39.0	39.0	39.0	14.6	15.2	15.2	13.0	23.3	23.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.6	49.6	49.6	39.0	39.0	39.0	14.6	15.2	15.2	13.0	23.3	23.3
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	12	12	12	5	6	6	1	19	19

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #15: Middlefield Road & University Avenue

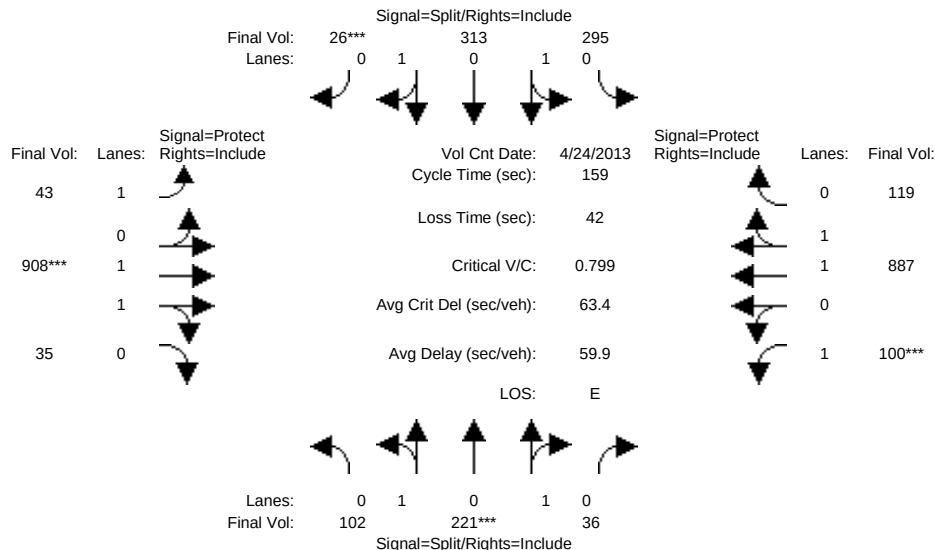


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	43	254	64	82	410	180	259	271	52	84	513	171
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	43	254	64	82	410	180	259	271	52	84	513	171
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	43	254	64	82	410	180	259	271	52	84	513	171
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	43	254	64	82	410	180	259	271	52	84	513	171
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	43	254	64	82	410	180	259	271	52	84	513	171
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	43	254	64	82	410	180	259	271	52	84	513	171
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.24	1.41	0.35	0.24	1.22	0.54	1.00	0.84	0.16	1.00	0.75	0.25
Final Sat.:	429	2533	638	439	2196	964	1750	1510	290	1750	1350	450
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.15	0.18	0.18	0.05	0.38	0.38
Crit Moves:	***			***						***		
Green Time:	14.4	14.4	14.4	26.9	26.9	26.9	54.7	54.7	54.7	54.7	54.7	54.7
Volume/Cap:	0.73	0.73	0.73	0.73	0.73	0.73	0.28	0.34	0.34	0.09	0.73	0.73
Delay/Veh:	48.9	48.9	48.9	38.7	38.7	38.7	14.3	14.9	14.9	12.7	22.4	22.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	48.9	48.9	38.7	38.7	38.7	14.3	14.9	14.9	12.7	22.4	22.4
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	12	12	12	5	6	6	1	19	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]

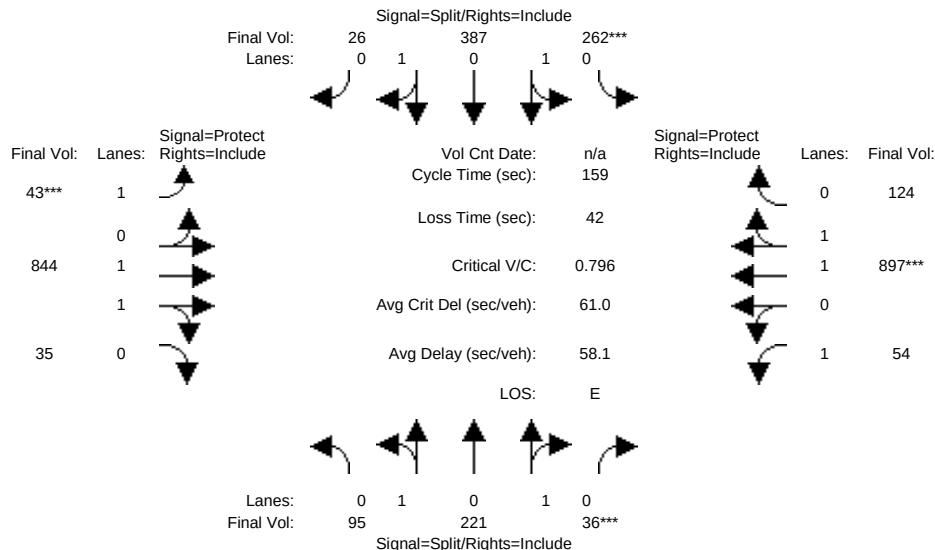


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Apr 2013 << AM												
Base Vol:	102	221	36	295	313	26	43	908	35	100	887	119
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	102	221	36	295	313	26	43	908	35	100	887	119
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	102	221	36	295	313	26	43	908	35	100	887	119
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	102	221	36	295	313	26	43	908	35	100	887	119
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	221	36	295	313	26	43	908	35	100	887	119
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	102	221	36	295	313	26	43	908	35	100	887	119
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.57	1.23	0.20	0.93	0.99	0.08	1.00	1.92	0.08	1.00	1.76	0.24
Final Sat.:	1023	2216	361	1675	1777	148	1750	3563	137	1750	3262	438
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.18	0.18	0.18	0.02	0.25	0.25	0.06	0.27	0.27
Crit Moves:	****			****			****			****		
Green Time:	19.8	19.8	19.8	35.1	35.1	35.1	8.7	50.7	50.7	11.4	53.4	53.4
Volume/Cap:	0.80	0.80	0.80	0.80	0.80	0.80	0.45	0.80	0.80	0.80	0.81	0.81
Delay/Veh:	77.4	77.4	77.4	64.4	64.4	64.4	76.2	53.4	53.4	102.0	52.2	52.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.4	77.4	77.4	64.4	64.4	64.4	76.2	53.4	53.4	102.0	52.2	52.2
LOS by Move:	E	E	E	E	E	E	E	D	D	F	D	D
HCM2kAvgQ:	11	11	11	17	17	17	3	23	23	7	24	24
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]



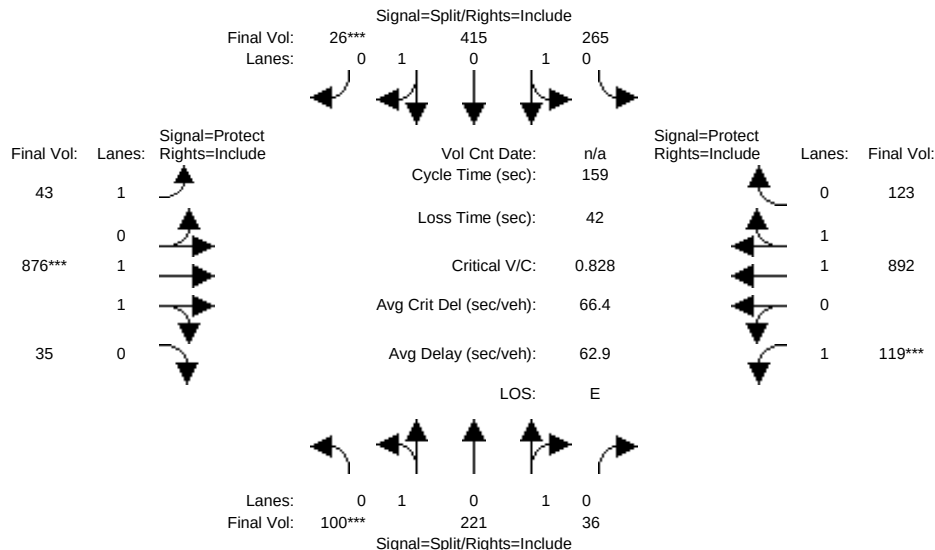
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	221	36	262	387	26	43	844	35	54	897	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	221	36	262	387	26	43	844	35	54	897	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	221	36	262	387	26	43	844	35	54	897	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	221	36	262	387	26	43	844	35	54	897	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	221	36	262	387	26	43	844	35	54	897	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	221	36	262	387	26	43	844	35	54	897	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.54	1.26	0.20	0.77	1.15	0.08	1.00	1.92	0.08	1.00	1.75	0.25
Final Sat.:	972	2260	368	1397	2064	139	1750	3553	147	1750	3250	449
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.19	0.19	0.19	0.02	0.24	0.24	0.03	0.28	0.28
Crit Moves:	****			****			****			****		
Green Time:	19.2	19.2	19.2	36.7	36.7	36.7	7.0	51.5	51.5	9.6	54.1	54.1
Volume/Cap:	0.81	0.81	0.81	0.81	0.81	0.81	0.56	0.73	0.73	0.51	0.81	0.81
Delay/Veh:	79.2	79.2	79.2	63.9	63.9	63.9	83.3	50.0	50.0	76.8	51.9	51.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	79.2	79.2	79.2	63.9	63.9	63.9	83.3	50.0	50.0	76.8	51.9	51.9
LOS by Move:	E	E	E	E	E	E	F	D	D	E	D	D
HCM2kAvgQ:	11	11	11	18	18	18	3	20	20	3	25	25

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]



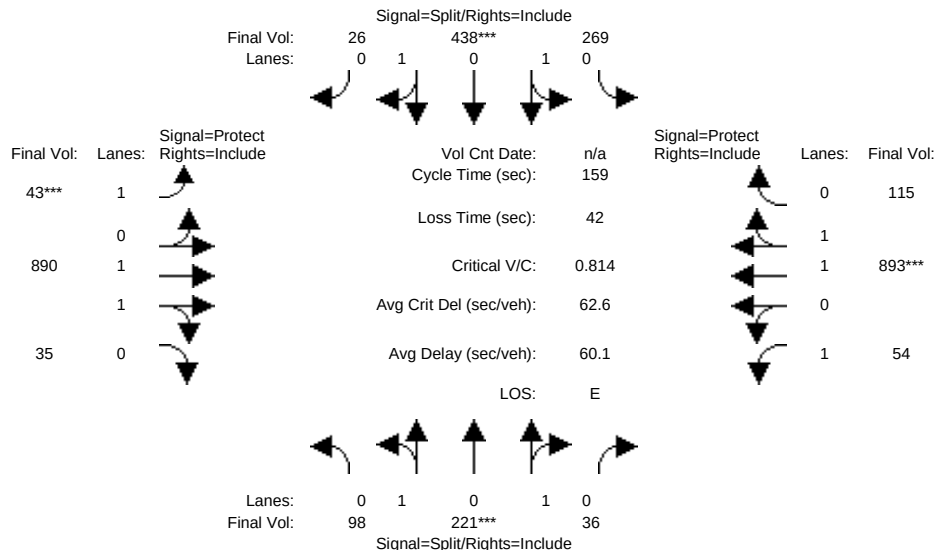
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	100	221	36	265	415	26	43	876	35	119	892	123
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	221	36	265	415	26	43	876	35	119	892	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	221	36	265	415	26	43	876	35	119	892	123
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	100	221	36	265	415	26	43	876	35	119	892	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	221	36	265	415	26	43	876	35	119	892	123
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	100	221	36	265	415	26	43	876	35	119	892	123
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.56	1.24	0.20	0.75	1.18	0.07	1.00	1.92	0.08	1.00	1.75	0.25
Final Sat.:	1008	2229	363	1351	2116	133	1750	3558	142	1750	3251	448
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.20	0.20	0.20	0.02	0.25	0.25	0.07	0.27	0.27
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	19.0	19.0	19.0	37.6	37.6	37.6	8.3	47.3	47.3	13.1	52.0	52.0
Volume/Cap:	0.83	0.83	0.83	0.83	0.83	0.83	0.47	0.83	0.83	0.83	0.84	0.84
Delay/Veh:	81.0	81.0	81.0	64.4	64.4	64.4	76.9	57.4	57.4	103.1	55.0	55.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.0	81.0	81.0	64.4	64.4	64.4	76.9	57.4	57.4	103.1	55.0	55.0
LOS by Move:	F	F	F	E	E	E	E	E	E	F	E	E
HCM2kAvgQ:	11	11	11	19	19	19	3	23	23	8	25	25

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]



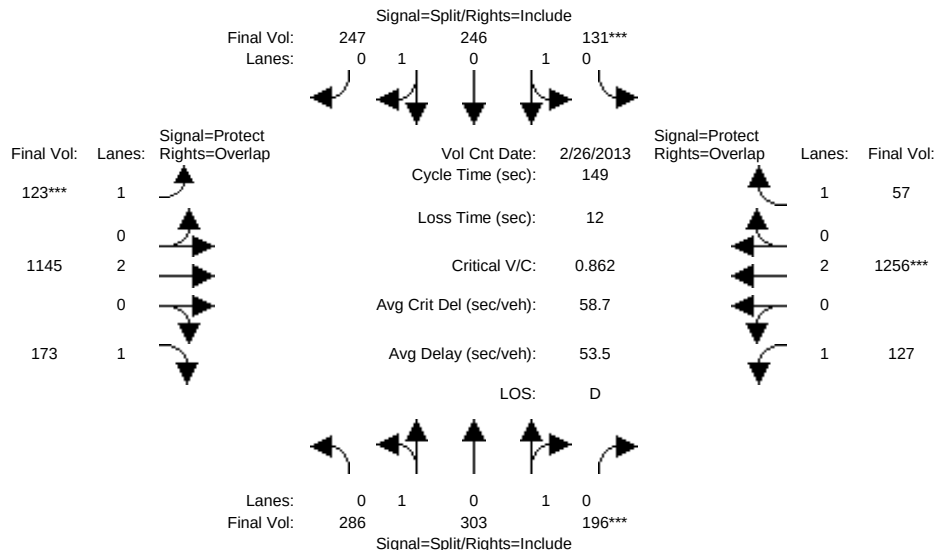
Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	98	221	36	269	438	26	43	890	35	54	893	115
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	98	221	36	269	438	26	43	890	35	54	893	115
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	98	221	36	269	438	26	43	890	35	54	893	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	98	221	36	269	438	26	43	890	35	54	893	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	98	221	36	269	438	26	43	890	35	54	893	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	98	221	36	269	438	26	43	890	35	54	893	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.55	1.25	0.20	0.73	1.20	0.07	1.00	1.92	0.08	1.00	1.77	0.23
Final Sat.:	994	2241	365	1321	2151	128	1750	3560	140	1750	3278	422
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.20	0.20	0.20	0.02	0.25	0.25	0.03	0.27	0.27
Crit Moves:	****			****			****			****		
Green Time:	18.9	18.9	18.9	39.0	39.0	39.0	7.0	50.3	50.3	8.9	52.2	52.2
Volume/Cap:	0.83	0.83	0.83	0.83	0.83	0.83	0.56	0.79	0.79	0.55	0.83	0.83
Delay/Veh:	81.4	81.4	81.4	63.6	63.6	63.6	83.3	53.3	53.3	79.9	54.3	54.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.4	81.4	81.4	63.6	63.6	63.6	83.3	53.3	53.3	79.9	54.3	54.3
LOS by Move:	F	F	F	E	E	E	F	D	D	E	D	D
HCM2kAvgQ:	11	11	11	20	20	20	3	22	22	4	25	25

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

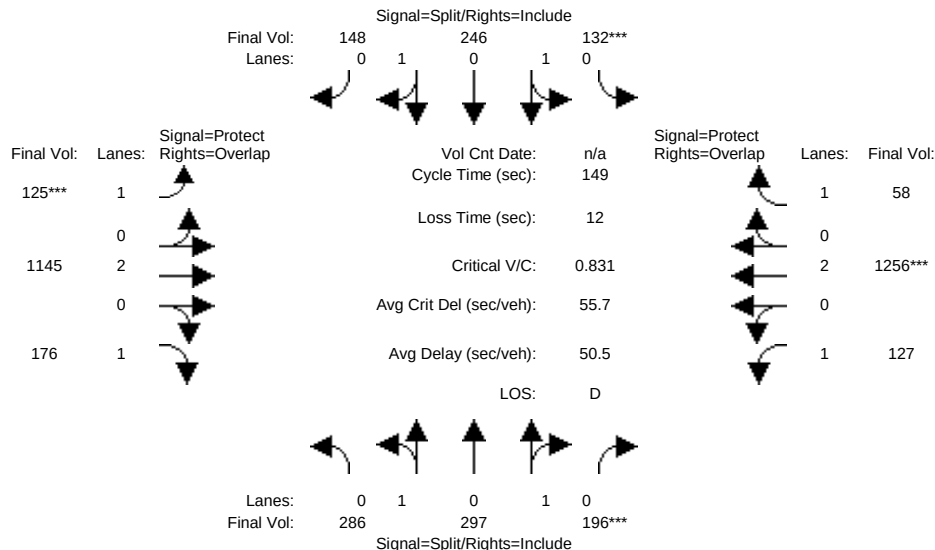


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Feb 2013 << AM												
Base Vol:	286	303	196	131	246	247	123	1145	173	127	1256	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	303	196	131	246	247	123	1145	173	127	1256	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	303	196	131	246	247	123	1145	173	127	1256	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	303	196	131	246	247	123	1145	173	127	1256	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	303	196	131	246	247	123	1145	173	127	1256	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	303	196	131	246	247	123	1145	173	127	1256	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.42	0.79	0.79	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1312	1390	899	756	1419	1425	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.17	0.17	0.17	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	37.7	37.7	37.7	30.0	30.0	30.0	12.2	55.9	93.6	13.5	57.2	87.1
Volume/Cap:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.80	0.16	0.80	0.86	0.06
Delay/Veh:	61.6	61.6	61.6	67.8	67.8	67.8	105.6	45.1	11.5	91.4	47.8	13.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.6	61.6	61.6	67.8	67.8	67.8	105.6	45.1	11.5	91.4	47.8	13.3
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	21	21	21	17	17	17	8	25	3	8	29	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)

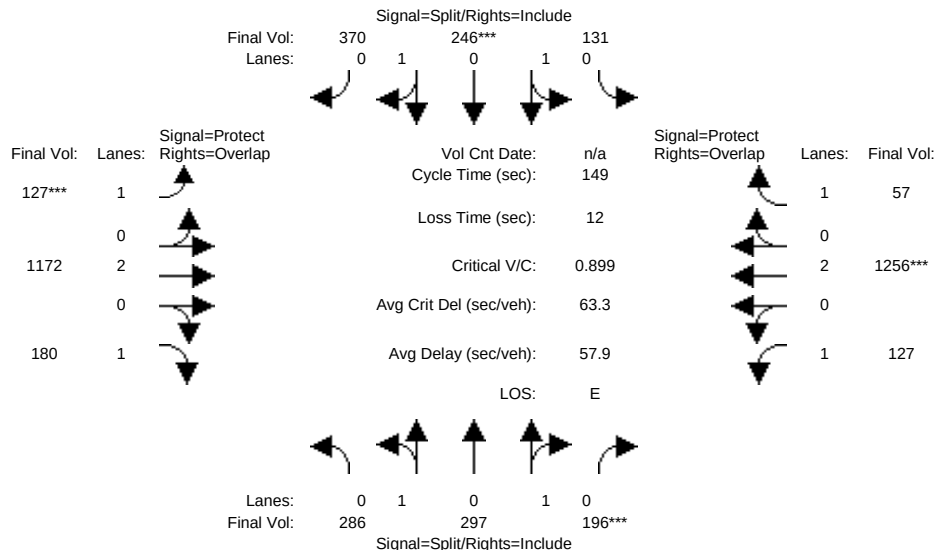


Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	297	196	132	246	148	125	1145	176	127	1256	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	297	196	132	246	148	125	1145	176	127	1256	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	297	196	132	246	148	125	1145	176	127	1256	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	297	196	132	246	148	125	1145	176	127	1256	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	297	196	132	246	148	125	1145	176	127	1256	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	297	196	132	246	148	125	1145	176	127	1256	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.50	0.94	0.56	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1322	1373	906	903	1684	1013	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.15	0.15	0.15	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	38.8	38.8	38.8	26.2	26.2	26.2	12.8	58.1	96.8	14.0	59.2	85.4
Volume/Cap:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.77	0.15	0.77	0.83	0.06
Delay/Veh:	58.4	58.4	58.4	68.4	68.4	68.4	97.7	42.3	10.2	86.0	44.5	14.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.4	58.4	58.4	68.4	68.4	68.4	97.7	42.3	10.2	86.0	44.5	14.1
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	20	20	20	14	14	14	8	24	3	8	27	1
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



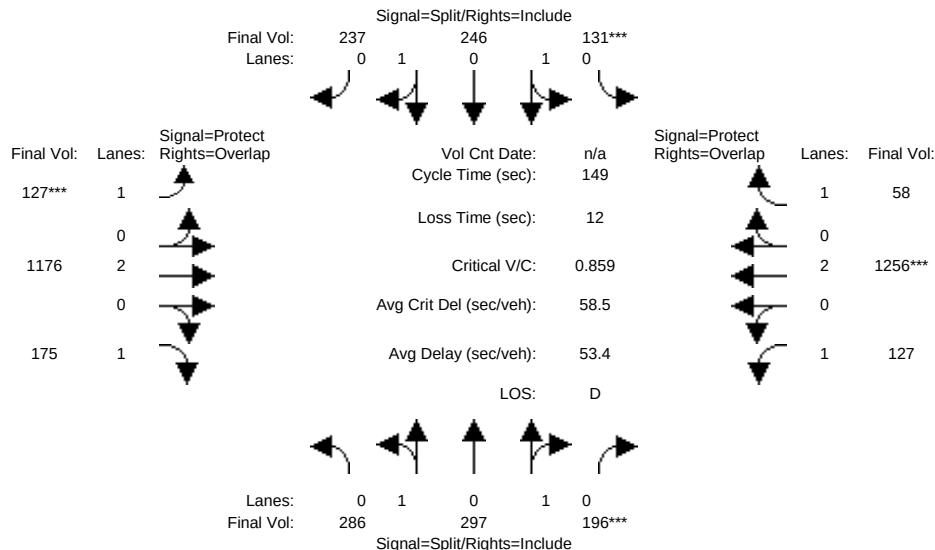
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	297	196	131	246	370	127	1172	180	127	1256	57
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	297	196	131	246	370	127	1172	180	127	1256	57
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	297	196	131	246	370	127	1172	180	127	1256	57
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	297	196	131	246	370	127	1172	180	127	1256	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	297	196	131	246	370	127	1172	180	127	1256	57
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	297	196	131	246	370	127	1172	180	127	1256	57
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.35	0.66	0.99	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1322	1373	906	631	1186	1783	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.21	0.21	0.21	0.07	0.31	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.8	35.8	35.8	34.4	34.4	34.4	12.0	54.1	89.9	12.7	54.8	89.1
Volume/Cap:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.85	0.17	0.85	0.90	0.05
Delay/Veh:	67.1	67.1	67.1	68.3	68.3	68.3	114.8	49.0	13.1	101.6	52.7	12.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	67.1	67.1	67.1	68.3	68.3	68.3	114.8	49.0	13.1	101.6	52.7	12.5
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	21	21	21	21	21	21	9	27	4	9	30	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



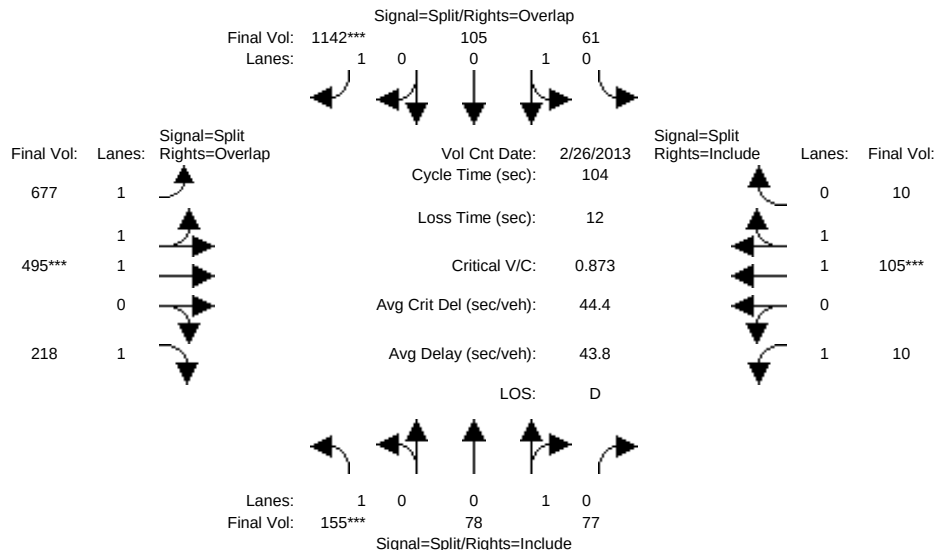
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	297	196	131	246	237	127	1176	175	127	1256	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	297	196	131	246	237	127	1176	175	127	1256	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	297	196	131	246	237	127	1176	175	127	1256	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	297	196	131	246	237	127	1176	175	127	1256	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	297	196	131	246	237	127	1176	175	127	1256	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	297	196	131	246	237	127	1176	175	127	1256	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.43	0.80	0.77	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1322	1373	906	768	1442	1390	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.17	0.17	0.17	0.07	0.31	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	37.5	37.5	37.5	29.6	29.6	29.6	12.6	56.6	94.1	13.3	57.3	86.9
Volume/Cap:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.81	0.16	0.81	0.86	0.06
Delay/Veh:	61.5	61.5	61.5	68.0	68.0	68.0	103.9	45.2	11.3	93.6	47.5	13.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.5	61.5	61.5	68.0	68.0	68.0	103.9	45.2	11.3	93.6	47.5	13.4
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	20	20	20	17	17	17	9	25	3	8	28	1

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 AM

Intersection #18: Bayshore Road & Embarcadero Road

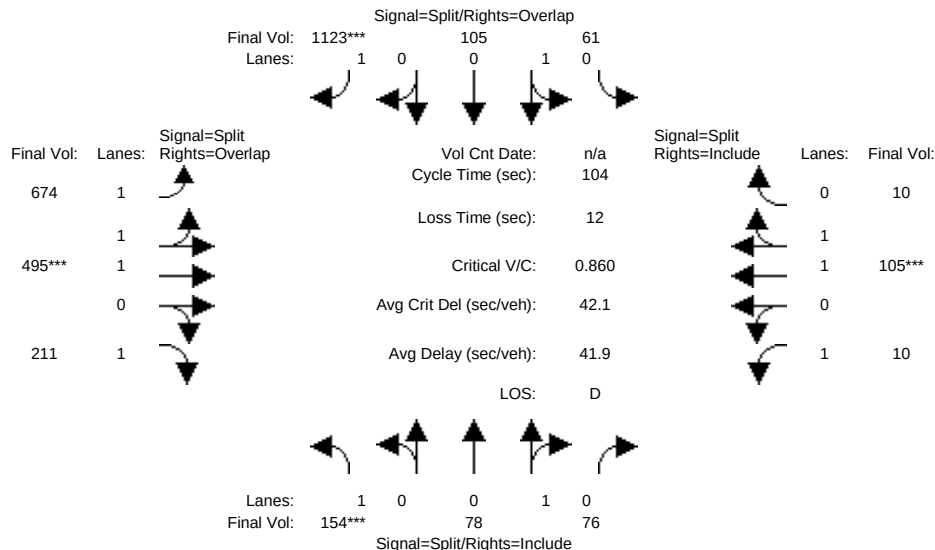


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 26 Feb 2013 << AM												
Base Vol:	155	78	77	61	105	1142	677	495	218	10	105	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	155	78	77	61	105	1142	677	495	218	10	105	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	155	78	77	61	105	1142	677	495	218	10	105	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	155	78	77	61	105	1142	677	495	218	10	105	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	155	78	77	61	105	1142	677	495	218	10	105	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	155	78	77	61	105	1142	677	495	218	10	105	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.50	0.50	0.37	0.63	1.00	1.78	1.22	1.00	1.00	1.82	0.18
Final Sat.:	1750	906	894	661	1139	1750	3145	2300	1750	1750	3378	322
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.65	0.22	0.22	0.12	0.01	0.03	0.03
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	10.0	10.0	10.0	48.3	48.3	72.0	23.7	23.7	33.7	10.0	10.0	10.0
Volume/Cap:	0.92	0.90	0.90	0.20	0.20	0.94	0.94	0.94	0.38	0.06	0.32	0.32
Delay/Veh:	93.6	86.6	86.6	16.6	16.6	28.4	53.5	53.5	27.5	42.9	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.6	86.6	86.6	16.6	16.6	28.4	53.5	53.5	27.5	42.9	44.4	44.4
LOS by Move:	F	F	F	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	9	8	8	3	3	40	17	17	6	0	2	2
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M AM

Intersection #18: Bayshore Road & Embarcadero Road

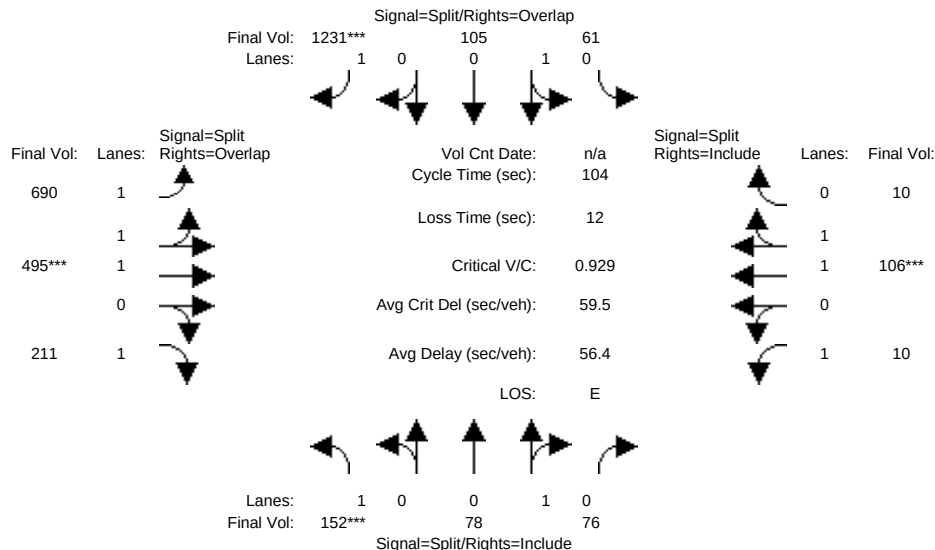


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	154	78	76	61	105	1123	674	495	211	10	105	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	154	78	76	61	105	1123	674	495	211	10	105	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	154	78	76	61	105	1123	674	495	211	10	105	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	78	76	61	105	1123	674	495	211	10	105	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	78	76	61	105	1123	674	495	211	10	105	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	154	78	76	61	105	1123	674	495	211	10	105	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.51	0.49	0.37	0.63	1.00	1.77	1.23	1.00	1.00	1.82	0.18
Final Sat.:	1750	912	888	661	1139	1750	3140	2306	1750	1750	3378	322
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.64	0.21	0.21	0.12	0.01	0.03	0.03
Crit Moves:	***					***	***	***		***		
Green Time:	10.0	10.0	10.0	47.9	47.9	72.0	24.1	24.1	34.1	10.0	10.0	10.0
Volume/Cap:	0.92	0.89	0.89	0.20	0.20	0.93	0.93	0.93	0.37	0.06	0.32	0.32
Delay/Veh:	92.1	85.3	85.3	16.8	16.8	25.9	50.9	50.9	27.1	42.9	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	92.1	85.3	85.3	16.8	16.8	25.9	50.9	50.9	27.1	42.9	44.4	44.4
LOS by Move:	F	F	F	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	8	8	8	3	3	38	17	17	6	0	2	2
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 AM

Intersection #18: Bayshore Road & Embarcadero Road

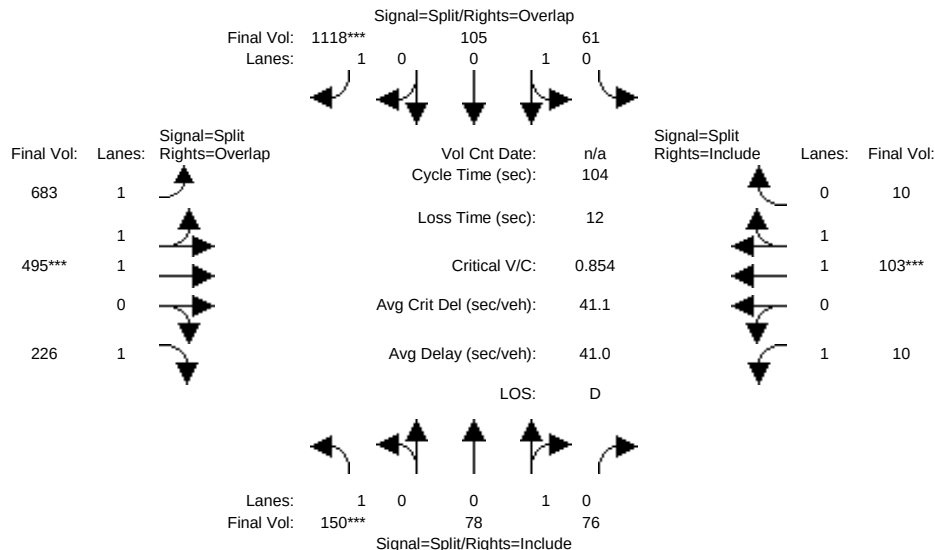


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	152	78	76	61	105	1231	690	495	211	10	106	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	152	78	76	61	105	1231	690	495	211	10	106	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	152	78	76	61	105	1231	690	495	211	10	106	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	152	78	76	61	105	1231	690	495	211	10	106	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	152	78	76	61	105	1231	690	495	211	10	106	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	152	78	76	61	105	1231	690	495	211	10	106	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.51	0.49	0.37	0.63	1.00	1.79	1.21	1.00	1.00	1.82	0.18
Final Sat.:	1750	912	888	661	1139	1750	3171	2275	1750	1750	3381	319
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.70	0.22	0.22	0.12	0.01	0.03	0.03
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	10.0	10.0	10.0	49.7	49.7	72.0	22.3	22.3	32.3	10.0	10.0	10.0
Volume/Cap:	0.90	0.89	0.89	0.19	0.19	1.02	1.02	1.02	0.39	0.06	0.33	0.33
Delay/Veh:	89.2	85.3	85.3	15.7	15.7	45.9	71.3	71.3	28.6	42.9	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.2	85.3	85.3	15.7	15.7	45.9	71.3	71.3	28.6	42.9	44.4	44.4
LOS by Move:	F	F	F	B	B	D	E	E	C	D	D	D
HCM2kAvgQ:	8	8	8	3	3	53	20	20	6	0	2	2
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
Scenario 6M AM

Intersection #18: Bayshore Road & Embarcadero Road



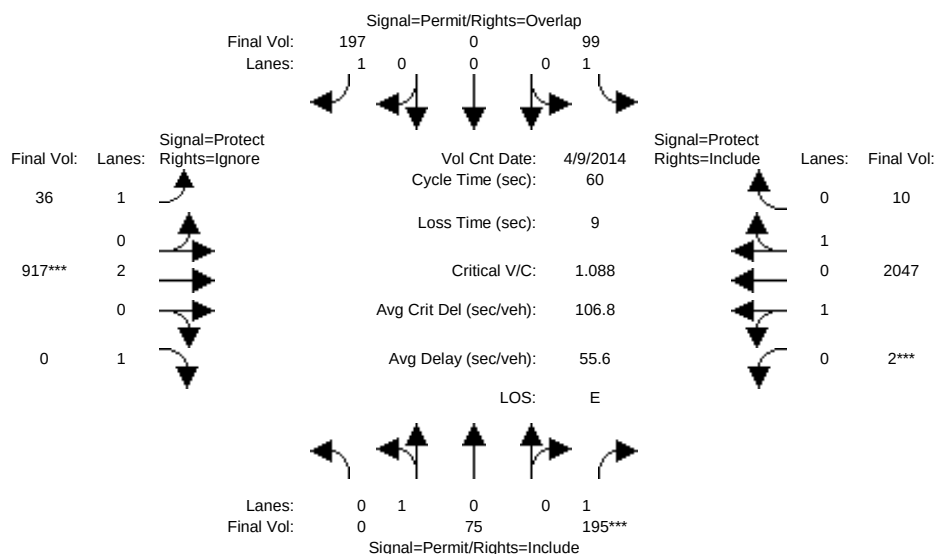
Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	150	78	76	61	105	1118	683	495	226	10	103	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	78	76	61	105	1118	683	495	226	10	103	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	78	76	61	105	1118	683	495	226	10	103	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	78	76	61	105	1118	683	495	226	10	103	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	78	76	61	105	1118	683	495	226	10	103	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	150	78	76	61	105	1118	683	495	226	10	103	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.51	0.49	0.37	0.63	1.00	1.78	1.22	1.00	1.00	1.82	0.18
Final Sat.:	1750	912	888	661	1139	1750	3157	2288	1750	1750	3372	327
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.64	0.22	0.22	0.13	0.01	0.03	0.03
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	***
Green Time:	10.0	10.0	10.0	47.6	47.6	72.0	24.4	24.4	34.4	10.0	10.0	10.0
Volume/Cap:	0.89	0.89	0.89	0.20	0.20	0.92	0.92	0.92	0.39	0.06	0.32	0.32
Delay/Veh:	86.4	85.3	85.3	17.0	17.0	25.3	50.1	50.1	27.2	42.9	44.3	44.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.4	85.3	85.3	17.0	17.0	25.3	50.1	50.1	27.2	42.9	44.3	44.3
LOS by Move:	F	F	F	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	8	8	8	3	3	37	17	17	6	0	2	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

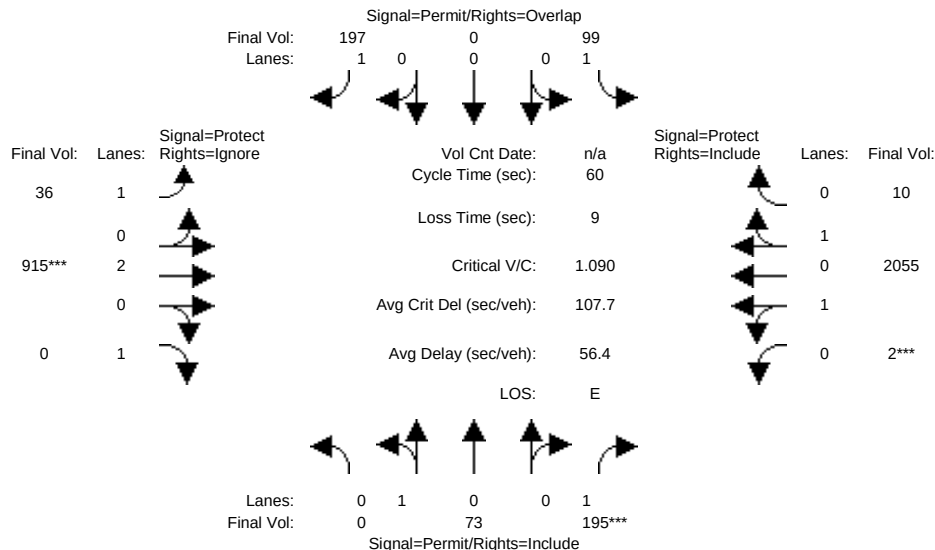


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 9 Apr 2014 << 4:00 PM - 5:00 PM											
Base Vol:	0	75	195	99	0	197	36	917	106	2	2047	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	75	195	99	0	197	36	917	106	2	2047	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	75	195	99	0	197	36	917	106	2	2047	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	75	195	99	0	197	36	917	0	2	2047	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	75	195	99	0	197	36	917	0	2	2047	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	75	195	99	0	197	36	917	0	2	2047	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.11	0.06	0.00	0.11	0.02	0.24	0.00	0.57	0.57	0.57
Crit Moves:	*****											
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	12.2	0.0	28.8	34.0	34.0
Volume/Cap:	0.00	0.25	0.67	0.34	0.00	0.40	0.18	1.19	0.00	1.19	1.01	1.01
Delay/Veh:	0.0	22.2	29.3	22.8	0.0	17.9	24.3	122	0.0	107.2	35.2	35.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.2	29.3	22.8	0.0	17.9	24.3	122	0.0	107.2	35.2	35.2
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	21	0	45	30	30
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

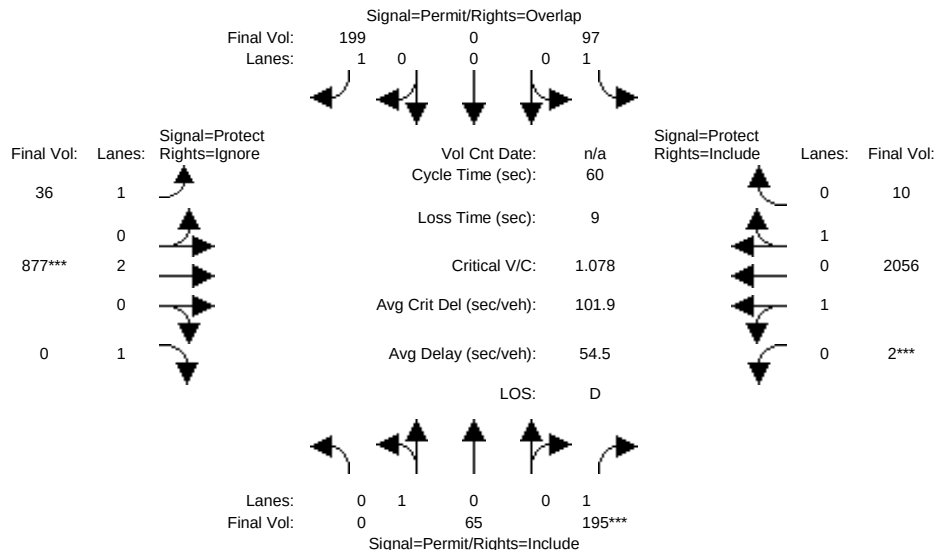


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	73	195	99	0	197	36	915	106	2	2055	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	73	195	99	0	197	36	915	106	2	2055	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	73	195	99	0	197	36	915	106	2	2055	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	73	195	99	0	197	36	915	0	2	2055	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	73	195	99	0	197	36	915	0	2	2055	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	73	195	99	0	197	36	915	0	2	2055	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.11	0.06	0.00	0.11	0.02	0.24	0.00	0.57	0.57	0.57
Crit Moves:	****											
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	12.1	0.0	28.9	34.0	34.0
Volume/Cap:	0.00	0.24	0.67	0.34	0.00	0.40	0.18	1.19	0.00	1.19	1.01	1.01
Delay/Veh:	0.0	22.1	29.3	22.8	0.0	17.9	24.3	123	0.0	108.2	36.3	36.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.1	29.3	22.8	0.0	17.9	24.3	123	0.0	108.2	36.3	36.3
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	21	0	45	31	31
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

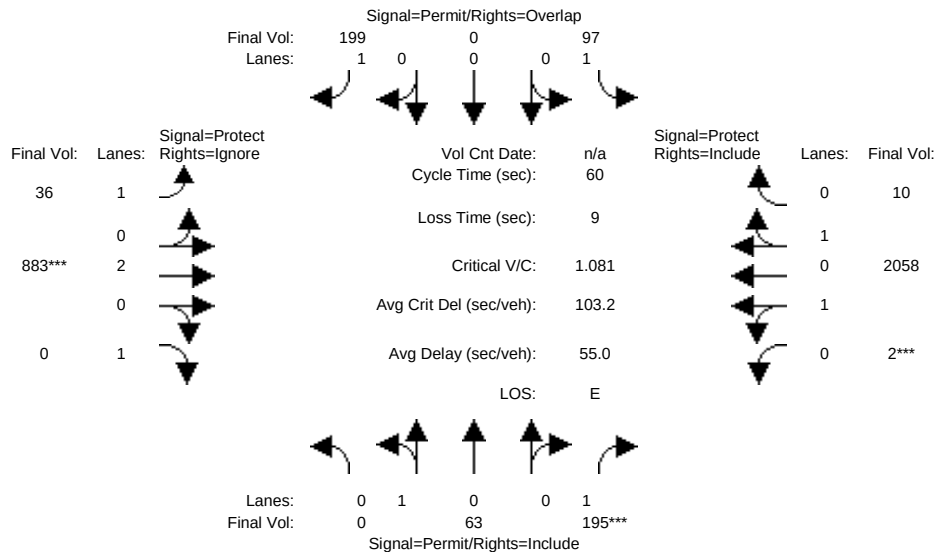


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	65	195	97	0	199	36	877	106	2	2056	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	65	195	97	0	199	36	877	106	2	2056	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	65	195	97	0	199	36	877	106	2	2056	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	65	195	97	0	199	36	877	0	2	2056	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	65	195	97	0	199	36	877	0	2	2056	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	65	195	97	0	199	36	877	0	2	2056	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.11	0.06	0.00	0.11	0.02	0.23	0.00	0.57	0.57	0.57
Crit Moves:	****											
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.8	0.0	29.2	34.0	34.0
Volume/Cap:	0.00	0.22	0.67	0.33	0.00	0.40	0.18	1.18	0.00	1.18	1.01	1.01
Delay/Veh:	0.0	22.0	29.3	22.7	0.0	17.9	24.3	118	0.0	101.9	36.4	36.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	22.0	29.3	22.7	0.0	17.9	24.3	118	0.0	101.9	36.4	36.4
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	44	31	31
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

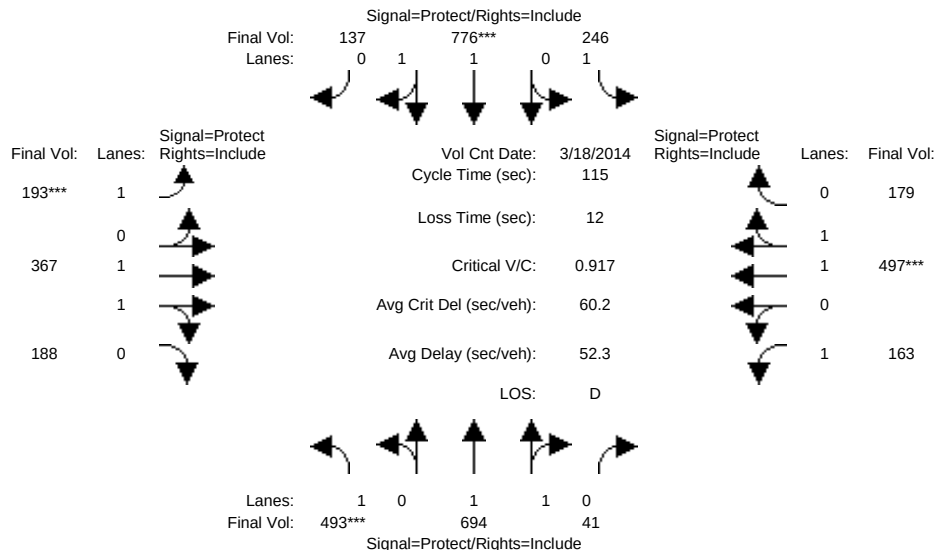


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	63	195	97	0	199	36	883	106	2	2058	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	63	195	97	0	199	36	883	106	2	2058	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	63	195	97	0	199	36	883	106	2	2058	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	63	195	97	0	199	36	883	0	2	2058	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	63	195	97	0	199	36	883	0	2	2058	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	63	195	97	0	199	36	883	0	2	2058	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.04	0.11	0.06	0.00	0.11	0.02	0.23	0.00	0.58	0.58	0.58
Crit Moves:	****											
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.8	0.0	29.2	34.0	34.0
Volume/Cap:	0.00	0.21	0.67	0.33	0.00	0.40	0.18	1.18	0.00	1.18	1.01	1.01
Delay/Veh:	0.0	21.9	29.3	22.7	0.0	17.9	24.3	119	0.0	103.3	36.7	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.9	29.3	22.7	0.0	17.9	24.3	119	0.0	103.3	36.7	36.7
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	20	0	44	31	31
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #2: Middlefield Road & Charleston Road

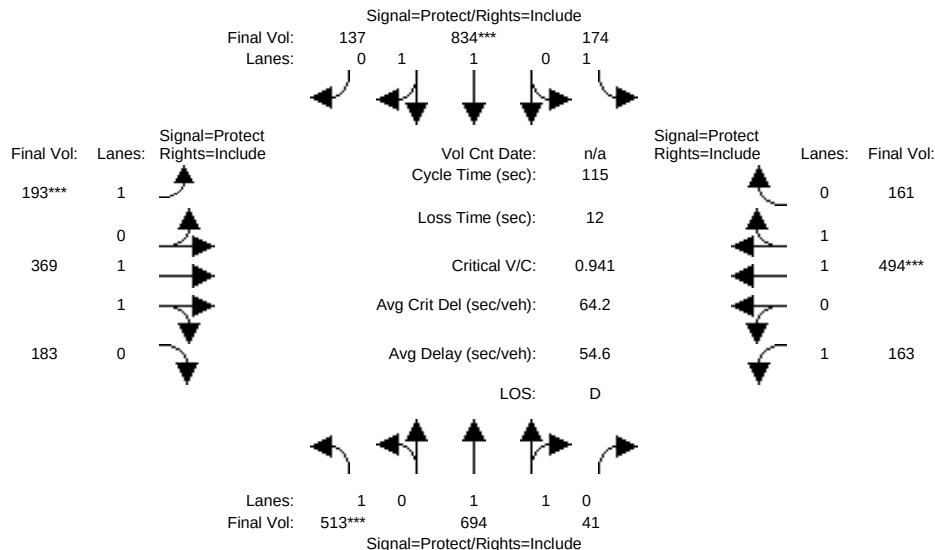


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	493	694	41	246	776	137	193	367	188	163	497	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	493	694	41	246	776	137	193	367	188	163	497	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	493	694	41	246	776	137	193	367	188	163	497	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	493	694	41	246	776	137	193	367	188	163	497	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	493	694	41	246	776	137	193	367	188	163	497	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	493	694	41	246	776	137	193	367	188	163	497	179
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.69	0.31	1.00	1.30	0.70	1.00	1.46	0.54
Final Sat.:	1750	3493	206	1750	3144	555	1750	2446	1253	1750	2720	979
Capacity Analysis Module:												
Vol/Sat:	0.28	0.20	0.20	0.14	0.25	0.25	0.11	0.15	0.15	0.09	0.18	0.18
Crit Moves:	***				***		***				***	
Green Time:	35.3	38.8	38.8	27.5	30.9	30.9	13.8	22.7	22.7	14.1	22.9	22.9
Volume/Cap:	0.92	0.59	0.59	0.59	0.92	0.92	0.92	0.76	0.76	0.76	0.92	0.92
Delay/Veh:	59.1	32.2	32.2	41.0	53.7	53.7	89.8	48.3	48.3	63.6	61.4	61.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.1	32.2	32.2	41.0	53.7	53.7	89.8	48.3	48.3	63.6	61.4	61.4
LOS by Move:	E	C	C	D	D	D	F	D	D	E	E	E
HCM2kAvgQ:	22	11	11	9	20	20	11	11	11	8	16	16
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #2: Middlefield Road & Charleston Road

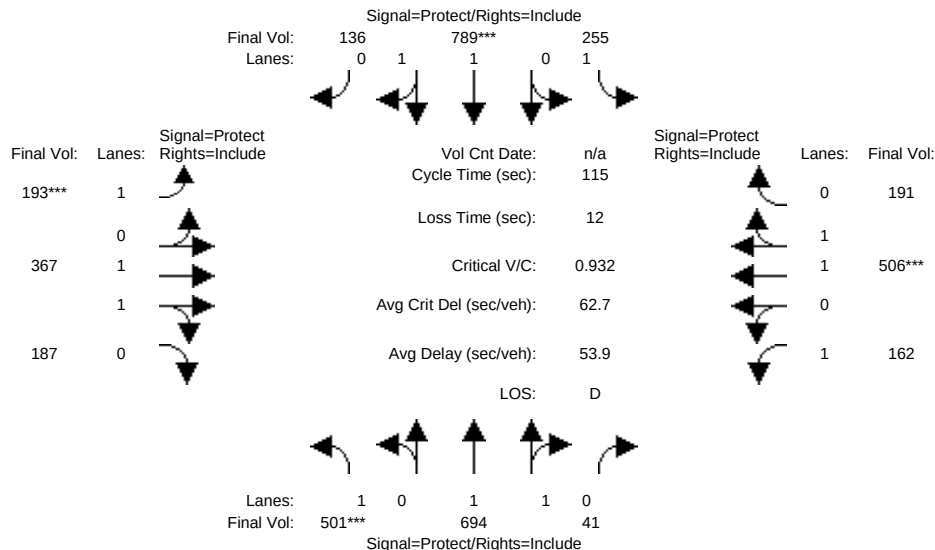


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	513	694	41	174	834	137	193	369	183	163	494	161
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	513	694	41	174	834	137	193	369	183	163	494	161
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	513	694	41	174	834	137	193	369	183	163	494	161
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	513	694	41	174	834	137	193	369	183	163	494	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	513	694	41	174	834	137	193	369	183	163	494	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	513	694	41	174	834	137	193	369	183	163	494	161
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.71	0.29	1.00	1.32	0.68	1.00	1.49	0.51
Final Sat.:	1750	3493	206	1750	3178	522	1750	2472	1226	1750	2790	909
Capacity Analysis Module:												
Vol/Sat:	0.29	0.20	0.20	0.10	0.26	0.26	0.11	0.15	0.15	0.09	0.18	0.18
Crit Moves:	***				***		***				***	
Green Time:	35.8	45.2	45.2	22.6	32.1	32.1	13.5	21.6	21.6	13.5	21.6	21.6
Volume/Cap:	0.94	0.50	0.50	0.50	0.94	0.94	0.94	0.79	0.79	0.79	0.94	0.94
Delay/Veh:	63.3	26.7	26.7	42.4	56.4	56.4	96.7	50.8	50.8	68.2	67.0	67.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.3	26.7	26.7	42.4	56.4	56.4	96.7	50.8	50.8	68.2	67.0	67.0
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	24	10	10	6	22	22	11	12	12	8	16	16
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #2: Middlefield Road & Charleston Road

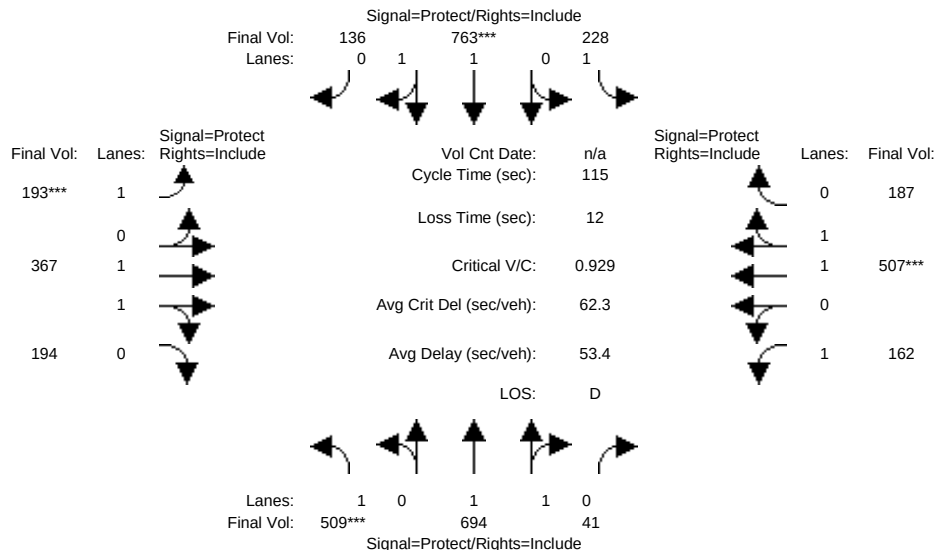


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	501	694	41	255	789	136	193	367	187	162	506	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	501	694	41	255	789	136	193	367	187	162	506	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	501	694	41	255	789	136	193	367	187	162	506	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	501	694	41	255	789	136	193	367	187	162	506	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	501	694	41	255	789	136	193	367	187	162	506	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	501	694	41	255	789	136	193	367	187	162	506	191
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.70	0.30	1.00	1.31	0.69	1.00	1.44	0.56
Final Sat.:	1750	3493	206	1750	3156	544	1750	2450	1248	1750	2685	1014
Capacity Analysis Module:												
Vol/Sat:	0.29	0.20	0.20	0.15	0.25	0.25	0.11	0.15	0.15	0.09	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	35.3	38.2	38.2	28.0	30.8	30.8	13.6	22.8	22.8	14.1	23.2	23.2
Volume/Cap:	0.93	0.60	0.60	0.60	0.93	0.93	0.93	0.76	0.76	0.76	0.93	0.93
Delay/Veh:	62.0	32.9	32.9	40.9	56.0	56.0	94.0	48.0	48.0	63.1	63.5	63.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.0	32.9	32.9	40.9	56.0	56.0	94.0	48.0	48.0	63.1	63.5	63.5
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	23	11	11	9	21	21	11	11	11	8	17	17
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #2: Middlefield Road & Charleston Road

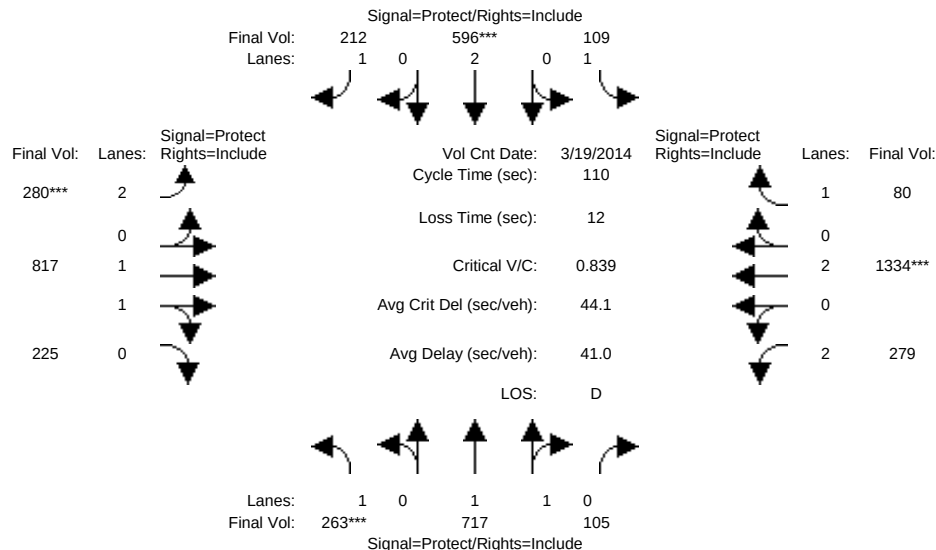


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	509	694	41	228	763	136	193	367	194	162	507	187
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	509	694	41	228	763	136	193	367	194	162	507	187
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	509	694	41	228	763	136	193	367	194	162	507	187
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	509	694	41	228	763	136	193	367	194	162	507	187
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	509	694	41	228	763	136	193	367	194	162	507	187
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	509	694	41	228	763	136	193	367	194	162	507	187
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.69	0.31	1.00	1.29	0.71	1.00	1.45	0.55
Final Sat.:	1750	3493	206	1750	3140	560	1750	2420	1279	1750	2702	997
Capacity Analysis Module:												
Vol/Sat:	0.29	0.20	0.20	0.13	0.24	0.24	0.11	0.15	0.15	0.09	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	36.0	39.9	39.9	26.2	30.1	30.1	13.7	22.9	22.9	14.0	23.2	23.2
Volume/Cap:	0.93	0.57	0.57	0.57	0.93	0.93	0.93	0.76	0.76	0.76	0.93	0.93
Delay/Veh:	60.6	31.2	31.2	41.4	56.1	56.1	93.0	48.1	48.1	63.7	62.9	62.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.6	31.2	31.2	41.4	56.1	56.1	93.0	48.1	48.1	63.7	62.9	62.9
LOS by Move:	E	C	C	D	E	E	F	D	D	E	E	E
HCM2kAvgQ:	23	11	11	8	20	20	11	11	11	8	16	16
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

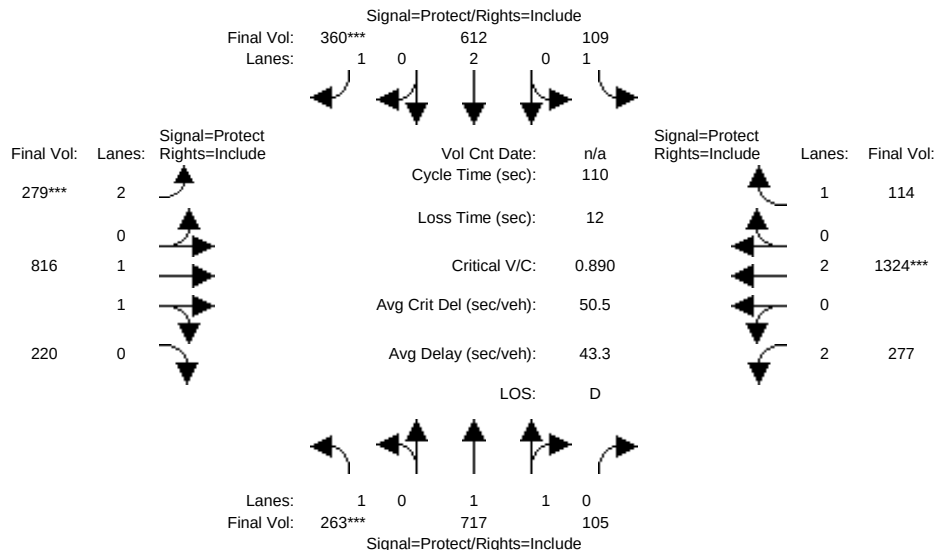


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 19 Mar 2014 << 5:00 PM - 6:00 PM												
Base Vol:	263	717	105	109	596	353	280	817	225	279	1334	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	109	596	353	280	817	225	279	1334	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	109	596	353	280	817	225	279	1334	114
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	0.70
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	109	596	212	280	817	225	279	1334	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	109	596	212	280	817	225	279	1334	80
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	109	596	212	280	817	225	279	1334	80
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.56	0.44	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2900	799	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.12	0.09	0.28	0.28	0.09	0.35	0.05
Crit Moves:	***				***		***				***	
Green Time:	19.7	31.3	31.3	9.0	20.6	20.6	11.7	43.9	43.9	13.8	46.1	46.1
Volume/Cap:	0.84	0.78	0.78	0.76	0.84	0.65	0.84	0.71	0.71	0.71	0.84	0.11
Delay/Veh:	61.4	40.0	40.0	70.9	51.8	45.8	65.1	29.2	29.2	51.9	32.8	19.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.4	40.0	40.0	70.9	51.8	45.8	65.1	29.2	29.2	51.9	32.8	19.5
LOS by Move:	E	D	D	E	D	D	E	C	C	D	C	B
HCM2kAvgQ:	12	15	15	6	12	8	8	16	16	7	22	2
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



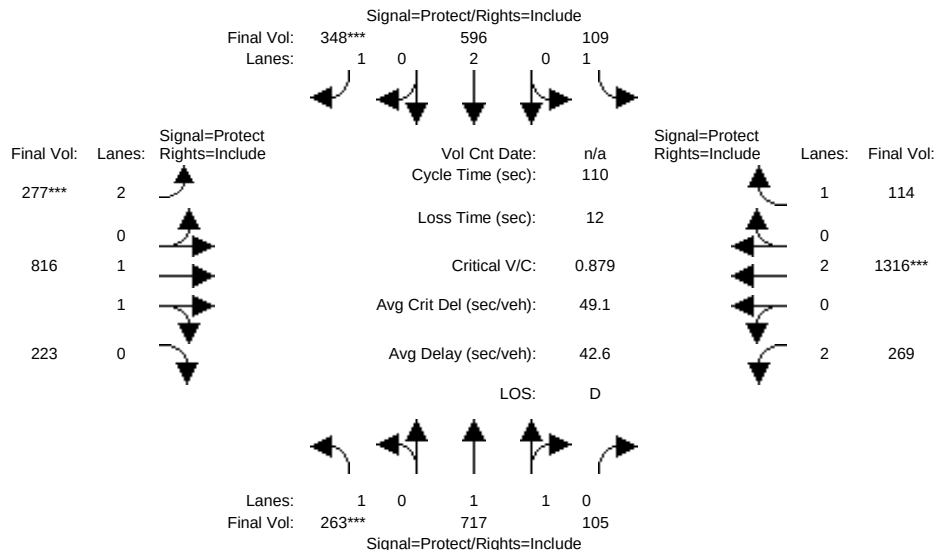
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	717	105	109	612	360	279	816	220	277	1324	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	109	612	360	279	816	220	277	1324	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	109	612	360	279	816	220	277	1324	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	109	612	360	279	816	220	277	1324	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	109	612	360	279	816	220	277	1324	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	109	612	360	279	816	220	277	1324	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.56	0.44	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2914	786	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.21	0.09	0.28	0.28	0.09	0.35	0.07
Crit Moves:	***					***	***			***		
Green Time:	18.6	34.2	34.2	9.8	25.4	25.4	10.9	41.1	41.1	12.9	43.1	43.1
Volume/Cap:	0.89	0.71	0.71	0.70	0.70	0.89	0.89	0.75	0.75	0.75	0.89	0.17
Delay/Veh:	71.2	35.7	35.7	61.9	41.2	61.8	74.3	32.3	32.3	55.3	38.3	21.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.2	35.7	35.7	61.9	41.2	61.8	74.3	32.3	32.3	55.3	38.3	21.9
LOS by Move:	E	D	D	E	D	E	E	C	C	E	D	C
HCM2kAvgQ:	13	14	14	5	11	16	9	17	17	7	24	3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



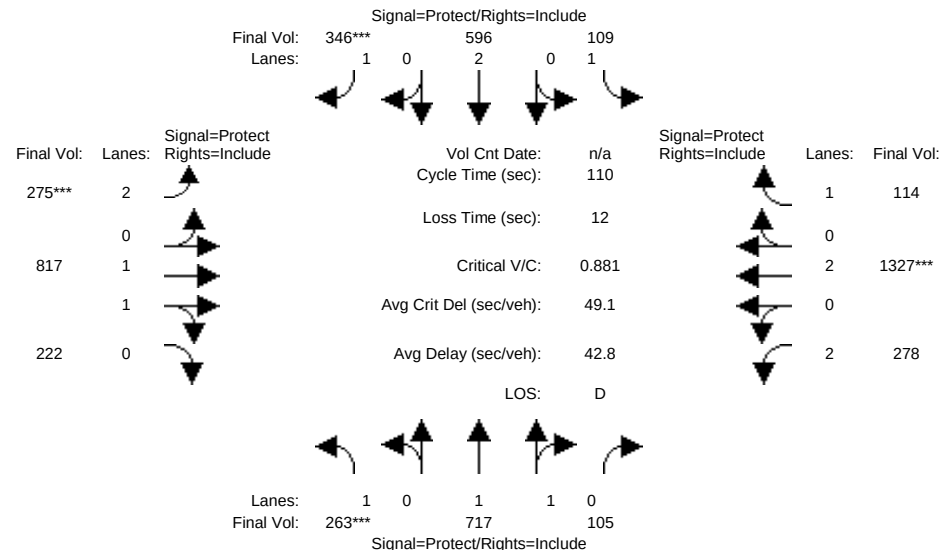
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	717	105	109	596	348	277	816	223	269	1316	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	109	596	348	277	816	223	269	1316	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	109	596	348	277	816	223	269	1316	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	109	596	348	277	816	223	269	1316	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	109	596	348	277	816	223	269	1316	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	109	596	348	277	816	223	269	1316	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.56	0.44	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2905	794	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.20	0.09	0.28	0.28	0.09	0.35	0.07
Crit Moves:	***					***	***				***	
Green Time:	18.8	34.0	34.0	9.7	24.9	24.9	11.0	41.7	41.7	12.7	43.3	43.3
Volume/Cap:	0.88	0.72	0.72	0.70	0.69	0.88	0.88	0.74	0.74	0.74	0.88	0.17
Delay/Veh:	68.9	36.1	36.1	62.5	41.5	60.8	72.3	31.7	31.7	55.1	37.2	21.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	68.9	36.1	36.1	62.5	41.5	60.8	72.3	31.7	31.7	55.1	37.2	21.7
LOS by Move:	E	D	D	E	D	E	E	C	C	E	D	C
HCM2kAvgQ:	13	14	14	5	10	16	8	17	17	7	24	3

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

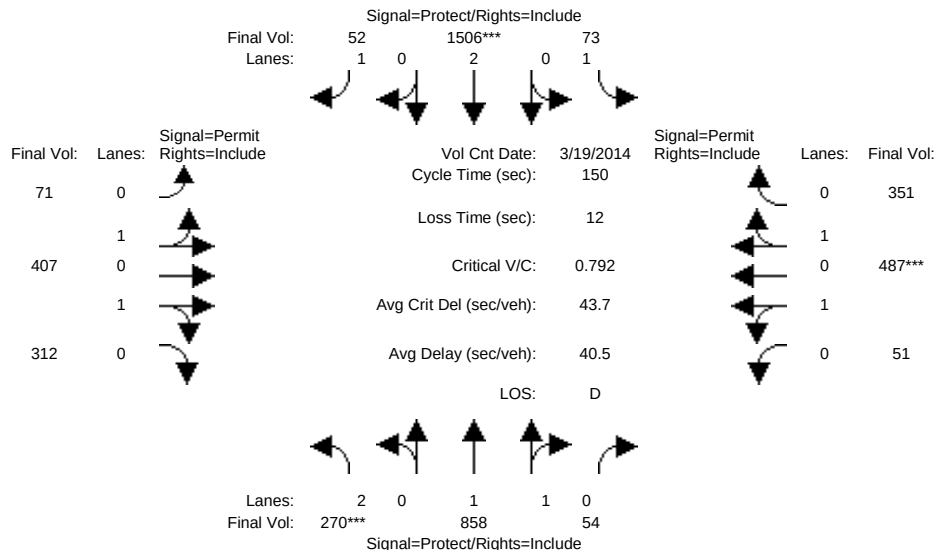


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	717	105	109	596	346	275	817	222	278	1327	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	109	596	346	275	817	222	278	1327	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	109	596	346	275	817	222	278	1327	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	109	596	346	275	817	222	278	1327	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	109	596	346	275	817	222	278	1327	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	109	596	346	275	817	222	278	1327	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.56	0.44	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2909	790	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.20	0.09	0.28	0.28	0.09	0.35	0.07
Crit Moves:	***					***	***			***		
Green Time:	18.8	33.8	33.8	9.7	24.7	24.7	10.9	41.5	41.5	13.0	43.6	43.6
Volume/Cap:	0.88	0.72	0.72	0.71	0.70	0.88	0.88	0.74	0.74	0.74	0.88	0.16
Delay/Veh:	69.2	36.3	36.3	62.9	41.8	61.2	72.7	31.9	31.9	54.8	37.1	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.2	36.3	36.3	62.9	41.8	61.2	72.7	31.9	31.9	54.8	37.1	21.5
LOS by Move:	E	D	D	E	D	E	E	C	C	D	D	C
HCM2kAvgQ:	13	14	14	5	10	15	8	17	17	7	24	3
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #4: Alma Street & Charleston Road

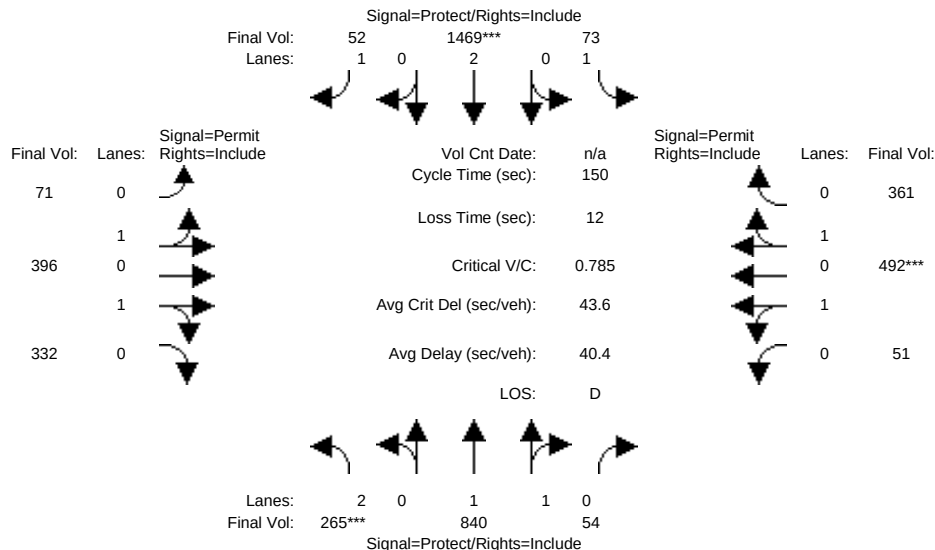


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 19 Mar 2014 << 4:45 PM - 5:45 PM												
Base Vol:	270	858	54	73	1506	52	71	407	312	51	487	351
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	270	858	54	73	1506	52	71	407	312	51	487	351
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	270	858	54	73	1506	52	71	407	312	51	487	351
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	270	858	54	73	1506	52	71	407	312	51	487	351
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	270	858	54	73	1506	52	71	407	312	51	487	351
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	270	858	54	73	1506	52	71	407	312	51	487	351
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.18	1.03	0.79	0.11	1.10	0.79
Final Sat.:	3150	3481	219	1750	3800	1750	324	1855	1422	207	1972	1421
Capacity Analysis Module:												
Vol/Sat:	0.09	0.25	0.25	0.04	0.40	0.03	0.22	0.22	0.22	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	16.2	76.7	76.7	14.5	75.0	75.0	46.7	46.7	46.7	46.7	46.7	46.7
Volume/Cap:	0.79	0.48	0.48	0.43	0.79	0.06	0.70	0.70	0.70	0.79	0.79	0.79
Delay/Veh:	77.2	23.9	23.9	65.6	33.4	19.3	47.6	47.6	47.6	51.1	51.1	51.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.2	23.9	23.9	65.6	33.4	19.3	47.6	47.6	47.6	51.1	51.1	51.1
LOS by Move:	E	C	C	E	C	B	D	D	D	D	D	D
HCM2kAvgQ:	9	14	14	4	29	1	17	17	17	21	21	21
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #4: Alma Street & Charleston Road

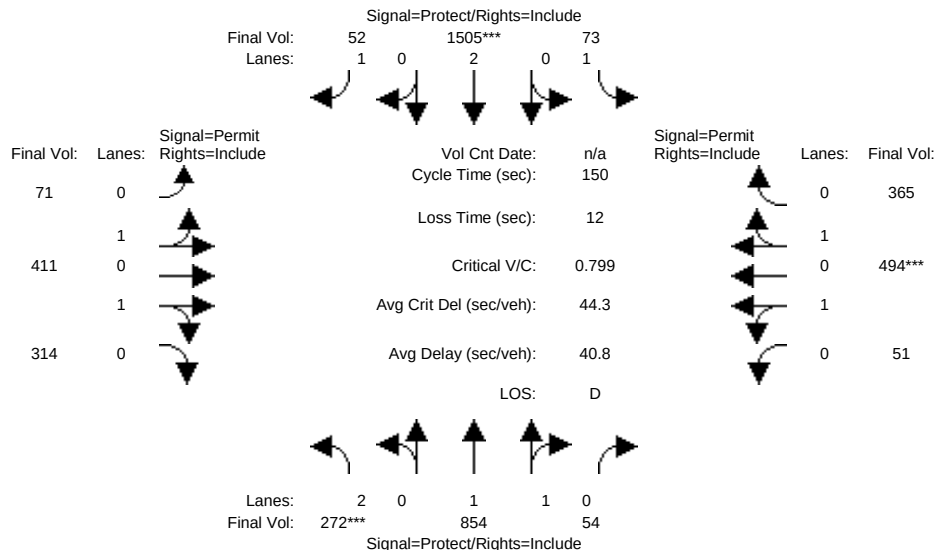


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	265	840	54	73	1469	52	71	396	332	51	492	361
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	265	840	54	73	1469	52	71	396	332	51	492	361
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	265	840	54	73	1469	52	71	396	332	51	492	361
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	265	840	54	73	1469	52	71	396	332	51	492	361
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	840	54	73	1469	52	71	396	332	51	492	361
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	265	840	54	73	1469	52	71	396	332	51	492	361
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.18	0.99	0.83	0.11	1.09	0.80
Final Sat.:	3150	3476	223	1750	3800	1750	320	1784	1496	203	1959	1438
Capacity Analysis Module:												
Vol/Sat:	0.08	0.24	0.24	0.04	0.39	0.03	0.22	0.22	0.22	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	16.1	75.4	75.4	14.6	73.9	73.9	48.0	48.0	48.0	48.0	48.0	48.0
Volume/Cap:	0.78	0.48	0.48	0.43	0.78	0.06	0.69	0.69	0.69	0.78	0.78	0.78
Delay/Veh:	76.7	24.6	24.6	65.5	33.7	19.9	46.4	46.4	46.4	49.9	49.9	49.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.7	24.6	24.6	65.5	33.7	19.9	46.4	46.4	46.4	49.9	49.9	49.9
LOS by Move:	E	C	C	E	C	B	D	D	D	D	D	D
HCM2kAvgQ:	9	13	13	4	29	1	17	17	17	21	21	21
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #4: Alma Street & Charleston Road

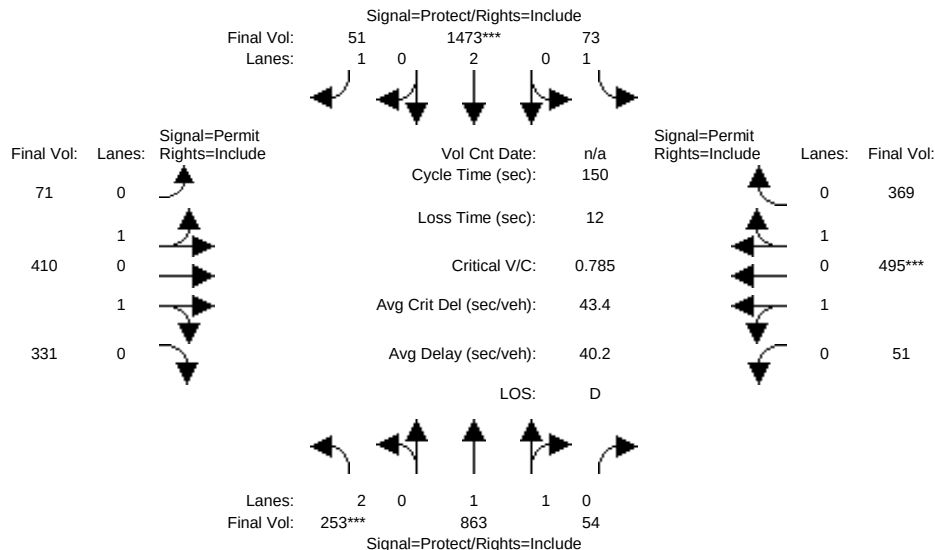


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	272	854	54	73	1505	52	71	411	314	51	494	365
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	272	854	54	73	1505	52	71	411	314	51	494	365
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	272	854	54	73	1505	52	71	411	314	51	494	365
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	272	854	54	73	1505	52	71	411	314	51	494	365
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	854	54	73	1505	52	71	411	314	51	494	365
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	272	854	54	73	1505	52	71	411	314	51	494	365
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.18	1.03	0.79	0.11	1.09	0.80
Final Sat.:	3150	3480	220	1750	3800	1750	321	1859	1420	202	1954	1444
Capacity Analysis Module:												
Vol/Sat:	0.09	0.25	0.25	0.04	0.40	0.03	0.22	0.22	0.22	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	16.2	76.1	76.1	14.5	74.3	74.3	47.4	47.4	47.4	47.4	47.4	47.4
Volume/Cap:	0.80	0.48	0.48	0.43	0.80	0.06	0.70	0.70	0.70	0.80	0.80	0.80
Delay/Veh:	77.8	24.3	24.3	65.7	34.1	19.7	47.0	47.0	47.0	51.0	51.0	51.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.8	24.3	24.3	65.7	34.1	19.7	47.0	47.0	47.0	51.0	51.0	51.0
LOS by Move:	E	C	C	E	C	B	D	D	D	D	D	D
HCM2kAvgQ:	9	14	14	4	30	1	17	17	17	22	22	22
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #4: Alma Street & Charleston Road

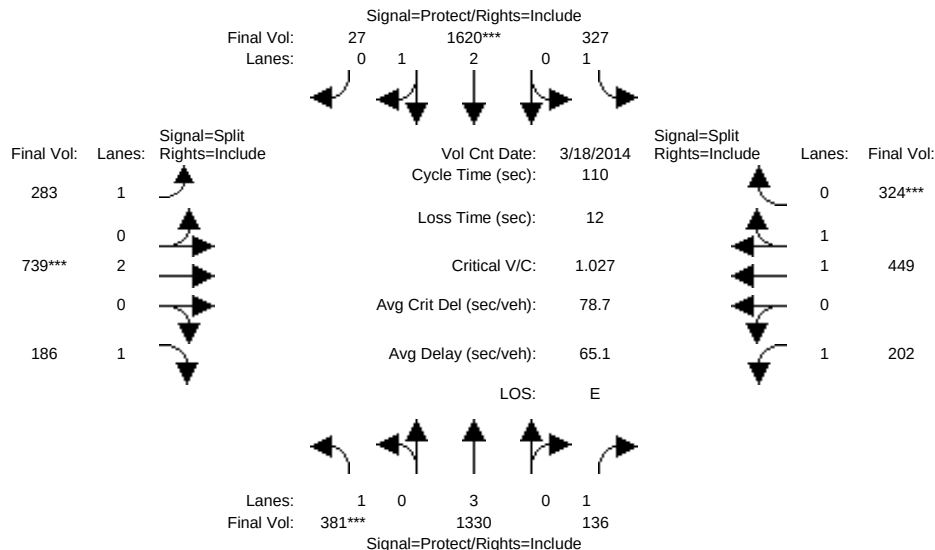


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	253	863	54	73	1473	51	71	410	331	51	495	369
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	253	863	54	73	1473	51	71	410	331	51	495	369
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	253	863	54	73	1473	51	71	410	331	51	495	369
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	253	863	54	73	1473	51	71	410	331	51	495	369
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	253	863	54	73	1473	51	71	410	331	51	495	369
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	253	863	54	73	1473	51	71	410	331	51	495	369
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.88	0.12	1.00	2.00	1.00	0.17	1.01	0.82	0.11	1.08	0.81
Final Sat.:	3150	3482	218	1750	3800	1750	315	1818	1467	201	1948	1452
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.25	0.04	0.39	0.03	0.23	0.23	0.23	0.25	0.25	0.25
Crit Moves:	***			***						***		
Green Time:	15.3	75.3	75.3	14.2	74.1	74.1	48.6	48.6	48.6	48.6	48.6	48.6
Volume/Cap:	0.78	0.49	0.49	0.44	0.78	0.06	0.70	0.70	0.70	0.78	0.78	0.78
Delay/Veh:	77.7	25.0	25.0	66.1	33.6	19.8	46.1	46.1	46.1	49.6	49.6	49.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.7	25.0	25.0	66.1	33.6	19.8	46.1	46.1	46.1	49.6	49.6	49.6
LOS by Move:	E	C	C	E	C	B	D	D	D	D	D	D
HCM2kAvgQ:	9	14	14	4	29	1	18	18	18	21	21	21
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

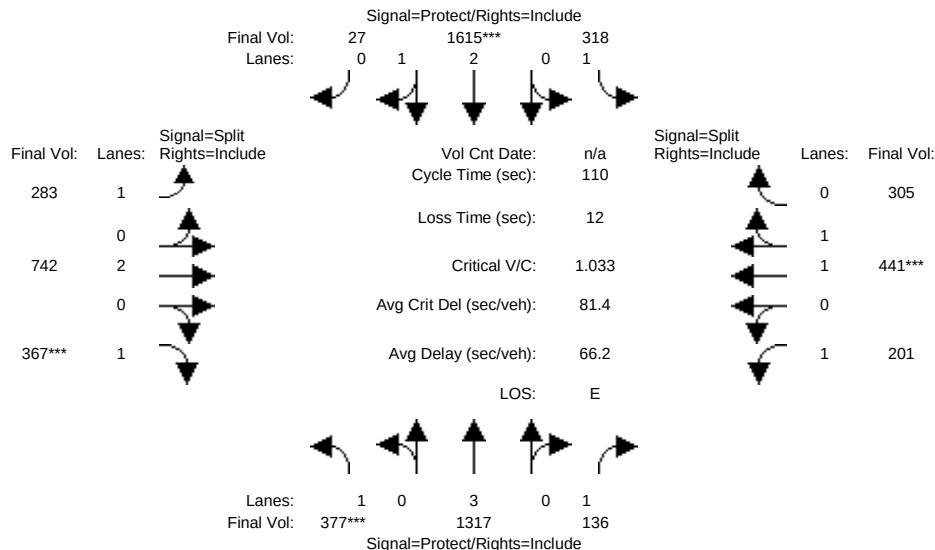


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date:	18 Mar 2014 << 5:00 PM - 6:00 PM											
Base Vol:	381	1330	136	327	1620	27	283	739	371	202	449	324
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	381	1330	136	327	1620	27	283	739	371	202	449	324
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	381	1330	136	327	1620	27	283	739	371	202	449	324
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	381	1330	136	327	1620	27	283	739	186	202	449	324
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	381	1330	136	327	1620	27	283	739	186	202	449	324
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	381	1330	136	327	1620	27	283	739	186	202	449	324
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.14	0.86
Final Sat.:	1750	5700	1750	1750	5508	92	1750	3800	1750	1750	2148	1550
Capacity Analysis Module:												
Vol/Sat:	0.22	0.23	0.08	0.19	0.29	0.29	0.16	0.19	0.11	0.12	0.21	0.21
Crit Moves:	***			***			***					***
Green Time:	23.3	30.4	30.4	24.4	31.5	31.5	20.8	20.8	20.8	22.4	22.4	22.4
Volume/Cap:	1.03	0.84	0.28	0.84	1.03	1.03	0.85	1.03	0.56	0.57	1.03	1.03
Delay/Veh:	97.3	41.9	31.5	56.4	69.0	69.0	62.1	85.3	42.6	41.6	83.8	83.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	97.3	41.9	31.5	56.4	69.0	69.0	62.1	85.3	42.6	41.6	83.8	83.8
LOS by Move:	F	D	C	E	E	E	E	F	D	D	F	F
HCM2kAvgQ:	21	17	4	14	26	26	13	19	7	7	20	20
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

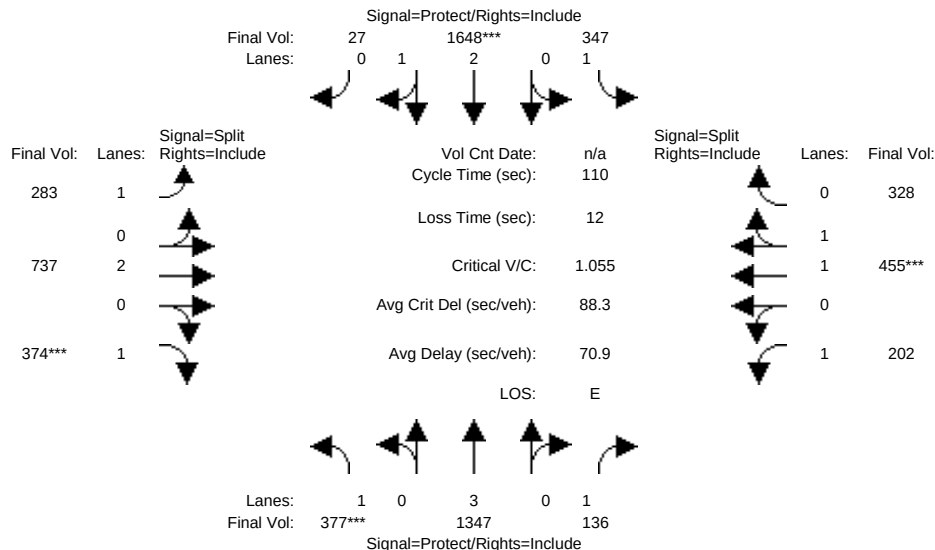


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	377	1317	136	318	1615	27	283	742	367	201	441	305
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	1317	136	318	1615	27	283	742	367	201	441	305
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	1317	136	318	1615	27	283	742	367	201	441	305
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	1317	136	318	1615	27	283	742	367	201	441	305
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	1317	136	318	1615	27	283	742	367	201	441	305
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	377	1317	136	318	1615	27	283	742	367	201	441	305
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.16	0.84
Final Sat.:	1750	5700	1750	1750	5508	92	1750	3800	1750	1750	2186	1512
Capacity Analysis Module:												
Vol/Sat:	0.22	0.23	0.08	0.18	0.29	0.29	0.16	0.20	0.21	0.11	0.20	0.20
Crit Moves:	***			***			***			***		
Green Time:	22.9	30.3	30.3	23.9	31.2	31.2	22.3	22.3	22.3	21.5	21.5	21.5
Volume/Cap:	1.03	0.84	0.28	0.84	1.03	1.03	0.80	0.96	1.03	0.59	1.03	1.03
Delay/Veh:	99.3	41.7	31.6	56.3	70.8	70.8	53.5	66.7	100.3	42.9	86.4	86.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	99.3	41.7	31.6	56.3	70.8	70.8	53.5	66.7	100.3	42.9	86.4	86.4
LOS by Move:	F	D	C	E	E	E	D	E	F	D	F	F
HCM2kAvgQ:	21	16	4	14	27	27	12	17	20	7	19	19
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

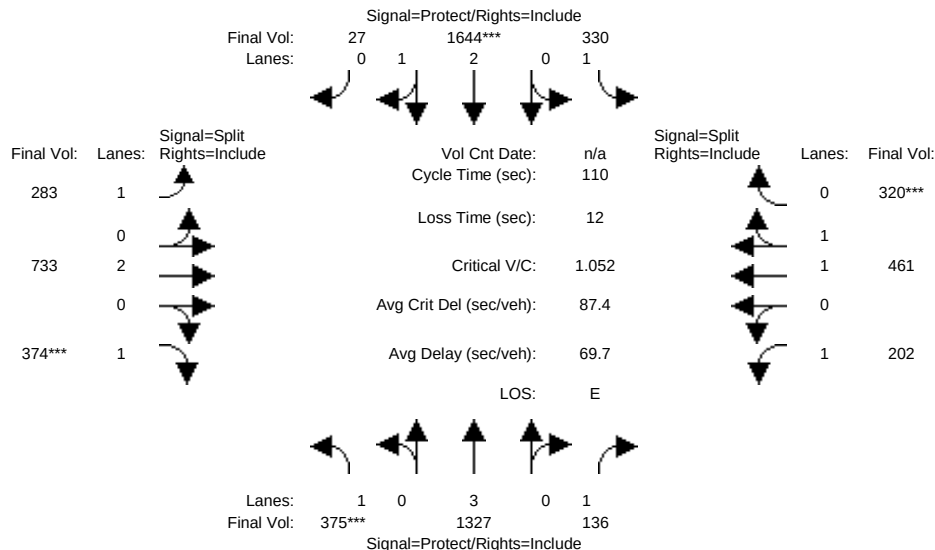


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	377	1347	136	347	1648	27	283	737	374	202	455	328
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	1347	136	347	1648	27	283	737	374	202	455	328
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	1347	136	347	1648	27	283	737	374	202	455	328
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	1347	136	347	1648	27	283	737	374	202	455	328
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	1347	136	347	1648	27	283	737	374	202	455	328
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	377	1347	136	347	1648	27	283	737	374	202	455	328
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.14	0.86
Final Sat.:	1750	5700	1750	1750	5510	90	1750	3800	1750	1750	2149	1549
Capacity Analysis Module:												
Vol/Sat:	0.22	0.24	0.08	0.20	0.30	0.30	0.16	0.19	0.21	0.12	0.21	0.21
Crit Moves:	***			***					***		***	
Green Time:	22.5	29.2	29.2	24.5	31.2	31.2	22.3	22.3	22.3	22.1	22.1	22.1
Volume/Cap:	1.06	0.89	0.29	0.89	1.06	1.06	0.80	0.96	1.06	0.58	1.06	1.06
Delay/Veh:	106.6	45.9	32.6	63.1	78.1	78.1	53.8	65.9	106.9	42.1	92.5	92.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.6	45.9	32.6	63.1	78.1	78.1	53.8	65.9	106.9	42.1	92.5	92.5
LOS by Move:	F	D	C	E	E	E	D	E	F	D	F	F
HCM2kAvgQ:	21	18	4	16	28	28	12	17	21	7	21	21
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

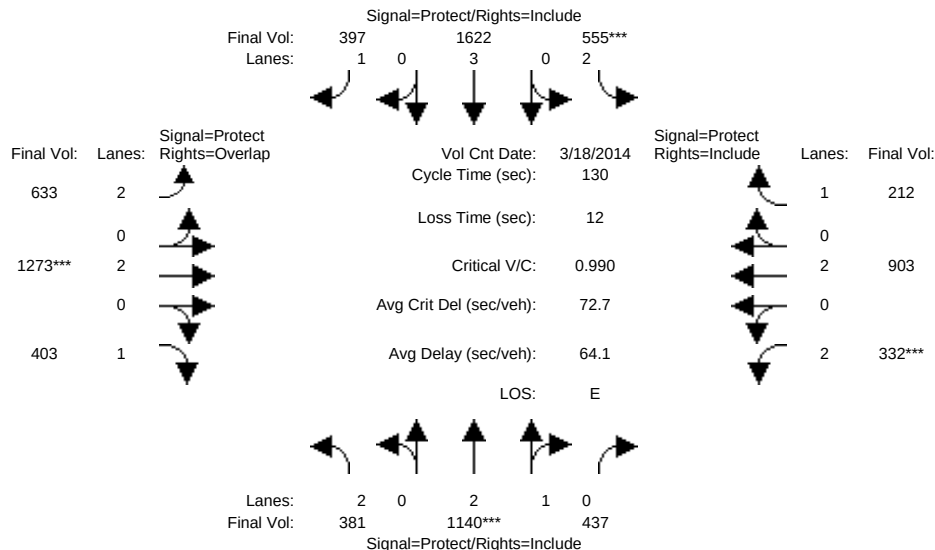


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	375	1327	136	330	1644	27	283	733	374	202	461	320
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	375	1327	136	330	1644	27	283	733	374	202	461	320
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	375	1327	136	330	1644	27	283	733	374	202	461	320
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	375	1327	136	330	1644	27	283	733	374	202	461	320
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	375	1327	136	330	1644	27	283	733	374	202	461	320
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	375	1327	136	330	1644	27	283	733	374	202	461	320
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.16	0.84
Final Sat.:	1750	5700	1750	1750	5509	90	1750	3800	1750	1750	2183	1515
Capacity Analysis Module:												
Vol/Sat:	0.21	0.23	0.08	0.19	0.30	0.30	0.16	0.19	0.21	0.12	0.21	0.21
Crit Moves:	***			***					***			***
Green Time:	22.4	29.6	29.6	24.0	31.2	31.2	22.3	22.3	22.3	22.1	22.1	22.1
Volume/Cap:	1.05	0.86	0.29	0.86	1.05	1.05	0.80	0.95	1.05	0.58	1.05	1.05
Delay/Veh:	105.9	43.7	32.2	59.7	77.2	77.2	53.5	64.3	106.0	42.1	91.6	91.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	105.9	43.7	32.2	59.7	77.2	77.2	53.5	64.3	106.0	42.1	91.6	91.6
LOS by Move:	F	D	C	E	E	E	D	E	F	D	F	F
HCM2kAvgQ:	21	17	4	15	28	28	12	17	21	7	21	21
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

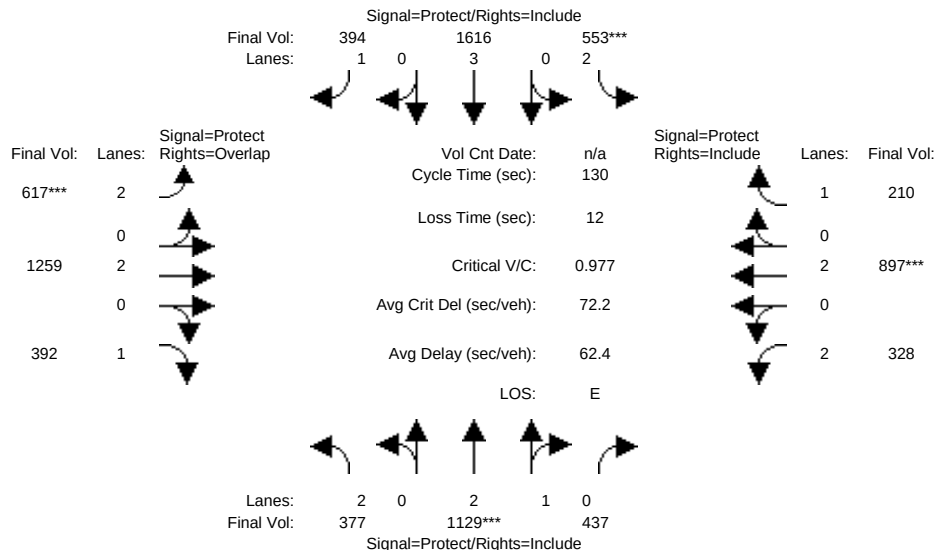


Street Name:	El Camino Real			Page Mill Rd/Oregon Expwy		
Approach:	North Bound			South Bound		
Movement:	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count	Date: 18 Mar 2014 << 5:00 PM - 6:00 PM					
Base Vol:	381	1140	437	555	1622	397
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	381	1140	437	555	1622	397
Added Vol:	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	381	1140	437	555	1622	397
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	381	1140	437	555	1622	397
Reduct Vol:	0	0	0	0	0	0
Reduced Vol:	381	1140	437	555	1622	397
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	381	1140	437	555	1622	397
Saturation Flow Module:						
Sat/Lane:	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92
Lanes:	2.00	2.14	0.86	2.00	3.00	1.00
Final Sat.:	3150	4046	1551	3150	5700	1750
Capacity Analysis Module:						
Vol/Sat:	0.12	0.28	0.28	0.18	0.28	0.23
Crit Moves:	****	****	****	****	****	****
Green Time:	17.9	37.0	37.0	23.1	42.2	42.2
Volume/Cap:	0.88	0.99	0.99	0.99	0.88	0.70
Delay/Veh:	72.8	66.4	66.4	88.6	46.5	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	72.8	66.4	66.4	88.6	46.5	42.2
LOS by Move:	E	E	E	F	D	D
HCM2kAvgQ:	12	27	27	18	23	16
Note: Queue reported is the number of cars per lane.						

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

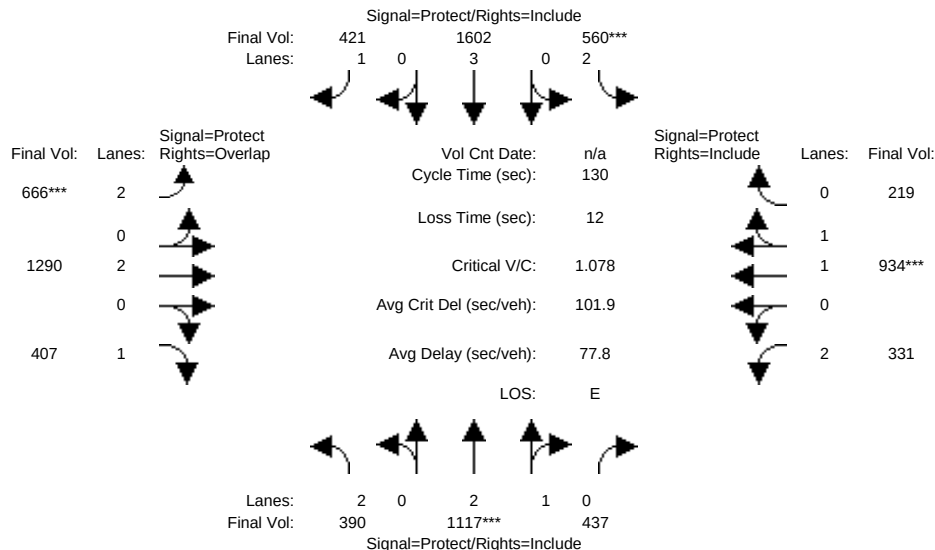


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	377	1129	437	553	1616	394	617	1259	392	328	897	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	377	1129	437	553	1616	394	617	1259	392	328	897	210
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	377	1129	437	553	1616	394	617	1259	392	328	897	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	377	1129	437	553	1616	394	617	1259	392	328	897	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	377	1129	437	553	1616	394	617	1259	392	328	897	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	377	1129	437	553	1616	394	617	1259	392	328	897	210
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.13	0.87	2.00	3.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	4035	1562	3150	5700	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.12	0.28	0.28	0.18	0.28	0.23	0.20	0.33	0.22	0.10	0.24	0.12
Crit Moves:	****			****			****			****		
Green Time:	18.0	37.2	37.2	23.3	42.6	42.6	26.0	43.7	61.7	13.7	31.4	31.4
Volume/Cap:	0.87	0.98	0.98	0.98	0.87	0.69	0.98	0.99	0.47	0.99	0.98	0.50
Delay/Veh:	71.3	63.3	63.3	85.1	45.6	41.4	81.8	64.5	23.6	103.3	73.2	43.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	71.3	63.3	63.3	85.1	45.6	41.4	81.8	64.5	23.6	103.3	73.2	43.4
LOS by Move:	E	E	E	F	D	D	F	E	C	F	E	D
HCM2kAvgQ:	12	26	26	18	23	15	20	31	11	12	23	8
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)



Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	390	1117	437	560	1602	421	666	1290	407	331	934	219
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	390	1117	437	560	1602	421	666	1290	407	331	934	219
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	390	1117	437	560	1602	421	666	1290	407	331	934	219
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	390	1117	437	560	1602	421	666	1290	407	331	934	219
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	390	1117	437	560	1602	421	666	1290	407	331	934	219
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	390	1117	437	560	1602	421	666	1290	407	331	934	219
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.13	0.87	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.61	0.39
Final Sat.:	3150	4023	1574	3150	5700	1750	3150	3800	1750	3150	2997	703
Capacity Analysis Module:												
Vol/Sat:	0.12	0.28	0.28	0.18	0.28	0.24	0.21	0.34	0.23	0.11	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	16.8	33.5	33.5	21.4	38.1	38.1	25.5	48.2	65.0	14.9	37.6	37.6
Volume/Cap:	0.96	1.08	1.08	1.08	0.96	0.82	1.08	0.92	0.47	0.92	1.08	1.08
Delay/Veh:	90.1	96.1	96.1	116.4	58.6	52.9	111.3	48.6	21.6	84.3	97.3	97.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.1	96.1	96.1	116.4	58.6	52.9	111.3	48.6	21.6	84.3	97.3	97.3
LOS by Move:	F	F	F	F	E	D	F	D	C	F	F	F
HCM2kAvgQ:	13	30	30	20	26	19	24	28	11	11	33	33
Note: Queue reported is the number of cars per lane.												

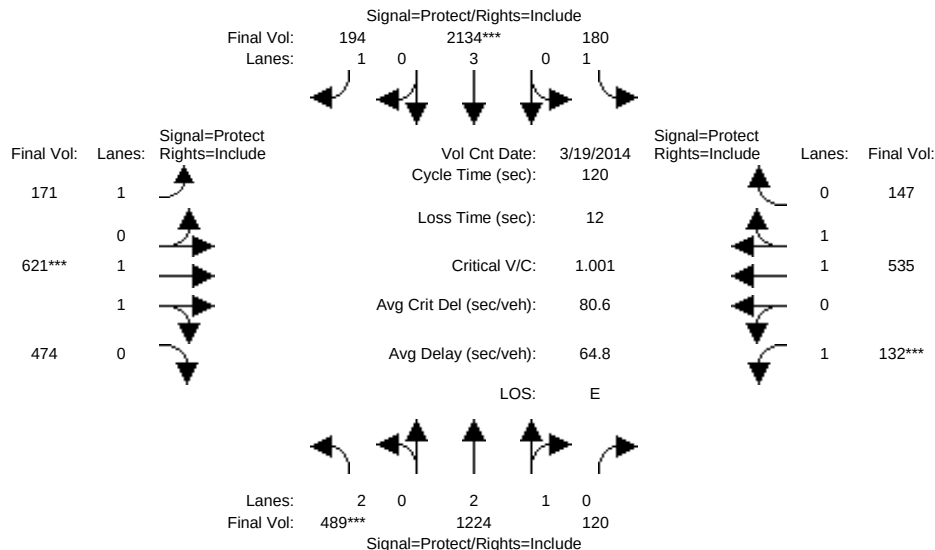
Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

			Signal=Protect/Rights=Include								
			Final Vol:	418		1611		552***			
			Lanes:	1	0	3	0	2			

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)

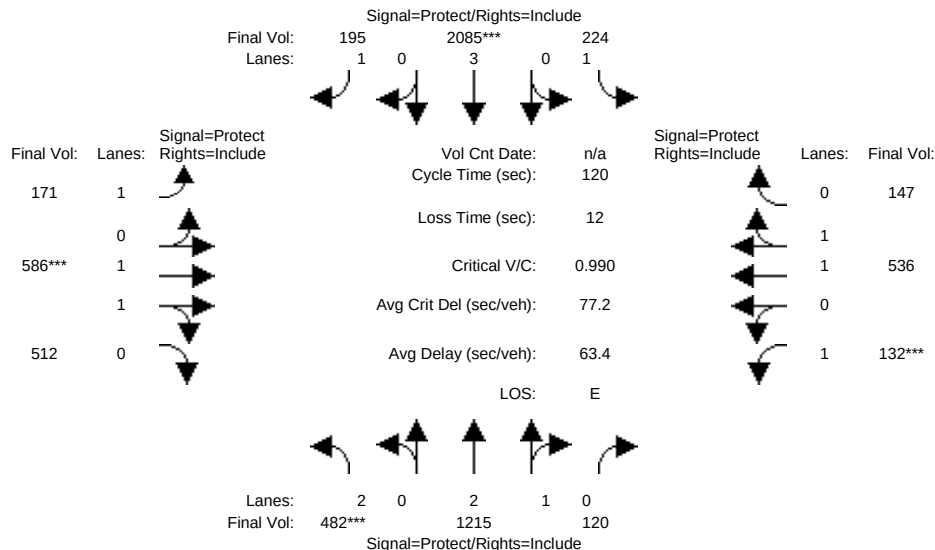


Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 19 Mar 2014 << 5:00 PM - 6:00 PM												
Base Vol:	489	1224	120	180	2134	194	171	621	474	132	535	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	489	1224	120	180	2134	194	171	621	474	132	535	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	489	1224	120	180	2134	194	171	621	474	132	535	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	489	1224	120	180	2134	194	171	621	474	132	535	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	489	1224	120	180	2134	194	171	621	474	132	535	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	489	1224	120	180	2134	194	171	621	474	132	535	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.72	0.28	1.00	3.00	1.00	1.00	1.11	0.89	1.00	1.56	0.44
Final Sat.:	3150	5099	500	1750	5700	1750	1750	2097	1601	1750	2902	797
Capacity Analysis Module:												
Vol/Sat:	0.16	0.24	0.24	0.10	0.37	0.11	0.10	0.30	0.30	0.08	0.18	0.18
Crit Moves:	***				***		***			***		
Green Time:	18.6	44.4	44.4	19.0	44.9	44.9	15.4	35.5	35.5	9.0	29.1	29.1
Volume/Cap:	1.00	0.65	0.65	0.65	1.00	0.30	0.76	1.00	1.00	1.00	0.76	0.76
Delay/Veh:	91.7	32.0	32.0	52.6	57.4	26.7	64.5	69.8	69.8	134.2	46.0	46.0
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	91.7	32.0	32.0	73.7	80.3	37.4	64.5	69.8	69.8	134.2	46.0	46.0
LOS by Move:	F	C	C	E	F	D	E	E	E	F	D	D
HCM2kAvgQ:	16	14	14	8	33	5	8	27	27	9	14	14
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)

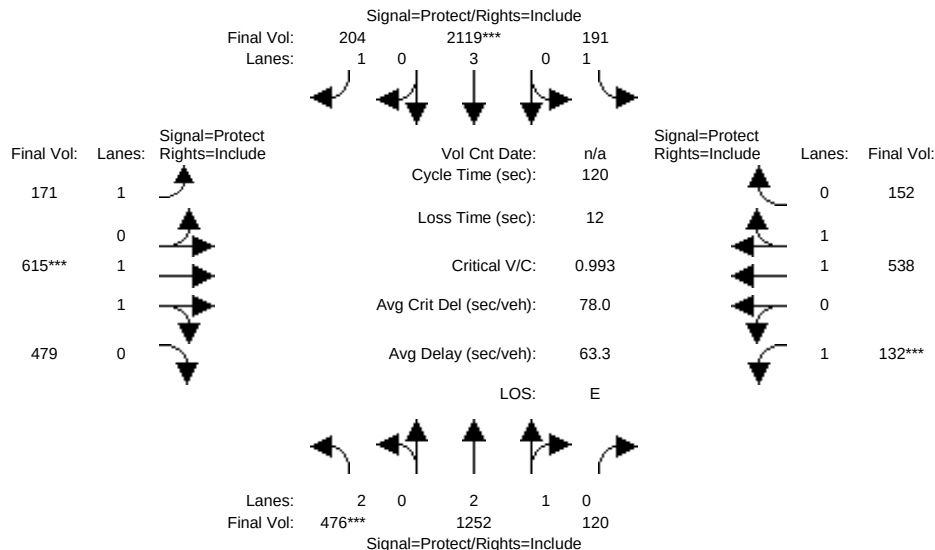


Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	482	1215	120	224	2085	195	171	586	512	132	536	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	482	1215	120	224	2085	195	171	586	512	132	536	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	482	1215	120	224	2085	195	171	586	512	132	536	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	482	1215	120	224	2085	195	171	586	512	132	536	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	482	1215	120	224	2085	195	171	586	512	132	536	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	482	1215	120	224	2085	195	171	586	512	132	536	147
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.72	0.28	1.00	3.00	1.00	1.00	1.04	0.96	1.00	1.56	0.44
Final Sat.:	3150	5096	503	1750	5700	1750	1750	1973	1724	1750	2903	796
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.24	0.13	0.37	0.11	0.10	0.30	0.30	0.08	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	18.5	40.9	40.9	22.0	44.3	44.3	15.6	36.0	36.0	9.1	29.5	29.5
Volume/Cap:	0.99	0.70	0.70	0.70	0.99	0.30	0.75	0.99	0.99	0.99	0.75	0.75
Delay/Veh:	88.8	35.4	35.4	52.6	54.9	27.1	63.4	66.4	66.4	130.2	45.4	45.4
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.8	35.4	35.4	73.7	76.9	38.0	63.4	66.4	66.4	130.2	45.4	45.4
LOS by Move:	F	D	D	E	E	D	E	E	E	F	D	D
HCM2kAvgQ:	16	15	15	10	32	5	8	27	27	9	13	13
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	476	1252	120	191	2119	204	171	615	479	132	538	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	476	1252	120	191	2119	204	171	615	479	132	538	152
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	476	1252	120	191	2119	204	171	615	479	132	538	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	476	1252	120	191	2119	204	171	615	479	132	538	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	476	1252	120	191	2119	204	171	615	479	132	538	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	476	1252	120	191	2119	204	171	615	479	132	538	152

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.73	0.27	1.00	3.00	1.00	1.00	1.10	0.90	1.00	1.55	0.45
Final Sat.:	3150	5110	490	1750	5700	1750	1750	2079	1619	1750	2884	815

Capacity Analysis Module:

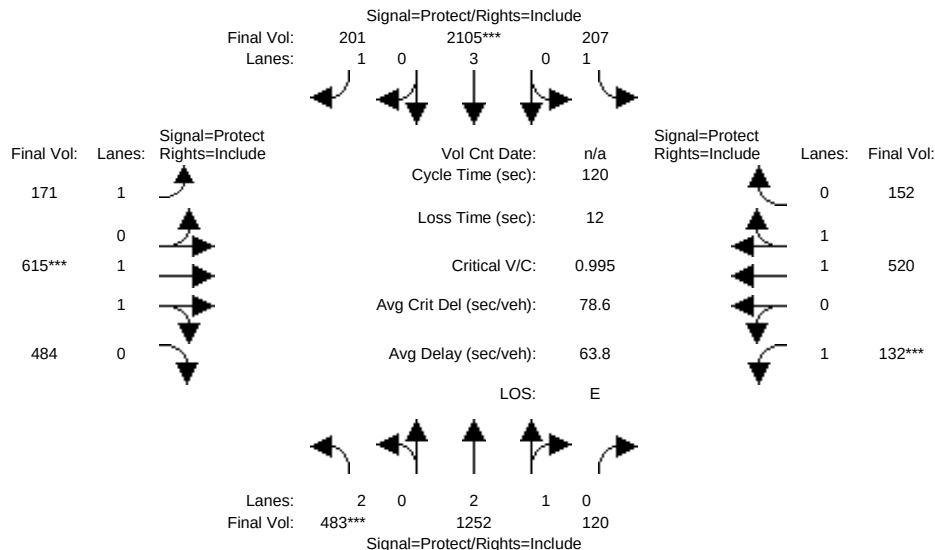
Vol/Sat:	0.15	0.25	0.25	0.11	0.37	0.12	0.10	0.30	0.30	0.08	0.19	0.19
Crit Moves:	***			***			***			***		
Green Time:	18.3	43.7	43.7	19.5	44.9	44.9	15.4	35.7	35.7	9.1	29.4	29.4
Volume/Cap:	0.99	0.67	0.67	0.67	0.99	0.31	0.76	0.99	0.99	0.99	0.76	0.76
Delay/Veh:	90.1	33.0	33.0	53.5	55.3	26.9	64.6	67.5	67.5	131.4	45.8	45.8
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.1	33.0	33.0	74.9	77.4	37.6	64.6	67.5	67.5	131.4	45.8	45.8
LOS by Move:	F	C	C	E	E	D	E	E	E	F	D	D
HCM2kAvgQ:	15	15	15	8	33	6	8	27	27	9	14	14

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)

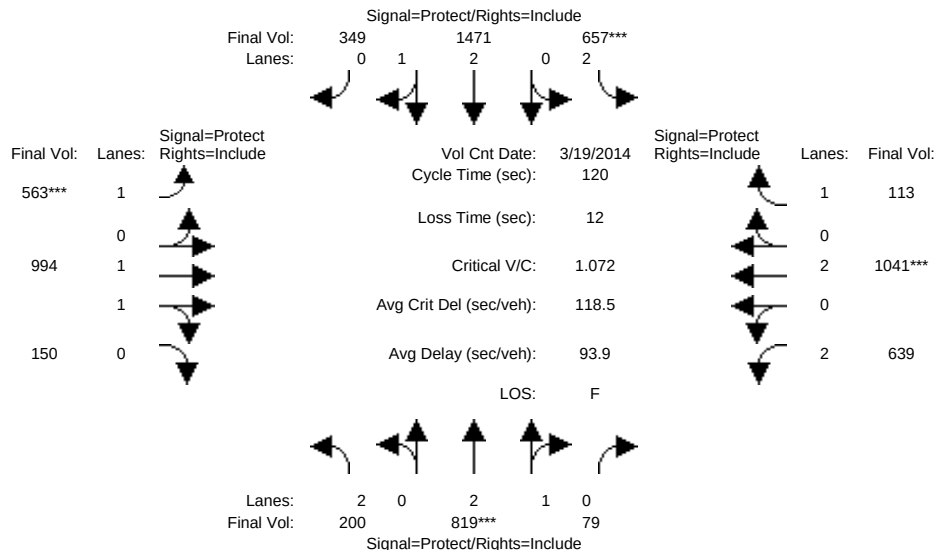


Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	483	1252	120	207	2105	201	171	615	484	132	520	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	483	1252	120	207	2105	201	171	615	484	132	520	152
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	483	1252	120	207	2105	201	171	615	484	132	520	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	483	1252	120	207	2105	201	171	615	484	132	520	152
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	483	1252	120	207	2105	201	171	615	484	132	520	152
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	483	1252	120	207	2105	201	171	615	484	132	520	152
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	2.73	0.27	1.00	3.00	1.00	1.00	1.10	0.90	1.00	1.54	0.46
Final Sat.:	3150	5110	490	1750	5700	1750	1750	2069	1629	1750	2862	837
Capacity Analysis Module:												
Vol/Sat:	0.15	0.25	0.25	0.12	0.37	0.11	0.10	0.30	0.30	0.08	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	18.5	42.5	42.5	20.5	44.6	44.6	15.7	35.9	35.9	9.1	29.2	29.2
Volume/Cap:	0.99	0.69	0.69	0.69	0.99	0.31	0.75	0.99	0.99	0.99	0.75	0.75
Delay/Veh:	90.1	34.2	34.2	53.5	55.9	27.1	62.8	67.7	67.7	131.8	45.4	45.4
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.1	34.2	34.2	74.9	78.2	37.9	62.8	67.7	67.7	131.8	45.4	45.4
LOS by Move:	F	C	C	E	E	D	E	E	E	F	D	D
HCM2kAvgQ:	16	15	15	9	32	6	8	27	27	9	13	13
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

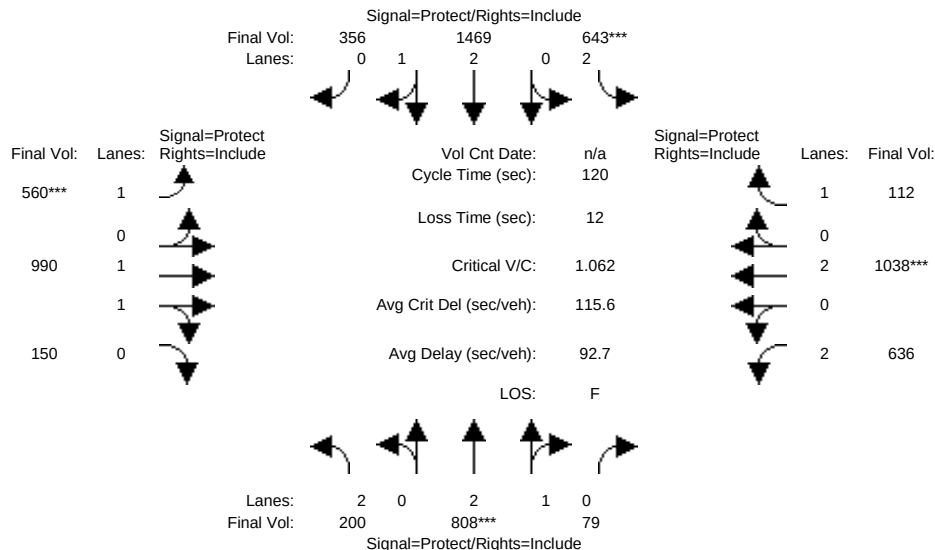


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 19 Mar 2014 << 4:45 PM - 5:45 PM												
Base Vol:	200	819	79	657	1471	349	563	994	150	639	1041	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	819	79	657	1471	349	563	994	150	639	1041	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	819	79	657	1471	349	563	994	150	639	1041	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	819	79	657	1471	349	563	994	150	639	1041	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	819	79	657	1471	349	563	994	150	639	1041	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	819	79	657	1471	349	563	994	150	639	1041	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.73	0.27	2.00	2.40	0.60	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5107	493	3150	4525	1074	1750	3214	485	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.33	0.33	0.32	0.31	0.31	0.20	0.27	0.06
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	19.7	37.7	37.7	30.3	36.4	36.4	23.9	30.0	30.0
Volume/Cap:	0.76	0.69	0.69	1.27	1.04	1.04	1.27	1.02	1.02	1.02	1.10	0.26
Delay/Veh:	66.2	43.6	43.6	187.4	72.5	72.5	184.3	73.4	73.4	88.7	104	36.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.6	43.6	187.4	72.5	72.5	184.3	73.4	73.4	88.7	104	36.4
LOS by Move:	E	D	D	F	E	E	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	27	31	31	41	29	29	20	29	4
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

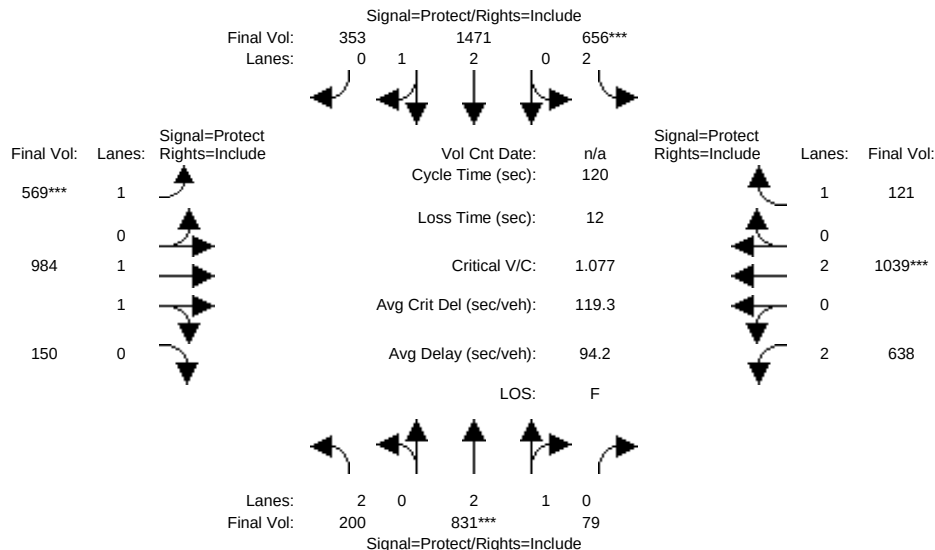


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	808	79	643	1469	356	560	990	150	636	1038	112
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	808	79	643	1469	356	560	990	150	636	1038	112
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	808	79	643	1469	356	560	990	150	636	1038	112
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	808	79	643	1469	356	560	990	150	636	1038	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	808	79	643	1469	356	560	990	150	636	1038	112
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	808	79	643	1469	356	560	990	150	636	1038	112
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.72	0.28	2.00	2.39	0.61	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5101	499	3150	4506	1092	1750	3213	487	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.20	0.33	0.33	0.32	0.31	0.31	0.20	0.27	0.06
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	19.5	37.5	37.5	30.5	36.6	36.6	24.0	30.0	30.0
Volume/Cap:	0.76	0.68	0.68	1.26	1.04	1.04	1.26	1.01	1.01	1.01	1.09	0.26
Delay/Veh:	66.2	43.4	43.4	181.5	75.3	75.3	178.0	71.3	71.3	86.7	103	36.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.4	43.4	181.5	75.3	75.3	178.0	71.3	71.3	86.7	103	36.4
LOS by Move:	E	D	D	F	E	E	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	26	31	31	40	28	28	20	29	4
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

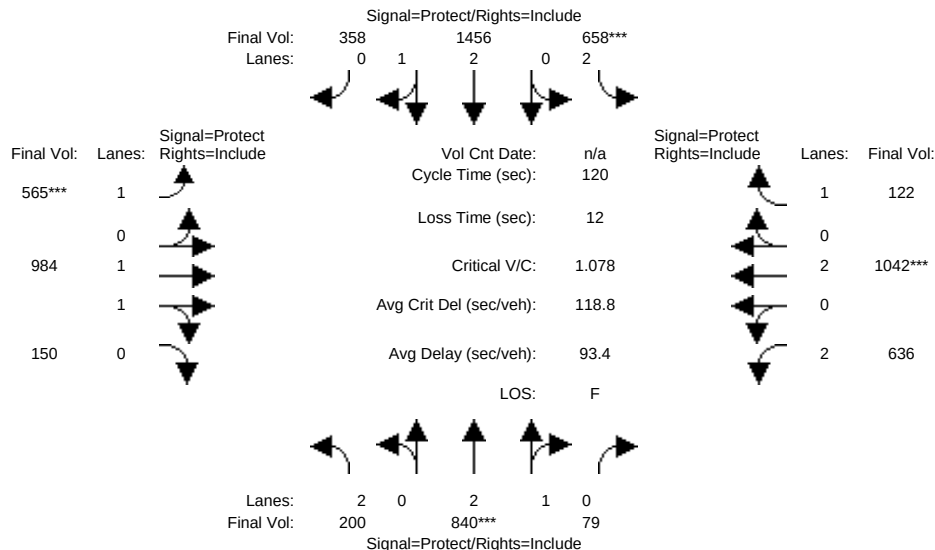


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	831	79	656	1471	353	569	984	150	638	1039	121
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	831	79	656	1471	353	569	984	150	638	1039	121
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	831	79	656	1471	353	569	984	150	638	1039	121
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	831	79	656	1471	353	569	984	150	638	1039	121
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	831	79	656	1471	353	569	984	150	638	1039	121
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	831	79	656	1471	353	569	984	150	638	1039	121
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.73	0.27	2.00	2.40	0.60	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5113	486	3150	4515	1083	1750	3210	489	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.33	0.33	0.33	0.31	0.31	0.20	0.27	0.07
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	19.5	37.5	37.5	30.5	36.4	36.4	24.1	30.0	30.0
Volume/Cap:	0.76	0.70	0.70	1.28	1.04	1.04	1.28	1.01	1.01	1.01	1.09	0.28
Delay/Veh:	66.2	43.8	43.8	190.7	74.6	74.6	187.2	71.1	71.1	86.3	103	36.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.8	43.8	190.7	74.6	74.6	187.2	71.1	71.1	86.3	103	36.6
LOS by Move:	E	D	D	F	E	E	F	E	E	F	F	D
HCM2kAvgQ:	6	11	11	27	31	31	41	28	28	20	29	4
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

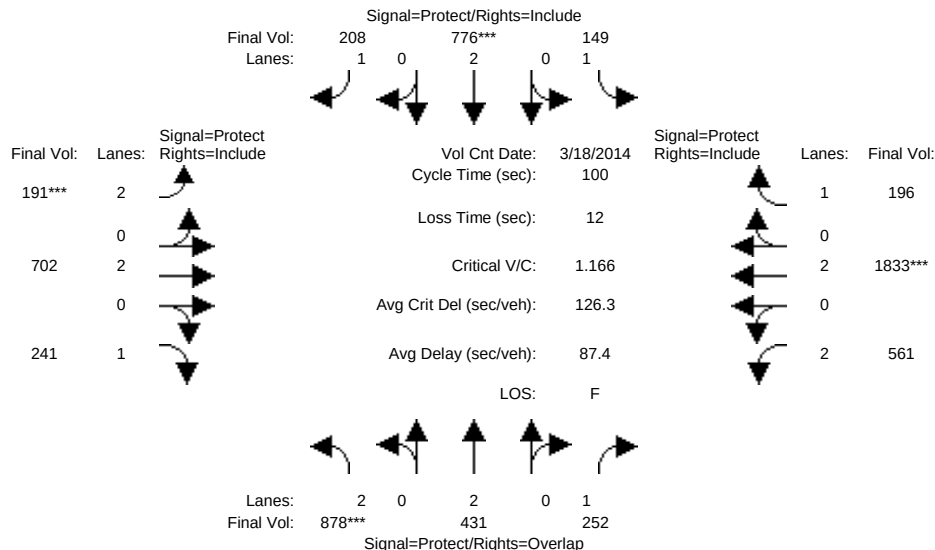


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	840	79	658	1456	358	565	984	150	636	1042	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	840	79	658	1456	358	565	984	150	636	1042	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	840	79	658	1456	358	565	984	150	636	1042	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	840	79	658	1456	358	565	984	150	636	1042	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	840	79	658	1456	358	565	984	150	636	1042	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	840	79	658	1456	358	565	984	150	636	1042	122
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.73	0.27	2.00	2.39	0.61	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5118	481	3150	4493	1105	1750	3210	489	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.16	0.16	0.21	0.32	0.32	0.32	0.31	0.31	0.20	0.27	0.07
Crit Moves:	****			****			****			****		
Green Time:	10.0	28.0	28.0	19.6	37.6	37.6	30.4	36.4	36.4	24.0	30.0	30.0
Volume/Cap:	0.76	0.70	0.70	1.28	1.03	1.03	1.28	1.01	1.01	1.01	1.10	0.28
Delay/Veh:	66.2	43.9	43.9	188.9	71.7	71.7	185.7	71.4	71.4	86.6	104	36.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.2	43.9	43.9	188.9	71.7	71.7	185.7	71.4	71.4	86.6	104	36.6
LOS by Move:	E	D	D	F	E	E	F	E	E	F	F	D
HCM2kAvgQ:	6	12	12	27	31	31	41	28	28	20	29	4
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

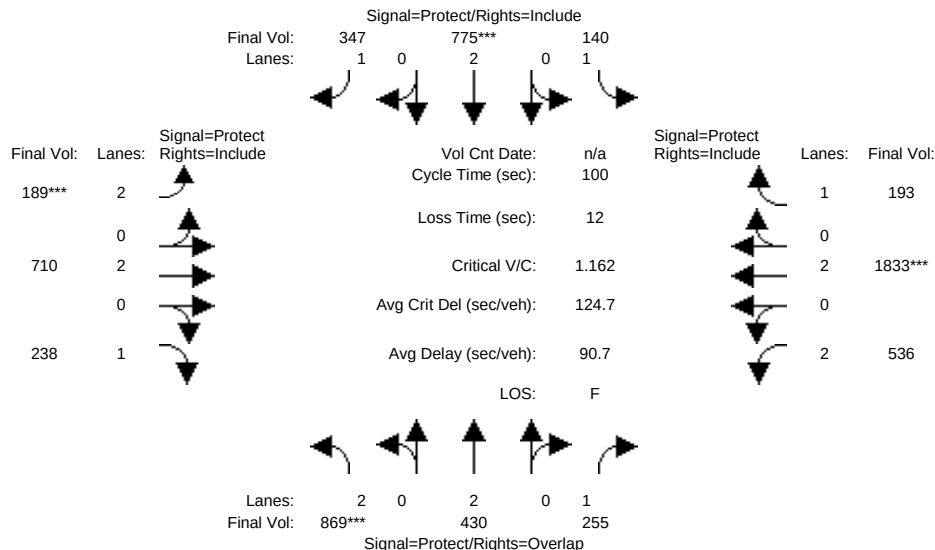
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 18 Mar 2014 << 4:45 PM - 5:45 PM												
Base Vol:	878	431	252	149	776	347	191	702	241	561	1833	196
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	878	431	252	149	776	347	191	702	241	561	1833	196
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	878	431	252	149	776	347	191	702	241	561	1833	196
User Adj:	1.00	1.00	1.00	1.00	1.00	0.60	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	878	431	252	149	776	208	191	702	241	561	1833	196
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	878	431	252	149	776	208	191	702	241	561	1833	196
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	878	431	252	149	776	208	191	702	241	561	1833	196
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.28	0.11	0.14	0.09	0.20	0.12	0.06	0.18	0.14	0.18	0.48	0.11
Crit Moves:	***				***		***				***	
Green Time:	23.4	23.1	46.5	17.4	17.1	17.1	7.0	24.2	24.2	23.3	40.5	40.5
Volume/Cap:	1.19	0.49	0.31	0.49	1.19	0.69	0.87	0.76	0.57	0.76	1.19	0.28
Delay/Veh:	137.8	33.7	17.0	38.6	142	45.9	74.3	39.1	35.2	40.6	119	18.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	137.8	33.7	17.0	38.6	142	45.9	74.3	39.1	35.2	40.6	119	18.0
LOS by Move:	F	C	B	D	F	D	E	D	D	D	F	B
HCM2kAvgQ:	30	7	7	5	23	8	6	12	8	11	49	4

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



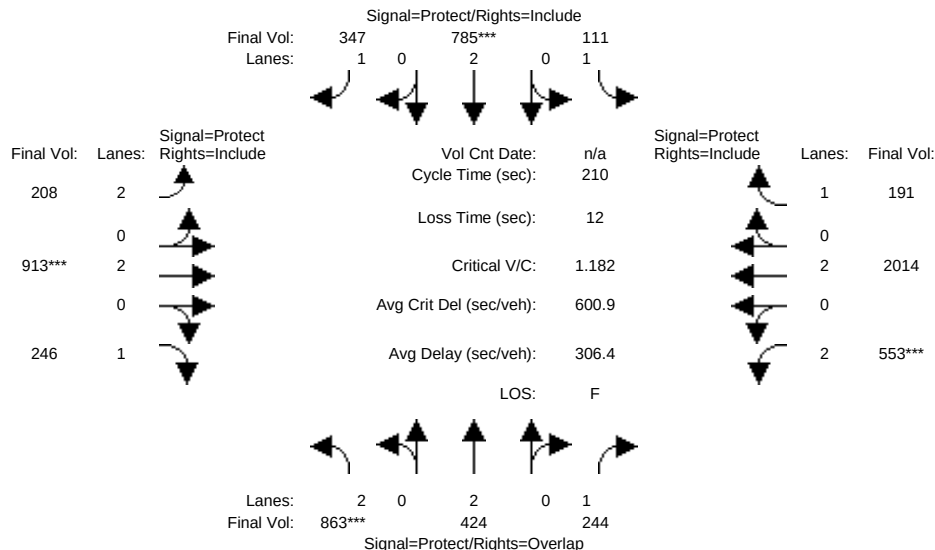
Street Name:Foothill Expressway - Junipero Se							Page Mill Road					
Approach:			Approach:			Approach:			Approach:			
North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Volume Module:												
Base Vol:	869	430	255	140	775	347	189	710	238	536	1833	193
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	869	430	255	140	775	347	189	710	238	536	1833	193
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	869	430	255	140	775	347	189	710	238	536	1833	193
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	869	430	255	140	775	347	189	710	238	536	1833	193
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	869	430	255	140	775	347	189	710	238	536	1833	193
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	869	430	255	140	775	347	189	710	238	536	1833	193
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Capacity Analysis Module:												
Vol/Sat:	0.28	0.11	0.15	0.08	0.20	0.20	0.06	0.19	0.14	0.17	0.48	0.11
Crit Moves:	****			****			****			****		
Green Time:	23.2	23.7	46.4	16.7	17.2	17.2	7.0	24.9	24.9	22.7	40.6	40.6
Volume/Cap:	1.19	0.48	0.31	0.48	1.19	1.15	0.86	0.75	0.55	0.75	1.19	0.27
Delay/Veh:	136.4	33.3	17.1	38.9	141	142.1	72.7	38.0	34.1	40.4	118	17.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	136.4	33.3	17.1	38.9	141	142.1	72.7	38.0	34.1	40.4	118	17.8
LOS by Move:	F	C	B	D	F	F	E	D	C	D	F	B
HCM2kAvgQ:	29	7	7	5	23	21	6	12	7	11	49	4
Note: Queue reported is the number of cars per lane.												

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	863	424	244	111	785	347	208	913	246	553	2014	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	863	424	244	111	785	347	208	913	246	553	2014	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	863	424	244	111	785	347	208	913	246	553	2014	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	863	424	244	111	785	347	208	913	246	553	2014	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	863	424	244	111	785	347	208	913	246	553	2014	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	863	424	244	111	785	347	208	913	246	553	2014	191

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

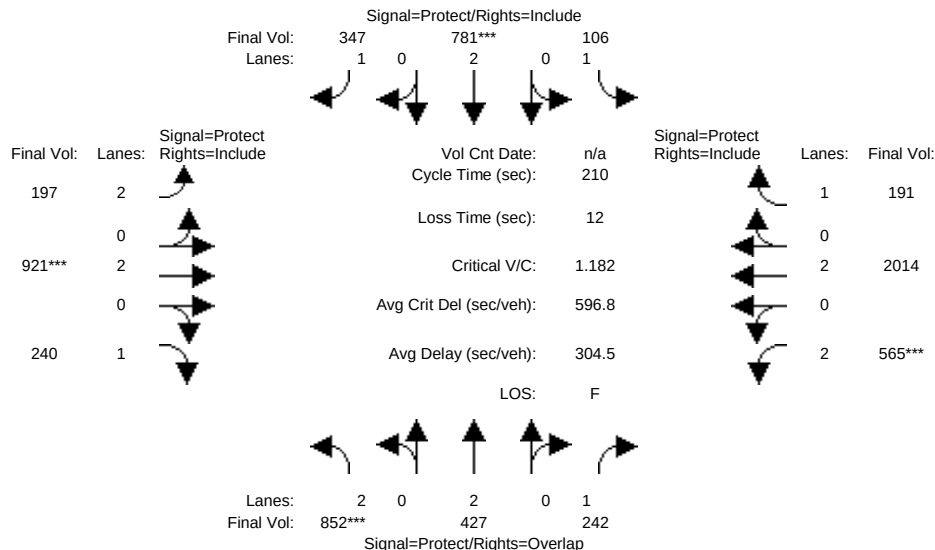
Vol/Sat:	0.27	0.11	0.14	0.13	0.41	0.20	0.07	0.24	0.14	0.18	0.53	0.11
Crit Moves:	***				***		***			***		
Green Time:	20.5	24.0	40.4	27.3	30.9	30.9	14.6	128	128.3	16.3	130	130.1
Volume/Cap:	2.81	0.98	0.73	0.98	2.81	1.35	0.95	0.39	0.23	2.26	0.86	0.18
Delay/Veh:	905.2	116	75.9	154.3	902	257.4	130.7	18.0	15.9	661.6	17.9	7.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	905.2	116	75.9	154.3	902	257.4	130.7	18.0	15.9	661.6	17.9	7.8
LOS by Move:	F	F	E	F	F	F	F	B	B	F	B	A
HCM2kAvgQ:	69	15	15	10	53	34	10	12	6	42	35	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	852	427	242	106	781	347	197	921	240	565	2014	191
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	852	427	242	106	781	347	197	921	240	565	2014	191
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	852	427	242	106	781	347	197	921	240	565	2014	191
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	852	427	242	106	781	347	197	921	240	565	2014	191
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	852	427	242	106	781	347	197	921	240	565	2014	191
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	852	427	242	106	781	347	197	921	240	565	2014	191

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

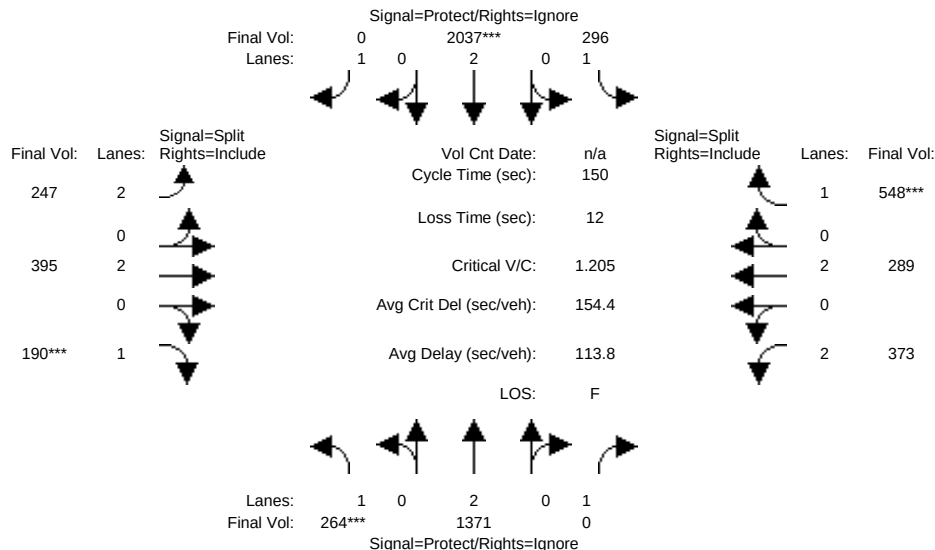
Vol/Sat:	0.27	0.11	0.14	0.12	0.41	0.20	0.06	0.24	0.14	0.18	0.53	0.11
Crit Moves:	***				***		***			***		
Green Time:	20.4	24.7	41.0	26.6	31.0	31.0	14.6	128	128.3	16.3	130	130.1
Volume/Cap:	2.79	0.96	0.71	0.96	2.79	1.34	0.90	0.40	0.22	2.31	0.86	0.18
Delay/Veh:	895.0	110	74.3	149.1	891	255.6	118.4	18.1	15.9	683.5	17.9	7.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	895.0	110	74.3	149.1	891	255.6	118.4	18.1	15.9	683.5	17.9	7.8
LOS by Move:	F	F	E	F	F	F	F	B	B	F	B	A
HCM2kAvgQ:	68	15	15	9	52	34	9	12	6	43	35	2

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #10: Foothill & Arastradero (CMP #5207)

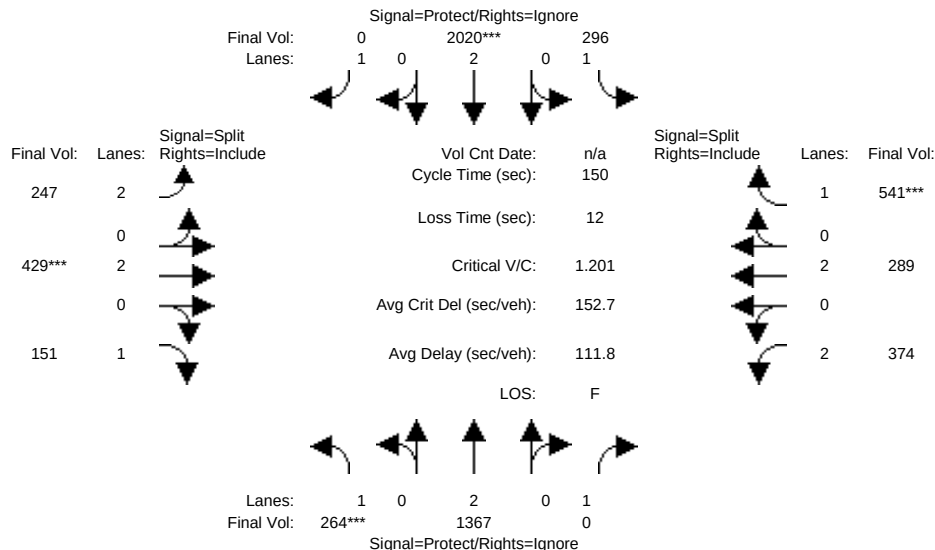


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: 5:00 PM - 6:00 PM												
Base Vol:	264	1371	59	296	2037	39	247	395	190	373	289	548
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	264	1371	59	296	2037	39	247	395	190	373	289	548
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	264	1371	59	296	2037	39	247	395	190	373	289	548
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	264	1371	0	296	2037	0	247	395	190	373	289	548
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	264	1371	0	296	2037	0	247	395	190	373	289	548
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	264	1371	0	296	2037	0	247	395	190	373	289	548
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.17	0.54	0.00	0.08	0.10	0.11	0.12	0.08	0.31
Crit Moves:	***			***					***			***
Green Time:	18.7	58.0	0.0	27.2	66.5	0.0	14.0	14.0	14.0	38.8	38.8	38.8
Volume/Cap:	1.21	0.93	0.00	0.93	1.21	0.00	0.84	1.11	1.16	0.46	0.29	1.21
Delay/Veh:	194.8	55.3	0.0	94.0	142	0.0	85.9	150	189.1	47.1	44.8	169.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	194.8	55.3	0.0	94.0	142	0.0	85.9	150	189.1	47.1	44.8	169.0
LOS by Move:	F	E	A	F	F	A	F	F	F	D	D	F
HCM2kAvgQ:	22	34	0	18	69	0	9	15	16	10	6	42
Note: Queue reported is the number of cars per lane.												

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Scenario 5M PM

Intersection #10: Foothill & Arastradero (CMP #5207)



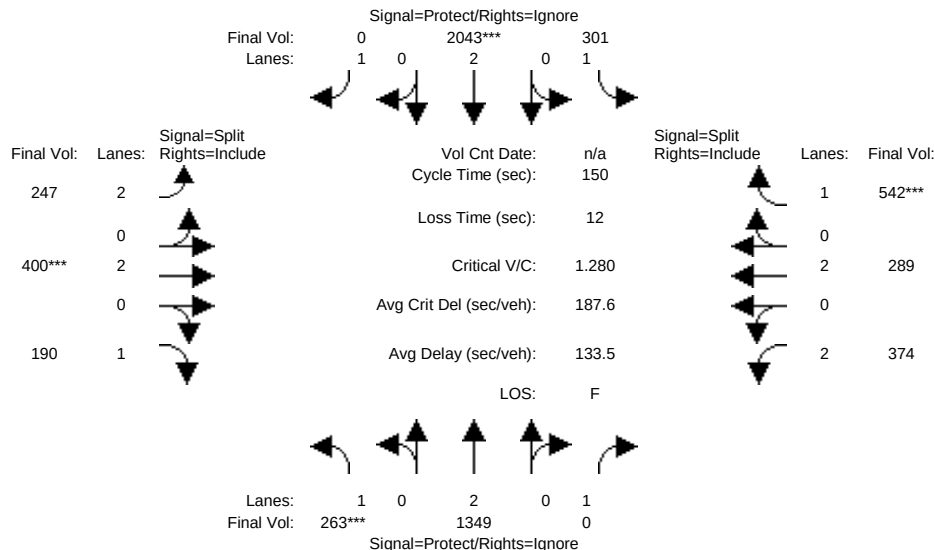
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	264	1367	58	296	2020	38	247	429	151	374	289	541
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	264	1367	58	296	2020	38	247	429	151	374	289	541
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	264	1367	58	296	2020	38	247	429	151	374	289	541
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	264	1367	0	296	2020	0	247	429	151	374	289	541
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	264	1367	0	296	2020	0	247	429	151	374	289	541
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	264	1367	0	296	2020	0	247	429	151	374	289	541
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.17	0.53	0.00	0.08	0.11	0.09	0.12	0.08	0.31
Crit Moves:	***			***			***			***		
Green Time:	18.8	58.0	0.0	27.3	66.4	0.0	14.1	14.1	14.1	38.6	38.6	38.6
Volume/Cap:	1.20	0.93	0.00	0.93	1.20	0.00	0.83	1.20	0.92	0.46	0.30	1.20
Delay/Veh:	191.0	54.9	0.0	93.2	138	0.0	84.8	182	114.1	47.3	44.9	165.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	191.0	54.9	0.0	93.2	138	0.0	84.8	182	114.1	47.3	44.9	165.6
LOS by Move:	F	D	A	F	F	A	F	F	F	D	D	F
HCM2kAvgQ:	22	34	0	18	68	0	9	17	11	10	6	41

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #10: Foothill & Arastradero (CMP #5207)

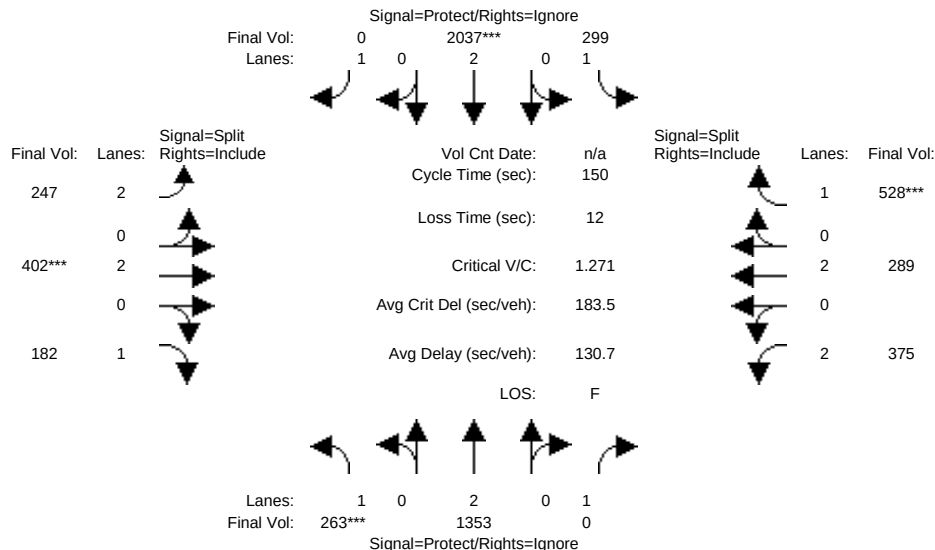


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	1349	61	301	2043	37	247	400	190	374	289	542
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	1349	61	301	2043	37	247	400	190	374	289	542
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	1349	61	301	2043	37	247	400	190	374	289	542
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	1349	0	301	2043	0	247	400	190	374	289	542
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	1349	0	301	2043	0	247	400	190	374	289	542
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	1349	0	301	2043	0	247	400	190	374	289	542
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.17	0.54	0.00	0.11	0.18	0.11	0.17	0.13	0.31
Crit Moves:	***			***			***			***		
Green Time:	17.6	54.3	0.0	26.3	63.0	0.0	21.1	21.1	21.1	36.3	36.3	36.3
Volume/Cap:	1.28	0.98	0.00	0.98	1.28	0.00	0.80	1.28	0.77	0.70	0.54	1.28
Delay/Veh:	224.3	67.1	0.0	107.6	175	0.0	75.6	213	76.0	56.1	50.7	200.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	224.3	67.1	0.0	107.6	175	0.0	75.6	213	76.0	56.1	50.7	200.1
LOS by Move:	F	E	A	F	F	A	E	F	E	E	D	F
HCM2kAvgQ:	23	36	0	20	75	0	9	17	11	11	7	44
Note: Queue reported is the number of cars per lane.												

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Scenario 6M PM

Intersection #10: Foothill & Arastradero (CMP #5207)

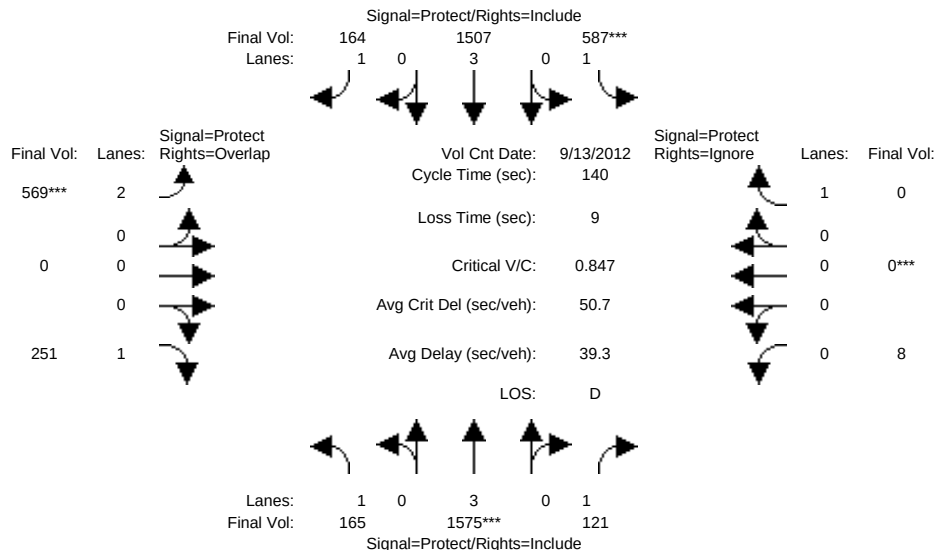


Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	1353	61	299	2037	36	247	402	182	375	289	528
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	1353	61	299	2037	36	247	402	182	375	289	528
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	1353	61	299	2037	36	247	402	182	375	289	528
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	1353	0	299	2037	0	247	402	182	375	289	528
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	1353	0	299	2037	0	247	402	182	375	289	528
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	1353	0	299	2037	0	247	402	182	375	289	528
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.36	0.00	0.17	0.54	0.00	0.11	0.18	0.10	0.17	0.13	0.30
Crit Moves:	***			***			***					***
Green Time:	17.7	54.7	0.0	26.3	63.3	0.0	21.4	21.4	21.4	35.6	35.6	35.6
Volume/Cap:	1.27	0.98	0.00	0.98	1.27	0.00	0.79	1.27	0.73	0.72	0.55	1.27
Delay/Veh:	220.3	65.5	0.0	106.2	170	0.0	74.4	209	72.0	57.3	51.4	196.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	220.3	65.5	0.0	106.2	170	0.0	74.4	209	72.0	57.3	51.4	196.9
LOS by Move:	F	E	A	F	F	A	E	F	E	E	D	F
HCM2kAvgQ:	23	36	0	19	74	0	9	17	10	11	7	43
Note: Queue reported is the number of cars per lane.												

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Scenario 5 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

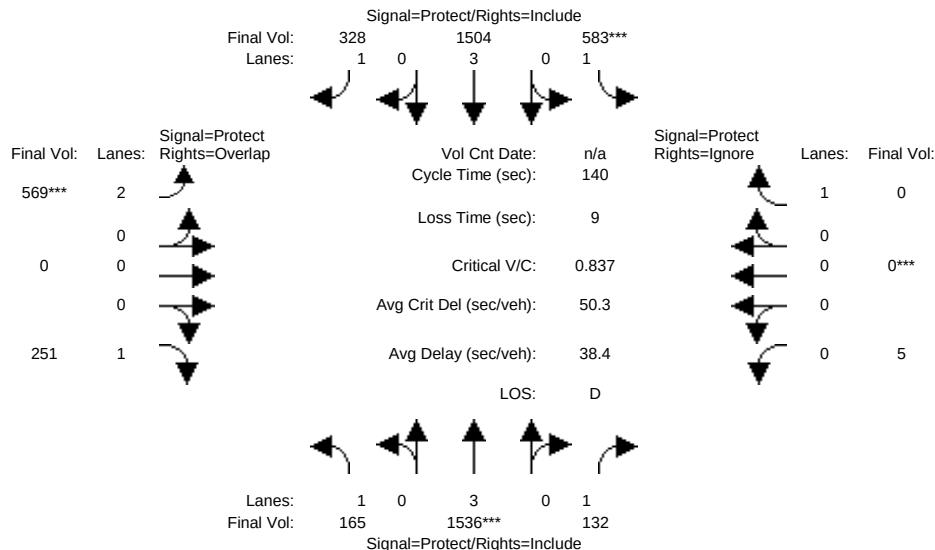


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << 5:00-6:00PM												
Base Vol:	165	1575	121	587	1507	328	569	0	251	8	0	1068
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1575	121	587	1507	328	569	0	251	8	0	1068
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1575	121	587	1507	328	569	0	251	8	0	1068
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1575	121	587	1507	164	569	0	251	8	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1575	121	587	1507	164	569	0	251	8	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1575	121	587	1507	164	569	0	251	8	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.28	0.07	0.34	0.26	0.09	0.18	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	26.6	45.7	45.7	55.5	74.6	74.6	29.9	0.0	53.9	2.5	0.0	0.0
Volume/Cap:	0.50	0.85	0.21	0.85	0.50	0.18	0.85	0.00	0.37	0.25	0.00	0.00
Delay/Veh:	51.9	47.7	34.3	47.9	20.9	17.0	62.7	0.0	31.3	71.9	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.9	47.7	34.3	47.9	20.9	17.0	62.7	0.0	31.3	71.9	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	23	4	27	13	4	17	0	8	1	0	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

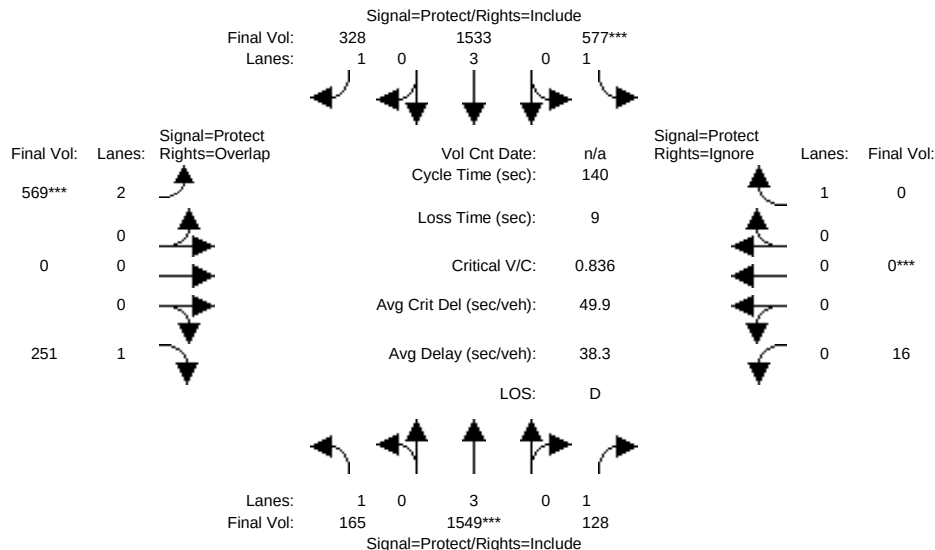


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	1536	132	583	1504	328	569	0	251	5	0	1070
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1536	132	583	1504	328	569	0	251	5	0	1070
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1536	132	583	1504	328	569	0	251	5	0	1070
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1536	132	583	1504	328	569	0	251	5	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1536	132	583	1504	328	569	0	251	5	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1536	132	583	1504	328	569	0	251	5	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.08	0.33	0.26	0.19	0.18	0.00	0.14	0.00	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	26.5	45.1	45.1	55.7	74.3	74.3	30.2	0.0	55.1	1.7	0.0	0.0
Volume/Cap:	0.50	0.84	0.23	0.84	0.50	0.35	0.84	0.00	0.36	0.24	0.00	0.00
Delay/Veh:	51.9	47.6	35.0	46.8	21.1	19.2	61.5	0.0	30.4	74.5	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.9	47.6	35.0	46.8	21.1	19.2	61.5	0.0	30.4	74.5	0.0	0.0
LOS by Move:	D	D	D	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	22	4	26	13	9	16	0	8	0	0	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

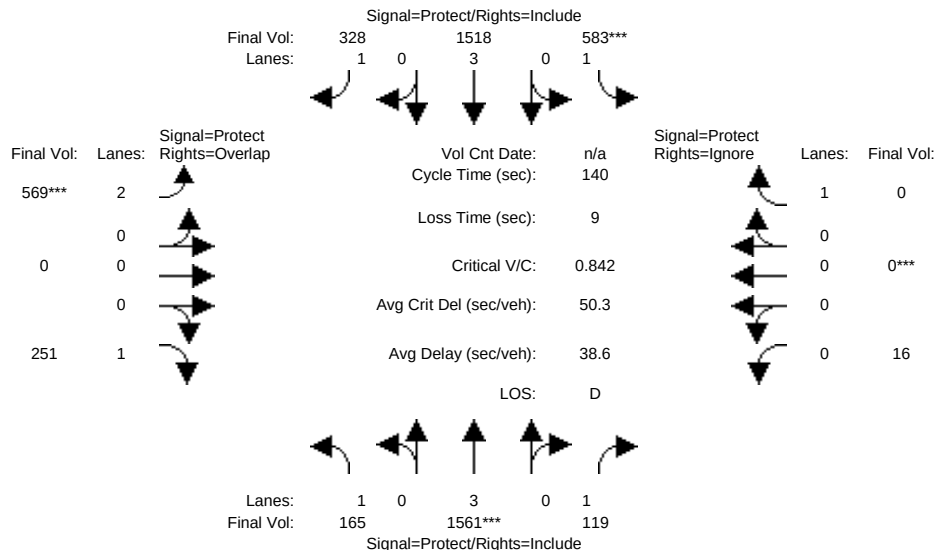


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	1549	128	577	1533	328	569	0	251	16	0	1075
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1549	128	577	1533	328	569	0	251	16	0	1075
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1549	128	577	1533	328	569	0	251	16	0	1075
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1549	128	577	1533	328	569	0	251	16	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1549	128	577	1533	328	569	0	251	16	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1549	128	577	1533	328	569	0	251	16	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.07	0.33	0.27	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	26.2	45.5	45.5	55.2	74.6	74.6	30.3	0.0	51.7	4.7	0.0	0.0
Volume/Cap:	0.50	0.84	0.22	0.84	0.50	0.35	0.84	0.00	0.39	0.27	0.00	0.00
Delay/Veh:	52.4	47.3	34.6	47.0	21.0	19.0	61.4	0.0	32.9	68.4	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.4	47.3	34.6	47.0	21.0	19.0	61.4	0.0	32.9	68.4	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	23	4	26	14	9	16	0	8	1	0	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)

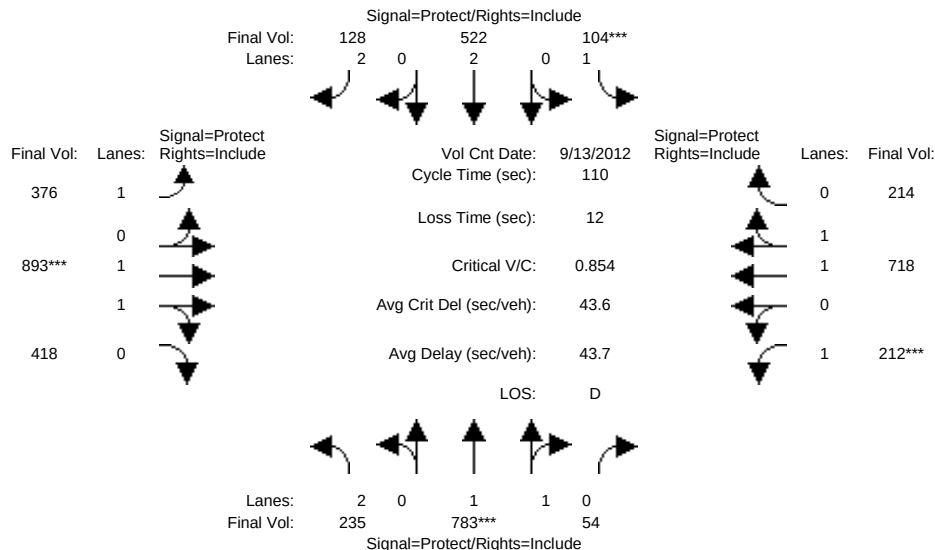


Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	165	1561	119	583	1518	328	569	0	251	16	0	1082
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1561	119	583	1518	328	569	0	251	16	0	1082
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1561	119	583	1518	328	569	0	251	16	0	1082
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1561	119	583	1518	328	569	0	251	16	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1561	119	583	1518	328	569	0	251	16	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1561	119	583	1518	328	569	0	251	16	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.27	0.07	0.33	0.27	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	26.4	45.5	45.5	55.4	74.6	74.6	30.0	0.0	51.7	4.7	0.0	0.0
Volume/Cap:	0.50	0.84	0.21	0.84	0.50	0.35	0.84	0.00	0.39	0.27	0.00	0.00
Delay/Veh:	52.1	47.5	34.4	47.5	21.0	19.1	62.0	0.0	32.9	68.5	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	47.5	34.4	47.5	21.0	19.1	62.0	0.0	32.9	68.5	0.0	0.0
LOS by Move:	D	D	C	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	23	4	26	14	9	16	0	8	1	0	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

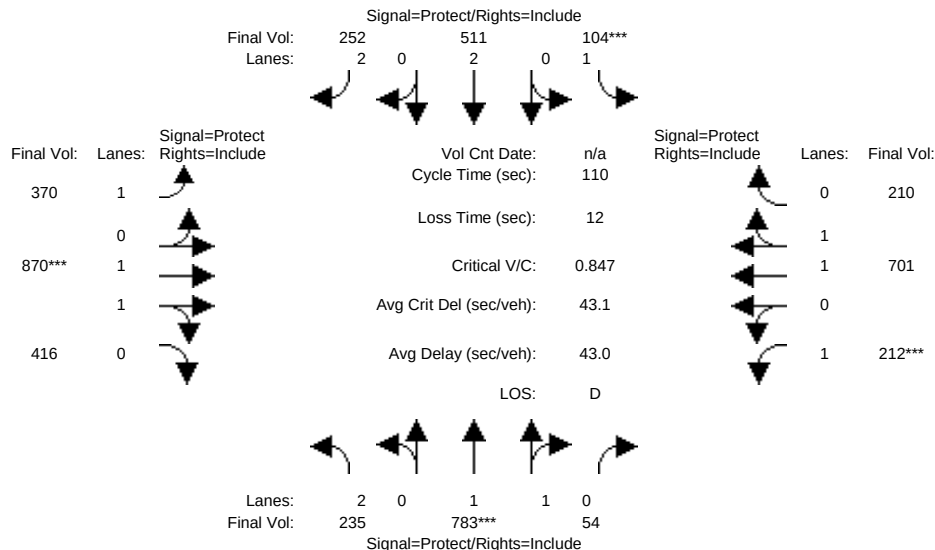


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << PM												
Base Vol:	235	783	54	104	522	256	376	893	418	212	718	214
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	522	256	376	893	418	212	718	214
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	522	256	376	893	418	212	718	214
User Adj:	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	522	128	376	893	418	212	718	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	522	128	376	893	418	212	718	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	522	128	376	893	418	212	718	214
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.34	0.66	1.00	1.53	0.47
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2519	1179	1750	2850	849
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.14	0.04	0.21	0.35	0.35	0.12	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	12.9	29.1	29.1	7.7	23.8	23.8	28.2	45.6	45.6	15.6	33.0	33.0
Volume/Cap:	0.63	0.85	0.85	0.85	0.63	0.19	0.84	0.85	0.85	0.85	0.84	0.84
Delay/Veh:	49.8	45.9	45.9	91.6	40.8	35.3	51.9	34.1	34.1	70.0	41.8	41.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.8	45.9	45.9	91.6	40.8	35.3	51.9	34.1	34.1	70.0	41.8	41.8
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	9	2	16	23	23	10	18	18
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

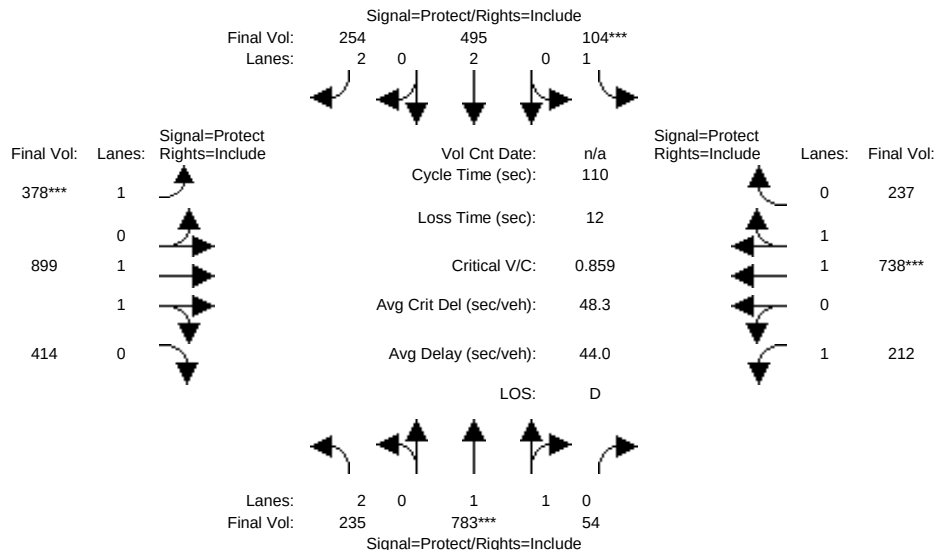


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	235	783	54	104	511	252	370	870	416	212	701	210
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	511	252	370	870	416	212	701	210
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	511	252	370	870	416	212	701	210
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	511	252	370	870	416	212	701	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	511	252	370	870	416	212	701	210
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	511	252	370	870	416	212	701	210
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.34	0.66	1.00	1.53	0.47
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2502	1196	1750	2846	853
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.13	0.08	0.21	0.35	0.35	0.12	0.25	0.25
Crit Moves:	****			****			****			****		
Green Time:	13.2	29.4	29.4	7.7	23.9	23.9	28.1	45.2	45.2	15.7	32.8	32.8
Volume/Cap:	0.62	0.85	0.85	0.85	0.62	0.37	0.83	0.85	0.85	0.85	0.83	0.83
Delay/Veh:	49.1	45.1	45.1	89.6	40.4	37.0	50.7	33.9	33.9	68.6	41.3	41.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.1	45.1	45.1	89.6	40.4	37.0	50.7	33.9	33.9	68.6	41.3	41.3
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	16	16	6	9	5	15	23	23	10	17	17
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

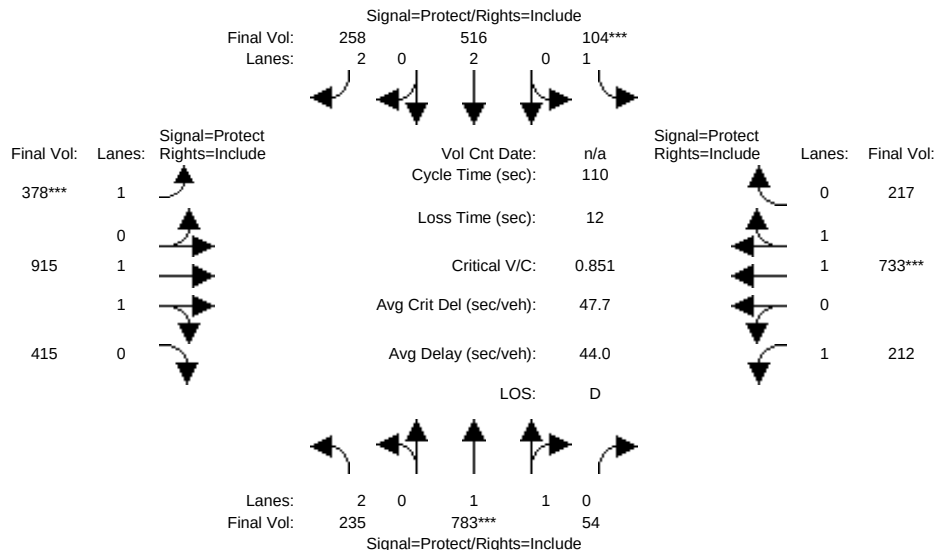


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	235	783	54	104	495	254	378	899	414	212	738	237
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	495	254	378	899	414	212	738	237
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	495	254	378	899	414	212	738	237
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	495	254	378	899	414	212	738	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	495	254	378	899	414	212	738	237
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	495	254	378	899	414	212	738	237
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.35	0.65	1.00	1.50	0.50
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2532	1166	1750	2800	899
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.13	0.08	0.22	0.35	0.35	0.12	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	13.3	29.0	29.0	7.6	23.3	23.3	27.7	45.8	45.8	15.6	33.8	33.8
Volume/Cap:	0.62	0.86	0.86	0.86	0.62	0.38	0.86	0.85	0.85	0.85	0.86	0.86
Delay/Veh:	48.9	46.3	46.3	92.8	40.8	37.6	54.8	33.9	33.9	69.7	42.6	42.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.9	46.3	46.3	92.8	40.8	37.6	54.8	33.9	33.9	69.7	42.6	42.6
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	8	5	16	23	23	10	19	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

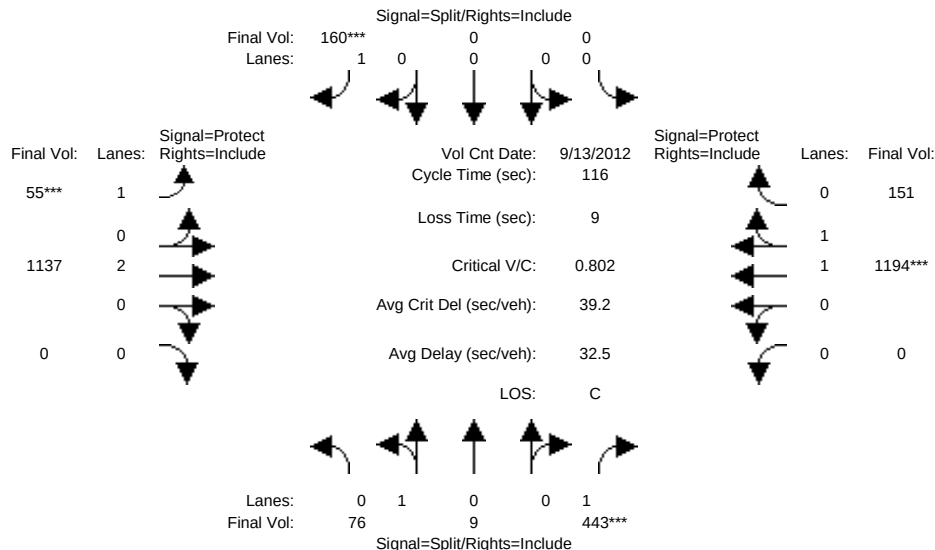


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	235	783	54	104	516	258	378	915	415	212	733	217
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	516	258	378	915	415	212	733	217
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	516	258	378	915	415	212	733	217
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	516	258	378	915	415	212	733	217
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	516	258	378	915	415	212	733	217
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	516	258	378	915	415	212	733	217
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.36	0.64	1.00	1.53	0.47
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2545	1154	1750	2854	845
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.14	0.08	0.22	0.36	0.36	0.12	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	13.1	29.2	29.2	7.7	23.8	23.8	27.9	45.7	45.7	15.4	33.2	33.2
Volume/Cap:	0.63	0.85	0.85	0.85	0.63	0.38	0.85	0.87	0.87	0.87	0.85	0.85
Delay/Veh:	49.5	45.5	45.5	90.8	40.6	37.1	53.6	34.8	34.8	72.3	42.5	42.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	45.5	45.5	90.8	40.6	37.1	53.6	34.8	34.8	72.3	42.5	42.5
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	16	16	6	9	5	16	24	24	10	18	18
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

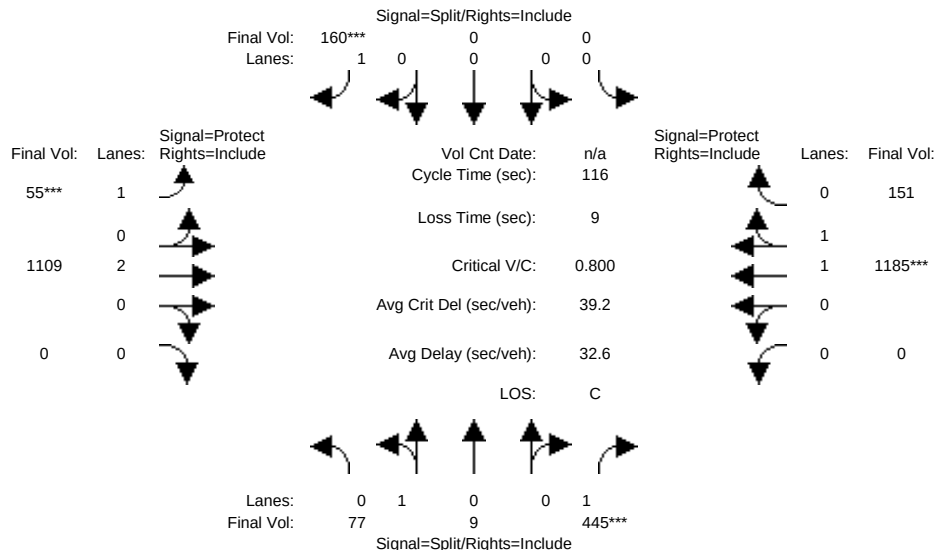


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 << 4:30-5:30PM												
Base Vol:	76	9	443	0	0	160	55	1137	0	0	1194	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	9	443	0	0	160	55	1137	0	0	1194	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	9	443	0	0	160	55	1137	0	0	1194	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	9	443	0	0	160	55	1137	0	0	1194	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	9	443	0	0	160	55	1137	0	0	1194	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	76	9	443	0	0	160	55	1137	0	0	1194	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.89	0.11	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1609	191	1750	0	0	1750	1750	3800	0	0	3284	415
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.30	0.00	0.00	0.36	0.36
Crit Moves:	****			****			****			****		
Green Time:	35.7	35.7	35.7	0.0	0.0	12.9	7.0	58.3	0.0	0.0	51.3	51.3
Volume/Cap:	0.15	0.15	0.82	0.00	0.00	0.82	0.52	0.59	0.00	0.00	0.82	0.82
Delay/Veh:	29.3	29.3	46.9	0.0	0.0	73.9	57.5	21.0	0.0	0.0	31.8	31.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.3	29.3	46.9	0.0	0.0	73.9	57.5	21.0	0.0	0.0	31.8	31.8
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	2	2	18	0	0	8	3	14	0	0	23	23
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



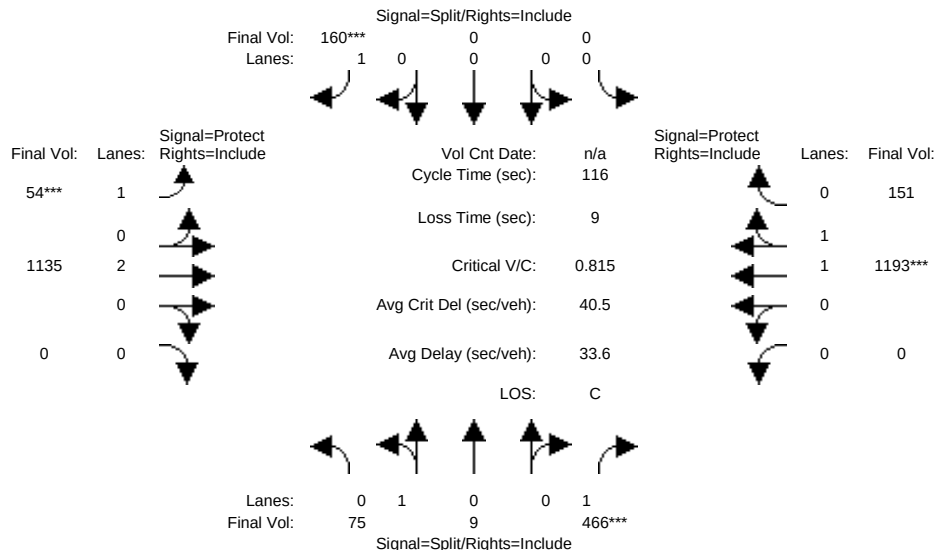
Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	77	9	445	0	0	160	55	1109	0	0	1185	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	77	9	445	0	0	160	55	1109	0	0	1185	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	9	445	0	0	160	55	1109	0	0	1185	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	77	9	445	0	0	160	55	1109	0	0	1185	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	9	445	0	0	160	55	1109	0	0	1185	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	77	9	445	0	0	160	55	1109	0	0	1185	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.90	0.10	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1612	188	1750	0	0	1750	1750	3800	0	0	3281	418
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.29	0.00	0.00	0.36	0.36
Crit Moves:	****			****			****			****		
Green Time:	36.0	36.0	36.0	0.0	0.0	12.9	7.0	58.1	0.0	0.0	51.1	51.1
Volume/Cap:	0.15	0.15	0.82	0.00	0.00	0.82	0.52	0.58	0.00	0.00	0.82	0.82
Delay/Veh:	29.1	29.1	46.6	0.0	0.0	73.6	57.5	20.9	0.0	0.0	31.9	31.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.1	29.1	46.6	0.0	0.0	73.6	57.5	20.9	0.0	0.0	31.9	31.9
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	2	2	18	0	0	8	3	14	0	0	23	23

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

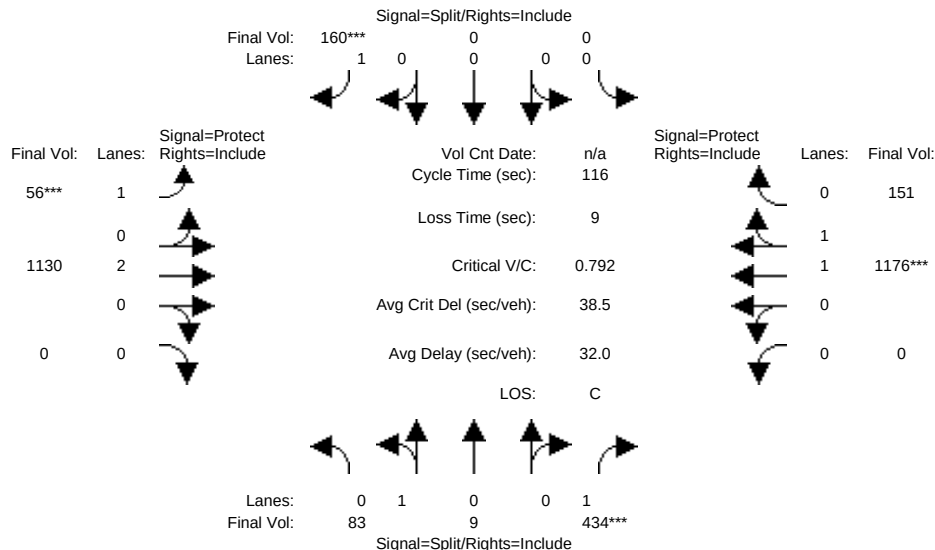


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	75	9	466	0	0	160	54	1135	0	0	1193	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	9	466	0	0	160	54	1135	0	0	1193	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	75	9	466	0	0	160	54	1135	0	0	1193	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	75	9	466	0	0	160	54	1135	0	0	1193	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	75	9	466	0	0	160	54	1135	0	0	1193	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	75	9	466	0	0	160	54	1135	0	0	1193	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.89	0.11	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1607	193	1750	0	0	1750	1750	3800	0	0	3284	416
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.27	0.00	0.00	0.09	0.03	0.30	0.00	0.00	0.36	0.36
Crit Moves:	****			****			****			****		
Green Time:	36.9	36.9	36.9	0.0	0.0	12.7	7.0	57.4	0.0	0.0	50.4	50.4
Volume/Cap:	0.15	0.15	0.84	0.00	0.00	0.84	0.51	0.60	0.00	0.00	0.84	0.84
Delay/Veh:	28.4	28.4	47.4	0.0	0.0	76.8	57.0	21.7	0.0	0.0	33.2	33.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.4	28.4	47.4	0.0	0.0	76.8	57.0	21.7	0.0	0.0	33.2	33.2
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	2	2	19	0	0	8	3	15	0	0	24	24
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

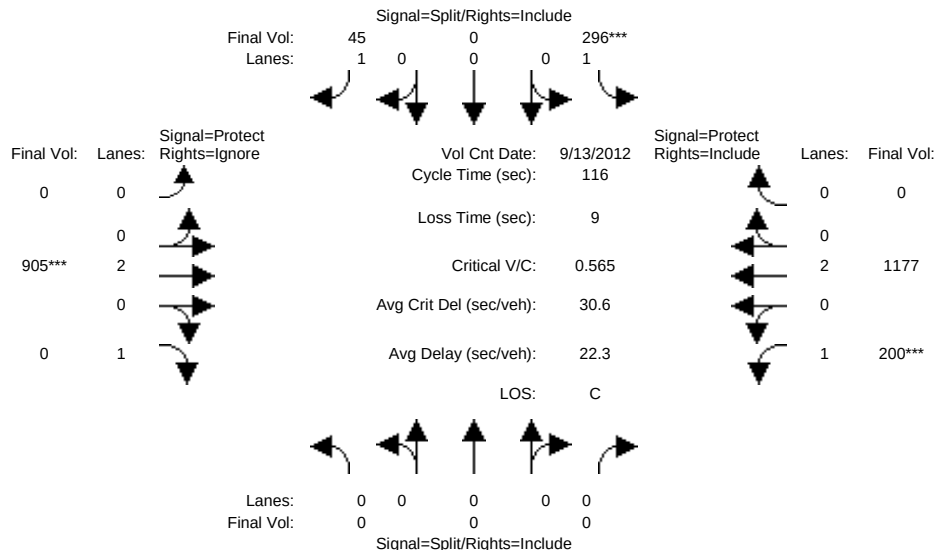


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	83	9	434	0	0	160	56	1130	0	0	1176	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	83	9	434	0	0	160	56	1130	0	0	1176	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	9	434	0	0	160	56	1130	0	0	1176	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	9	434	0	0	160	56	1130	0	0	1176	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	9	434	0	0	160	56	1130	0	0	1176	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	83	9	434	0	0	160	56	1130	0	0	1176	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.90	0.10	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.77	0.23
Final Sat.:	1624	176	1750	0	0	1750	1750	3800	0	0	3279	421
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.03	0.30	0.00	0.00	0.36	0.36
Crit Moves:	****			****			****			****		
Green Time:	35.5	35.5	35.5	0.0	0.0	13.1	7.0	58.4	0.0	0.0	51.4	51.4
Volume/Cap:	0.17	0.17	0.81	0.00	0.00	0.81	0.53	0.59	0.00	0.00	0.81	0.81
Delay/Veh:	29.6	29.6	46.1	0.0	0.0	71.8	57.9	20.9	0.0	0.0	31.2	31.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.6	29.6	46.1	0.0	0.0	71.8	57.9	20.9	0.0	0.0	31.2	31.2
LOS by Move:	C	C	D	A	A	E	E	C	A	A	C	C
HCM2kAvgQ:	2	2	17	0	0	8	3	14	0	0	23	23
Note: Queue reported is the number of cars per lane.												

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

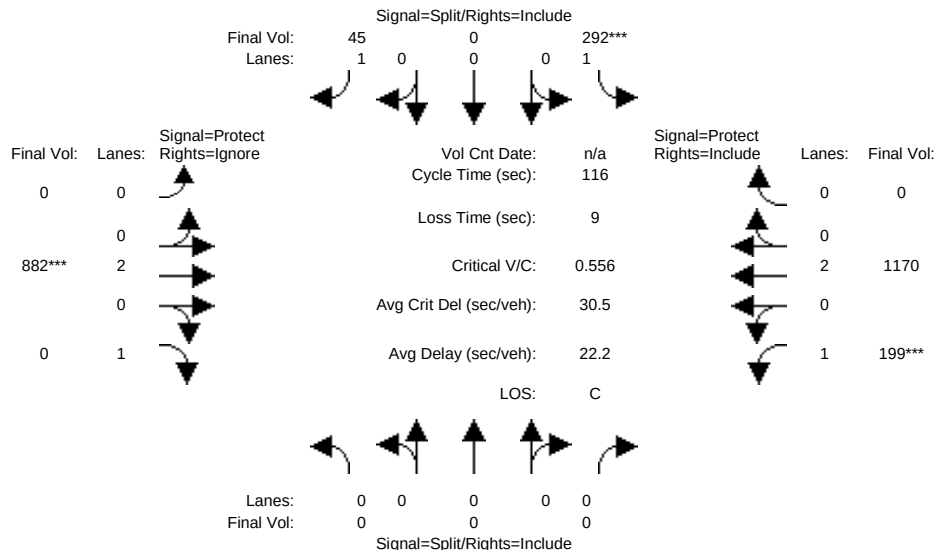


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 13 Sep 2012 <<												
Base Vol:	0	0	0	296	0	45	0	905	186	200	1177	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	296	0	45	0	905	186	200	1177	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	296	0	45	0	905	186	200	1177	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	296	0	45	0	905	0	200	1177	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	296	0	45	0	905	0	200	1177	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	296	0	45	0	905	0	200	1177	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.24	0.00	0.11	0.31	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	34.7	0.0	34.7	0.0	48.9	0.0	23.4	72.3	0.0
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.09	0.00	0.57	0.00	0.57	0.50	0.00
Delay/Veh:	0.0	0.0	0.0	35.7	0.0	29.3	0.0	26.0	0.0	43.8	12.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.7	0.0	29.3	0.0	26.0	0.0	43.8	12.1	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	12	0	8	11	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

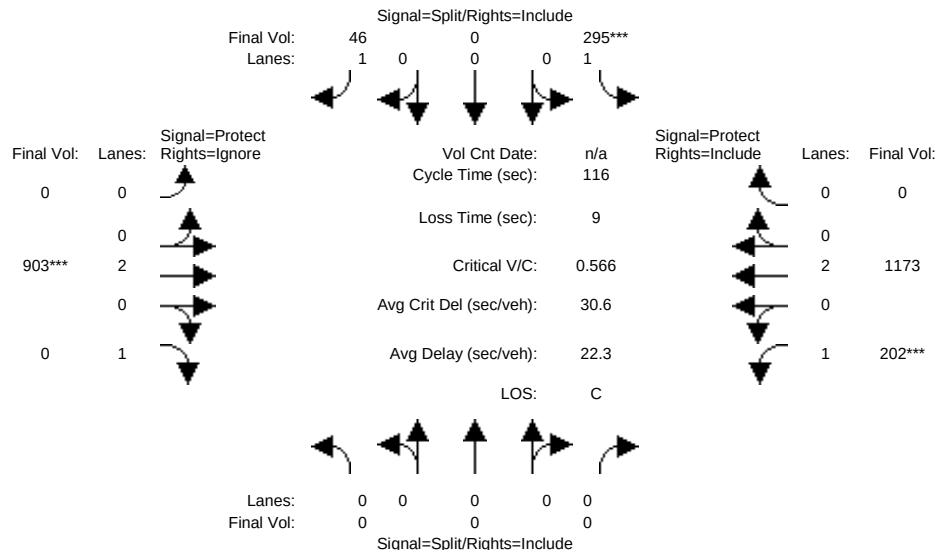


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	292	0	45	0	882	179	199	1170	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	292	0	45	0	882	179	199	1170	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	292	0	45	0	882	179	199	1170	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	292	0	45	0	882	0	199	1170	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	292	0	45	0	882	0	199	1170	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	292	0	45	0	882	0	199	1170	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.23	0.00	0.11	0.31	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	34.8	0.0	34.8	0.0	48.4	0.0	23.7	72.2	0.0
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.09	0.00	0.56	0.00	0.56	0.49	0.00
Delay/Veh:	0.0	0.0	0.0	35.4	0.0	29.2	0.0	26.1	0.0	43.3	12.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.4	0.0	29.2	0.0	26.1	0.0	43.3	12.1	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	12	0	7	11	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

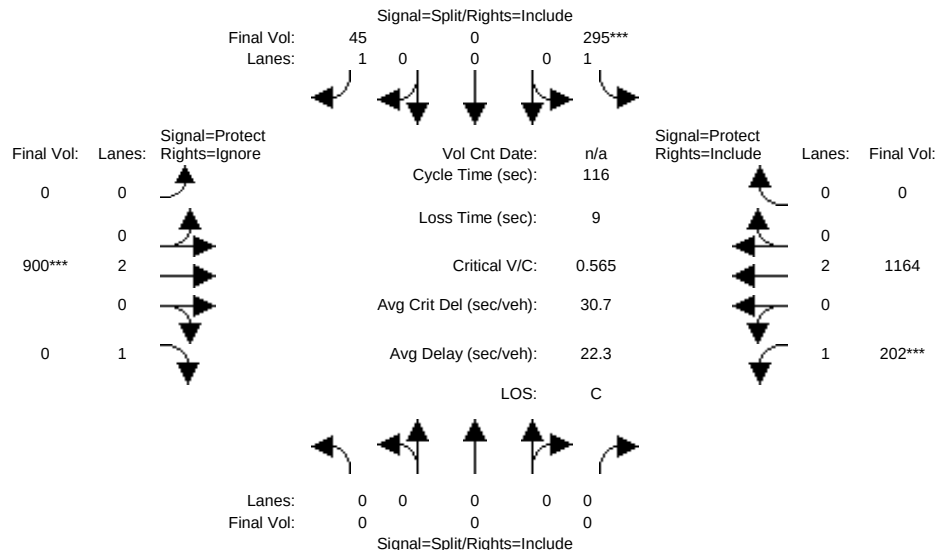


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	295	0	46	0	903	193	202	1173	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	295	0	46	0	903	193	202	1173	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	295	0	46	0	903	193	202	1173	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	295	0	46	0	903	0	202	1173	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	295	0	46	0	903	0	202	1173	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	295	0	46	0	903	0	202	1173	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.24	0.00	0.12	0.31	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	34.6	0.0	34.6	0.0	48.7	0.0	23.7	72.4	0.0
Volume/Cap:	0.00	0.00	0.00	0.57	0.00	0.09	0.00	0.57	0.00	0.57	0.49	0.00
Delay/Veh:	0.0	0.0	0.0	35.8	0.0	29.4	0.0	26.0	0.0	43.6	12.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.8	0.0	29.4	0.0	26.0	0.0	43.6	12.0	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	12	0	8	11	0
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)



Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	295	0	45	0	900	183	202	1164	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	295	0	45	0	900	183	202	1164	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	295	0	45	0	900	183	202	1164	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	295	0	45	0	900	0	202	1164	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	295	0	45	0	900	0	202	1164	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	295	0	45	0	900	0	202	1164	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.03	0.00	0.24	0.00	0.12	0.31	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	34.6	0.0	34.6	0.0	48.7	0.0	23.7	72.4	0.0
Volume/Cap:	0.00	0.00	0.00	0.56	0.00	0.09	0.00	0.56	0.00	0.56	0.49	0.00
Delay/Veh:	0.0	0.0	0.0	35.8	0.0	29.4	0.0	26.1	0.0	43.6	12.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	35.8	0.0	29.4	0.0	26.1	0.0	43.6	12.0	0.0
LOS by Move:	A	A	A	D	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	12	0	8	11	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

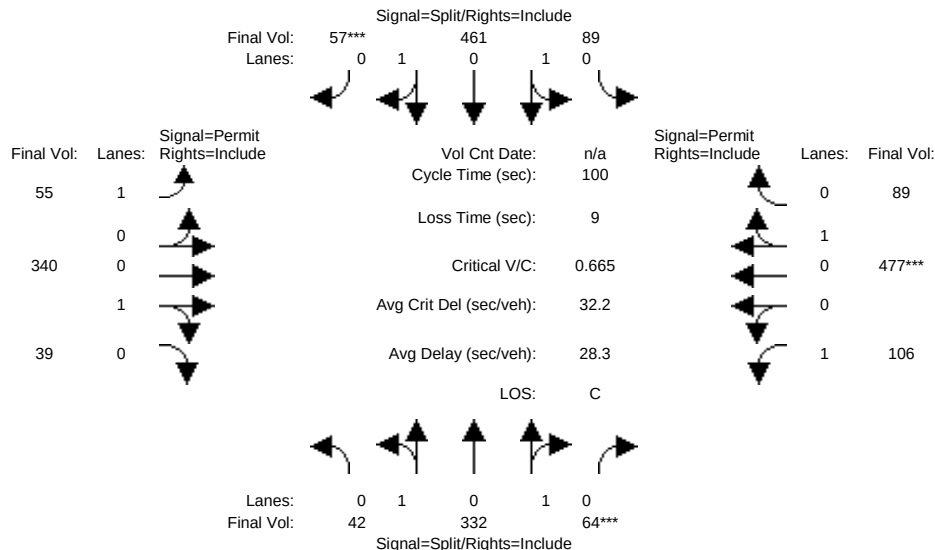
[illegible]

Street Name:				Middlefield Road						University Avenue							
Approach:		North Bound				South Bound				East Bound				West Bound			
Movement:		L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
-----		-----				-----				-----				-----			
Min. Green:		10		10		10	10		10		10	7		10		10	
Y+R:		4.0		4.0		4.0	4.0		4.0		4.0	4.0		4.0		4.0	
-----		-----				-----				-----				-----			
Volume Module:		>>	Count	Date:		24 Apr 2013 << PM											
Base Vol:		43	332	64	82	463	57	75	295	43	111	477	88				
Growth Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:		43	332	64	82	463	57	75	295	43	111	477	88				
Added Vol:		0	0	0	0	0	0	0	0	0	0	0	0				
PasserByVol:		0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:		43	332	64	82	463	57	75	295	43	111	477	88				
User Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:		43	332	64	82	463	57	75	295	43	111	477	88				
Reduct Vol:		0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:		43	332	64	82	463	57	75	295	43	111	477	88				
PCE Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:		43	332	64	82	463	57	75	295	43	111	477	88				
-----		-----				-----				-----				-----			
Saturation Flow Module:																	
Sat/Lane:		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:		0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95				
Lanes:		0.20	1.51	0.29	0.27	1.54	0.19	1.00	0.87	0.13	1.00	0.84	0.16				
Final Sat.:		353	2723	525	490	2769	341	1750	1571	229	1750	1520	280				
-----		-----				-----				-----				-----			
Capacity Analysis Module:																	
Vol/Sat:		0.12	0.12	0.12	0.17	0.17	0.17	0.04	0.19	0.19	0.06	0.31	0.31				
Crit Moves:		****				****						****					
Green Time:		18.4	18.4	18.4	25.2	25.2	25.2	47.4	47.4	47.4	47.4	47.4	47.4				
Volume/Cap:		0.66	0.66	0.66	0.66	0.66	0.66	0.09	0.40	0.40	0.13	0.66	0.66				
Delay/Veh:		40.4	40.4	40.4	35.4	35.4	35.4	14.5	17.4	17.4	14.9	22.2	22.2				
User DelAdj:		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:		40.4	40.4	40.4	35.4	35.4	35.4	14.5	17.4	17.4	14.9	22.2	22.2				
LOS by Move:		D	D	D	D	D	D	B	B	B	B	C	C				
HCM2kAvgQ:		8	8	8	10	10	10	1	7	7	2	15	15				
Note: Queue reported is the number of cars per lane.																	

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #15: Middlefield Road & University Avenue



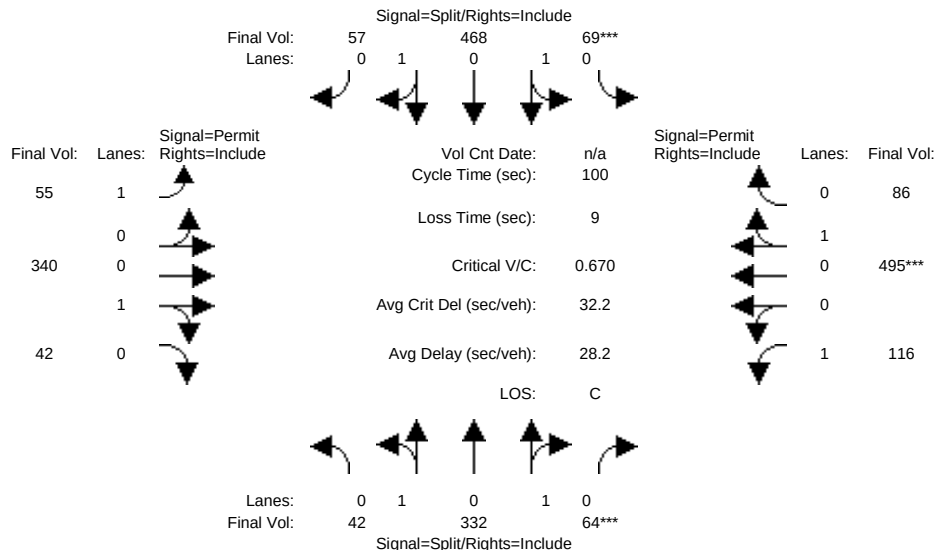
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	42	332	64	89	461	57	55	340	39	106	477	89
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	332	64	89	461	57	55	340	39	106	477	89
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	332	64	89	461	57	55	340	39	106	477	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	332	64	89	461	57	55	340	39	106	477	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	332	64	89	461	57	55	340	39	106	477	89
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	42	332	64	89	461	57	55	340	39	106	477	89
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.19	1.52	0.29	0.29	1.52	0.19	1.00	0.90	0.10	1.00	0.84	0.16
Final Sat.:	345	2729	526	528	2734	338	1750	1615	185	1750	1517	283
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.21	0.21	0.06	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	18.3	18.3	18.3	25.4	25.4	25.4	47.3	47.3	47.3	47.3	47.3	47.3
Volume/Cap:	0.66	0.66	0.66	0.66	0.66	0.66	0.07	0.44	0.44	0.13	0.66	0.66
Delay/Veh:	40.6	40.6	40.6	35.4	35.4	35.4	14.4	18.0	18.0	14.8	22.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.6	40.6	40.6	35.4	35.4	35.4	14.4	18.0	18.0	14.8	22.2	22.2
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	8	8	2	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #15: Middlefield Road & University Avenue



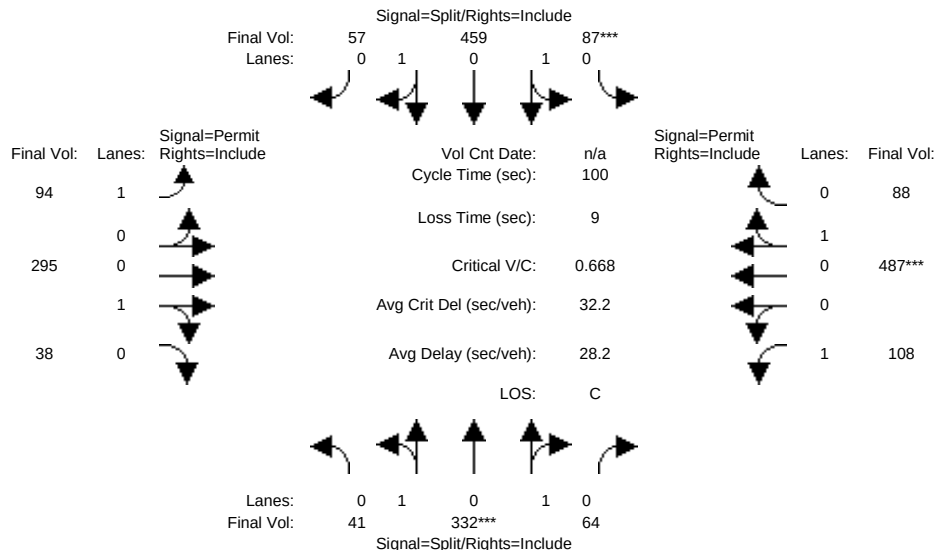
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	42	332	64	69	468	57	55	340	42	116	495	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	332	64	69	468	57	55	340	42	116	495	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	332	64	69	468	57	55	340	42	116	495	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	332	64	69	468	57	55	340	42	116	495	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	332	64	69	468	57	55	340	42	116	495	86
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	42	332	64	69	468	57	55	340	42	116	495	86
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.19	1.52	0.29	0.23	1.58	0.19	1.00	0.89	0.11	1.00	0.85	0.15
Final Sat.:	345	2729	526	418	2836	345	1750	1602	198	1750	1534	266
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.03	0.21	0.21	0.07	0.32	0.32
Crit Moves:	****			****			****			****		
Green Time:	18.2	18.2	18.2	24.6	24.6	24.6	48.2	48.2	48.2	48.2	48.2	48.2
Volume/Cap:	0.67	0.67	0.67	0.67	0.67	0.67	0.07	0.44	0.44	0.14	0.67	0.67
Delay/Veh:	40.8	40.8	40.8	36.0	36.0	36.0	13.9	17.4	17.4	14.4	21.9	21.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	40.8	40.8	36.0	36.0	36.0	13.9	17.4	17.4	14.4	21.9	21.9
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	1	8	8	2	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #15: Middlefield Road & University Avenue



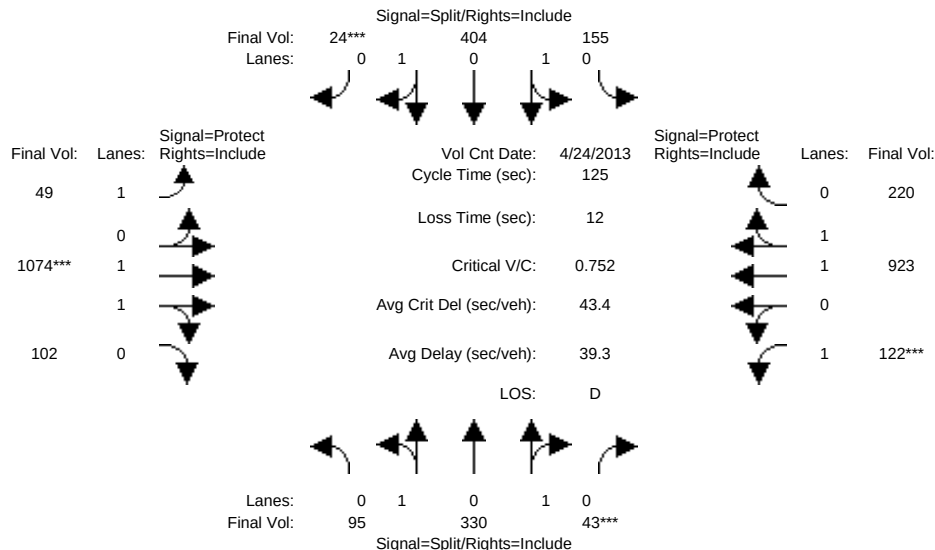
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	41	332	64	87	459	57	94	295	38	108	487	88
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	41	332	64	87	459	57	94	295	38	108	487	88
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	41	332	64	87	459	57	94	295	38	108	487	88
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	41	332	64	87	459	57	94	295	38	108	487	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	41	332	64	87	459	57	94	295	38	108	487	88
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	41	332	64	87	459	57	94	295	38	108	487	88
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.19	1.52	0.29	0.29	1.52	0.19	1.00	0.89	0.11	1.00	0.85	0.15
Final Sat.:	338	2735	527	519	2740	340	1750	1595	205	1750	1525	275
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.17	0.17	0.17	0.05	0.19	0.19	0.06	0.32	0.32
Crit Moves:	****			****						****		
Green Time:	18.2	18.2	18.2	25.1	25.1	25.1	47.8	47.8	47.8	47.8	47.8	47.8
Volume/Cap:	0.67	0.67	0.67	0.67	0.67	0.67	0.11	0.39	0.39	0.13	0.67	0.67
Delay/Veh:	40.8	40.8	40.8	35.7	35.7	35.7	14.5	17.0	17.0	14.6	22.1	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.8	40.8	40.8	35.7	35.7	35.7	14.5	17.0	17.0	14.6	22.1	22.1
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	8	8	8	10	10	10	2	7	7	2	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]

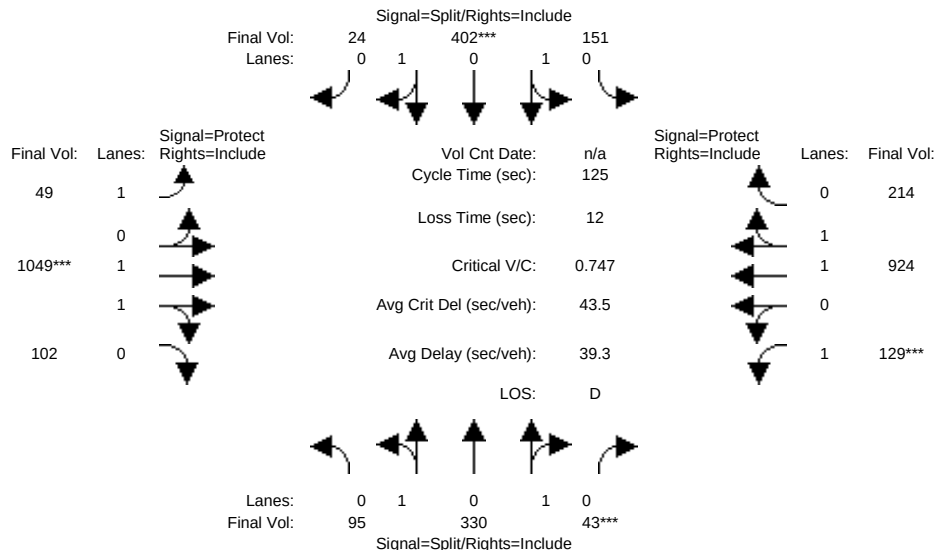


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 24 Apr 2013 << PM												
Base Vol:	95	330	43	155	404	24	49	1074	102	122	923	220
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	155	404	24	49	1074	102	122	923	220
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	155	404	24	49	1074	102	122	923	220
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	155	404	24	49	1074	102	122	923	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	155	404	24	49	1074	102	122	923	220
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	155	404	24	49	1074	102	122	923	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.53	1.39	0.08	1.00	1.82	0.18	1.00	1.60	0.40
Final Sat.:	731	2538	331	957	2495	148	1750	3379	321	1750	2987	712
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.16	0.16	0.16	0.03	0.32	0.32	0.07	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	21.6	21.6	21.6	26.9	26.9	26.9	9.9	52.9	52.9	11.6	54.6	54.6
Volume/Cap:	0.75	0.75	0.75	0.75	0.75	0.75	0.35	0.75	0.75	0.75	0.71	0.71
Delay/Veh:	54.3	54.3	54.3	50.1	50.1	50.1	56.1	32.6	32.6	73.0	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.3	54.3	54.3	50.1	50.1	50.1	56.1	32.6	32.6	73.0	30.2	30.2
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	13	13	13	2	20	20	7	19	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]

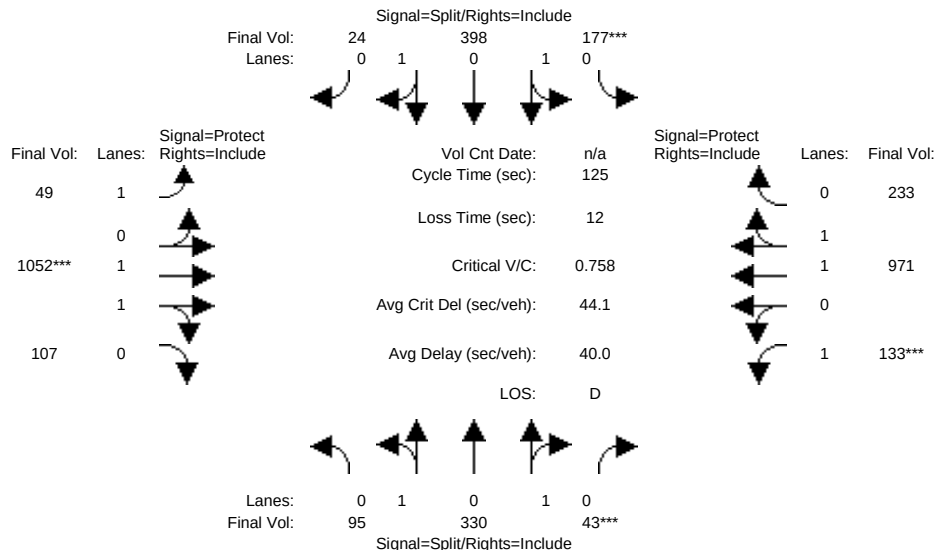


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	151	402	24	49	1049	102	129	924	214
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	151	402	24	49	1049	102	129	924	214
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	151	402	24	49	1049	102	129	924	214
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	151	402	24	49	1049	102	129	924	214
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	151	402	24	49	1049	102	129	924	214
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	151	402	24	49	1049	102	129	924	214
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.52	1.40	0.08	1.00	1.82	0.18	1.00	1.61	0.39
Final Sat.:	731	2538	331	942	2508	150	1750	3372	328	1750	3004	696
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.16	0.16	0.16	0.03	0.31	0.31	0.07	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	21.8	21.8	21.8	26.8	26.8	26.8	9.9	52.1	52.1	12.3	54.5	54.5
Volume/Cap:	0.75	0.75	0.75	0.75	0.75	0.75	0.35	0.75	0.75	0.75	0.71	0.71
Delay/Veh:	53.9	53.9	53.9	49.9	49.9	49.9	56.0	32.9	32.9	71.1	30.2	30.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	53.9	53.9	53.9	49.9	49.9	49.9	56.0	32.9	32.9	71.1	30.2	30.2
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	12	12	12	2	20	20	7	19	19
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]

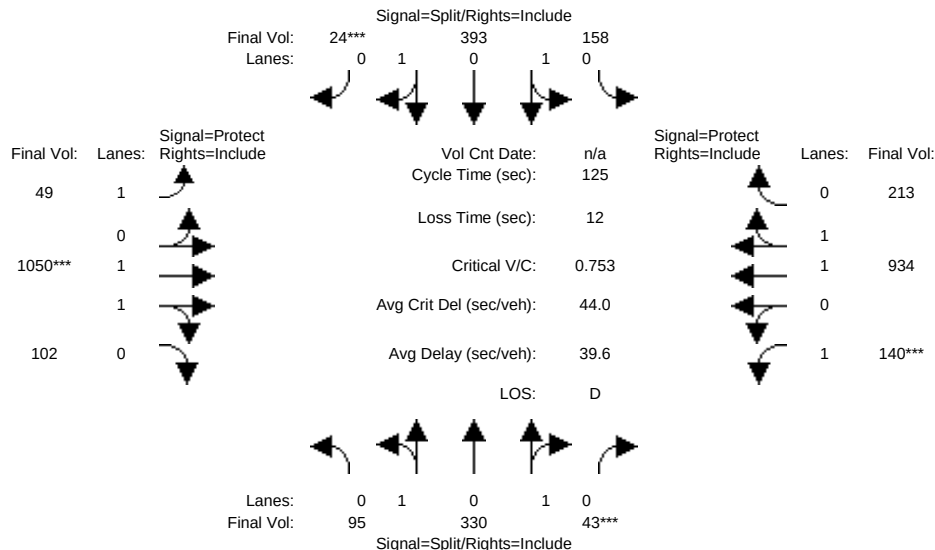


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	177	398	24	49	1052	107	133	971	233
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	177	398	24	49	1052	107	133	971	233
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	177	398	24	49	1052	107	133	971	233
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	177	398	24	49	1052	107	133	971	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	177	398	24	49	1052	107	133	971	233
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	177	398	24	49	1052	107	133	971	233
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.59	1.33	0.08	1.00	1.81	0.19	1.00	1.60	0.40
Final Sat.:	731	2538	331	1064	2392	144	1750	3358	342	1750	2983	716
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.17	0.17	0.17	0.03	0.31	0.31	0.08	0.33	0.33
Crit Moves:			****	****				****		****		
Green Time:	21.4	21.4	21.4	27.4	27.4	27.4	9.4	51.6	51.6	12.5	54.7	54.7
Volume/Cap:	0.76	0.76	0.76	0.76	0.76	0.76	0.37	0.76	0.76	0.76	0.74	0.74
Delay/Veh:	54.7	54.7	54.7	50.0	50.0	50.0	56.7	33.6	33.6	72.1	31.2	31.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.7	54.7	54.7	50.0	50.0	50.0	56.7	33.6	33.6	72.1	31.2	31.2
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	13	13	13	2	20	20	7	21	21
Note: Queue reported is the number of cars per lane.												

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Scenario 6M PM

Intersection #16: Middlefield Road & Embarcadero Road [30s loss time added for pedestrian phase]

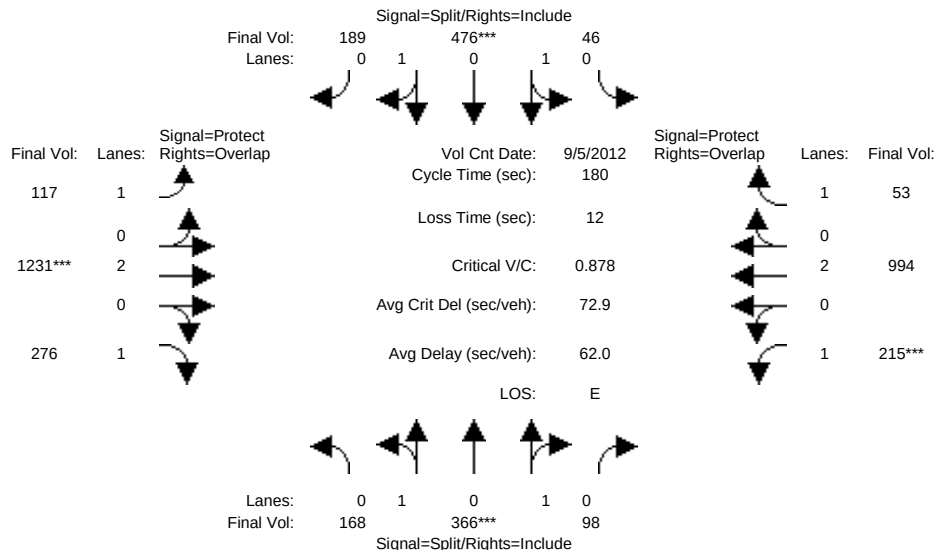


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	158	393	24	49	1050	102	140	934	213
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	158	393	24	49	1050	102	140	934	213
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	158	393	24	49	1050	102	140	934	213
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	158	393	24	49	1050	102	140	934	213
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	158	393	24	49	1050	102	140	934	213
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	158	393	24	49	1050	102	140	934	213
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.55	1.37	0.08	1.00	1.82	0.18	1.00	1.62	0.38
Final Sat.:	731	2538	331	989	2461	150	1750	3372	328	1750	3012	687
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.16	0.16	0.16	0.03	0.31	0.31	0.08	0.31	0.31
Crit Moves:	****			****			****			****		
Green Time:	21.6	21.6	21.6	26.5	26.5	26.5	9.9	51.7	51.7	13.3	55.0	55.0
Volume/Cap:	0.75	0.75	0.75	0.75	0.75	0.75	0.35	0.75	0.75	0.75	0.70	0.70
Delay/Veh:	54.4	54.4	54.4	50.5	50.5	50.5	56.0	33.4	33.4	70.2	29.8	29.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.4	54.4	54.4	50.5	50.5	50.5	56.0	33.4	33.4	70.2	29.8	29.8
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	12	12	12	2	20	20	7	19	19
Note: Queue reported is the number of cars per lane.												

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Scenario 5 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



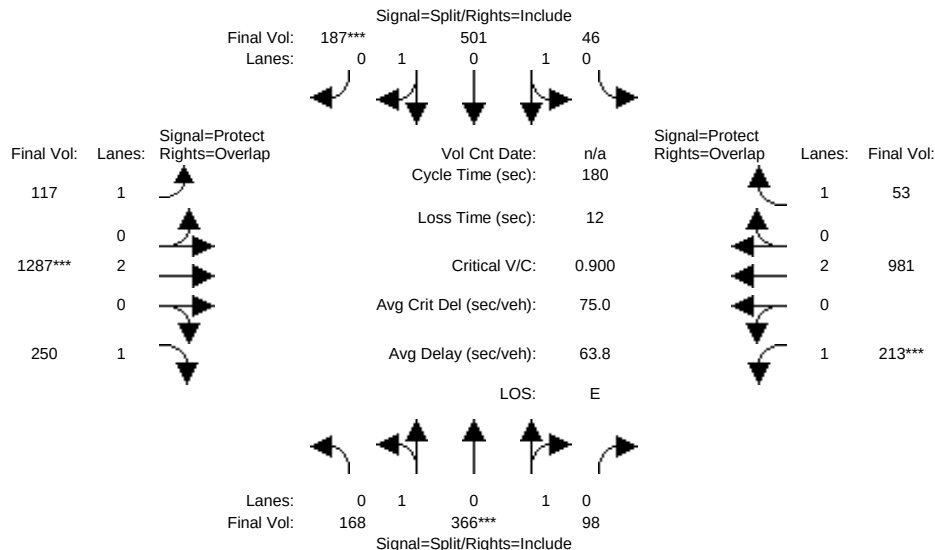
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module: >> Count Date: 5 Sep 2012 << 5:30-6:30PM												
Base Vol:	168	366	98	46	476	189	117	1231	276	215	994	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	46	476	189	117	1231	276	215	994	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	46	476	189	117	1231	276	215	994	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	46	476	189	117	1231	276	215	994	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	46	476	189	117	1231	276	215	994	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	46	476	189	117	1231	276	215	994	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.13	1.34	0.53	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	233	2410	957	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.20	0.20	0.20	0.07	0.32	0.16	0.12	0.26	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.8	35.8	35.8	40.2	40.2	40.2	15.7	67.0	102.8	25.0	76.3	116.5
Volume/Cap:	0.88	0.88	0.88	0.88	0.88	0.88	0.77	0.87	0.28	0.88	0.62	0.05
Delay/Veh:	82.7	82.7	82.7	79.0	79.0	79.0	100.8	58.6	19.8	105.4	41.2	11.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	82.7	82.7	82.7	79.0	79.0	79.0	100.8	58.6	19.8	105.4	41.2	11.6
LOS by Move:	F	F	F	E	E	E	F	E	B	F	D	B
HCM2kAvgQ:	21	21	21	23	23	23	8	33	8	15	21	1

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



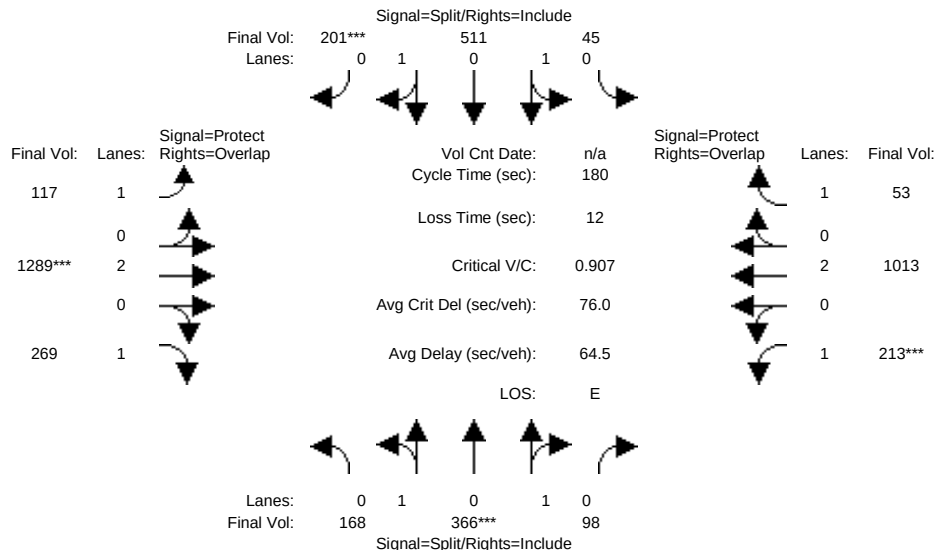
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	46	501	187	117	1287	250	213	981	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	46	501	187	117	1287	250	213	981	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	46	501	187	117	1287	250	213	981	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	46	501	187	117	1287	250	213	981	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	46	501	187	117	1287	250	213	981	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	46	501	187	117	1287	250	213	981	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.13	1.36	0.51	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	226	2457	917	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.20	0.20	0.20	0.07	0.34	0.14	0.12	0.26	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.1	35.1	35.1	40.8	40.8	40.8	15.7	67.7	102.9	24.3	76.4	117.2
Volume/Cap:	0.90	0.90	0.90	0.90	0.90	0.90	0.77	0.90	0.25	0.90	0.61	0.05
Delay/Veh:	85.3	85.3	85.3	80.6	80.6	80.6	100.7	61.0	19.4	109.7	40.9	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.3	85.3	85.3	80.6	80.6	80.6	100.7	61.0	19.4	109.7	40.9	11.3
LOS by Move:	F	F	F	F	F	F	F	E	B	F	D	B
HCM2kAvgQ:	21	21	21	24	24	24	8	36	7	15	21	1

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



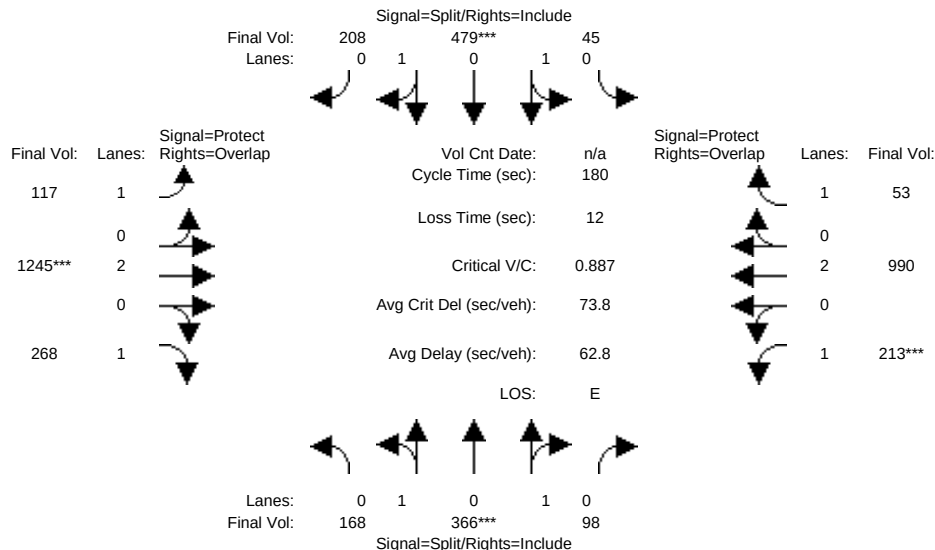
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	45	511	201	117	1289	269	213	1013	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	45	511	201	117	1289	269	213	1013	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	45	511	201	117	1289	269	213	1013	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	45	511	201	117	1289	269	213	1013	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	45	511	201	117	1289	269	213	1013	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	45	511	201	117	1289	269	213	1013	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.12	1.35	0.53	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	214	2430	956	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.21	0.21	0.21	0.07	0.34	0.15	0.12	0.27	0.03
Crit Moves:	****			****			****			****		
Green Time:	34.8	34.8	34.8	41.7	41.7	41.7	15.6	67.3	102.1	24.1	75.8	117.6
Volume/Cap:	0.91	0.91	0.91	0.91	0.91	0.91	0.77	0.91	0.27	0.91	0.63	0.05
Delay/Veh:	86.7	86.7	86.7	80.8	80.8	80.8	101.6	62.1	20.1	111.6	41.9	11.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	86.7	86.7	86.7	80.8	80.8	80.8	101.6	62.1	20.1	111.6	41.9	11.2
LOS by Move:	F	F	F	F	F	F	F	E	C	F	D	B
HCM2kAvgQ:	21	21	21	25	25	25	8	36	8	15	22	1

Note: Queue reported is the number of cars per lane.

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City of Palo Alto

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2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



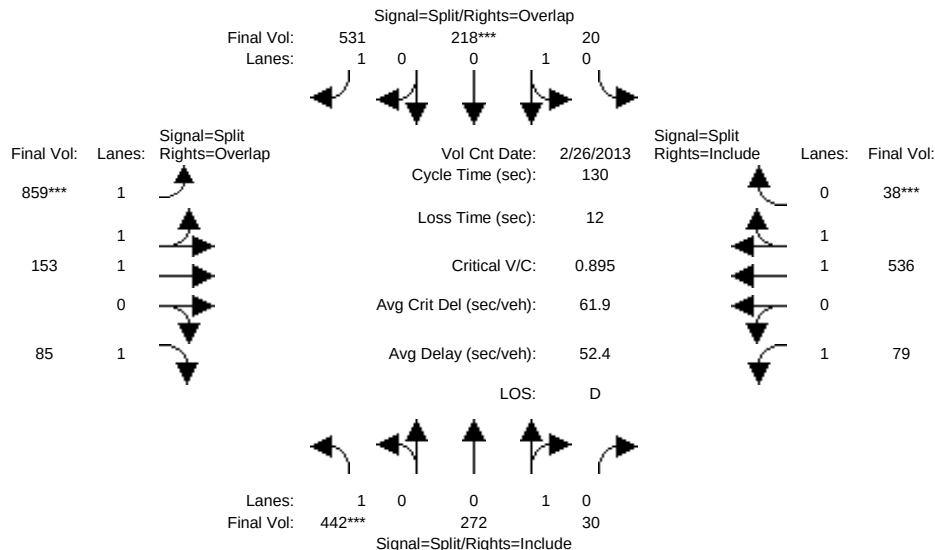
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	45	479	208	117	1245	268	213	990	53
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	45	479	208	117	1245	268	213	990	53
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	45	479	208	117	1245	268	213	990	53
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	45	479	208	117	1245	268	213	990	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	45	479	208	117	1245	268	213	990	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	45	479	208	117	1245	268	213	990	53
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.12	1.31	0.57	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	221	2356	1023	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.20	0.20	0.20	0.07	0.33	0.15	0.12	0.26	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.4	35.4	35.4	41.0	41.0	41.0	15.6	67.0	102.4	24.6	75.9	116.9
Volume/Cap:	0.89	0.89	0.89	0.89	0.89	0.89	0.77	0.88	0.27	0.89	0.62	0.05
Delay/Veh:	84.0	84.0	84.0	79.4	79.4	79.4	101.4	59.5	19.9	107.8	41.4	11.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	84.0	84.0	84.0	79.4	79.4	79.4	101.4	59.5	19.9	107.8	41.4	11.4
LOS by Move:	F	F	F	E	E	E	F	E	B	F	D	B
HCM2kAvgQ:	21	21	21	24	24	24	8	34	8	15	21	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5 PM

Intersection #18: Bayshore Road & Embarcadero Road

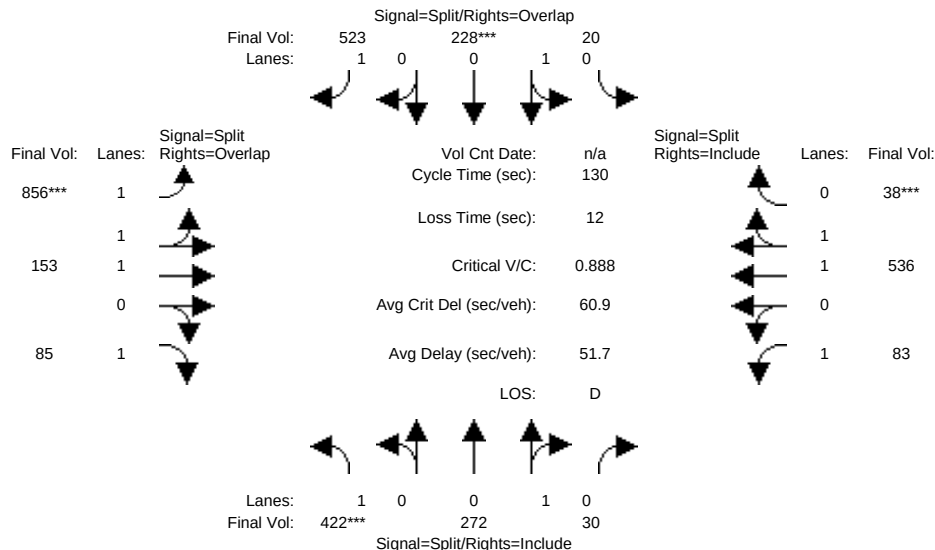


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:	>> Count Date: 26 Feb 2013 << PM											
Base Vol:	442	272	30	20	218	531	859	153	85	79	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	442	272	30	20	218	531	859	153	85	79	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	442	272	30	20	218	531	859	153	85	79	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	442	272	30	20	218	531	859	153	85	79	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	272	30	20	218	531	859	153	85	79	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	442	272	30	20	218	531	859	153	85	79	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	151	1649	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.25	0.17	0.17	0.13	0.13	0.30	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***				***		***					***
Green Time:	36.7	36.7	36.7	19.2	19.2	58.8	39.6	39.6	76.3	22.5	22.5	22.5
Volume/Cap:	0.90	0.59	0.59	0.90	0.90	0.67	0.90	0.26	0.08	0.26	0.90	0.90
Delay/Veh:	63.4	42.2	42.2	84.0	84.0	30.2	52.7	34.2	11.7	47.0	67.7	67.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.4	42.2	42.2	84.0	84.0	30.2	52.7	34.2	11.7	47.0	67.7	67.7
LOS by Move:	E	D	D	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	22	11	11	13	13	18	23	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 5M PM

Intersection #18: Bayshore Road & Embarcadero Road

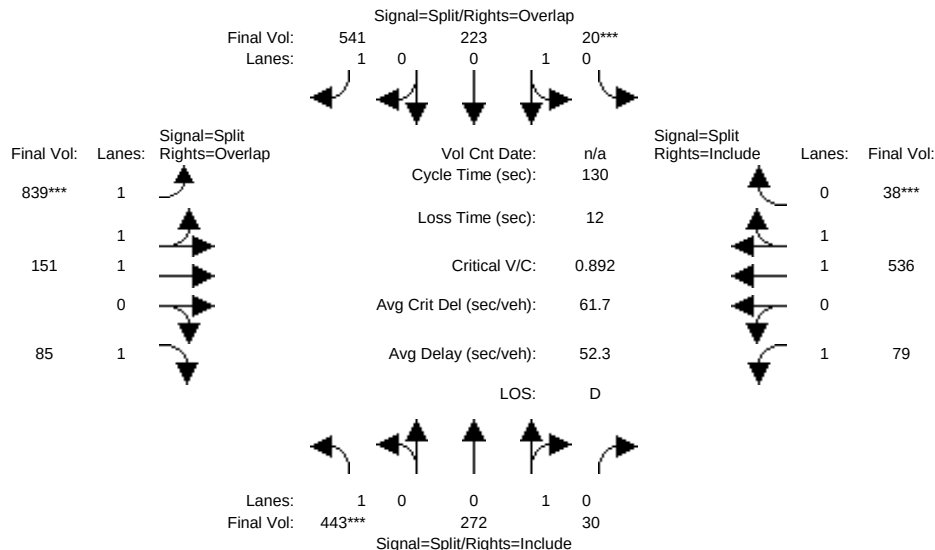


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	422	272	30	20	228	523	856	153	85	83	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	422	272	30	20	228	523	856	153	85	83	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	272	30	20	228	523	856	153	85	83	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	422	272	30	20	228	523	856	153	85	83	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	422	272	30	20	228	523	856	153	85	83	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	422	272	30	20	228	523	856	153	85	83	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	145	1655	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.24	0.17	0.17	0.14	0.14	0.30	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	35.3	35.3	35.3	20.2	20.2	60.0	39.8	39.8	75.1	22.7	22.7	22.7
Volume/Cap:	0.89	0.62	0.62	0.89	0.89	0.65	0.89	0.26	0.08	0.27	0.89	0.89
Delay/Veh:	63.5	43.8	43.8	81.0	81.0	28.8	51.7	34.1	12.2	47.0	66.5	66.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.5	43.8	43.8	81.0	81.0	28.8	51.7	34.1	12.2	47.0	66.5	66.5
LOS by Move:	E	D	D	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	21	12	12	13	13	18	23	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6 PM

Intersection #18: Bayshore Road & Embarcadero Road

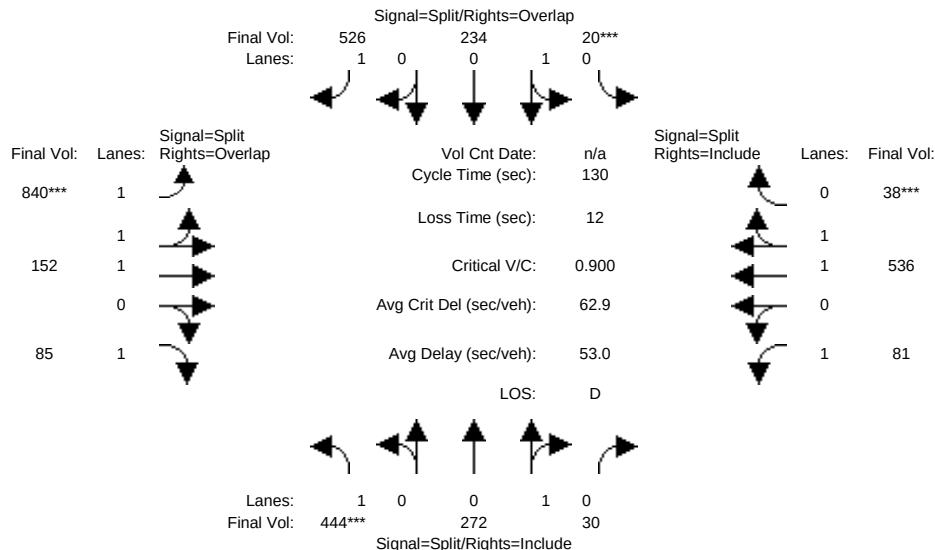


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	443	272	30	20	223	541	839	151	85	79	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	443	272	30	20	223	541	839	151	85	79	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	443	272	30	20	223	541	839	151	85	79	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	443	272	30	20	223	541	839	151	85	79	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	443	272	30	20	223	541	839	151	85	79	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	443	272	30	20	223	541	839	151	85	79	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	148	1652	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.25	0.17	0.17	0.14	0.14	0.31	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	36.9	36.9	36.9	19.7	19.7	58.5	38.8	38.8	75.7	22.6	22.6	22.6
Volume/Cap:	0.89	0.59	0.59	0.89	0.89	0.69	0.89	0.27	0.08	0.26	0.89	0.89
Delay/Veh:	62.7	41.9	41.9	82.6	82.6	31.0	52.9	34.8	11.9	46.9	67.2	67.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.7	41.9	41.9	82.6	82.6	31.0	52.9	34.8	11.9	46.9	67.2	67.2
LOS by Move:	E	D	D	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	22	11	11	13	13	19	22	5	2	3	15	15
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
Scenario 6M PM

Intersection #18: Bayshore Road & Embarcadero Road



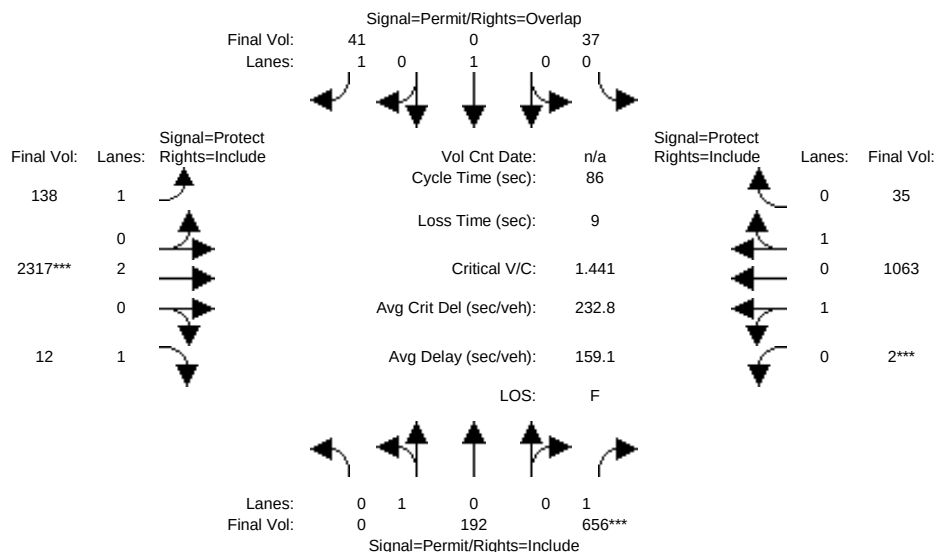
Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	444	272	30	20	234	526	840	152	85	81	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	444	272	30	20	234	526	840	152	85	81	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	444	272	30	20	234	526	840	152	85	81	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	444	272	30	20	234	526	840	152	85	81	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	444	272	30	20	234	526	840	152	85	81	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	444	272	30	20	234	526	840	152	85	81	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	142	1658	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.25	0.17	0.17	0.14	0.14	0.30	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	36.7	36.7	36.7	20.4	20.4	58.9	38.5	38.5	75.2	22.4	22.4	22.4
Volume/Cap:	0.90	0.59	0.59	0.90	0.90	0.66	0.90	0.27	0.08	0.27	0.90	0.90
Delay/Veh:	64.2	42.2	42.2	83.0	83.0	29.9	53.9	35.0	12.2	47.2	68.4	68.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	64.2	42.2	42.2	83.0	83.0	29.9	53.9	35.0	12.2	47.2	68.4	68.4
LOS by Move:	E	D	D	F	F	C	D	D	B	D	E	E
HCM2kAvgQ:	22	11	11	14	14	18	23	5	2	3	15	15

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)

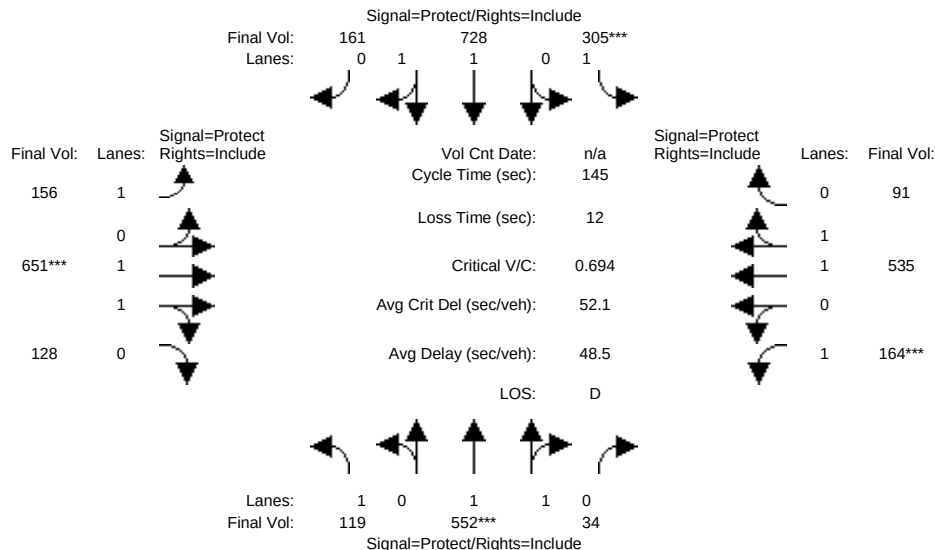


Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	192	656	37	0	41	138	2317	12	2	1063	35
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	192	656	37	0	41	138	2317	12	2	1063	35
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	192	656	37	0	41	138	2317	12	2	1063	35
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	192	656	37	0	41	138	2317	12	2	1063	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	656	37	0	41	138	2317	12	2	1063	35
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	192	656	37	0	41	138	2317	12	2	1063	35
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.95	0.95	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.93	0.06
Final Sat.:	0	1800	1750	1800	0	1750	1750	3800	1750	7	3479	115
Capacity Analysis Module:												
Vol/Sat:	0.00	0.11	0.37	0.02	0.00	0.02	0.08	0.61	0.01	0.31	0.31	0.31
Crit Moves:			****					****		****		
Green Time:	0.0	22.4	22.4	22.4	0.0	33.9	11.5	36.4	36.4	18.2	43.1	43.1
Volume/Cap:	0.00	0.41	1.44	0.08	0.00	0.06	0.59	1.44	0.02	1.44	0.61	0.61
Delay/Veh:	0.0	26.9	242.4	24.1	0.0	16.2	39.0	227	14.4	239.7	16.0	16.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	26.9	242.4	24.1	0.0	16.2	39.0	227	14.4	239.7	16.0	16.0
LOS by Move:	A	C	F	C	A	B	D	F	B	F	B	B
HCM2kAvgQ:	0	5	47	1	0	1	5	75	0	39	11	11
Note: Queue reported is the number of cars per lane.												

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #2: Middlefield Road & Charleston Road

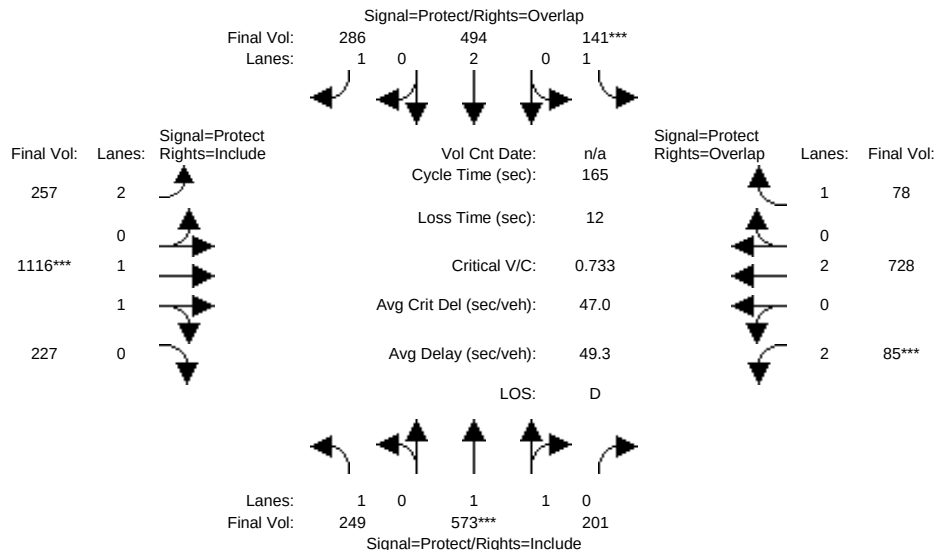


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	119	552	34	305	728	161	156	651	128	164	535	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	119	552	34	305	728	161	156	651	128	164	535	91
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	552	34	305	728	161	156	651	128	164	535	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	119	552	34	305	728	161	156	651	128	164	535	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	119	552	34	305	728	161	156	651	128	164	535	91
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	119	552	34	305	728	161	156	651	128	164	535	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	1.00	1.88	0.12	1.00	1.63	0.37	1.00	1.66	0.34	1.00	1.70	0.30
Final Sat.:	1750	3485	215	1750	3029	670	1750	3092	608	1750	3162	538
Capacity Analysis Module:												
Vol/Sat:	0.07	0.16	0.16	0.17	0.24	0.24	0.09	0.21	0.21	0.09	0.17	0.17
Crit Moves:	****			****			****			****		
Green Time:	15.3	33.1	33.1	36.4	54.1	54.1	21.9	44.0	44.0	19.6	41.6	41.6
Volume/Cap:	0.64	0.69	0.69	0.69	0.64	0.64	0.59	0.69	0.69	0.69	0.59	0.59
Delay/Veh:	69.8	53.9	53.9	54.0	38.5	38.5	60.8	46.5	46.5	68.5	45.2	45.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	69.8	53.9	53.9	54.0	38.5	38.5	60.8	46.5	46.5	68.5	45.2	45.2
LOS by Move:	E	D	D	D	D	D	E	D	D	E	D	D
HCM2kAvgQ:	7	13	13	14	17	17	8	16	16	9	12	12
Note: Queue reported is the number of cars per lane.												

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No Growth AM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)

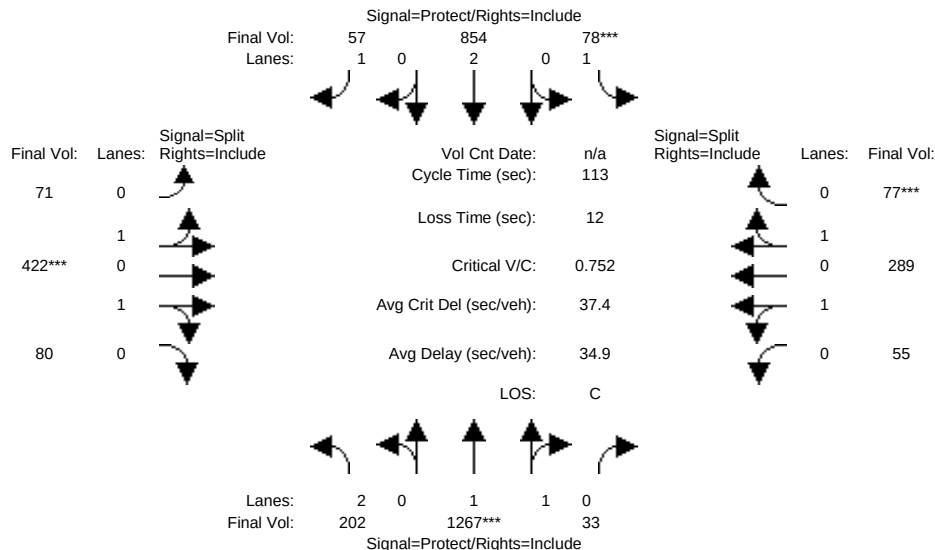


Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	249	573	201	141	494	286	257	1116	227	85	728	78
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	573	201	141	494	286	257	1116	227	85	728	78
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	249	573	201	141	494	286	257	1116	227	85	728	78
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	249	573	201	141	494	286	257	1116	227	85	728	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	249	573	201	141	494	286	257	1116	227	85	728	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	249	573	201	141	494	286	257	1116	227	85	728	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.47	0.53	1.00	2.00	1.00	2.00	1.65	0.35	2.00	2.00	1.00
Final Sat.:	1750	2738	961	1750	3800	1750	3150	3074	625	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.14	0.21	0.21	0.08	0.13	0.16	0.08	0.36	0.36	0.03	0.19	0.04
Crit Moves:	****			****			****			****		
Green Time:	33.9	46.8	46.8	18.0	30.9	57.3	26.3	81.2	81.2	7.0	61.8	79.9
Volume/Cap:	0.69	0.74	0.74	0.74	0.69	0.47	0.51	0.74	0.74	0.64	0.51	0.09
Delay/Veh:	66.5	56.3	56.3	85.2	65.6	42.6	64.3	35.0	35.0	87.5	40.2	23.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	66.5	56.3	56.3	85.2	65.6	42.6	64.3	35.0	35.0	87.5	40.2	23.0
LOS by Move:	E	E	E	F	E	D	E	D	D	F	D	C
HCM2kAvgQ:	13	19	19	9	13	12	7	28	28	4	14	2
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #4: Alma Street & Charleston Road

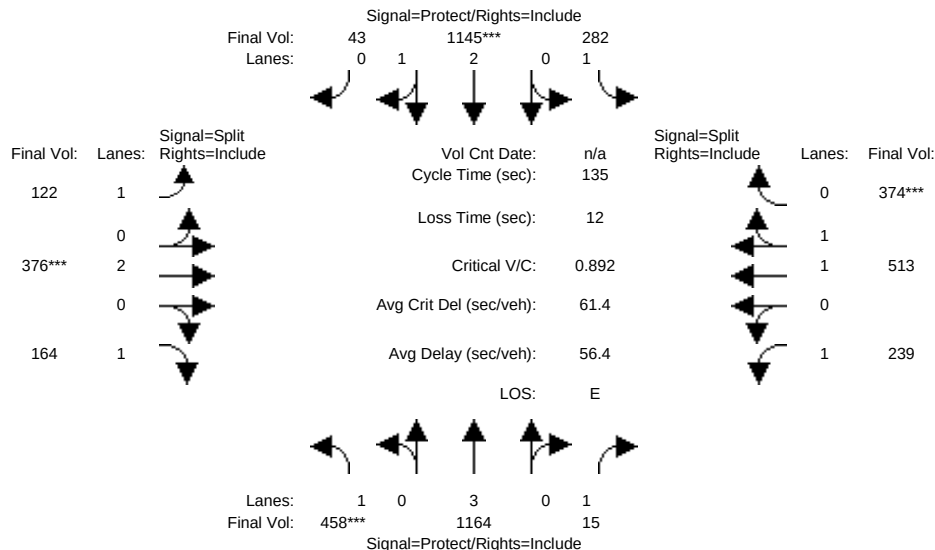


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	202	1267	33	78	854	57	71	422	80	55	289	77
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	202	1267	33	78	854	57	71	422	80	55	289	77
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	1267	33	78	854	57	71	422	80	55	289	77
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	202	1267	33	78	854	57	71	422	80	55	289	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	202	1267	33	78	854	57	71	422	80	55	289	77
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	202	1267	33	78	854	57	71	422	80	55	289	77
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.97	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.95	0.05	1.00	2.00	1.00	0.25	1.47	0.28	0.26	1.37	0.37
Final Sat.:	3150	3606	94	1750	3800	1750	446	2651	503	470	2471	658
Capacity Analysis Module:												
Vol/Sat:	0.06	0.35	0.35	0.04	0.22	0.03	0.16	0.16	0.16	0.12	0.12	0.12
Crit Moves:	****			****			****			****		
Green Time:	13.2	52.6	52.6	7.0	46.4	46.4	23.8	23.8	23.8	17.5	17.5	17.5
Volume/Cap:	0.55	0.75	0.75	0.72	0.55	0.08	0.75	0.75	0.75	0.75	0.75	0.75
Delay/Veh:	48.8	26.8	26.8	72.8	25.7	20.3	46.1	46.1	46.1	51.5	51.5	51.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.8	26.8	26.8	72.8	25.7	20.3	46.1	46.1	46.1	51.5	51.5	51.5
LOS by Move:	D	C	C	E	C	C	D	D	D	D	D	D
HCM2kAvgQ:	5	20	20	4	11	1	11	11	11	9	9	9
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

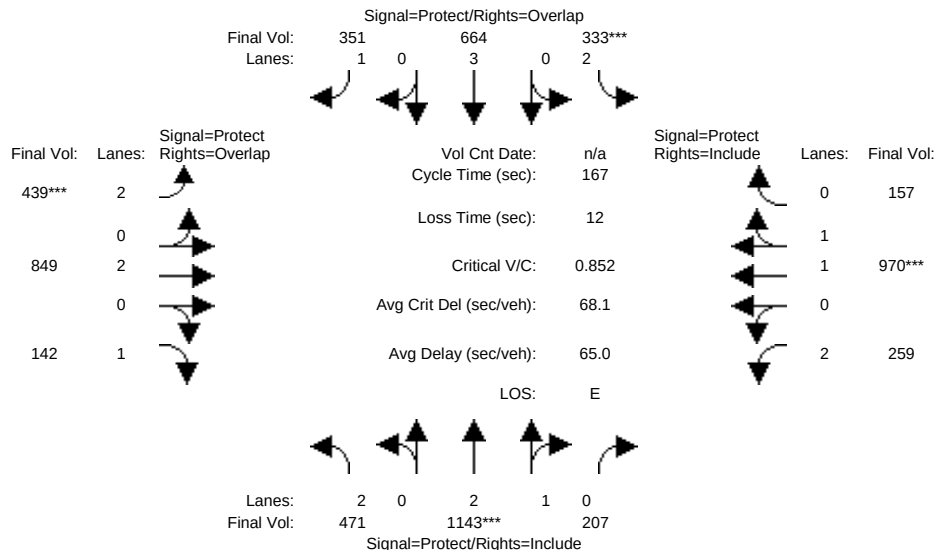


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	458	1164	15	282	1145	43	122	376	164	239	513	374
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	458	1164	15	282	1145	43	122	376	164	239	513	374
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	1164	15	282	1145	43	122	376	164	239	513	374
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	458	1164	15	282	1145	43	122	376	164	239	513	374
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	458	1164	15	282	1145	43	122	376	164	239	513	374
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	458	1164	15	282	1145	43	122	376	164	239	513	374
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.89	0.11	1.00	2.00	1.00	1.00	1.13	0.87
Final Sat.:	1750	5700	1750	1750	5397	203	1750	3800	1750	1750	2139	1559
Capacity Analysis Module:												
Vol/Sat:	0.26	0.20	0.01	0.16	0.21	0.21	0.07	0.10	0.09	0.14	0.24	0.24
Crit Moves:	***			***			***					***
Green Time:	39.6	40.1	40.1	31.6	32.1	32.1	15.0	15.0	15.0	36.3	36.3	36.3
Volume/Cap:	0.89	0.69	0.03	0.69	0.89	0.89	0.63	0.89	0.84	0.51	0.89	0.89
Delay/Veh:	63.2	43.1	33.7	52.0	57.7	57.7	63.8	79.7	86.2	42.7	57.7	57.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.2	43.1	33.7	52.0	57.7	57.7	63.8	79.7	86.2	42.7	57.7	57.7
LOS by Move:	E	D	C	D	E	E	E	E	F	D	E	E
HCM2kAvgQ:	23	15	0	12	19	19	6	11	10	9	21	21
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

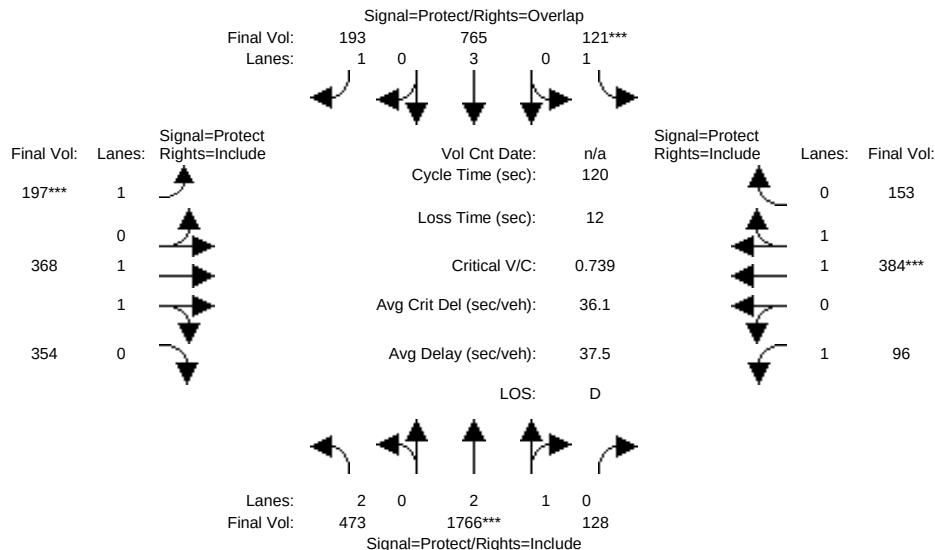


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	471	1143	207	333	664	351	439	849	142	259	970	157
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	471	1143	207	333	664	351	439	849	142	259	970	157
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	471	1143	207	333	664	351	439	849	142	259	970	157
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	471	1143	207	333	664	351	439	849	142	259	970	157
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	471	1143	207	333	664	351	439	849	142	259	970	157
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	471	1143	207	333	664	351	439	849	142	259	970	157
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.52	0.48	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.71	0.29
Final Sat.:	3150	4740	858	3150	5700	1750	3150	3800	1750	3150	3184	515
Capacity Analysis Module:												
Vol/Sat:	0.15	0.24	0.24	0.11	0.12	0.20	0.14	0.22	0.08	0.08	0.30	0.30
Crit Moves:	****			****			****			****		
Green Time:	38.2	47.3	47.3	20.7	29.8	57.1	27.3	63.6	101.8	23.4	59.7	59.7
Volume/Cap:	0.65	0.85	0.85	0.85	0.65	0.59	0.85	0.59	0.13	0.59	0.85	0.85
Delay/Veh:	60.6	61.2	61.2	87.9	65.4	46.8	80.8	41.8	13.9	69.3	55.1	55.1
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.6	61.2	61.2	123.1	91.5	65.5	80.8	41.8	13.9	69.3	55.1	55.1
LOS by Move:	E	E	E	F	F	E	F	D	B	E	E	E
HCM2kAvgQ:	14	24	24	12	11	16	15	17	3	8	29	29
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	473	1766	128	121	765	193	197	368	354	96	384	153
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	473	1766	128	121	765	193	197	368	354	96	384	153
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	473	1766	128	121	765	193	197	368	354	96	384	153
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	473	1766	128	121	765	193	197	368	354	96	384	153
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	473	1766	128	121	765	193	197	368	354	96	384	153
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	473	1766	128	121	765	193	197	368	354	96	384	153

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.79	0.21	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.41	0.59
Final Sat.:	3150	5221	378	1750	5700	1750	1750	1898	1800	1750	2645	1054

Capacity Analysis Module:

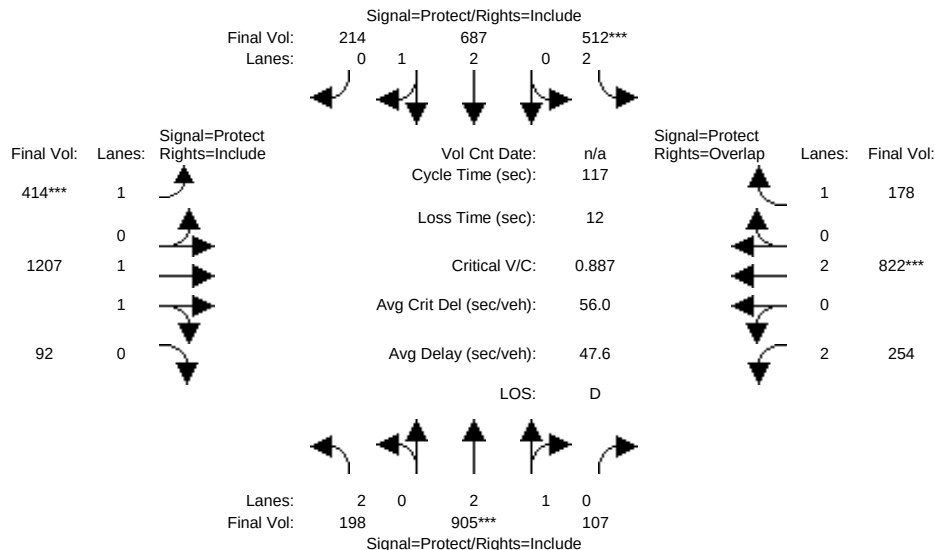
Vol/Sat:	0.15	0.34	0.34	0.07	0.13	0.11	0.11	0.19	0.20	0.05	0.15	0.15
Crit Moves:	****			****			****			****		
Green Time:	34.9	54.9	54.9	11.2	31.2	49.5	18.3	32.3	32.3	9.6	23.6	23.6
Volume/Cap:	0.52	0.74	0.74	0.74	0.52	0.27	0.74	0.72	0.73	0.69	0.74	0.74
Delay/Veh:	36.0	27.8	27.8	69.2	38.2	23.5	59.0	42.4	42.7	67.2	49.4	49.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	36.0	27.8	27.8	69.2	38.2	23.5	59.0	42.4	42.7	67.2	49.4	49.4
LOS by Move:	D	C	C	E	D	C	E	D	D	E	D	D
HCM2kAvgQ:	9	20	20	6	8	5	9	13	14	5	11	11

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

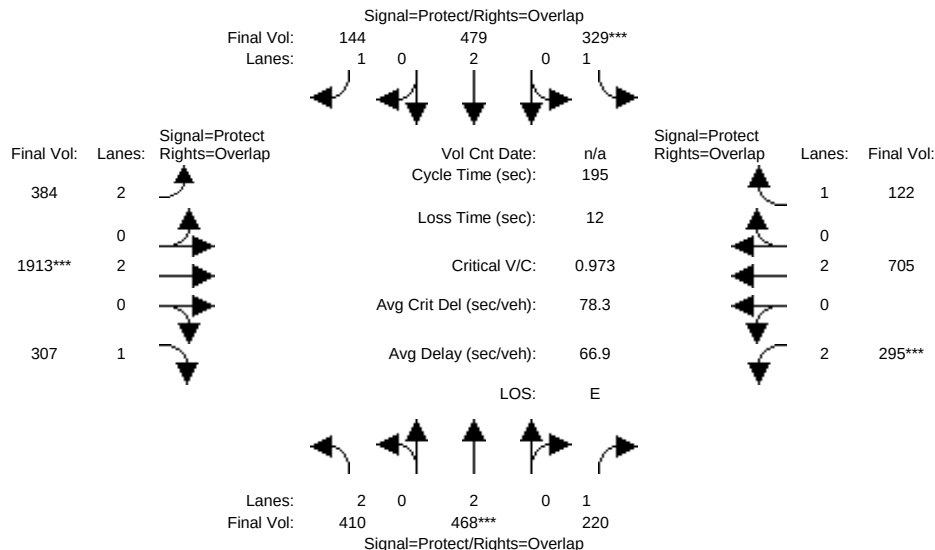


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	198	905	107	512	687	214	414	1207	92	254	822	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	198	905	107	512	687	214	414	1207	92	254	822	178
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	198	905	107	512	687	214	414	1207	92	254	822	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	198	905	107	512	687	214	414	1207	92	254	822	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	905	107	512	687	214	414	1207	92	254	822	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	198	905	107	512	687	214	414	1207	92	254	822	178
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.67	0.33	2.00	2.26	0.74	1.00	1.85	0.15	2.00	2.00	1.00
Final Sat.:	3150	5007	592	3150	4268	1330	1750	3438	262	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.18	0.18	0.16	0.16	0.16	0.24	0.35	0.35	0.08	0.22	0.10
Crit Moves:	****			****			****			****		
Green Time:	12.7	23.8	23.8	21.4	32.6	32.6	31.2	48.6	48.6	11.2	28.5	50.0
Volume/Cap:	0.58	0.89	0.89	0.89	0.58	0.58	0.89	0.85	0.85	0.85	0.89	0.24
Delay/Veh:	52.1	54.0	54.0	62.0	36.9	36.9	59.5	35.4	35.4	71.4	53.1	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.1	54.0	54.0	62.0	36.9	36.9	59.5	35.4	35.4	71.4	53.1	21.5
LOS by Move:	D	D	D	E	D	D	E	D	D	E	D	C
HCM2kAvgQ:	5	15	15	14	10	10	19	24	24	8	17	4
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name:Foothill Expressway - Junipero Se

Page Mill Road

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	410	468	220	329	479	144	384	1913	307	295	705	122
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	410	468	220	329	479	144	384	1913	307	295	705	122
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	410	468	220	329	479	144	384	1913	307	295	705	122
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	410	468	220	329	479	144	384	1913	307	295	705	122
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	410	468	220	329	479	144	384	1913	307	295	705	122
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	410	468	220	329	479	144	384	1913	307	295	705	122

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	1750	3800	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

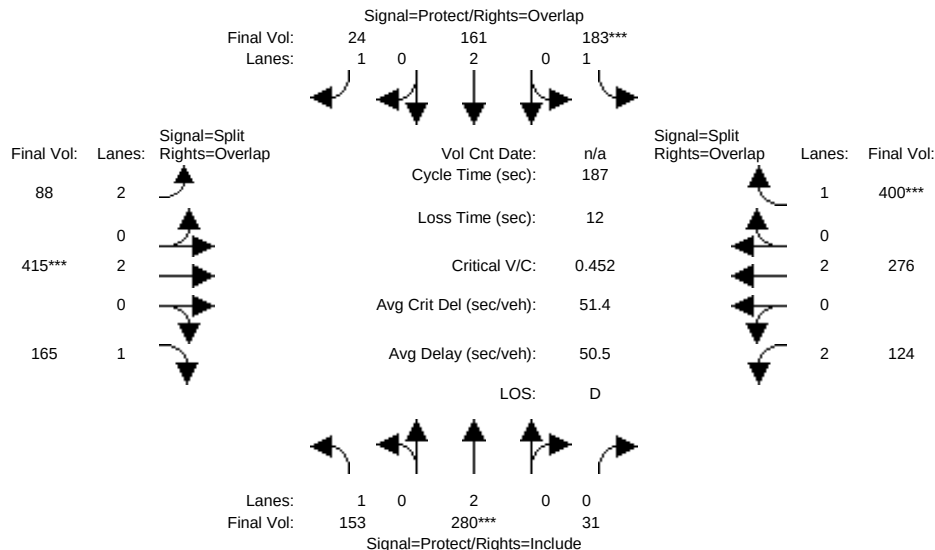
Vol/Sat:	0.13	0.12	0.13	0.19	0.13	0.08	0.12	0.50	0.18	0.09	0.19	0.07
Crit Moves:	****			****			****			****		
Green Time:	31.7	24.7	43.4	37.7	30.7	78.1	47.4	101	132.6	18.8	72.2	109.9
Volume/Cap:	0.80	0.97	0.56	0.97	0.80	0.21	0.50	0.97	0.26	0.97	0.50	0.12
Delay/Veh:	81.4	112	64.1	113.7	80.8	35.4	59.2	56.7	11.3	125.3	44.1	18.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.4	112	64.1	113.7	80.8	35.4	59.2	56.7	11.3	125.3	44.1	18.5
LOS by Move:	F	F	E	F	F	D	E	E	B	F	D	B
HCM2kAvgQ:	15	17	12	24	14	5	11	56	7	13	15	3

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #10: Foothill & Arastradero (CMP #5207)



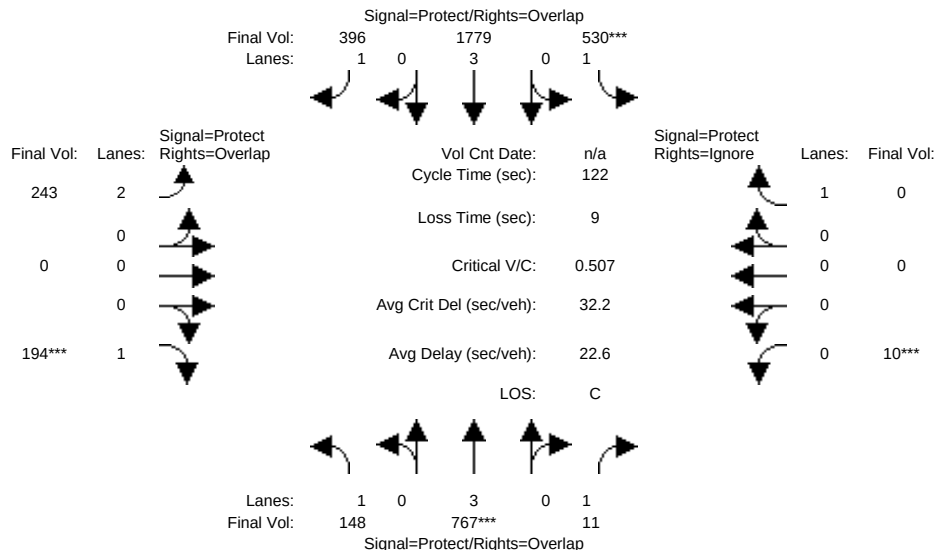
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	153	280	31	183	161	24	88	415	165	124	276	400
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	153	280	31	183	161	24	88	415	165	124	276	400
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	153	280	31	183	161	24	88	415	165	124	276	400
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	153	280	31	183	161	24	88	415	165	124	276	400
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	280	31	183	161	24	88	415	165	124	276	400
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	153	280	31	183	161	24	88	415	165	124	276	400
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	1.00	1.80	0.20	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3331	369	1750	3800	1750	3150	3800	1750	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.08	0.10	0.04	0.01	0.03	0.11	0.09	0.04	0.07	0.23
Crit Moves:	****			****			****			****		
Green Time:	47.7	34.8	34.8	43.3	30.3	75.5	45.2	45.2	92.9	51.3	51.3	94.6
Volume/Cap:	0.34	0.45	0.45	0.45	0.26	0.03	0.12	0.45	0.19	0.14	0.26	0.45
Delay/Veh:	55.2	65.6	65.6	60.2	66.2	32.5	53.3	58.5	25.3	49.4	51.2	28.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.2	65.6	65.6	60.2	66.2	32.5	53.3	58.5	25.3	49.4	51.2	28.9
LOS by Move:	E	E	E	E	E	C	D	E	C	D	D	C
HCM2kAvgQ:	7	8	8	9	4	1	2	10	5	3	6	15

Note: Queue reported is the number of cars per lane.

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No Growth AM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



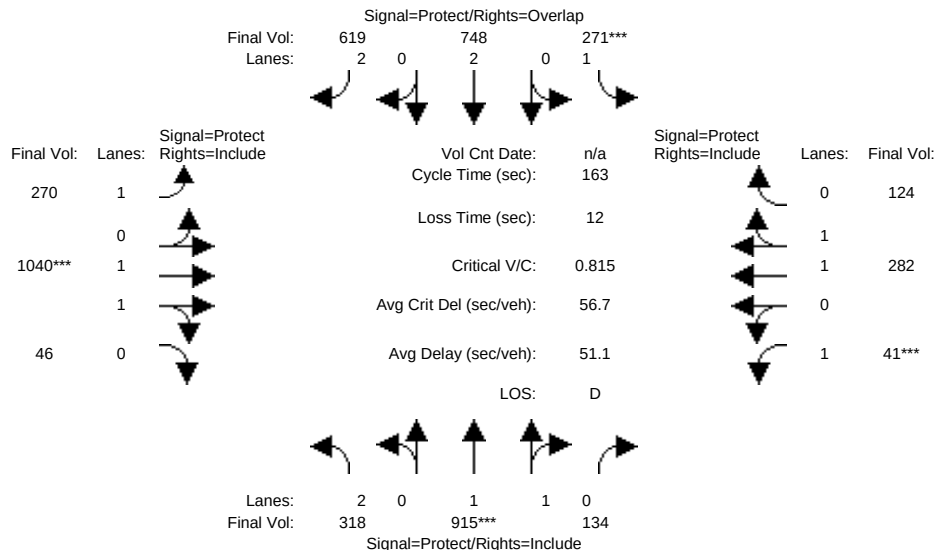
Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	148	767	11	530	1779	396	243	0	194	10	0	478
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	148	767	11	530	1779	396	243	0	194	10	0	478
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	148	767	11	530	1779	396	243	0	194	10	0	478
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	148	767	11	530	1779	396	243	0	194	10	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	767	11	530	1779	396	243	0	194	10	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	148	767	11	530	1779	396	243	0	194	10	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.13	0.01	0.30	0.31	0.23	0.08	0.00	0.11	0.01	0.00	0.00
Crit Moves:	****			****			****			****		
Green Time:	21.3	30.8	37.8	69.2	78.7	91.7	13.0	0.0	27.3	7.0	0.0	0.0
Volume/Cap:	0.48	0.53	0.02	0.53	0.48	0.30	0.72	0.00	0.49	0.10	0.00	0.00
Delay/Veh:	46.6	39.8	29.3	16.9	11.3	5.0	60.3	0.0	42.3	54.9	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	39.8	29.3	16.9	11.3	5.0	60.3	0.0	42.3	54.9	0.0	0.0
LOS by Move:	D	D	C	B	B	A	E	A	D	D	A	A
HCM2kAvgQ:	6	9	0	13	11	5	7	0	7	0	0	0

Note: Queue reported is the number of cars per lane.

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No Growth AM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

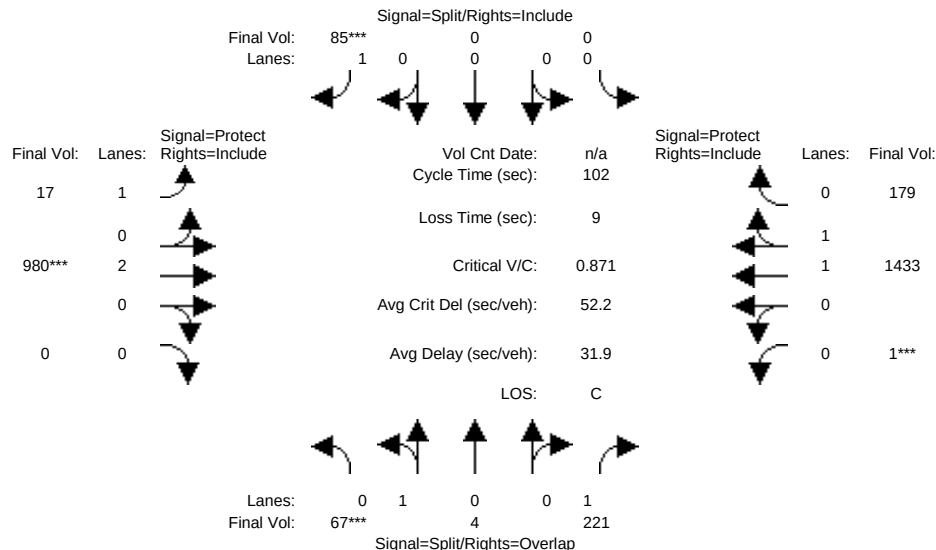


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	318	915	134	271	748	619	270	1040	46	41	282	124
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	318	915	134	271	748	619	270	1040	46	41	282	124
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	318	915	134	271	748	619	270	1040	46	41	282	124
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	318	915	134	271	748	619	270	1040	46	41	282	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	318	915	134	271	748	619	270	1040	46	41	282	124
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	318	915	134	271	748	619	270	1040	46	41	282	124
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.97	0.95	0.92	0.99	0.95
Lanes:	2.00	1.74	0.26	1.00	2.00	2.00	1.00	1.91	0.09	1.00	1.37	0.63
Final Sat.:	3150	3227	473	1750	3800	3150	1750	3543	157	1750	2569	1130
Capacity Analysis Module:												
Vol/Sat:	0.10	0.28	0.28	0.15	0.20	0.20	0.15	0.29	0.29	0.02	0.11	0.11
Crit Moves:	****			****			****			****		
Green Time:	29.2	55.8	55.8	30.5	57.0	94.8	37.8	57.7	57.7	7.0	26.9	26.9
Volume/Cap:	0.56	0.83	0.83	0.83	0.56	0.34	0.66	0.83	0.83	0.55	0.66	0.66
Delay/Veh:	62.4	53.9	53.9	79.7	43.5	17.8	61.0	52.6	52.6	84.5	66.6	66.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.4	53.9	53.9	79.7	43.5	17.8	61.0	52.6	52.6	84.5	66.6	66.6
LOS by Move:	E	D	D	E	D	B	E	D	D	F	E	E
HCM2kAvgQ:	9	26	26	16	15	9	14	27	27	3	11	11
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]



Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	67	4	221	0	0	85	17	980	0	1	1433	179
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	4	221	0	0	85	17	980	0	1	1433	179
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	4	221	0	0	85	17	980	0	1	1433	179
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	4	221	0	0	85	17	980	0	1	1433	179
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	4	221	0	0	85	17	980	0	1	1433	179
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	67	4	221	0	0	85	17	980	0	1	1433	179

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.94	0.06	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.01	1.77	0.22
Final Sat.:	1699	101	1750	0	0	1750	1750	3800	0	2	3198	400

Capacity Analysis Module:

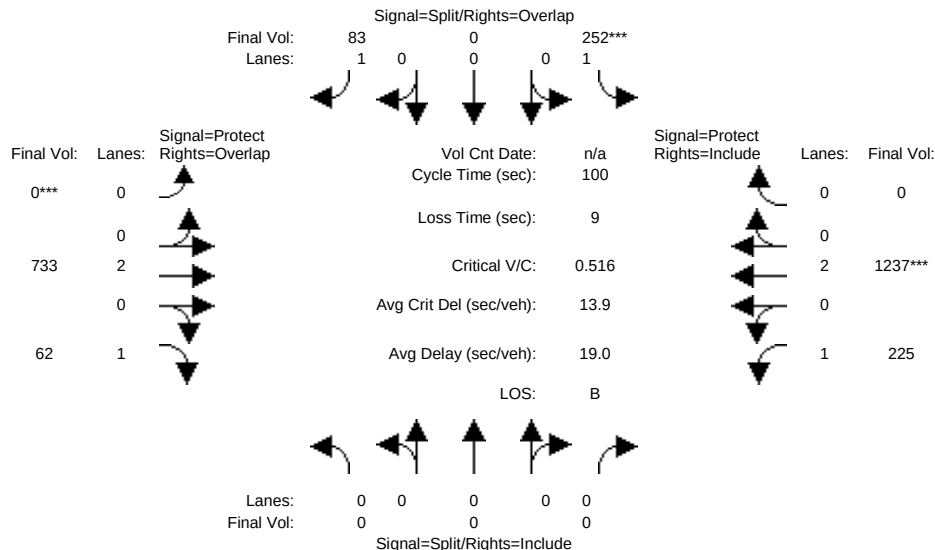
Vol/Sat:	0.04	0.04	0.13	0.00	0.00	0.05	0.01	0.26	0.00	0.45	0.45	0.45
Crit Moves:	***					***		***		***		
Green Time:	10.0	10.0	56.3	0.0	0.0	10.0	9.7	26.7	0.0	46.3	63.3	63.3
Volume/Cap:	0.40	0.40	0.23	0.00	0.00	0.50	0.10	0.99	0.00	0.99	0.72	0.72
Delay/Veh:	44.7	44.7	11.8	0.0	0.0	45.9	42.4	62.6	0.0	46.5	14.5	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.7	44.7	11.8	0.0	0.0	45.9	42.4	62.6	0.0	46.5	14.5	14.5
LOS by Move:	D	D	B	A	A	D	D	E	A	D	B	B
HCM2kAvgQ:	3	3	4	0	0	3	1	21	0	33	19	19

Note: Queue reported is the number of cars per lane.

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No Growth AM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

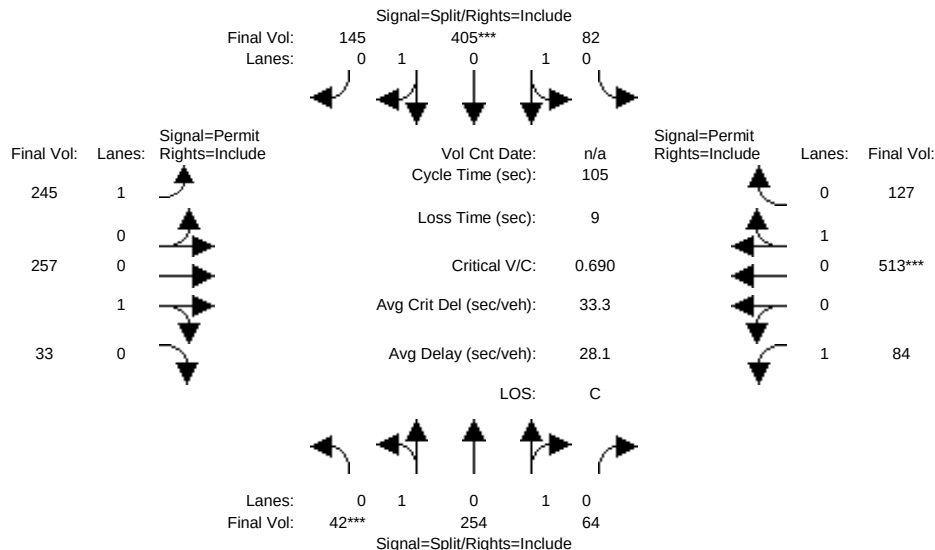


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	252	0	83	0	733	62	225	1237	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	252	0	83	0	733	62	225	1237	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	252	0	83	0	733	62	225	1237	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	252	0	83	0	733	62	225	1237	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	252	0	83	0	733	62	225	1237	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	0	0	0	252	0	83	0	733	62	225	1237	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.14	0.00	0.05	0.00	0.19	0.04	0.13	0.33	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	27.9	0.0	27.9	0.0	37.9	37.9	25.2	63.1	0.0
Volume/Cap:	0.00	0.00	0.00	0.52	0.00	0.17	0.00	0.51	0.09	0.51	0.52	0.00
Delay/Veh:	0.0	0.0	0.0	31.3	0.0	27.4	0.0	24.2	20.1	33.1	10.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.3	0.0	27.4	0.0	24.2	20.1	33.1	10.3	0.0
LOS by Move:	A	A	A	C	A	C	A	C	C	C	B	A
HCM2kAvgQ:	0	0	0	7	0	2	0	9	1	7	10	0
Note: Queue reported is the number of cars per lane.												

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No Growth AM

Intersection #15: Middlefield Road & University Avenue

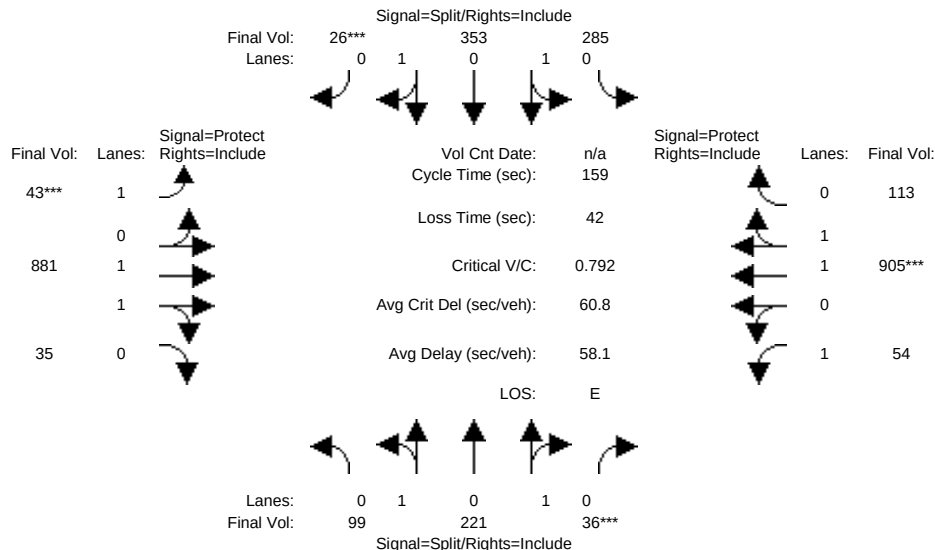


Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	42	254	64	82	405	145	245	257	33	84	513	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	42	254	64	82	405	145	245	257	33	84	513	127
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	42	254	64	82	405	145	245	257	33	84	513	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	42	254	64	82	405	145	245	257	33	84	513	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	254	64	82	405	145	245	257	33	84	513	127
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	42	254	64	82	405	145	245	257	33	84	513	127
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.23	1.41	0.36	0.26	1.28	0.46	1.00	0.89	0.11	1.00	0.80	0.20
Final Sat.:	420	2540	640	467	2307	826	1750	1595	205	1750	1443	357
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.18	0.18	0.18	0.14	0.16	0.16	0.05	0.36	0.36
Crit Moves:	***			***						***		
Green Time:	15.2	15.2	15.2	26.7	26.7	26.7	54.1	54.1	54.1	54.1	54.1	54.1
Volume/Cap:	0.69	0.69	0.69	0.69	0.69	0.69	0.27	0.31	0.31	0.09	0.69	0.69
Delay/Veh:	46.6	46.6	46.6	37.7	37.7	37.7	14.5	14.9	14.9	13.0	21.4	21.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.6	46.6	46.6	37.7	37.7	37.7	14.5	14.9	14.9	13.0	21.4	21.4
LOS by Move:	D	D	D	D	D	D	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	11	11	11	5	6	6	1	17	17
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #16: Middlefield Road & Embarcadero Road

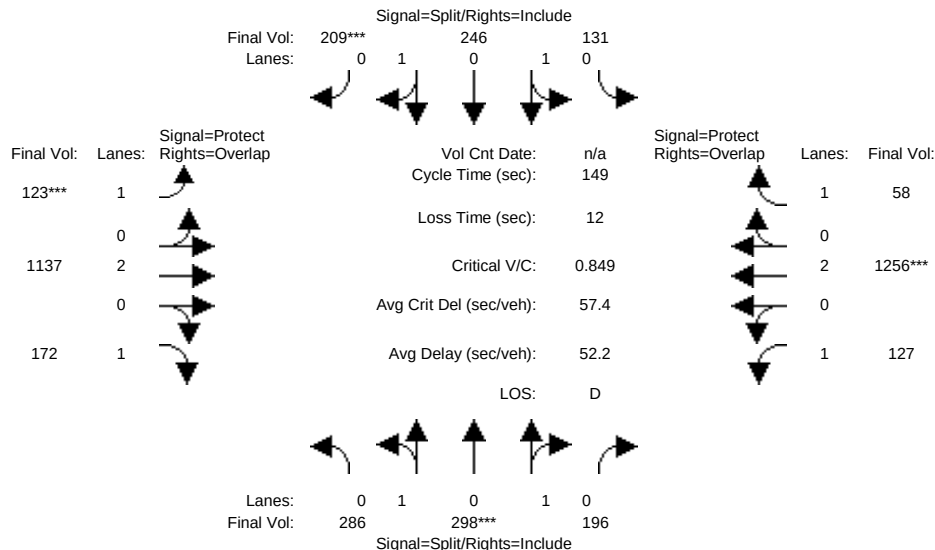


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R		L	-	T	-	R	
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	99	221	36	285	353	26	43	881	35	54	905	113
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	221	36	285	353	26	43	881	35	54	905	113
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	221	36	285	353	26	43	881	35	54	905	113
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	99	221	36	285	353	26	43	881	35	54	905	113
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	99	221	36	285	353	26	43	881	35	54	905	113
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	99	221	36	285	353	26	43	881	35	54	905	113
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.97	0.95	0.92	0.98	0.95
Lanes:	0.56	1.24	0.20	0.86	1.06	0.08	1.00	1.92	0.08	1.00	1.77	0.23
Final Sat.:	1001	2235	364	1545	1914	141	1750	3559	141	1750	3289	411
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.10	0.18	0.18	0.18	0.02	0.25	0.25	0.03	0.28	0.28
Crit Moves:	****			****			****			****		
Green Time:	19.5	19.5	19.5	36.3	36.3	36.3	7.0	52.0	52.0	9.2	54.2	54.2
Volume/Cap:	0.81	0.81	0.81	0.81	0.81	0.81	0.56	0.76	0.76	0.53	0.81	0.81
Delay/Veh:	78.5	78.5	78.5	64.0	64.0	64.0	83.3	50.7	50.7	78.0	51.6	51.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	78.5	78.5	78.5	64.0	64.0	64.0	83.3	50.7	50.7	78.0	51.6	51.6
LOS by Move:	E	E	E	E	E	E	F	D	D	E	D	D
HCM2kAvgQ:	11	11	11	18	18	18	3	21	21	3	24	24
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



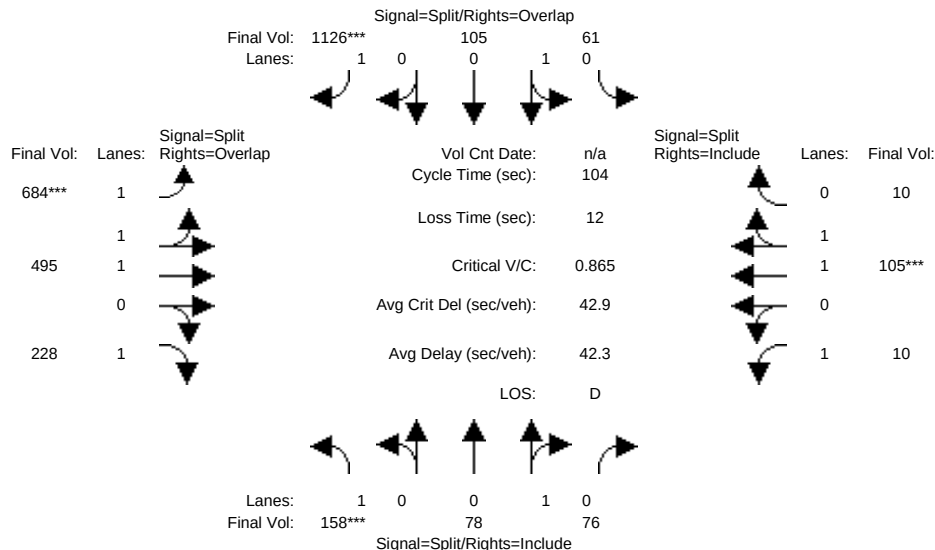
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	286	298	196	131	246	209	123	1137	172	127	1256	58
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	286	298	196	131	246	209	123	1137	172	127	1256	58
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	298	196	131	246	209	123	1137	172	127	1256	58
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	286	298	196	131	246	209	123	1137	172	127	1256	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	298	196	131	246	209	123	1137	172	127	1256	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	286	298	196	131	246	209	123	1137	172	127	1256	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.73	0.77	0.50	0.45	0.84	0.71	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	1320	1375	905	805	1511	1284	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.16	0.16	0.16	0.07	0.30	0.10	0.07	0.33	0.03
Crit Moves:	****			****			****			****		
Green Time:	38.0	38.0	38.0	28.6	28.6	28.6	12.3	56.6	94.7	13.7	58.0	86.6
Volume/Cap:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.79	0.15	0.79	0.85	0.06
Delay/Veh:	60.2	60.2	60.2	67.8	67.8	67.8	102.3	43.8	11.0	88.4	46.3	13.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.2	60.2	60.2	67.8	67.8	67.8	102.3	43.8	11.0	88.4	46.3	13.5
LOS by Move:	E	E	E	E	E	E	F	D	B	F	D	B
HCM2kAvgQ:	20	20	20	16	16	16	8	24	3	8	28	1

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth AM

Intersection #18: Bayshore Road & Embarcadero Road

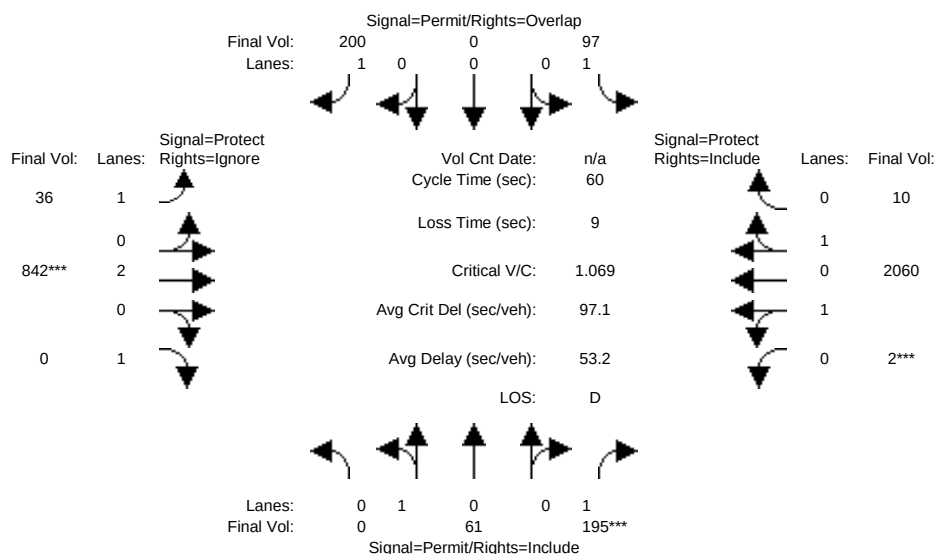


Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	158	78	76	61	105	1126	684	495	228	10	105	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	78	76	61	105	1126	684	495	228	10	105	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	78	76	61	105	1126	684	495	228	10	105	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	78	76	61	105	1126	684	495	228	10	105	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	78	76	61	105	1126	684	495	228	10	105	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	158	78	76	61	105	1126	684	495	228	10	105	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.93	0.99	0.92	0.92	0.98	0.95
Lanes:	1.00	0.51	0.49	0.37	0.63	1.00	1.78	1.22	1.00	1.00	1.82	0.18
Final Sat.:	1750	912	888	661	1139	1750	3159	2286	1750	1750	3378	322
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.09	0.09	0.09	0.64	0.22	0.22	0.13	0.01	0.03	0.03
Crit Moves:	***					***	***				***	
Green Time:	10.1	10.1	10.1	47.7	47.7	71.9	24.2	24.2	34.3	10.0	10.0	10.0
Volume/Cap:	0.93	0.88	0.88	0.20	0.20	0.93	0.93	0.93	0.40	0.06	0.32	0.32
Delay/Veh:	95.7	83.2	83.2	16.9	16.9	26.5	51.3	51.3	27.3	42.9	44.4	44.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	95.7	83.2	83.2	16.9	16.9	26.5	51.3	51.3	27.3	42.9	44.4	44.4
LOS by Move:	F	F	F	B	B	C	D	D	C	D	D	D
HCM2kAvgQ:	9	8	8	3	3	38	17	17	6	0	2	2
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #1: I-280 NB Ramps & Sand Hill Rd (north)



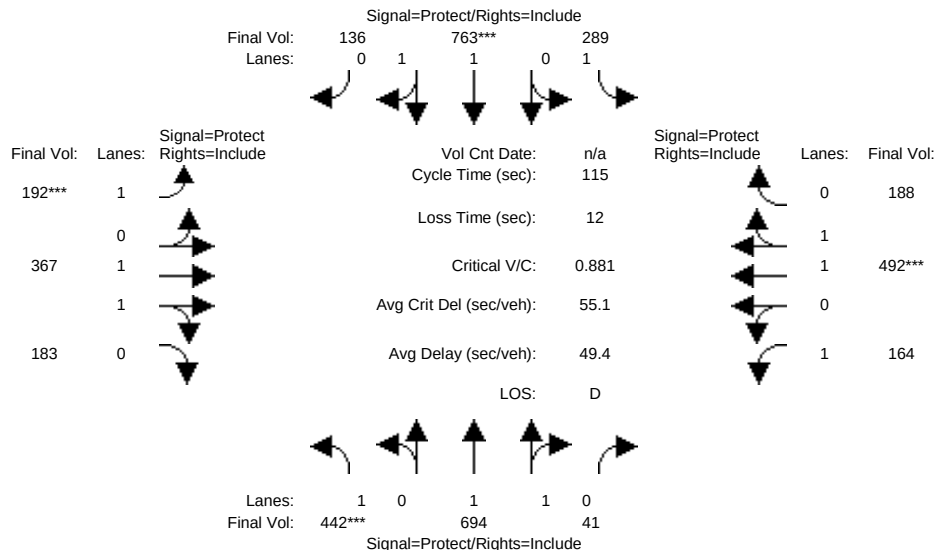
Street Name:	I-280 NB Ramps						Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	61	195	97	0	200	36	842	106	2	2060	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	61	195	97	0	200	36	842	106	2	2060	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	61	195	97	0	200	36	842	106	2	2060	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	61	195	97	0	200	36	842	0	2	2060	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	61	195	97	0	200	36	842	0	2	2060	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	61	195	97	0	200	36	842	0	2	2060	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.95	0.95	0.95
Lanes:	0.00	1.00	1.00	1.00	0.00	1.00	1.00	2.00	1.00	0.01	1.98	0.01
Final Sat.:	0	1800	1750	1750	0	1750	1750	3800	1750	3	3579	17
Capacity Analysis Module:												
Vol/Sat:	0.00	0.03	0.11	0.06	0.00	0.11	0.02	0.22	0.00	0.58	0.58	0.58
Crit Moves:			****					****		****		
Green Time:	0.0	10.0	10.0	10.0	0.0	17.0	7.0	11.4	0.0	29.6	34.0	34.0
Volume/Cap:	0.00	0.20	0.67	0.33	0.00	0.40	0.18	1.17	0.00	1.17	1.02	1.02
Delay/Veh:	0.0	21.9	29.3	22.7	0.0	17.9	24.3	114	0.0	96.7	36.9	36.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	21.9	29.3	22.7	0.0	17.9	24.3	114	0.0	96.7	36.9	36.9
LOS by Move:	A	C	C	C	A	B	C	F	A	F	D	D
HCM2kAvgQ:	0	1	5	2	0	4	1	19	0	43	31	31

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #2: Middlefield Road & Charleston Road

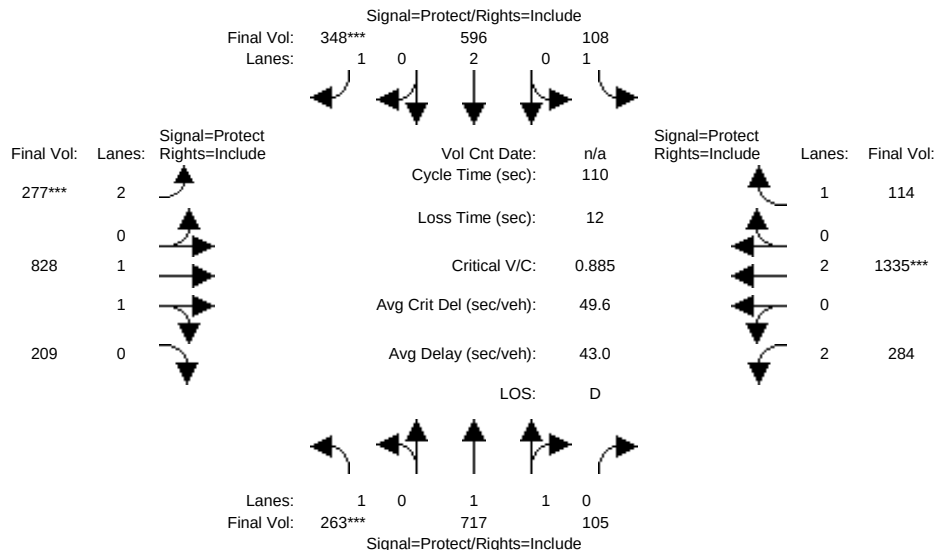


Street Name:	Middlefield Road						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	442	694	41	289	763	136	192	367	183	164	492	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	442	694	41	289	763	136	192	367	183	164	492	188
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	442	694	41	289	763	136	192	367	183	164	492	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	442	694	41	289	763	136	192	367	183	164	492	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	694	41	289	763	136	192	367	183	164	492	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	442	694	41	289	763	136	192	367	183	164	492	188
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	0.98	0.95	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	1.00	1.89	0.11	1.00	1.69	0.31	1.00	1.32	0.68	1.00	1.43	0.57
Final Sat.:	1750	3493	206	1750	3140	560	1750	2468	1231	1750	2676	1023
Capacity Analysis Module:												
Vol/Sat:	0.25	0.20	0.20	0.17	0.24	0.24	0.11	0.15	0.15	0.09	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	33.0	35.3	35.3	29.4	31.7	31.7	14.3	23.5	23.5	14.8	24.0	24.0
Volume/Cap:	0.88	0.65	0.65	0.65	0.88	0.88	0.88	0.73	0.73	0.73	0.88	0.88
Delay/Veh:	55.6	35.8	35.8	41.5	48.9	48.9	80.8	46.3	46.3	59.5	55.6	55.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.6	35.8	35.8	41.5	48.9	48.9	80.8	46.3	46.3	59.5	55.6	55.6
LOS by Move:	E	D	D	D	D	D	F	D	D	E	E	E
HCM2kAvgQ:	19	12	12	11	19	19	10	11	11	8	15	15
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #3: Middlefield Rd& San Antonio (CMP #1110)



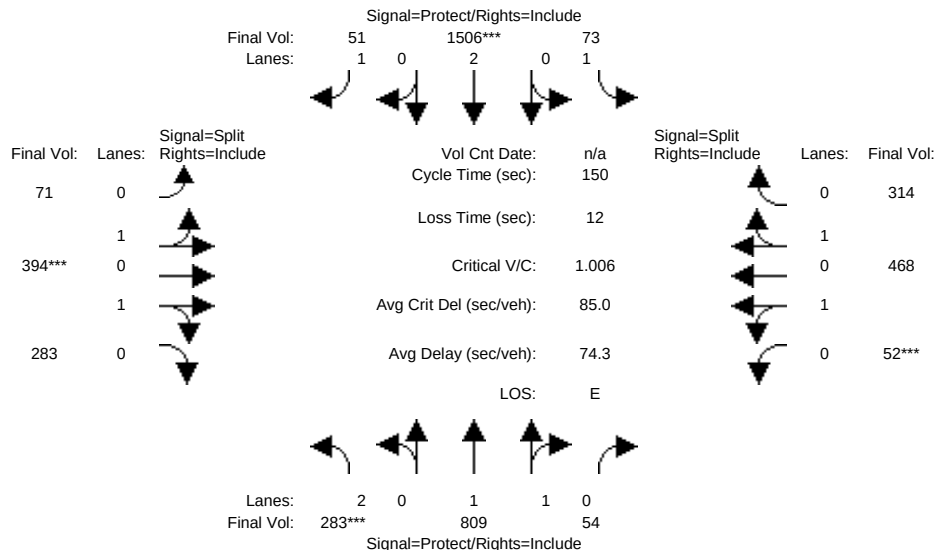
Street Name:	Middlefield Rd						San Antonio					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	263	717	105	108	596	348	277	828	209	284	1335	114
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	263	717	105	108	596	348	277	828	209	284	1335	114
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	263	717	105	108	596	348	277	828	209	284	1335	114
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	263	717	105	108	596	348	277	828	209	284	1335	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	263	717	105	108	596	348	277	828	209	284	1335	114
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	263	717	105	108	596	348	277	828	209	284	1335	114
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.98	0.95	0.92	1.00	0.92	0.83	0.98	0.95	0.83	1.00	0.92
Lanes:	1.00	1.74	0.26	1.00	2.00	1.00	2.00	1.59	0.41	2.00	2.00	1.00
Final Sat.:	1750	3227	473	1750	3800	1750	3150	2954	746	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.22	0.22	0.06	0.16	0.20	0.09	0.28	0.28	0.09	0.35	0.07
Crit Moves:	***					***	***				***	
Green Time:	18.7	33.7	33.7	9.7	24.7	24.7	10.9	41.3	41.3	13.3	43.7	43.7
Volume/Cap:	0.88	0.72	0.72	0.70	0.70	0.88	0.88	0.75	0.75	0.75	0.88	0.16
Delay/Veh:	70.1	36.3	36.3	62.4	41.8	61.8	73.4	32.1	32.1	54.6	37.5	21.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	70.1	36.3	36.3	62.4	41.8	61.8	73.4	32.1	32.1	54.6	37.5	21.5
LOS by Move:	E	D	D	E	D	E	E	C	C	D	D	C
HCM2kAvgQ:	13	14	14	5	10	16	8	17	17	7	24	3

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #4: Alma Street & Charleston Road

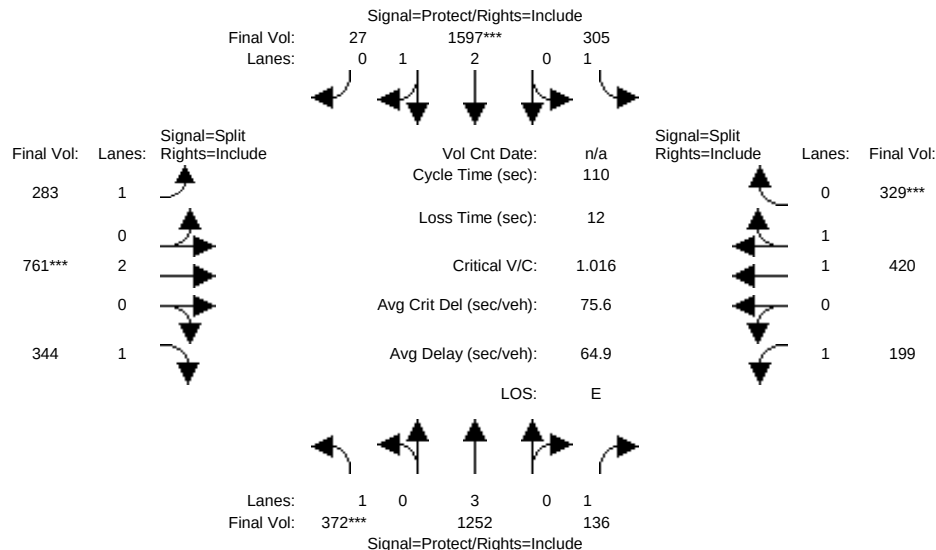


Street Name:	Alma Street						Charleston Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	283	809	54	73	1506	51	71	394	283	52	468	314
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	283	809	54	73	1506	51	71	394	283	52	468	314
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	283	809	54	73	1506	51	71	394	283	52	468	314
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	283	809	54	73	1506	51	71	394	283	52	468	314
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	283	809	54	73	1506	51	71	394	283	52	468	314
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	283	809	54	73	1506	51	71	394	283	52	468	314
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.92	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	1.00	0.19	1.05	0.76	0.12	1.13	0.75
Final Sat.:	3150	3468	232	1750	3800	1750	342	1896	1362	224	2020	1355
Capacity Analysis Module:												
Vol/Sat:	0.09	0.23	0.23	0.04	0.40	0.03	0.21	0.21	0.21	0.23	0.23	0.23
Crit Moves:	***			***			***			***		
Green Time:	13.4	60.4	60.4	12.1	59.1	59.1	31.0	31.0	31.0	34.5	34.5	34.5
Volume/Cap:	1.01	0.58	0.58	0.52	1.01	0.07	1.01	1.01	1.01	1.01	1.01	1.01
Delay/Veh:	123.5	35.5	35.5	69.5	70.2	28.4	94.0	94.0	94.0	90.5	90.5	90.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	123.5	35.5	35.5	69.5	70.2	28.4	94.0	94.0	94.0	90.5	90.5	90.5
LOS by Move:	F	D	D	E	E	C	F	F	F	F	F	F
HCM2kAvgQ:	12	16	16	4	41	2	24	24	24	26	26	26
Note: Queue reported is the number of cars per lane.												

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No Growth PM

Intersection #5: El Camino Real & Embarcadero Rd/Galvez (CMP #1102)

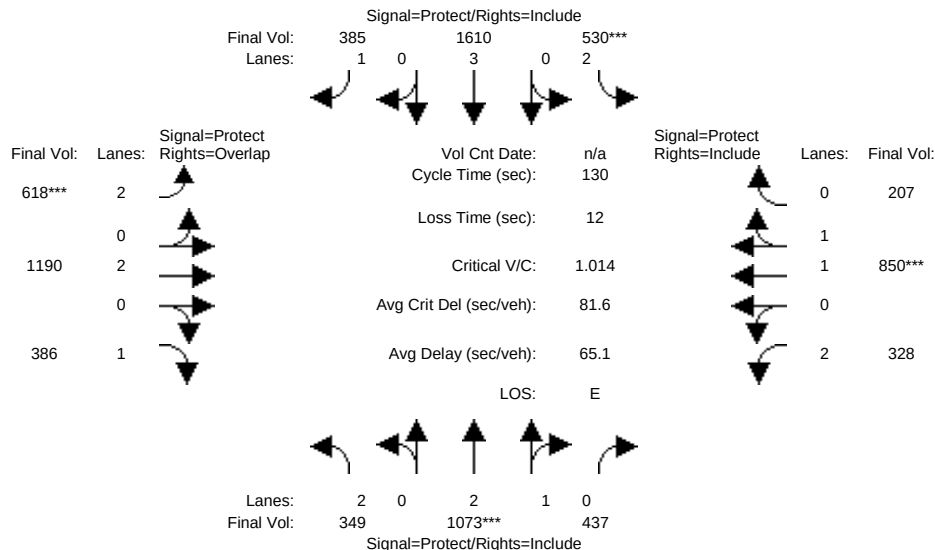


Street Name:	El Camino Real						Embarcadero Rd/Galvez					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	372	1252	136	305	1597	27	283	761	344	199	420	329
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	372	1252	136	305	1597	27	283	761	344	199	420	329
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	372	1252	136	305	1597	27	283	761	344	199	420	329
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	372	1252	136	305	1597	27	283	761	344	199	420	329
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	372	1252	136	305	1597	27	283	761	344	199	420	329
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	372	1252	136	305	1597	27	283	761	344	199	420	329
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	0.98	0.95	0.92	1.00	0.92	0.92	0.99	0.95
Lanes:	1.00	3.00	1.00	1.00	2.95	0.05	1.00	2.00	1.00	1.00	1.10	0.90
Final Sat.:	1750	5700	1750	1750	5507	93	1750	3800	1750	1750	2074	1624
Capacity Analysis Module:												
Vol/Sat:	0.21	0.22	0.08	0.17	0.29	0.29	0.16	0.20	0.20	0.11	0.20	0.20
Crit Moves:	***			***			***					***
Green Time:	23.0	30.3	30.3	24.1	31.4	31.4	21.7	21.7	21.7	21.9	21.9	21.9
Volume/Cap:	1.02	0.80	0.28	0.80	1.02	1.02	0.82	1.02	1.00	0.57	1.02	1.02
Delay/Veh:	94.7	39.9	31.6	51.7	66.0	66.0	56.7	81.2	91.9	42.0	81.3	81.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	94.7	39.9	31.6	51.7	66.0	66.0	56.7	81.2	91.9	42.0	81.3	81.3
LOS by Move:	F	D	C	D	E	E	E	F	F	D	F	F
HCM2kAvgQ:	20	15	4	13	26	26	12	19	18	7	19	19
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #6: El Camino Real & Page Mill Rd/Oregon Expwy (CMP #1104)

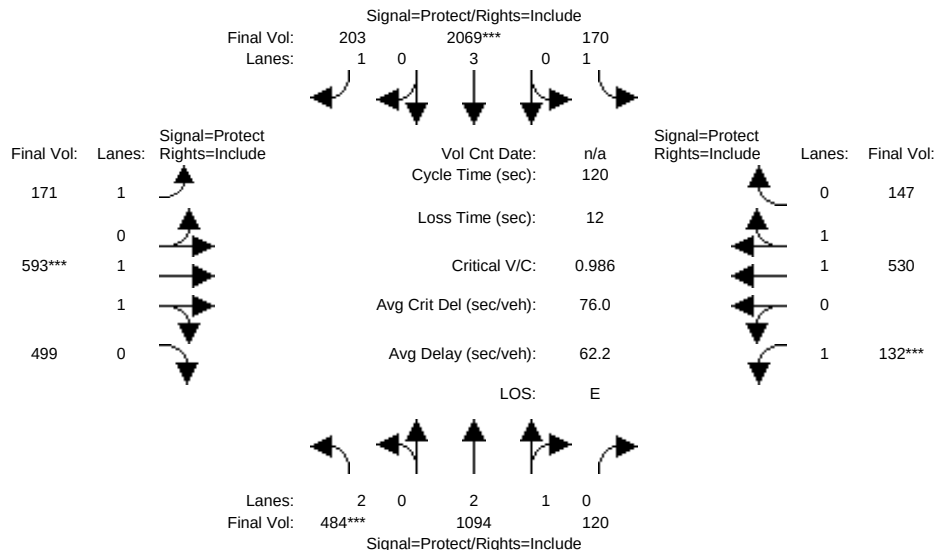


Street Name:	El Camino Real						Page Mill Rd/Oregon Expwy					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	349	1073	437	530	1610	385	618	1190	386	328	850	207
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	349	1073	437	530	1610	385	618	1190	386	328	850	207
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	349	1073	437	530	1610	385	618	1190	386	328	850	207
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	349	1073	437	530	1610	385	618	1190	386	328	850	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	349	1073	437	530	1610	385	618	1190	386	328	850	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	349	1073	437	530	1610	385	618	1190	386	328	850	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.95	0.83	1.00	0.92	0.83	1.00	0.92	0.83	0.98	0.95
Lanes:	2.00	2.10	0.90	2.00	3.00	1.00	2.00	2.00	1.00	2.00	1.60	0.40
Final Sat.:	3150	3977	1620	3150	5700	1750	3150	3800	1750	3150	2975	724
Capacity Analysis Module:												
Vol/Sat:	0.11	0.27	0.27	0.17	0.28	0.22	0.20	0.31	0.22	0.10	0.29	0.29
Crit Moves:	****			****			****			****		
Green Time:	15.8	34.6	34.6	21.6	40.4	40.4	25.2	46.4	62.2	15.4	36.6	36.6
Volume/Cap:	0.91	1.01	1.01	1.01	0.91	0.71	1.01	0.88	0.46	0.88	1.01	1.01
Delay/Veh:	81.4	74.4	74.4	97.0	50.5	43.9	92.3	46.0	23.1	76.6	77.9	77.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	81.4	74.4	74.4	97.0	50.5	43.9	92.3	46.0	23.1	76.6	77.9	77.9
LOS by Move:	F	E	E	F	D	D	F	D	C	E	E	E
HCM2kAvgQ:	11	27	27	18	24	16	21	25	11	11	28	28
Note: Queue reported is the number of cars per lane.												

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #7: ECR & Arastradero Rd/Charleston Rd (CMP #1106)



Street Name:	El Camino Real						Arastradero Rd/Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	484	1094	120	170	2069	203	171	593	499	132	530	147
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	484	1094	120	170	2069	203	171	593	499	132	530	147
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	484	1094	120	170	2069	203	171	593	499	132	530	147
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	484	1094	120	170	2069	203	171	593	499	132	530	147
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	484	1094	120	170	2069	203	171	593	499	132	530	147
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	484	1094	120	170	2069	203	171	593	499	132	530	147

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.92	1.00	0.92	0.92	1.00	0.95	0.92	0.98	0.95
Lanes:	2.00	2.69	0.31	1.00	3.00	1.00	1.00	1.06	0.94	1.00	1.55	0.45
Final Sat.:	3150	5046	553	1750	5700	1750	1750	2008	1690	1750	2896	803

Capacity Analysis Module:

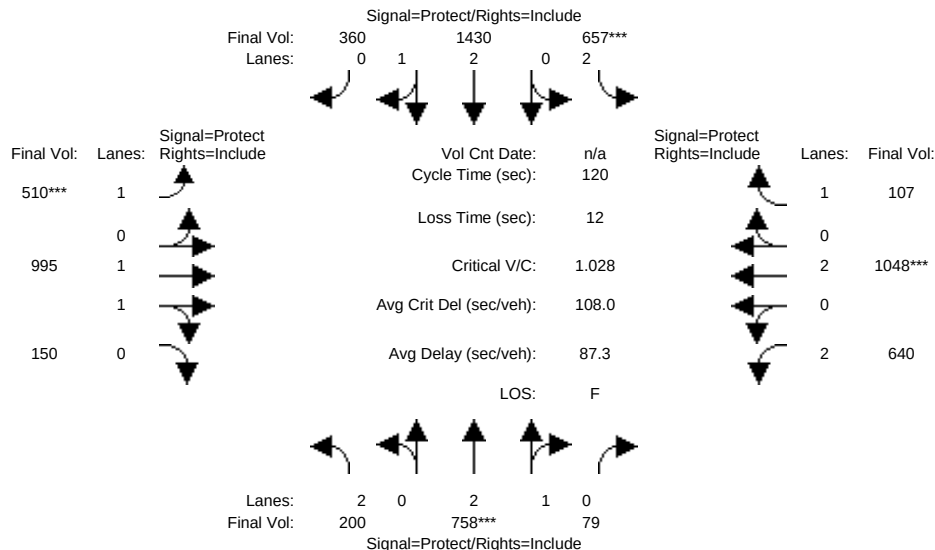
Vol/Sat:	0.15	0.22	0.22	0.10	0.36	0.12	0.10	0.30	0.30	0.08	0.18	0.18
Crit Moves:	***			***			***			***		
Green Time:	18.7	43.4	43.4	19.5	44.2	44.2	15.7	35.9	35.9	9.2	29.4	29.4
Volume/Cap:	0.99	0.60	0.60	0.60	0.99	0.32	0.75	0.99	0.99	0.99	0.75	0.75
Delay/Veh:	87.4	31.7	31.7	50.2	54.0	27.4	62.8	65.4	65.4	128.6	45.3	45.3
User DelAdj:	1.00	1.00	1.00	1.40	1.40	1.40	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	87.4	31.7	31.7	70.2	75.6	38.3	62.8	65.4	65.4	128.6	45.3	45.3
LOS by Move:	F	C	C	E	E	D	E	E	E	F	D	D
HCM2kAvgQ:	15	13	13	7	31	6	8	26	26	9	13	13

Note: Queue reported is the number of cars per lane.

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No Growth PM

Intersection #8: El Camino Real & San Antonio Road (CMP #1006)

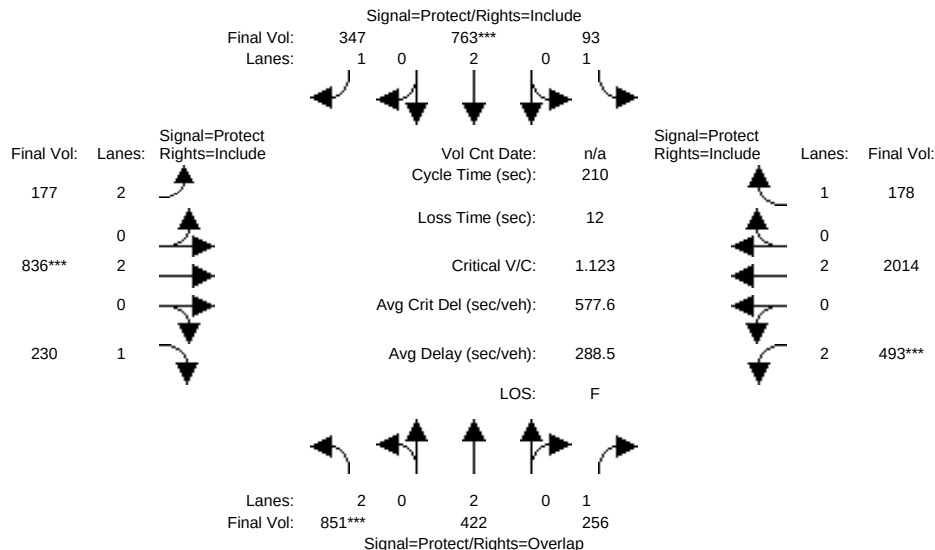


Street Name:	El Camino Real						San Antonio Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	28	0	10	28	0	10	30	0	10	30	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	200	758	79	657	1430	360	510	995	150	640	1048	107
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	758	79	657	1430	360	510	995	150	640	1048	107
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	758	79	657	1430	360	510	995	150	640	1048	107
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	758	79	657	1430	360	510	995	150	640	1048	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	758	79	657	1430	360	510	995	150	640	1048	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	200	758	79	657	1430	360	510	995	150	640	1048	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.99	0.95	0.83	0.99	0.95	0.92	0.98	0.95	0.83	1.00	0.92
Lanes:	2.00	2.71	0.29	2.00	2.37	0.63	1.00	1.73	0.27	2.00	2.00	1.00
Final Sat.:	3150	5071	528	3150	4472	1126	1750	3215	485	3150	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.06	0.15	0.15	0.21	0.32	0.32	0.29	0.31	0.31	0.20	0.28	0.06
Crit Moves:	****			****			****			****		
Green Time:	10.1	28.0	28.0	20.9	38.8	38.8	29.1	35.7	35.7	23.4	30.0	30.0
Volume/Cap:	0.75	0.64	0.64	1.20	0.99	0.99	1.20	1.04	1.04	1.04	1.10	0.24
Delay/Veh:	65.4	42.6	42.6	156.2	59.2	59.2	156.1	80.3	80.3	95.4	107	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.4	42.6	42.6	156.2	59.2	59.2	156.1	80.3	80.3	95.4	107	36.2
LOS by Move:	E	D	D	F	E	E	F	F	F	F	F	D
HCM2kAvgQ:	6	10	10	25	28	28	34	30	30	21	29	3
Note: Queue reported is the number of cars per lane.												

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No Growth PM

Intersection #9: Foothill Expressway & Page Mill Road (CMP #5205)



Street Name: Foothill Expressway - Junipero Se

Page Mill Road

Approach: North Bound

South Bound

East Bound

West Bound

Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	110	10	14	125	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	851	422	256	93	763	347	177	836	230	493	2014	178
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	851	422	256	93	763	347	177	836	230	493	2014	178
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	851	422	256	93	763	347	177	836	230	493	2014	178
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	851	422	256	93	763	347	177	836	230	493	2014	178
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	851	422	256	93	763	347	177	836	230	493	2014	178
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	851	422	256	93	763	347	177	836	230	493	2014	178

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	1.00	0.92	0.46	0.50	0.92	0.83	1.00	0.92	0.83	1.00	0.92
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3150	3800	1750	875	1900	1750	3150	3800	1750	3150	3800	1750

Capacity Analysis Module:

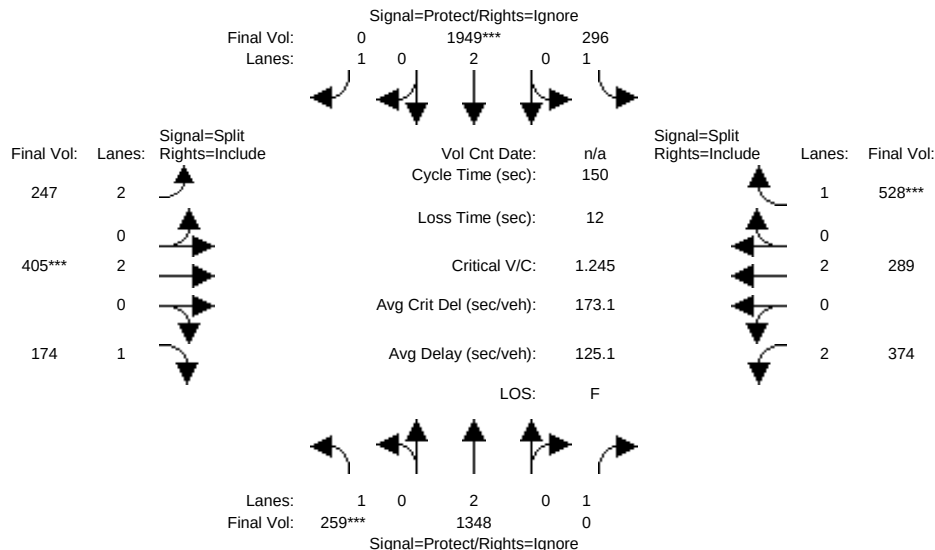
Vol/Sat:	0.27	0.11	0.15	0.11	0.40	0.20	0.06	0.22	0.13	0.16	0.53	0.10
Crit Moves:	***				***			***				
Green Time:	20.6	26.2	42.6	25.1	30.7	30.7	14.6	128	128.3	16.3	130	130.1
Volume/Cap:	2.75	0.89	0.72	0.89	2.75	1.36	0.81	0.36	0.22	2.01	0.86	0.16
Delay/Veh:	876.8	95.8	74.1	132.4	874	260.8	102.4	17.5	15.8	552.7	17.9	7.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	876.8	95.8	74.1	132.4	874	260.8	102.4	17.5	15.8	552.7	17.9	7.7
LOS by Move:	F	F	E	F	F	F	F	B	B	F	B	A
HCM2kAvgQ:	68	14	16	8	51	34	8	11	6	35	35	2

Note: Queue reported is the number of cars per lane.

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2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #10: Foothill & Arastradero (CMP #5207)



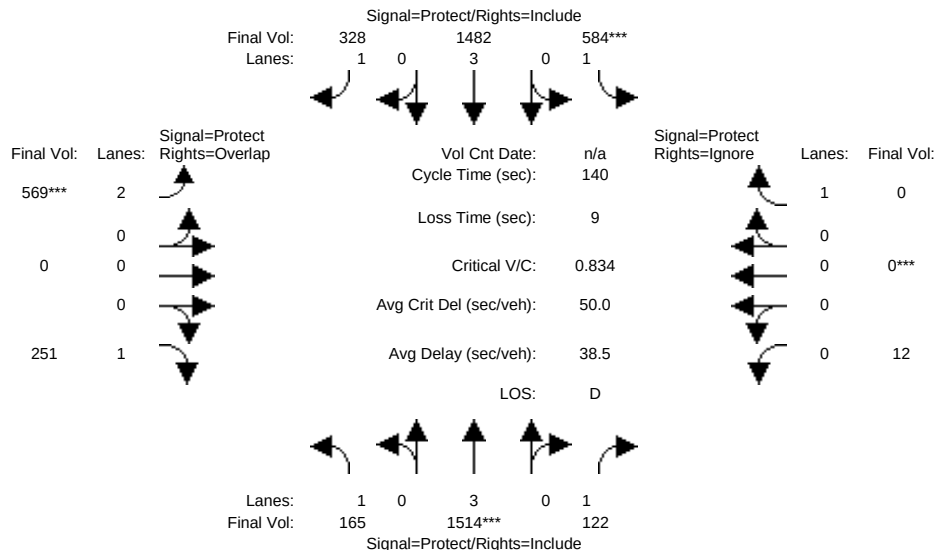
Street Name:	Foothill						Arastradero					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	10	10	14	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	259	1348	59	296	1949	33	247	405	174	374	289	528
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	259	1348	59	296	1949	33	247	405	174	374	289	528
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	259	1348	59	296	1949	33	247	405	174	374	289	528
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	259	1348	0	296	1949	0	247	405	174	374	289	528
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	259	1348	0	296	1949	0	247	405	174	374	289	528
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	259	1348	0	296	1949	0	247	405	174	374	289	528
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.58	0.58	0.92	0.58	0.58	0.92
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	1750	3800	1750	1750	3800	1750	2205	2218	1750	2205	2218	1750
Capacity Analysis Module:												
Vol/Sat:	0.15	0.35	0.00	0.17	0.51	0.00	0.11	0.18	0.10	0.17	0.13	0.30
Crit Moves:	***			***			***					***
Green Time:	17.8	53.9	0.0	25.7	61.8	0.0	22.0	22.0	22.0	36.4	36.4	36.4
Volume/Cap:	1.24	0.99	0.00	0.99	1.24	0.00	0.76	1.24	0.68	0.70	0.54	1.24
Delay/Veh:	209.9	68.8	0.0	110.1	160	0.0	71.8	197	67.7	56.0	50.6	185.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	209.9	68.8	0.0	110.1	160	0.0	71.8	197	67.7	56.0	50.6	185.4
LOS by Move:	F	E	A	F	F	A	E	F	E	E	D	F
HCM2kAvgQ:	22	37	0	19	69	0	8	17	10	11	7	42

Note: Queue reported is the number of cars per lane.

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No Growth PM

Intersection #11: El Camino Real & Alma St/Sand Hill Rd (CMP #1100)



Street Name:	El Camino Real						Alma St/Sand Hill Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	0	10	0	0	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

Volume Module:

Base Vol:	165	1514	122	584	1482	328	569	0	251	12	0	1061
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	165	1514	122	584	1482	328	569	0	251	12	0	1061
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	165	1514	122	584	1482	328	569	0	251	12	0	1061
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Volume:	165	1514	122	584	1482	328	569	0	251	12	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	165	1514	122	584	1482	328	569	0	251	12	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Volume:	165	1514	122	584	1482	328	569	0	251	12	0	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.83	1.00	0.92	0.92	0.92	0.92
Lanes:	1.00	3.00	1.00	1.00	3.00	1.00	2.00	0.00	1.00	1.00	0.00	0.00
Final Sat.:	1750	5700	1750	1750	5700	1750	3150	0	1750	1750	0	0

Capacity Analysis Module:

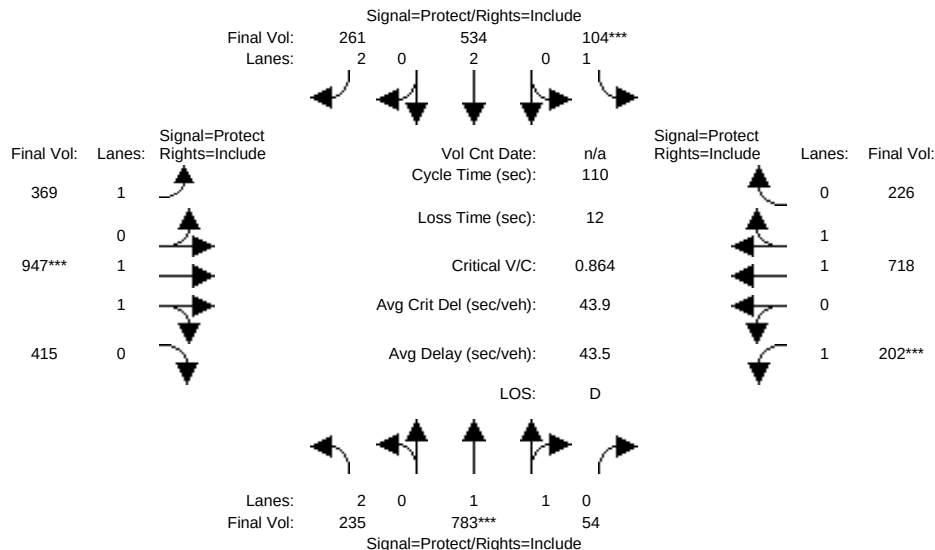
Vol/Sat:	0.09	0.27	0.07	0.33	0.26	0.19	0.18	0.00	0.14	0.01	0.00	0.00
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****
Green Time:	26.8	44.6	44.6	56.0	73.9	73.9	30.3	0.0	53.4	3.7	0.0	0.0
Volume/Cap:	0.49	0.83	0.22	0.83	0.49	0.36	0.83	0.00	0.38	0.26	0.00	0.00
Delay/Veh:	51.7	47.7	35.1	46.3	21.2	19.5	61.1	0.0	31.6	69.7	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.7	47.7	35.1	46.3	21.2	19.5	61.1	0.0	31.6	69.7	0.0	0.0
LOS by Move:	D	D	D	D	C	B	E	A	C	E	A	A
HCM2kAvgQ:	7	22	4	26	13	9	16	0	8	1	0	0

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #12: San Antonio Rd & Charleston Rd (CMP # 1108)

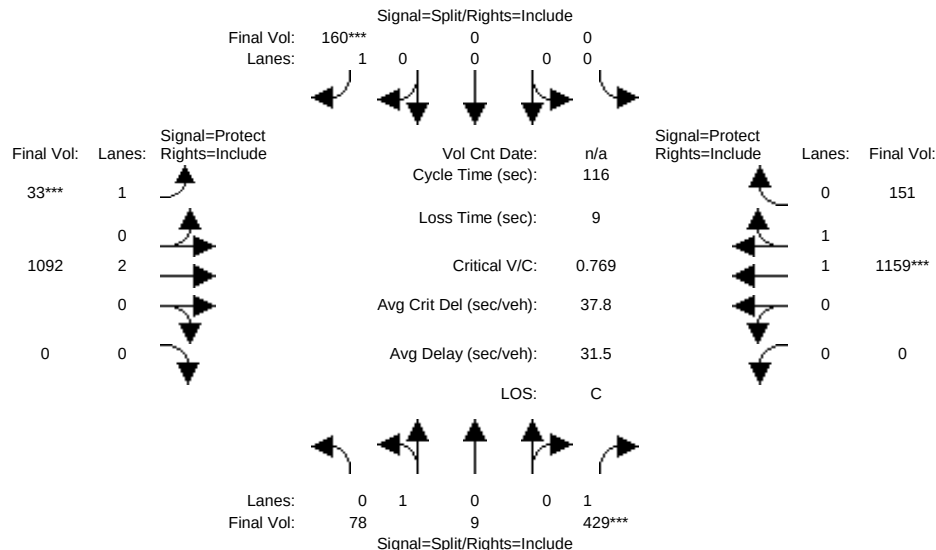


Street Name:	San Antonio Rd						Charleston Rd					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	7	10	10	7	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	235	783	54	104	534	261	369	947	415	202	718	226
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	783	54	104	534	261	369	947	415	202	718	226
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	235	783	54	104	534	261	369	947	415	202	718	226
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	235	783	54	104	534	261	369	947	415	202	718	226
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	783	54	104	534	261	369	947	415	202	718	226
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	235	783	54	104	534	261	369	947	415	202	718	226
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.83	0.98	0.95	0.92	1.00	0.83	0.92	0.99	0.95	0.92	0.98	0.95
Lanes:	2.00	1.87	0.13	1.00	2.00	2.00	1.00	1.37	0.63	1.00	1.51	0.49
Final Sat.:	3150	3461	239	1750	3800	3150	1750	2572	1127	1750	2814	886
Capacity Analysis Module:												
Vol/Sat:	0.07	0.23	0.23	0.06	0.14	0.08	0.21	0.37	0.37	0.12	0.26	0.26
Crit Moves:	****			****			****			****		
Green Time:	12.6	28.8	28.8	7.6	23.8	23.8	27.9	46.9	46.9	14.7	33.7	33.7
Volume/Cap:	0.65	0.86	0.86	0.86	0.65	0.38	0.83	0.86	0.86	0.86	0.83	0.83
Delay/Veh:	50.7	46.8	46.8	94.0	41.2	37.2	51.5	33.8	33.8	73.2	40.9	40.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	50.7	46.8	46.8	94.0	41.2	37.2	51.5	33.8	33.8	73.2	40.9	40.9
LOS by Move:	D	D	D	F	D	D	D	C	C	E	D	D
HCM2kAvgQ:	6	17	17	6	9	5	15	24	24	10	18	18
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #13: El Camino Real NB Ramps & University (east) (CMP #1114) [AM volumes adjusted]

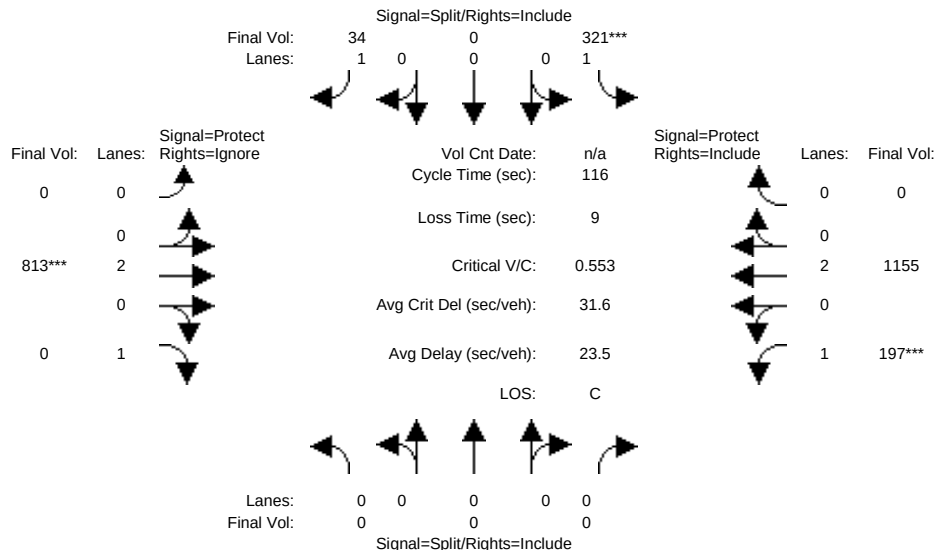


Street Name:	El Camino Real NB Ramps						University (east)					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	0	0	10	7	10	0	0	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	78	9	429	0	0	160	33	1092	0	0	1159	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	78	9	429	0	0	160	33	1092	0	0	1159	151
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	78	9	429	0	0	160	33	1092	0	0	1159	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	78	9	429	0	0	160	33	1092	0	0	1159	151
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	9	429	0	0	160	33	1092	0	0	1159	151
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	78	9	429	0	0	160	33	1092	0	0	1159	151
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	0.98	0.95
Lanes:	0.90	0.10	1.00	0.00	0.00	1.00	1.00	2.00	0.00	0.00	1.76	0.24
Final Sat.:	1614	186	1750	0	0	1750	1750	3800	0	0	3273	426
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.25	0.00	0.00	0.09	0.02	0.29	0.00	0.00	0.35	0.35
Crit Moves:	****			****			****			****		
Green Time:	35.5	35.5	35.5	0.0	0.0	13.2	7.0	58.3	0.0	0.0	51.3	51.3
Volume/Cap:	0.16	0.16	0.80	0.00	0.00	0.80	0.31	0.57	0.00	0.00	0.80	0.80
Delay/Veh:	29.5	29.5	45.4	0.0	0.0	70.3	53.9	20.6	0.0	0.0	30.9	30.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.5	29.5	45.4	0.0	0.0	70.3	53.9	20.6	0.0	0.0	30.9	30.9
LOS by Move:	C	C	D	A	A	E	D	C	A	A	C	C
HCM2kAvgQ:	2	2	17	0	0	8	2	14	0	0	22	22
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #14: El Camino Real (SB Ramp) & University Ave (CMP #1112)

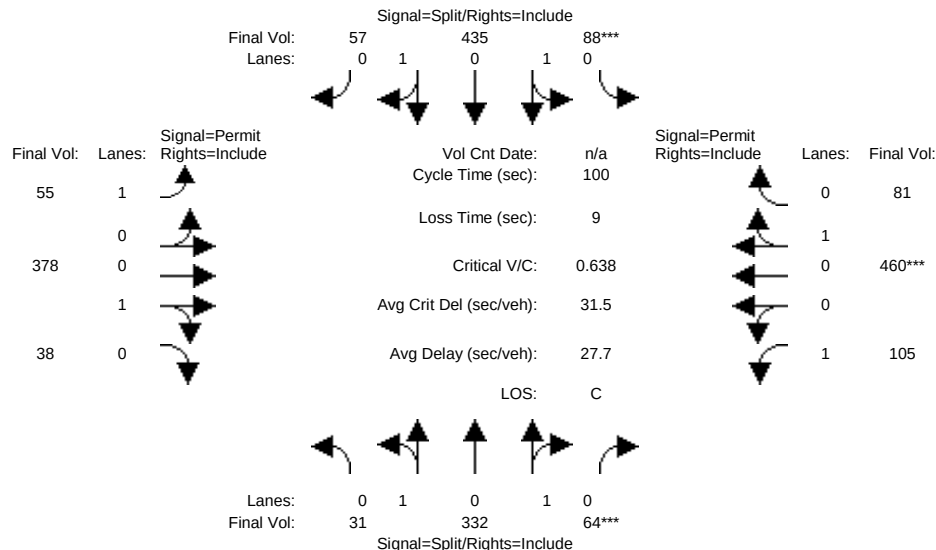


Street Name:	El Camino Real (SB Ramp)						University Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	0	0	0	10	0	10	0	10	10	7	10	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	0	0	0	321	0	34	0	813	186	197	1155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	321	0	34	0	813	186	197	1155	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	321	0	34	0	813	186	197	1155	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	0	0	0	321	0	34	0	813	0	197	1155	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	321	0	34	0	813	0	197	1155	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Volume:	0	0	0	321	0	34	0	813	0	197	1155	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	0.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	0	0	0	1750	0	1750	0	3800	1750	1750	3800	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.18	0.00	0.02	0.00	0.21	0.00	0.11	0.30	0.00
Crit Moves:				****				****				****
Green Time:	0.0	0.0	0.0	38.5	0.0	38.5	0.0	44.9	0.0	23.6	68.5	0.0
Volume/Cap:	0.00	0.00	0.00	0.55	0.00	0.06	0.00	0.55	0.00	0.55	0.51	0.00
Delay/Veh:	0.0	0.0	0.0	32.9	0.0	26.5	0.0	28.2	0.0	43.3	14.2	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	32.9	0.0	26.5	0.0	28.2	0.0	43.3	14.2	0.0
LOS by Move:	A	A	A	C	A	C	A	C	A	D	B	A
HCM2kAvgQ:	0	0	0	10	0	1	0	11	0	7	12	0
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #15: Middlefield Road & University Avenue



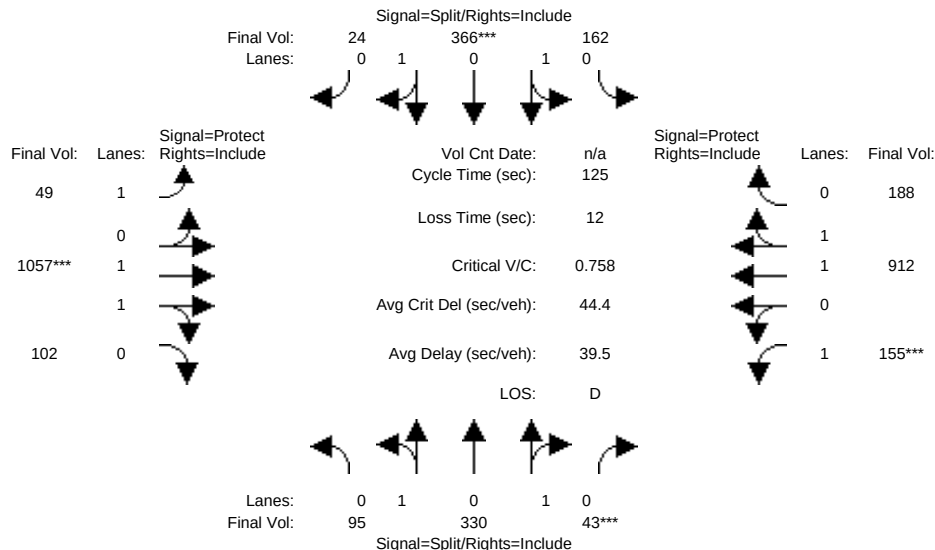
Street Name:	Middlefield Road						University Avenue					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	31	332	64	88	435	57	55	378	38	105	460	81
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	31	332	64	88	435	57	55	378	38	105	460	81
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	31	332	64	88	435	57	55	378	38	105	460	81
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	31	332	64	88	435	57	55	378	38	105	460	81
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	332	64	88	435	57	55	378	38	105	460	81
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	31	332	64	88	435	57	55	378	38	105	460	81
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Lanes:	0.15	1.55	0.30	0.30	1.50	0.20	1.00	0.91	0.09	1.00	0.85	0.15
Final Sat.:	261	2799	540	546	2700	354	1750	1636	164	1750	1530	270
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.12	0.16	0.16	0.16	0.03	0.23	0.23	0.06	0.30	0.30
Crit Moves:	****			****			****			****		
Green Time:	18.6	18.6	18.6	25.3	25.3	25.3	47.1	47.1	47.1	47.1	47.1	47.1
Volume/Cap:	0.64	0.64	0.64	0.64	0.64	0.64	0.07	0.49	0.49	0.13	0.64	0.64
Delay/Veh:	39.6	39.6	39.6	34.8	34.8	34.8	14.5	18.6	18.6	14.9	21.6	21.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.6	39.6	39.6	34.8	34.8	34.8	14.5	18.6	18.6	14.9	21.6	21.6
LOS by Move:	D	D	D	C	C	C	B	B	B	B	C	C
HCM2kAvgQ:	7	7	7	9	9	9	1	9	9	2	14	14

Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #16: Middlefield Road & Embarcadero Road

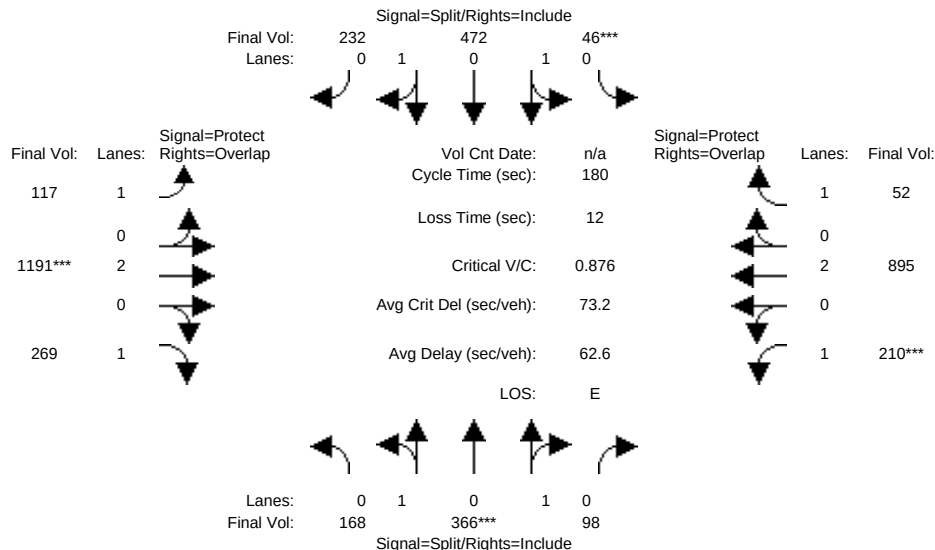


Street Name:	Middlefield Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	7	10	10	7	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	95	330	43	162	366	24	49	1057	102	155	912	188
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	95	330	43	162	366	24	49	1057	102	155	912	188
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	330	43	162	366	24	49	1057	102	155	912	188
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	95	330	43	162	366	24	49	1057	102	155	912	188
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	330	43	162	366	24	49	1057	102	155	912	188
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	95	330	43	162	366	24	49	1057	102	155	912	188
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.98	0.95	0.92	0.98	0.95
Lanes:	0.41	1.41	0.18	0.59	1.32	0.09	1.00	1.82	0.18	1.00	1.65	0.35
Final Sat.:	731	2538	331	1057	2387	157	1750	3374	326	1750	3067	632
Capacity Analysis Module:												
Vol/Sat:	0.13	0.13	0.13	0.15	0.15	0.15	0.03	0.31	0.31	0.09	0.30	0.30
Crit Moves:	****			****			****			****		
Green Time:	21.4	21.4	21.4	25.3	25.3	25.3	10.5	51.7	51.7	14.6	55.8	55.8
Volume/Cap:	0.76	0.76	0.76	0.76	0.76	0.76	0.33	0.76	0.76	0.76	0.67	0.67
Delay/Veh:	54.7	54.7	54.7	51.6	51.6	51.6	55.3	33.6	33.6	68.5	28.3	28.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.7	54.7	54.7	51.6	51.6	51.6	55.3	33.6	33.6	68.5	28.3	28.3
LOS by Move:	D	D	D	D	D	D	E	C	C	E	C	C
HCM2kAvgQ:	11	11	11	12	12	12	2	20	20	8	17	17
Note: Queue reported is the number of cars per lane.												

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Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #17: Middlefield Road & Oregon Expressway (CMP #5108)



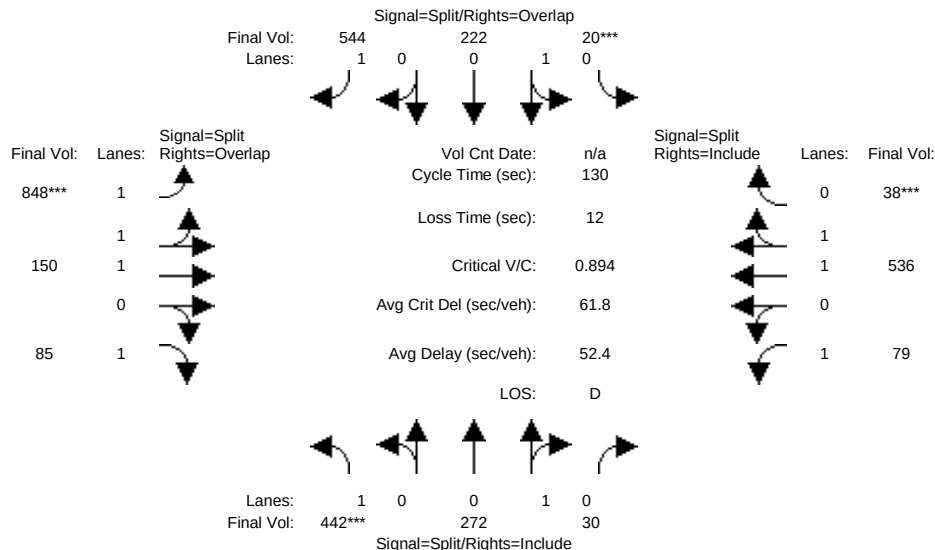
Street Name:	Middlefield Road						Oregon Expressway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	14	10	10	14	10	10	14	67	10	14	68	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	168	366	98	46	472	232	117	1191	269	210	895	52
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	366	98	46	472	232	117	1191	269	210	895	52
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	168	366	98	46	472	232	117	1191	269	210	895	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	168	366	98	46	472	232	117	1191	269	210	895	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	168	366	98	46	472	232	117	1191	269	210	895	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	168	366	98	46	472	232	117	1191	269	210	895	52
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.95	0.95	0.92	1.00	0.92	0.92	1.00	0.92
Lanes:	0.53	1.16	0.31	0.12	1.26	0.62	1.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	957	2085	558	221	2266	1114	1750	3800	1750	1750	3800	1750
Capacity Analysis Module:												
Vol/Sat:	0.18	0.18	0.18	0.21	0.21	0.21	0.07	0.31	0.15	0.12	0.24	0.03
Crit Moves:	****			****			****			****		
Green Time:	35.2	35.2	35.2	41.8	41.8	41.8	15.5	67.0	102.2	24.1	75.5	117.3
Volume/Cap:	0.90	0.90	0.90	0.90	0.90	0.90	0.77	0.84	0.27	0.90	0.56	0.05
Delay/Veh:	85.0	85.0	85.0	79.5	79.5	79.5	102.2	56.4	20.0	109.8	40.1	11.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	85.0	85.0	85.0	79.5	79.5	79.5	102.2	56.4	20.0	109.8	40.1	11.3
LOS by Move:	F	F	F	E	E	E	F	E	C	F	D	B
HCM2kAvgQ:	21	21	21	24	24	24	9	31	8	15	18	1

Note: Queue reported is the number of cars per lane.

Comprehensive Plan Update TIA - November 2016
City of Palo Alto

Level Of Service Computation Report
2000 HCM Operations (Future Volume Alternative)
No Growth PM

Intersection #18: Bayshore Road & Embarcadero Road



Street Name:	Bayshore Road						Embarcadero Road					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Min. Green:	10	10	10	10	10	10	10	10	10	10	10	10
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	442	272	30	20	222	544	848	150	85	79	536	38
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	442	272	30	20	222	544	848	150	85	79	536	38
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	442	272	30	20	222	544	848	150	85	79	536	38
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	442	272	30	20	222	544	848	150	85	79	536	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	272	30	20	222	544	848	150	85	79	536	38
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	442	272	30	20	222	544	848	150	85	79	536	38
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.95	0.95	0.95	0.95	0.92	0.83	1.00	0.92	0.92	0.98	0.95
Lanes:	1.00	0.90	0.10	0.08	0.92	1.00	2.00	1.00	1.00	1.00	1.86	0.14
Final Sat.:	1750	1621	179	149	1651	1750	3150	1900	1750	1750	3455	245
Capacity Analysis Module:												
Vol/Sat:	0.25	0.17	0.17	0.13	0.13	0.31	0.27	0.08	0.05	0.05	0.16	0.16
Crit Moves:	***			***			***					***
Green Time:	36.7	36.7	36.7	19.6	19.6	58.7	39.2	39.2	75.9	22.6	22.6	22.6
Volume/Cap:	0.89	0.59	0.59	0.89	0.89	0.69	0.89	0.26	0.08	0.26	0.89	0.89
Delay/Veh:	63.1	42.1	42.1	83.2	83.2	30.9	52.9	34.5	11.9	47.0	67.5	67.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	63.1	42.1	42.1	83.2	83.2	30.9	52.9	34.5	11.9	47.0	67.5	67.5
LOS by Move:	E	D	D	F	F	C	D	C	B	D	E	E
HCM2kAvgQ:	22	11	11	13	13	19	23	4	2	3	15	15
Note: Queue reported is the number of cars per lane.												

A P P E N D I X H

MEMORANDUM RE: ANALYSIS OF
THE NO GROWTH SCENARIO

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MEMORANDUM

DATE February 3, 2017

TO Hillary Gitelman
City of Palo Alto, Department of Planning and Community Environment

FROM Joanna Jansen

SUBJECT Analysis of the No Growth Scenario

This memorandum summarizes the analysis of a “No Growth Scenario” for the year 2030. A No Growth Scenario is purely hypothetical and was developed to highlight the extent to which the proposed Plan’s significant and unavoidable impacts result from regional growth outside of Palo Alto. The No Growth Scenario analysis assumes that the proposed Plan would not be adopted and that no growth in population, employment, or square footage would occur in Palo Alto by 2030 beyond the amount of development existing in 2014, plus new growth permitted by fall 2016. This means not only that no new construction would occur, but that no children would be added to existing Palo Alto families, and no new jobs would be added in existing businesses. For all scenarios, including the No Growth Scenario, population and employment growth is assumed to proceed outside of Palo Alto consistent with the assumptions embedded in the VTA Travel Demand Model used for this analysis. The modeling completed for the No Growth Scenario also assumes Caltrain electrification, implementation of the *Valley Transportation Plan*, and other future transportation system improvements outside of Palo Alto by the year 2030.

This memorandum is organized by impact threshold. The impact statements correspond to the **significant and unavoidable impacts** to transportation and air quality in Chapter 4 of the February 2016 Draft Environmental Impact Report (EIR) and Supplement to the Draft EIR.

AIR-2	Implementation of the proposed Plan could violate an air quality standard; contribute substantially to an existing or project air quality violation; and/or result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). (Significant and Unavoidable – All Six Scenarios)

Criteria air pollutant emissions associated with the No Growth Scenario are shown in Table 1. The No Growth Scenario would have fewer emissions than all six scenarios, but would, nonetheless, generate an increase in emissions that would contribute to the nonattainment designation for ozone and particulates within the Air Basin. Development that has already been authorized, include the new facilities at the Stanford Medical Center. As a result, the No Growth Scenario would not eliminate the significant and unavoidable impact identified for all six of the proposed Plan scenarios. Consequently, the No Growth Scenario would also contribute to an increase in health effects in the basin until such time the attainment standards are met in the Air Basin.

TABLE 1 COMMUNITY-WIDE CRITERIA AIR POLLUTANTS GENERATED BY PROPOSED LAND USES UNDER THE NO GROWTH SCENARIO

Category	Criteria Air Pollutants (Average lbs./day)			
	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Existing Land Uses 2030				
Transportation ^a	125	329	365	149
Energy ^b	94	832	65	65
Area Sources ^c	1,709	1,444	106	105
<i>Total</i>	<i>1,927</i>	<i>2,606</i>	<i>536</i>	<i>319</i>
<i>Total Tons per Year (tpy)</i>	<i>349</i>	<i>463</i>	<i>94</i>	<i>56</i>
No Growth				
Transportation ^a	127	336	370	151
Energy ^b	97	857	67	67
Area Sources ^c	1,790	1,501	112	111
<i>Total</i>	<i>2,014</i>	<i>2,694</i>	<i>549</i>	<i>329</i>
Change from Existing Land Uses	86	88	13	10
<i>Total Tons per Year (tpy)</i>	<i>365</i>	<i>479</i>	<i>96</i>	<i>58</i>
Change from Existing Land Uses (tpy)	16	16	2	2
BAAQMD Criteria	10	10	15	10

Notes: Emissions may not total to 100 percent due to rounding.

ROG = reactive organic gases; NO_x = nitrogen oxides; PM₁₀ = coarse inhalable particulate matter; PM_{2.5} = fine inhalable particulate matter.

a. Transportation. VMT is based on data provided by Hexagon Transportation Consultants, Inc. based on the VTA model for Palo Alto and modeled with EMFAC2014 Version 1.07 for running exhaust emissions using 2030 emission rates. VMT is multiplied by 347 days/year to account for reduced traffic on weekends and holidays.

b. Energy. Based on three-year average (2014–2011) of energy use provided by City of Palo Alto Utilities. The forecast is based on the proposed Plan housing units (residential), employment (non-residential), and service population (city) projections. The table includes the natural gas use provided by City of Palo Alto Utilities, both for residential and non-residential uses in the city and the Sphere of Influence. Customers may participate in the Palo Alto Green Gas (PAGG) program, which would reduce community emissions. Palo Alto expects that about 10 percent of the city's gas load (both for residential and non-residential) will participate in PAGG in 2020. In addition, electrification of gas appliances (e.g., water heaters, space heaters, dryers, and cooktops) would also reduce natural gas use and increase carbon neutral electric use. The analysis is conservative and does not include additional local reductions from participation in the PAGG program or conversion of natural gas appliances to electric appliances.

c. Area Sources – Off-Road Emissions. Generated using OFFROAD2007. Estimated based on population (Landscaping), employment (Light Commercial Equipment), and construction building permits (Construction) for Palo Alto as a percentage of Santa Clara County. Annual construction emissions forecasts are assumed to be similar to historic levels. Forecasts for landscaping equipment use are based on the proposed Plan population projections, and for light commercial equipment use are based on the proposed Plan employment projections. Excludes BAAQMD-permitted sources. ROG emissions from consumer product use based on the emissions rates in CalEEMod 2013.2.2. Daily construction emissions multiplied by 347 days/year to account for reduced/limited construction activity on weekends and holidays. Excludes fugitive emissions from construction sites.

Source: PlaceWorks, 2016.

TRANS-1	Implementation of the project would cause an intersection to drop below its motor vehicle level of service standard, or deteriorate operations at representative intersections that already operate at a substandard level of service. (Significant and Unavoidable – All Six Scenarios)

Level of Service

For the No Growth Scenario, all intersections were assumed to have the same lane geometry as under Scenario 1, the Business As Usual scenario, which includes only improvements that are already planned and funded. The No Growth Scenario analysis was conducted using the same methodology as the six planning scenarios. Traffic volumes were projected with the travel demand forecasting model, intersection level of service was calculated using TRAFFIX Table 2 presents the intersection level of service (LOS) for the No Growth Scenario.

As shown in Table 2, under the No Growth Scenario, six of the 18 intersections analyzed for the Supplement to the Draft EIR would have a substandard level of service and would experience a significant impact. Thus, under No Growth Scenario conditions there would be nearly as many intersections where the level of service would be substandard as under Scenario 1. This reflects the fact that when one trip is removed from a roadway (due to the “no growth” assumption), the travel demand forecasting model replaces it with another trip made by another driver because of the regional growth in travel demand in the year 2030. Thus, a significant impact would still occur under No Growth Scenario and this significant and unavoidable impact would not be avoided.

Vehicle Miles Traveled

VMT for City + SOI

Understanding vehicle miles traveled (VMT) contributes to an understanding of transportation patterns, but VMT is not the basis for a standard of significance used in this analysis. Table 3 presents the No Growth Scenario VMT for the city and Sphere of Influence (SOI). As shown in Table 3, under No Growth Scenario conditions there would be slightly more (0.5 percent higher) VMT compared to existing conditions. VMT excludes trips that begin and end outside Palo Alto. However, the level of service analysis and ADT includes all trips, whether or not attributable to Palo Alto. Traffic volumes on roadways will increase on nearly all roadways under the No Growth scenario, even though Palo Alto-related VMT would increase only slightly. The No Growth Scenario would result in lower VMT than any of the six scenarios in the city and SOI, but would still be higher than existing VMT.

VMT for City Only

Table 4 presents the No Growth Scenario VMT for the city only. The results for the city only presented in Table 4 are very similar to the ones presented in Table 3, which include the city and the SOI. Under No Growth conditions there would be slightly more VMT compared to existing conditions in the city. The No Growth Scenario would result in lower VMT than any of the six scenarios in the city.

VMT per Capita

For the No Growth Scenario, the VMT per capita for the city and SOI would be 34.7, and for the city 32.2. Under No Growth conditions there would be slightly less VMT per capita compared to existing conditions, but

TABLE 2 EXISTING AND 2030 NO GROWTH SCENARIO INTERSECTION LEVELS OF SERVICE

#	Intersection	Peak Hour	Existing			No Growth Scenario		
			Average Delay (sec)	LOS	Crit. V/C	Average Delay (sec)	LOS	Crit. V/C
1	I-280 NB Off-Ramp & Sand Hill Road (Menlo Park)	AM	114.5	F	1.269	159.1	F	1.441
		PM	27.0	C	0.939	53.2	D	1.069
2	Middlefield Road & Charleston Road	AM	47.6	D	0.660	48.5	D	0.694
		PM	39.8	D	0.695	49.4	D	0.881
3	Middlefield Road & San Antonio Road*	AM	48.9	D	0.668	49.3	D	0.733
		PM	39.0	D	0.789	43.0	D	0.885
4	Alma Street & Charleston Road	AM	33.2	C	0.642	34.9	C	0.752
		PM	48.6	D	0.743	74.3	E	1.006
5	El Camino Real (SR 82) & Embarcadero Road/ Galvez Street*	AM	46.1	D	0.729	56.4	E	0.892
		PM	42.5	D	0.824	64.9	E	1.016
6	El Camino Real (SR 82) & Page Mill Road/ Oregon Expressway*	AM	62.7	E	0.819	65.0	E	0.852
		PM	52.4	D	0.910	65.1	E	1.014
7	El Camino Real (SR 82) & Arastradero Road/ Charleston Road*	AM	35.3	D	0.663	37.5	D	0.739
		PM	47.7	D	0.841	62.2	E	0.986
8	El Camino Real (SR 82) & San Antonio Road (Mountain View)*	AM	40.5	D	0.768	47.6	D	0.887
		PM	54.0	D	0.816	87.3	F	1.028
9	Foothill Expressway/Junipero Serra Blvd & Page Mill Road*	AM	55.7	E	0.909	66.9	E	0.973
		PM	189.7	F	1.064	288.5	F	1.123
10	Foothill Expressway & Arastradero Road*	AM	48.7	D	0.276	50.5	D	0.452
		PM	57.0	E	0.849	125.1	F	1.245
11	El Camino Real (SR 82) & Alma Street/ Sand Hill Road*	AM	22.7	C	0.452	22.6	C	0.507
		PM	36.5	D	0.651	38.5	D	0.834
12	San Antonio Road & East Charleston Road*	AM	48.4	D	0.729	51.1	D	0.815
		PM	42.0	D	0.844	43.5	D	0.864
13	El Camino Real (SR 82) NB Ramps & University Avenue*	AM	22.5	C	0.666	31.9	C	0.871
		PM	32.4	C	0.619	31.5	C	0.769

TABLE 2 EXISTING AND 2030 NO GROWTH SCENARIO INTERSECTION LEVELS OF SERVICE

#	Intersection	Peak Hour	Existing			No Growth Scenario		
			Average Delay (sec)	LOS	Crit. V/C	Average Delay (sec)	LOS	Crit. V/C
14	El Camino Real (SR 82) SB Ramp & University Avenue/Palm Drive*	AM	20.9	C	0.424	19.0	B	0.516
		PM	24.9	C	0.487	23.5	C	0.553
15	Middlefield Road & University Avenue	AM	27.0	C	0.609	28.1	C	0.690
		PM	27.5	C	0.512	27.7	C	0.638
16	Middlefield Road & Embarcadero Road	AM	50.3	D	0.583	58.1	E	0.792
		PM	36.6	D	0.607	39.5	D	0.758
17	Middlefield Road & Oregon Expressway*	AM	42.8	D	0.754	52.2	D	0.849
		PM	42.9	D	0.688	62.6	E	0.876
18	Embarcadero Road & E. Bayshore Road	AM	31.6	C	0.682	42.3	D	0.865
		PM	40.3	D	0.702	52.4	D	0.894

Notes: All data (level of service, average delay, and critical volume-to-capacity ratio) were calculated with the TRAFFIX software, which incorporates the 2000 Highway Capacity Manual methodology. The VTA CMP guidelines require the use of this methodology to analyze intersections. For the four planning scenarios, the traffic volumes at each intersection, which were used as inputs to the TRAFFIX analysis, were calculated with the Palo Alto travel demand forecasting model.

v/c = volume-to-capacity ratio

*Denotes CMP Intersection

Bold indicates a level of service worse than the standard for that intersection.

Shaded indicates a significant impact.

Source: Hexagon Transportation Consultants, Inc., 2016.

it would be higher than any of the six scenarios. Compared to Scenarios 1 through 6, VMT under the No Growth Scenario would be higher because all of the other scenarios include more housing, and by reducing the jobs/housing imbalance, the planning scenarios (except Scenario 1, which would increase the jobs/housing imbalance compared to existing conditions) would result in some shorter vehicle trips and more trips made by alternative modes. Both shorter trips and the mode shift result in lower VMT per capita. The No Growth Scenario includes the same sustainability measures as Scenario 1, which includes fewer than Scenarios 2 through 6., and which also leads to more mode shift and lower VMT per capita in the other scenarios

Mode Share

The number of transit trips would be 33 percent higher than existing conditions, as more trips would be made on transit due to increased congestion on the region's streets and freeways. The No Growth Scenario includes the same transportation investment and sustainability assumptions included in Scenario 1 but fewer measures when compared to Scenarios 2 through 6. The transit mode share would be the same as Scenario 2 (6.6 percent), and lower than all other scenarios. Conversely, the Drive Alone share is higher under the No Growth Scenario than under all six planning scenarios. This is partly because all the other scenarios (except Scenario 1) include sustainability assumptions to reduce single occupancy vehicle trips. Also, all the other scenarios include

TABLE 3 EXISTING AND 2030 NO GROWTH DAILY MOTOR VEHICLE MILES BY DIRECTIONAL ORIENTATION – CITY + SOI

	Existing^g		No Growth	
Total Palo Alto+SOI VMT^a	6,391,293	100.0%	6,477,788	100.0%
Internal-External ^b	2,828,732	44.3%	2,883,120	44.5%
External-Internal ^c	3,132,854	49.0%	3,186,869	49.2%
Internal-Internal ^d	429,707	6.7%	407,800	6.3%
Total Motor Vehicle Trips^a	499,013	100.0%	504,725	100.0%
Internal-External ^b	190,992	38.3%	197,633	39.2%
External-Internal ^c	200,982	40.3%	206,448	40.9%
Internal-Internal ^d	107,039	21.5%	100,644	19.9%
Total Average Trip Length [Miles]^e	12.81		12.83	
Internal-External	14.81		14.59	
External-Internal	15.59		15.44	
Internal-Internal	4.01		4.05	
Total Palo Alto+SOI Commercial VMT^f	258,293	100.0%	270,804	100.0%
Internal-External ^b	119,252	46.2%	125,436	46.3%
External-Internal ^c	135,372	52.4%	142,099	52.5%
Internal-Internal ^d	3,670	1.4%	3,269	1.2%
Total Commercial Motor Vehicle Trips^a	9,776	100.0%	10,275	100.0%
Internal-External ^b	4,464	45.7%	4,761	46.3%
External-Internal ^c	4,572	46.8%	4,862	47.3%
Internal-Internal ^d	739	7.6%	652	6.3%
Commercial Average Trip Length [Miles]^e	26.42		26.36	
Internal-External	26.71		26.34	
External-Internal	29.61		29.23	
Internal-Internal	4.96		5.02	

Note: Numbers may not add up to 100% due to rounding.

a. Trips with one trip end outside Palo Alto +SOI were counted as one trip, whereas trips with both ends in Palo Alto+SOI were counted as two trips.

b. "Internal-External" refers to VMT generated by motor vehicle trips that start in Palo Alto+SOI and end outside Palo Alto+SOI.

c. "External-Internal" refers to VMT generated by motor vehicle trips that start outside Palo Alto+SOI and end in Palo Alto+SOI.

d. "Internal-Internal" refers to VMT generated by motor vehicle trips that start and end in Palo Alto+SOI.

e. Average Trip Length is calculated by dividing the Total VMT by the Total Number of Motor Vehicle Trips.

f. Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto+SOI VMT" shown in the table.

g. Existing and 2030 daily motor vehicle miles were calculated by the travel demand forecasting model, which is the forecasting method that has the capability to calculate VMT.

Source: Hexagon Transportation Consultants, Inc., 2015. All data calculated by the Palo Alto travel demand forecasting model, for both 2013 and 2030 with assumptions for each planning scenario in accordance with each scenario's description (e.g., population, jobs, roadway network changes).

TABLE 4 EXISTING AND 2030 NO GROWTH DAILY MOTOR VEHICLE MILES BY DIRECTIONAL ORIENTATION – CITY ONLY

	Existing^g		No Growth	
Total Palo Alto+SOI VMT^a	5,320,931	100.0%	5,349,838	100.0%
Internal-External ^b	2,410,604	45.3%	2,441,769	45.6%
External-Internal ^c	2,600,249	48.9%	2,612,275	48.8%
Internal-Internal ^d	310,078	5.8%	295,793	5.5%
Total Motor Vehicle Trips^a	432,122	100.0%	436,018	100.0%
Internal-External ^b	171,108	39.6%	175,604	40.3%
External-Internal ^c	177,227	41.0%	180,501	41.4%
Internal-Internal ^d	83,786	19.4%	79,912	18.3%
Total Average Trip Length [Miles]^e	12.31		12.27	
Internal-External	14.09		13.90	
External-Internal	14.67		14.47	
Internal-Internal	3.70		3.70	
Total Palo Alto+SOI Commercial VMT^f	240,869	100.0%	253,343	100.0%
Internal-External ^b	111,444	46.3%	117,612	46.4%
External-Internal ^c	126,369	52.5%	132,991	52.5%
Internal-Internal ^d	3,056	1.3%	2,740	1.1%
Total Commercial Motor Vehicle Trips^a	9,182	100.0%	9,671	100.0%
Internal-External ^b	4,222	46.0%	4,508	46.6%
External-Internal ^c	4,327	47.1%	4,603	47.6%
Internal-Internal ^d	634	6.9%	561	5.8%
Commercial Average Trip Length [Miles]^e	26.23		26.20	
Internal-External	26.40		26.09	
External-Internal	29.21		28.90	
Internal-Internal	4.82		4.89	

Note: Numbers may not add up to 100% due to rounding.

a. Trips with one trip end outside Palo Alto +SOI were counted as one trip, whereas trips with both ends in Palo Alto+SOI were counted as two trips.

b. "Internal-External" refers to VMT generated by motor vehicle trips that start in Palo Alto+SOI and end outside Palo Alto+SOI.

c. "External-Internal" refers to VMT generated by motor vehicle trips that start outside Palo Alto+SOI and end in Palo Alto+SOI.

d. "Internal-Internal" refers to VMT generated by motor vehicle trips that start and end in Palo Alto+SOI.

e. Average Trip Length is calculated by dividing the Total VMT by the Total Number of Motor Vehicle Trips.

f. Commercial VMT (related to heavy trucks) is not included in "Total Palo Alto+SOI VMT" shown in the table.

g. Existing and 2030 daily motor vehicle miles were calculated by the travel demand forecasting model, which is the forecasting method that has the capability to calculate VMT.

Source: Hexagon Transportation Consultants, Inc., 2015. All data calculated by the Palo Alto travel demand forecasting model, for both 2013 and 2030 with assumptions for each planning scenario in accordance with each scenario's description (e.g., population, jobs, roadway network changes).

more housing, and reducing the job/housing imbalance results in some shorter trips that may be made by walking or biking. In summary, the No Growth Scenario would have a higher percentage of drive alone compared to Scenarios 1 through 6, only lower than existing conditions.

TRANS-3	Implementation of the project would cause a freeway segment or ramp to drop below its level of service standard, or deteriorate operations that already operate at a substandard level of service. (Significant and Unavoidable – All Six Scenarios)

Freeway segment impacts are shown in Table 5. Following the same methodology as was used for the other six scenarios, the freeway analysis examines the number of Palo Alto trips (trips going to and/or from Palo Alto) on a segment and compares that number to the segment's capacity in order to determine if there would be an impact. As listed below and shown in Table 5, the number of freeway segments impacted under the No Growth Scenario would be somewhat less than in the six scenarios evaluated as explained below.

The No Growth Scenario would avoid impacts at the following segments that were identified to operate at substandard levels of service under other scenarios:

- Southbound US 101, between Oregon Expressway and San Antonio Road, PM peak hour (all six scenarios)
- Southbound US 101, between San Antonio Road and Rengstorff Avenue, PM peak hour (Scenarios 2 through 5)
- Northbound I-280, between Sand Hill Road and Woodside Road (SR 84), PM peak hour (all six scenarios)

The No Growth Scenario would result in fewer freeway segment impacts because it would generate substantially fewer Palo Alto-related trips than the other six scenarios. However, this does not mean that there would be fewer vehicles on these freeway segments or that they would be less congested. As soon as the travel demand forecasting model removes a Palo Alto-related trip from the freeway, that trip is replaced with a non-Palo Alto-related trip, because travel demand on the freeways is projected to be so high in the year 2030. Said another way, levels of freeway congestion are projected to be so high in 2030 that some travelers will choose other modes to avoid the freeway. If some trips from Palo Alto were to be taken off the road, travelers who would otherwise take other modes would then be expected to "fill in" and use up any freeway capacity that Palo Alto-related drivers aren't using.

The No Growth Scenario would not avoid impacts at the following segments that were identified to operate at substandard levels of service under Scenarios 1 through 6:

- Northbound US 101, between Rengstorff Avenue and San Antonio Road, both AM and PM peak hours (all six scenarios)
- Northbound US 101, between San Antonio Road and Oregon Expressway, AM peak hour (all six scenarios)

TABLE 5 NO GROWTH SCENARIO FREEWAY SEGMENT EVALUATION

Freeway	Segment	Dir.	Total # of Lanes	Capacity (vph) ^a	1% of Capacity	Peak Hour	Existing LOS ^b	Increase in Palo Alto Volumes
US 101	Rengstorff Avenue to San Antonio Road	NB	4.5	9,700	97	AM	F	156
						PM	F	143
US 101	San Antonio Road to Oregon Expressway	NB	4.5	9,700	97	AM	F	213
						PM	E	254
US 101	Oregon Expressway to Embarcadero Road	NB	4.5	9,700	97	AM	D	32
						PM	D	186
US 101	Embarcadero Road to University Ave	NB	4.5	9,700	97	AM	F	-37
						PM	F	136
US 101	University Avenue to Willow Road	NB	4.5	9,700	97	AM	F	-102
						PM	F	-209
US 101	Willow Road to University Avenue	SB	4.5	9,700	97	AM	F	-444
						PM	F	-91
US 101	University Avenue to Embarcadero Road	SB	4.5	9,700	97	AM	F	-501
						PM	F	-149
US 101	Embarcadero Road to Oregon Expressway	SB	4.5	9,700	97	AM	E	-141
						PM	F	-284
US 101	Oregon Expressway to San Antonio Ave	SB	4.5	9,700	97	AM	E	2-4
						PM	F	59
US 101	San Antonio Avenue to Rengstorff Ave	SB	4.5	9,700	97	AM	D	171
						PM	F	33
I-280	El Monte to Page Mill Road	NB	4	9,200	92	AM	D	-376
						PM	C	68

TABLE 5 NO GROWTH SCENARIO FREEWAY SEGMENT EVALUATION

Freeway	Segment	Dir.	Total # of Lanes	Capacity (vph) ^a	1% of Capacity	Peak Hour	Existing LOS ^b	Increase in Palo Alto Volumes
I-280	Page Mill Road to Alpine Road	NB	4	9,200	92	AM	C	-34
						PM	D	-125
I-280	Alpine Road to Sand Hill Road	NB	4	9,200	92	AM	A	-67
						PM	F	-164
I-280	Sand Hill Road to Woodside Road (SR 84)	NB	4	9,200	92	AM	A	285
						PM	F	34
I-280	Woodside Road (SR 84) to Sand Hill Road	SB	4	9,200	92	AM	A	90
						PM	F	178
I-280	Sand Hill Road to Alpine Road	SB	4	9,200	92	AM	A	-104
						PM	F	-28
I-280	Alpine Road to Page Mill Road	SB	4	9,200	92	AM	D	-112
						PM	C	-190
I-280	Page Mill Road to El Monte Avenue	SB	4	9,200	92	AM	C	-33
						PM	F	-437

Notes: **Bold and shaded** indicates a significant impact. For segments already operating at LOS F, an impact occurs if the additional trips generated by a scenario are greater than 1% of the segment's capacity. For segments not already operating at LOS F, an impact occurs if the scenario would cause the LOS to drop to F. It was assumed that if the additional trips generated by a scenario were greater than 10% of capacity, the level of service would drop by one grade level. If additional trips were greater than 20% of capacity, the level of service would drop by two grade levels.

a. Capacity is based on the capacities cited in the VTA's Transportation Impact Guidelines, October 2014.

b. Sources for Existing LOS:

Santa Clara County LOS levels taken from the VTA CMP Monitoring Report, 2013.

San Mateo County LOS levels for US 101 taken from a recent TIA prepared for a proposed project.

San Mateo County LOS levels for I-280 taken from C/CAG 2013 Monitoring Report.

Source: Hexagon Transportation Consultants, Inc., 2016.

- Northbound US 101, between Embarcadero Road and University Avenue, PM peak hour (all six scenarios)
- Southbound I-280, between Woodside Road (SR 84) and Sand Hill Road, PM peak hour (all six scenarios)

Overall, the significant and unavoidable impact would remain because four freeway segments would operate at a substandard level of service even if no growth were to occur in Palo Alto.

TRANS-6	Implementation of the project would impede the operation of a transit system as a result of congestion. (Significant and Unavoidable – All Six Scenarios)

The No Growth Scenario would substantially impede the operation of the transit system if transportation investments or growth assumed during the life of the plan would result in substantial increased levels of congestion at intersections and roadway segments where bus and shuttle services operate.

Table 6 presents the average daily traffic (ADT) on roadway segments under the No Growth Scenario. Under the No Growth Scenario, the ADT on nearly all roadway segments would be higher in the year 2030 than under existing conditions. Specifically, No Growth Scenario ADT would be higher than existing ADT on 11 out of 13 segments, which indicates that the overall level of traffic in 2030 would increase due to previously approved development in Palo Alto and due to regional growth. The roadway LOS under the No Growth Scenario would be similar to the six scenarios evaluated and would not improve LOS at roadways that are deficient. Like the intersection impact analysis, this result indicates that the city's roadways will become more congested because Palo Alto is part of a region that is growing, regardless of whether the city approves more development or not.

Table 2 presents the intersection LOS for the No Growth Scenario. Under the No Growth Scenario, five of the 14 intersections analyzed in the February 2016 Draft EIR and one of the four intersections added as part of the Supplement to the Draft EIR would have a substandard level of service and would experience a significant impact.

Transit services that travel on those roadway segments and use those impacted intersections would be slowed down by the increased congestion. Thus, a significant impact would still occur under No Growth Scenario and this significant and unavoidable impact would not be avoided even if there is no growth in Palo Alto.

TABLE 6 ADT AND ROADWAY SEGMENT LEVEL OF SERVICE

#	Street	From	To	Jurisdiction	# of Lanes	Capacity	Existing Conditions		No Growth	
							Existing ADT	LOS	ADT	LOS
1	Sand Hill Rd	I-280	El Camino Real	City	4	38,200	29,035	D	35,473	E
2	El Camino Real ^a	Sand Hill Rd	Page Mill Rd	Caltrans	6	59,300	35,862	C	41,213	D
3	El Camino Real ^a	Page Mill Rd	San Antonio Rd	Caltrans	6	59,300	30,443	B	34,934	C
4	Page Mill Rd ^{a,c}	I-280	El Camino Real	County	4	39,888	34,204	E	35,860	E
5	Arastradero Rd	I-280	El Camino Real	City	4	38,200	15,144	A	20,183	B
6	Alma St	University Ave	San Antonio Rd	City	4	38,200	28,475	D	32,894	E
7	Middlefield Rd	University Ave	San Antonio Rd	City	2	17,300	12,492	D	12,492	D
8	University Ave ^b	El Camino Real	US 101	City	2	17,300	19,022	F	19,719	F
9	Embarcadero Rd	El Camino Real	US 101	City	4	38,200	24,859	C	31,429	D
10	Oregon Expwy ^a	El Camino Real	US 101	County	4	39,888	30,925	D	30,925	D
11	Charleston Rd	El Camino Real	San Antonio Rd	City	2	17,300	12,371	D	14,699	D
12	San Antonio Rd ^a	El Camino Real	US 101	City	4	38,200	35,885	E	37,436	E
13	Foothill Expwy/ Junipero Serra ^{a,d}	Sand Hill Rd	Arastradero Rd	County/City	4, 2	23,000	15,580	C	19,447	D

a. These roadway segments are part of the VTA CMP System Roadway Network.

b. Segment LOS **bolded and shaded** represents LOS below acceptable standards.

c. According to the "Page Mill Road Expressway Corridor Study Report," Santa Clara Roads and Airports Department, June 2015, the portion of Page Mill Road between I-280 and Porter Drive would be expanded from 4 to 6 lanes. However, the location where the ADT volume was counted (between Hansen Way and Ramos Way) would still have 4 lanes, so the capacity is based on four lanes under all scenarios.

d. The portion of this segment east of Page Mill Road is called Foothill Expressway, has four lanes, and is a County Expressway. The portion of this segment west of Page Mill Road is called Junipero Serra Boulevard, has two lanes, and is not a County Expressway. The location where the ADT volume was counted (on Junipero Serra Boulevard, between Stanford Avenue and Page Mill Road) has two lanes. The capacity has been estimated as 23,000 because of the longer green time for Junipero Serra Boulevard at signals.

Source: Hexagon Transportation Consultants, Inc., 2016.

A P P E N D I X I

S U P P L E M E N T A L N O I S E A P P E N D I X

ANALYST
NJF

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

73.6 75.55%
13.6 13.96%
10.22 10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Tr
Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to Evening (7 Night (10 PM to 7 AM)		
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

Palo Alto Comprehensive Plan
SCENARIO 5 CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTANCE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sand Hill Road	I-280 to El Camino Real	36,622	71.9	66	143	308
2	El Camino Real	Sand Hill Road to Page Mill Road	42,860	75.7	119	257	554
3	El Camino Real	Page Mill Road to San Antonio Road	36,850	75.0	108	232	501
4	Page Mill Road	I-280 to El Camino Real	38,836	72.1	69	149	321
5	Arastradero Road	I-280 to El Camino Real	20,053	65.5	25	54	117
6	Alma Street	University Avenue to San Antonio Road	34,160	71.1	60	128	277
7	Middlefield road	University Avenue to San Antonio Road	12,492	63.1	17	37	80
8	University Avenue	El Camino Real to Route 101	20,385	65.2	24	51	111
9	Embarcadero Road	El Camino Real to Route 101	32,241	67.6	34	74	160
10	Oregon Expressway	El Camino Real to Route 101	30,925	71.1	59	128	275
11	Charleston Road	El Camino Real to San Antonio Road	15,514	64.1	20	44	94
12	San Antonio Road	El Camino Real to Route 101	37,177	71.9	67	145	311
13	Foothill /Junipero Serra	Sand Hill Road to Arastradero Road	21,336	71.4	62	133	287
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Scenario: SCENARIO 5
Roadway: Sand Hill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: NJF
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	36,622
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2246	42	17	1660	31	13	416	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.5	-18.4	1.5	-15.8	-19.7	-4.6	-21.8	-25.8
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.1	62.4	67.3	59.8	61.1	61.3	53.8	55.0
VEHICULAR NOISE	DAY=	70.1	Leq	EVENING=	68.8	Leq	NIGHT=	62.8	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.2 CNEL= 71.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	60	130 280
		CNEL:	66	143 308

Scenario: **SCENARIO 5**
Roadway: **El Camino Real**
Segment: **Sand Hill Road to Page Mill Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	42,860
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2629	50	20	1943	37	15	487	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.5	-13.8	-17.7	2.1	-15.1	-19.1	-3.9	-21.1	-25.1
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.4	64.9	66.2	71.1	63.6	64.9	65.1	57.6	58.9
VEHICULAR NOISE	DAY=	73.9	Leq	EVENING=	72.6	Leq	NIGHT=	66.6	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 75.0
				CNEL= 75.7
NOISE CONTOUR:		70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	108	233
		CNEL:	119	257
			503	554

Scenario: **SCENARIO 5**
Roadway: **El Camino Real**
Segment: **Page Mill Road to San Antonio Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	36,850
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2260	43	17	1671	32	13	418	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.4	-18.4	1.5	-15.8	-19.7	-4.5	-21.8	-25.7
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.8	64.3	65.5	70.5	62.9	64.2	64.5	56.9	58.2
VEHICULAR NOISE	DAY=	73.3	Leq	EVENING=	72.0	Leq	NIGHT=	66.0	Leq

RESULTS									
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):					Ldn=	74.4	
							CNEL=	75.0	
NOISE CONTOUR:							70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):						Ldn:	98	211	455
						CNEL:	108	232	501

Scenario: **SCENARIO 5**
Roadway: **Page Mill Road**
Segment: **I-280 to El Camino Real**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	38,836
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2382	45	18	1761	33	13	441	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.0	-14.2	-18.2	1.7	-15.5	-19.5	-4.3	-21.5	-25.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.9	61.4	62.6	67.6	60.0	61.3	61.6	54.0	55.3
VEHICULAR NOISE	DAY=	70.4	Leq	EVENING=	69.1	Leq	NIGHT=	63.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.5 CNEL= 72.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	63 135 291	
		CNEL:	69 149 321	

Scenario: **SCENARIO 5**
Roadway: **Arastradero Road**
Segment: **I-280 to El Camino Real**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	20,053
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1230	23	9	909	17	7	228	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.6	-15.6	-19.6	0.3	-16.9	-20.9	-5.7	-22.9	-26.9
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.4	55.8	58.0	60.1	54.5	56.7	54.1	48.5	50.7
VEHICULAR NOISE	DAY=	63.8	Leq	EVENING=	62.5	Leq	NIGHT=	56.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.9 CNEL= 65.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	23	49 106
		CNEL:	25	54 117

Scenario: **SCENARIO 5**
Roadway: **Alma Street**
Segment: **University Avenue to San Antonio Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	34,160
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2095	40	16	1549	29	12	388	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.5	-14.8	-18.7	1.2	-16.1	-20.0	-4.9	-22.1	-26.1
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.7	66.6	59.1	60.4	60.6	53.1	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	117 251
		CNEL:	60	128 277

Scenario: **SCENARIO 5**
Roadway: **Middlefield road**
Segment: **University Avenue to San Antonio Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	12,492
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	766	14	6	566	11	4	142	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	-0.4	-17.7	-21.6	-1.8	-19.0	-22.9	-7.8	-25.0	-29.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.9	53.3	55.5	57.6	52.0	54.2	51.6	46.0	48.2
VEHICULAR NOISE	DAY=	61.3	Leq	EVENING=	60.0	Leq	NIGHT=	54.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 62.4 CNEL= 63.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	16	34 73
		CNEL:	17	37 80

Scenario: **SCENARIO 5**
Roadway: **University Avenue**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	20,385
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1250	24	9	924	17	7	231	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.7	-15.6	-19.5	0.4	-16.9	-20.8	-5.6	-22.9	-26.8
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.1	55.5	57.7	59.8	54.2	56.4	53.7	48.2	50.3
VEHICULAR NOISE	DAY=	63.5	Leq	EVENING=	62.1	Leq	NIGHT=	56.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.6 CNEL= 65.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	22	47 101
		CNEL:	24	51 111

Scenario: **SCENARIO 5**
Roadway: **Embarcadero Road**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	32,241
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1977	37	15	1462	28	11	366	7	3
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	3.7	-13.6	-17.5	2.4	-14.9	-18.8	-3.6	-20.9	-24.8
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.5	57.9	60.1	62.2	56.6	58.8	56.1	50.5	52.7
VEHICULAR NOISE	DAY=	65.9	Leq	EVENING=	64.5	Leq	NIGHT=	58.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 66.9 CNEL= 67.6
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	31	67 145
		CNEL:	34	74 160

Scenario: **SCENARIO 5**
Roadway: **Oregon Expressway**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **NJF**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	30,925
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1897	36	14	1402	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	116 250
		CNEL:	59	128 275

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Charleston Road** Analyst: **NJF**
 Segment: **El Camino Real to San Antonio Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	15,514
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	24
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	952	18	7	703	13	5	176	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	0.5	-16.7	-20.7	-0.8	-18.1	-22.0	-6.8	-24.1	-28.0
Distance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.0	54.4	56.6	58.7	53.1	55.3	52.7	47.1	49.3
VEHICULAR NOISE	DAY=	62.4	Leq	EVENING=	61.1	Leq	NIGHT=	55.1	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	63.5
			CNEL=	64.1
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	18
			CNEL:	20
			60 dBA	86
				44
				94

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5**
 Roadway: **San Antonio Road**
 Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
 Analyst: **NJF**
 Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	37,177
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2280	43	17	1685	32	13	422	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.4	-18.4	1.5	-15.7	-19.7	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.4	67.4	59.9	61.1	61.4	53.8	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 71.3 CNEL= 71.9
NOISE CONTOUR:	70 dBA	65 dBA	60 dBA	
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	Ldn: 61	131	283	
	CNEL: 67	145	311	

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Foothill /Junipero Serra** Analyst: **NJF**
 Segment: **Sand Hill Road to Arastradero Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	21,336
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1309	25	10	967	18	7	242	5	2
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-0.7	-17.9	-21.9	-2.0	-19.2	-23.2	-8.0	-25.2	-29.2
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	59.7	60.2	67.3	58.3	58.9	61.3	52.3	52.9
VEHICULAR NOISE	DAY=	69.7	Leq	EVENING=	68.3	Leq	NIGHT=	62.3	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 70.8 CNEL= 71.4
NOISE CONTOUR:		70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	Ldn:	56	121	261
	CNEL:	62	133	287

ANALYST
CTS

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

73.6

75.55%

13.6

13.96%

10.22

10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traffic
Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to Evening (7 Night (10 PM to 7 AM)		
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

Palo Alto Comprehensive Plan
SCENARIO 5M CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTANCE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sand Hill Road	I-280 to El Camino Real	36,619	71.9	66	143	308
2	El Camino Real	Sand Hill Road to Page Mill Road	42,463	75.6	119	255	550
3	El Camino Real	Page Mill Road to San Antonio Road	36,595	75.0	107	231	498
4	Page Mill Road	I-280 to El Camino Real	38,251	72.0	68	147	317
5	Arastradero Road	I-280 to El Camino Real	20,016	65.5	25	54	116
6	Alma Street	University Avenue to San Antonio Road	33,875	71.1	59	128	275
7	Middlefield road	University Avenue to San Antonio Road	12,492	63.1	17	37	80
8	University Avenue	El Camino Real to Route 101	19,849	65.1	23	50	109
9	Embarcadero Road	El Camino Real to Route 101	30,476	67.3	33	71	154
10	Oregon Expressway	El Camino Real to Route 101	30,922	71.1	59	128	275
11	Charleston Road	El Camino Real to San Antonio Road	15,501	64.1	20	44	94
12	San Antonio Road	El Camino Real to Route 101	37,181	71.9	67	145	311
13	Foothill /Junipero Serra	Sand Hill Road to Arastradero Road	21,077	71.3	61	132	285
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Scenario: SCENARIO 5M
Roadway: Sand Hill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	36,619
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2246	42	17	1660	31	13	416	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.5	-18.4	1.5	-15.8	-19.7	-4.6	-21.8	-25.8
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.1	62.4	67.3	59.8	61.1	61.3	53.8	55.0
VEHICULAR NOISE	DAY=	70.1	Leq	EVENING=	68.8	Leq	NIGHT=	62.8	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.2 CNEL= 71.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	60	130 280
		CNEL:	66	143 308

Scenario: SCENARIO 5M
 Roadway: El Camino Real
 Segment: Sand Hill Road to Page Mill Road

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	42,463
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2604	49	20	1925	36	15	482	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.4	-13.8	-17.8	2.1	-15.1	-19.1	-3.9	-21.2	-25.1
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.4	64.9	66.1	71.1	63.6	64.8	65.1	57.6	58.8
VEHICULAR NOISE	DAY=	73.9	Leq	EVENING=	72.6	Leq	NIGHT=	66.6	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 75.0 CNEL= 75.6
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	108	232 500
		CNEL:	119	255 550

Scenario: SCENARIO 5M
 Roadway: El Camino Real
 Segment: Page Mill Road to San Antonio Road

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	36,595
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2244	42	17	1659	31	13	416	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.5	-18.4	1.5	-15.8	-19.7	-4.6	-21.8	-25.8
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.8	64.2	65.5	70.4	62.9	64.2	64.4	56.9	58.2
VEHICULAR NOISE	DAY=	73.3	Leq	EVENING=	71.9	Leq	NIGHT=	65.9	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 74.4 CNEL= 75.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	98	210 453
		CNEL:	107	231 498

Scenario: SCENARIO 5M
Roadway: Page Mill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	38,251
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2346	44	18	1734	33	13	434	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.0	-14.3	-18.2	1.6	-15.6	-19.6	-4.4	-21.6	-25.6
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.8	61.3	62.6	67.5	60.0	61.2	61.5	54.0	55.2
VEHICULAR NOISE	DAY=	70.3	Leq	EVENING=	69.0	Leq	NIGHT=	63.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.4 CNEL= 72.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	62	134 288
		CNEL:	68	147 317

Scenario: **SCENARIO 5M**
Roadway: **Arastradero Road**
Segment: **I-280 to El Camino Real**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	20,016
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1228	23	9	907	17	7	227	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.6	-15.6	-19.6	0.3	-16.9	-20.9	-5.7	-23.0	-26.9
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.4	55.8	58.0	60.1	54.5	56.7	54.1	48.5	50.7
VEHICULAR NOISE	DAY=	63.8	Leq	EVENING=	62.5	Leq	NIGHT=	56.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.9 CNEL= 65.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	23	49 106
		CNEL:	25	54 116

Scenario: SCENARIO 5M
 Roadway: Alma Street
 Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	33,875
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2078	39	16	1536	29	12	385	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.4	-14.8	-18.8	1.1	-16.1	-20.1	-4.9	-22.1	-26.1
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	116 250
		CNEL:	59	128 275

Scenario: SCENARIO 5M
Roadway: Middlefield road
Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	12,492
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	766	14	6	566	11	4	142	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	-0.4	-17.7	-21.6	-1.8	-19.0	-22.9	-7.8	-25.0	-29.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.9	53.3	55.5	57.6	52.0	54.2	51.6	46.0	48.2
VEHICULAR NOISE	DAY=	61.3	Leq	EVENING=	60.0	Leq	NIGHT=	54.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 62.4 CNEL= 63.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	16	34 73
		CNEL:	17	37 80

Scenario: SCENARIO 5M
 Roadway: University Avenue
 Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	19,849
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1217	23	9	900	17	7	225	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.6	-15.7	-19.6	0.3	-17.0	-20.9	-5.8	-23.0	-26.9
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.0	55.4	57.6	59.6	54.0	56.2	53.6	48.0	50.2
VEHICULAR NOISE	DAY=	63.3	Leq	EVENING=	62.0	Leq	NIGHT=	56.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.4 CNEL= 65.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	21	46 99
		CNEL:	23	50 109

Scenario: SCENARIO 5M
Roadway: Embarcadero Road
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	30,476
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1869	35	14	1382	26	10	346	7	3
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	3.4	-13.8	-17.8	2.1	-15.1	-19.1	-3.9	-21.1	-25.1
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.2	57.6	59.8	61.9	56.3	58.5	55.9	50.3	52.5
VEHICULAR NOISE	DAY=	65.6	Leq	EVENING=	64.3	Leq	NIGHT=	58.3	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 66.7 CNEL= 67.3
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	30	65 140
		CNEL:	33	71 154

Scenario: SCENARIO 5M
Roadway: Oregon Expressway
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	30,922
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1897	36	14	1402	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	116 250
		CNEL:	59	128 275

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5M** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Charleston Road** Analyst: **CTS**
 Segment: **El Camino Real to San Antonio Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	15,501
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	24
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	951	18	7	703	13	5	176	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	0.5	-16.7	-20.7	-0.8	-18.1	-22.0	-6.8	-24.1	-28.0
Distance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.0	54.4	56.6	58.7	53.1	55.3	52.7	47.1	49.3
VEHICULAR NOISE	DAY=	62.4	Leq	EVENING=	61.1	Leq	NIGHT=	55.1	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 63.5 CNEL= 64.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):				Ldn: 18 40 86 CNEL: 20 44 94

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5M**
 Roadway: **San Antonio Road**
 Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
 Analyst: **CTS**
 Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	37,181
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2280	43	17	1686	32	13	422	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.4	-18.4	1.5	-15.7	-19.7	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.4	67.4	59.9	61.1	61.4	53.8	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	71.3
			CNEL=	71.9
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	61
			CNEL:	67
			131	283
			145	311

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 5M** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Foothill /Junipero Serra** Analyst: **CTS**
 Segment: **Sand Hill Road to Arastradero Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	21,077
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1293	24	10	955	18	7	239	5	2
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-0.7	-18.0	-21.9	-2.0	-19.3	-23.2	-8.0	-25.3	-29.2
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	59.6	60.2	67.3	58.3	58.9	61.2	52.3	52.8
VEHICULAR NOISE	DAY=	69.6	Leq	EVENING=	68.3	Leq	NIGHT=	62.3	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	70.7
			CNEL=	71.3
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	56
			CNEL:	61
			120	259
			132	285

ANALYST
CTS

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

73.6 75.55%
13.6 13.96%
10.22 10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traffic
Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to Evening (7 Night (10 PM to 7 AM)		
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

Palo Alto Comprehensive Plan
SCENARIO 6 CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTANCE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sand Hill Road	I-280 to El Camino Real	36,698	71.9	67	143	309
2	El Camino Real	Sand Hill Road to Page Mill Road	41,624	75.5	117	252	543
3	El Camino Real	Page Mill Road to San Antonio Road	33,315	74.6	101	217	468
4	Page Mill Road	I-280 to El Camino Real	40,382	72.3	71	153	329
5	Arastradero Road	I-280 to El Camino Real	19,607	65.4	25	53	115
6	Alma Street	University Avenue to San Antonio Road	34,215	71.2	60	129	277
7	Middlefield road	University Avenue to San Antonio Road	13,071	63.2	18	38	82
8	University Avenue	El Camino Real to Route 101	20,618	65.2	24	52	112
9	Embarcadero Road	El Camino Real to Route 101	32,214	67.6	34	74	160
10	Oregon Expressway	El Camino Real to Route 101	30,925	71.1	59	128	275
11	Charleston Road	El Camino Real to San Antonio Road	16,690	64.5	21	46	99
12	San Antonio Road	El Camino Real to Route 101	37,419	71.9	67	145	313
13	Foothill /Junipero Serra	Sand Hill Road to Arastradero Road	20,971	71.3	61	132	284
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Scenario: SCENARIO 6
Roadway: Sand Hill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	36,698
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2251	43	17	1664	31	13	417	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.5	-18.4	1.5	-15.8	-19.7	-4.5	-21.8	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.1	62.4	67.3	59.8	61.1	61.3	53.8	55.1
VEHICULAR NOISE	DAY=	70.1	Leq	EVENING=	68.8	Leq	NIGHT=	62.8	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.2 CNEL= 71.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	60	130 280
		CNEL:	67	143 309

Scenario: **SCENARIO 6**
Roadway: **El Camino Real**
Segment: **Sand Hill Road to Page Mill Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	41,624
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2553	48	19	1887	36	14	473	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.3	-13.9	-17.9	2.0	-15.2	-19.2	-4.0	-21.2	-25.2
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.3	64.8	66.1	71.0	63.5	64.7	65.0	57.5	58.7
VEHICULAR NOISE	DAY=	73.8	Leq	EVENING=	72.5	Leq	NIGHT=	66.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 74.9 CNEL= 75.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	106	229 493
		CNEL:	117	252 543

Scenario: **SCENARIO 6**
Roadway: **El Camino Real**
Segment: **Page Mill Road to San Antonio Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	33,315
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2043	39	16	1510	29	11	378	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.4	-14.9	-18.8	1.0	-16.2	-20.2	-5.0	-22.2	-26.2
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.3	63.8	65.1	70.0	62.5	63.8	64.0	56.5	57.8
VEHICULAR NOISE	DAY=	72.8	Leq	EVENING=	71.5	Leq	NIGHT=	65.5	Leq

RESULTS									
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):					Ldn=	73.9	
							CNEL=	74.6	
NOISE CONTOUR:							70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):						Ldn:	92	197	425
						CNEL:	101	217	468

Scenario: **SCENARIO 6**
Roadway: **Page Mill Road**
Segment: **I-280 to El Camino Real**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	40,382
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2477	47	19	1831	35	14	459	9	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.2	-14.0	-18.0	1.9	-15.4	-19.3	-4.1	-21.4	-25.3
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.1	61.5	62.8	67.7	60.2	61.5	61.7	54.2	55.5
VEHICULAR NOISE	DAY=	70.6	Leq	EVENING=	69.2	Leq	NIGHT=	63.2	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.6 CNEL= 72.3
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	64	139 299
		CNEL:	71	153 329

Scenario: **SCENARIO 6**
Roadway: **Arastradero Road**
Segment: **I-280 to El Camino Real**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	19,607
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1203	23	9	889	17	7	223	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.5	-15.7	-19.7	0.2	-17.0	-21.0	-5.8	-23.0	-27.0
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.3	55.7	57.9	60.0	54.4	56.6	54.0	48.4	50.6
VEHICULAR NOISE	DAY=	63.7	Leq	EVENING=	62.4	Leq	NIGHT=	56.4	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.8 CNEL= 65.4
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	22	48 104
		CNEL:	25	53 115

Scenario: **SCENARIO 6**
Roadway: **Alma Street**
Segment: **University Avenue to San Antonio Road**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	34,215
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2099	40	16	1551	29	12	389	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.5	-14.8	-18.7	1.2	-16.1	-20.0	-4.9	-22.1	-26.0
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.7	66.6	59.1	60.4	60.6	53.1	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	117 252
		CNEL:	60	129 277

Scenario: SCENARIO 6
Roadway: Middlefield road
Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	13,071
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	802	15	6	593	11	5	148	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	-0.2	-17.5	-21.4	-1.6	-18.8	-22.8	-7.6	-24.8	-28.8
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.1	53.5	55.7	57.8	52.2	54.4	51.8	46.2	48.4
VEHICULAR NOISE	DAY=	61.5	Leq	EVENING=	60.2	Leq	NIGHT=	54.2	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 62.6 CNEL= 63.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	16	35 75
		CNEL:	18	38 82

Scenario: SCENARIO 6
 Roadway: University Avenue
 Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	20,618
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1265	24	10	935	18	7	234	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.7	-15.5	-19.5	0.4	-16.8	-20.8	-5.6	-22.8	-26.8
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.1	55.5	57.7	59.8	54.2	56.4	53.8	48.2	50.4
VEHICULAR NOISE	DAY=	63.5	Leq	EVENING=	62.2	Leq	NIGHT=	56.2	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.6 CNEL= 65.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	22	47 101
		CNEL:	24	52 112

Scenario: **SCENARIO 6**
Roadway: **Embarcadero Road**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	32,214
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1976	37	15	1460	28	11	366	7	3
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	3.7	-13.6	-17.5	2.4	-14.9	-18.8	-3.7	-20.9	-24.8
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.5	57.9	60.1	62.1	56.6	58.8	56.1	50.5	52.7
VEHICULAR NOISE	DAY=	65.8	Leq	EVENING=	64.5	Leq	NIGHT=	58.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 66.9 CNEL= 67.6
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	31	67 145
		CNEL:	34	74 160

Scenario: **SCENARIO 6**
Roadway: **Oregon Expressway**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	30,925
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1897	36	14	1402	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54 116 250	
		CNEL:	59 128 275	

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Charleston Road** Analyst: **CTS**
 Segment: **El Camino Real to San Antonio Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	16,690
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	24
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1024	19	8	757	14	6	190	4	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	0.8	-16.4	-20.4	-0.5	-17.7	-21.7	-6.5	-23.7	-27.7
Distance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.3	54.8	57.0	59.0	53.4	55.6	53.0	47.4	49.6
VEHICULAR NOISE	DAY=	62.7	Leq	EVENING=	61.4	Leq	NIGHT=	55.4	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	63.8
			CNEL=	64.5
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	19
			CNEL:	21
			60 dBA	90
				99

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6**
 Roadway: **San Antonio Road**
 Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
 Analyst: **CTS**
 Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	37,419
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2295	43	17	1696	32	13	425	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.9	-14.4	-18.3	1.5	-15.7	-19.6	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.5	67.4	59.9	61.1	61.4	53.9	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 71.3 CNEL= 71.9
NOISE CONTOUR:		70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	Ldn:	61	132	284
	CNEL:	67	145	313

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Foothill /Junipero Serra** Analyst: **CTS**
 Segment: **Sand Hill Road to Arastradero Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	20,971
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1286	24	10	951	18	7	238	4	2
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-0.7	-18.0	-21.9	-2.1	-19.3	-23.3	-8.1	-25.3	-29.3
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.5	59.6	60.1	67.2	58.3	58.8	61.2	52.3	52.8
VEHICULAR NOISE	DAY=	69.6	Leq	EVENING=	68.3	Leq	NIGHT=	62.3	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	70.7
			CNEL=	71.3
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	56
			CNEL:	61
			120	258
			132	284

ANALYST
CTS

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

73.6 75.55%
13.6 13.96%
10.22 10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traffic
Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to Evening (7 Night (10 PM to 7 AM)		
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

Palo Alto Comprehensive Plan
SCENARIO 6M CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTANCE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sand Hill Road	I-280 to El Camino Real	36,642	71.9	66	143	308
2	El Camino Real	Sand Hill Road to Page Mill Road	40,965	75.5	116	249	537
3	El Camino Real	Page Mill Road to San Antonio Road	32,753	74.5	100	215	463
4	Page Mill Road	I-280 to El Camino Real	39,730	72.2	70	151	326
5	Arastradero Road	I-280 to El Camino Real	19,339	65.4	25	53	114
6	Alma Street	University Avenue to San Antonio Road	34,207	71.2	60	129	277
7	Middlefield road	University Avenue to San Antonio Road	12,492	63.1	17	37	80
8	University Avenue	El Camino Real to Route 101	19,654	65.0	23	50	108
9	Embarcadero Road	El Camino Real to Route 101	31,732	67.5	34	73	158
10	Oregon Expressway	El Camino Real to Route 101	30,922	71.1	59	128	275
11	Charleston Road	El Camino Real to San Antonio Road	16,690	64.5	21	46	99
12	San Antonio Road	El Camino Real to Route 101	37,411	71.9	67	145	313
13	Foothill /Junipero Serra	Sand Hill Road to Arastradero Road	20,959	71.3	61	132	284
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Scenario: SCENARIO 6M
Roadway: Sand Hill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	36,642
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2247	42	17	1661	31	13	416	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.8	-14.5	-18.4	1.5	-15.8	-19.7	-4.6	-21.8	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.1	62.4	67.3	59.8	61.1	61.3	53.8	55.0
VEHICULAR NOISE	DAY=	70.1	Leq	EVENING=	68.8	Leq	NIGHT=	62.8	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.2 CNEL= 71.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	60	130 280
		CNEL:	66	143 308

Scenario: SCENARIO 6M
Roadway: El Camino Real
Segment: Sand Hill Road to Page Mill Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	40,965
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2513	47	19	1857	35	14	465	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.3	-14.0	-17.9	1.9	-15.3	-19.3	-4.1	-21.3	-25.3
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.2	64.7	66.0	70.9	63.4	64.7	64.9	57.4	58.7
VEHICULAR NOISE	DAY=	73.7	Leq	EVENING=	72.4	Leq	NIGHT=	66.4	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 74.8 CNEL= 75.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	105	226 488
		CNEL:	116	249 537

Scenario: SCENARIO 6M
 Roadway: El Camino Real
 Segment: Page Mill Road to San Antonio Road

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	32,753
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2009	38	15	1485	28	11	372	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.3	-15.0	-18.9	1.0	-16.3	-20.2	-5.0	-22.3	-26.2
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.3	63.8	65.0	70.0	62.4	63.7	63.9	56.4	57.7
VEHICULAR NOISE	DAY=	72.8	Leq	EVENING=	71.5	Leq	NIGHT=	65.4	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 73.9 CNEL= 74.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	91	195 420
		CNEL:	100	215 463

Scenario: SCENARIO 6M
Roadway: Page Mill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	39,730
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2437	46	19	1801	34	14	451	9	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.1	-14.1	-18.1	1.8	-15.4	-19.4	-4.2	-21.4	-25.4
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.0	61.5	62.7	67.7	60.1	61.4	61.7	54.1	55.4
VEHICULAR NOISE	DAY=	70.5	Leq	EVENING=	69.2	Leq	NIGHT=	63.2	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.6 CNEL= 72.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	64	137 296
		CNEL:	70	151 326

Scenario: SCENARIO 6M
 Roadway: Arastradero Road
 Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	19,339
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1186	22	9	877	17	7	220	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.5	-15.8	-19.7	0.1	-17.1	-21.1	-5.9	-23.1	-27.1
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.2	55.7	57.8	59.9	54.3	56.5	53.9	48.3	50.5
VEHICULAR NOISE	DAY=	63.6	Leq	EVENING=	62.3	Leq	NIGHT=	56.3	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.7 CNEL= 65.4
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	22	48 103
		CNEL:	25	53 114

Scenario: SCENARIO 6M
 Roadway: Alma Street
 Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	34,207
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2098	40	16	1551	29	12	388	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.5	-14.8	-18.7	1.2	-16.1	-20.0	-4.9	-22.1	-26.0
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.7	66.6	59.1	60.4	60.6	53.1	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.2
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	117 252
		CNEL:	60	129 277

Scenario: SCENARIO 6M
Roadway: Middlefield road
Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	12,492
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	766	14	6	566	11	4	142	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	-0.4	-17.7	-21.6	-1.8	-19.0	-22.9	-7.8	-25.0	-29.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.9	53.3	55.5	57.6	52.0	54.2	51.6	46.0	48.2
VEHICULAR NOISE	DAY=	61.3	Leq	EVENING=	60.0	Leq	NIGHT=	54.0	Leq

RESULTS									
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):					Ldn=	62.4	
							CNEL=	63.1	
NOISE CONTOUR:							70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):						Ldn:	16	34	73
						CNEL:	17	37	80

Scenario: SCENARIO 6M
Roadway: University Avenue
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	19,654
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1205	23	9	891	17	7	223	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.5	-15.7	-19.7	0.2	-17.0	-21.0	-5.8	-23.0	-27.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.9	55.3	57.5	59.6	54.0	56.2	53.6	48.0	50.2
VEHICULAR NOISE	DAY=	63.3	Leq	EVENING=	62.0	Leq	NIGHT=	56.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.4 CNEL= 65.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	21	46 98
		CNEL:	23	50 108

Scenario: **SCENARIO 6M**
Roadway: **Embarcadero Road**
Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
Analyst: **CTS**
Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	31,732
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1946	37	15	1439	27	11	360	7	3
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	3.6	-13.6	-17.6	2.3	-14.9	-18.9	-3.7	-21.0	-24.9
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.4	57.8	60.0	62.1	56.5	58.7	56.1	50.5	52.7
VEHICULAR NOISE	DAY=	65.8	Leq	EVENING=	64.5	Leq	NIGHT=	58.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 66.9 CNEL= 67.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	31	67 144
		CNEL:	34	73 158

Scenario: SCENARIO 6M
Roadway: Oregon Expressway
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	30,922
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1897	36	14	1402	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54	116 250
		CNEL:	59	128 275

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6M** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Charleston Road** Analyst: **CTS**
 Segment: **El Camino Real to San Antonio Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	16,690
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	24
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1024	19	8	757	14	6	190	4	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	0.8	-16.4	-20.4	-0.5	-17.7	-21.7	-6.5	-23.7	-27.7
Distance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.3	54.8	57.0	59.0	53.4	55.6	53.0	47.4	49.6
VEHICULAR NOISE	DAY=	62.7	Leq	EVENING=	61.4	Leq	NIGHT=	55.4	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):			Ldn=	63.8
			CNEL=	64.5
NOISE CONTOUR:			70 dBA	65 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):			Ldn:	19
			CNEL:	21
			60 dBA	90
				99

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6M**
 Roadway: **San Antonio Road**
 Segment: **El Camino Real to Route 101**

Project: **Palo Alto Comprehensive Plan**
 Analyst: **CTS**
 Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	37,411
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2295	43	17	1696	32	13	425	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.9	-14.4	-18.3	1.5	-15.7	-19.6	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.5	67.4	59.9	61.1	61.4	53.9	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 71.3
				CNEL= 71.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):				Ldn: 61 132 284
				CNEL: 67 145 313

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: **SCENARIO 6M** Project: **Palo Alto Comprehensive Plan**
 Roadway: **Foothill /Junipero Serra** Analyst: **CTS**
 Segment: **Sand Hill Road to Arastradero Road** Date: **29-Nov-16**

ROADWAY INPUTS	
ADT	20,959
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1285	24	10	950	18	7	238	4	2
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-0.7	-18.0	-21.9	-2.1	-19.3	-23.3	-8.1	-25.3	-29.3
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.5	59.6	60.1	67.2	58.3	58.8	61.2	52.3	52.8
VEHICULAR NOISE	DAY=	69.6	Leq	EVENING=	68.3	Leq	NIGHT=	62.3	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 70.7 CNEL= 71.3
NOISE CONTOUR:		70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	Ldn:	55	120	258
	CNEL:	61	132	284

ANALYST
CTS

ROAD CLASSIFICATION	SPEED	LANE DISTANCE
2U	40	12
4U	40	36
4D	45	48
6D	45	84
2D	40	24

73.6 75.55%
13.6 13.96%
10.22 10.49%

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.42%	DAY	75.5%
% MT	1.84%	EVENING	14.0%
% HT	0.74%	NIGHT	10.5%

Source: Riverside, County of, Department of Public Health, Office of Industrial Hygiene. 2009, November. For Determining and Mitigating Traffic
Riverside County Fleet Mix: Secondary, Collectors, or Smaller

Vehicle	Overall %	Day (7 AM to Evening (7 Night (10 PM to 7 AM)		
Auto	97%	73.60	13.60	10.22
Medium Truck	2%	0.90	0.04	0.90
Heavy Truck	1%	0.35	0.04	0.35
		74.85	13.68	11.47

Palo Alto Comprehensive Plan
No Growth CONDITIONS NOISE CONTOURS RESULT SUMMARY TABLE

					DISTANCE TO NOISE CONTOUR (FT.)		
#	ROADWAY	SEGMENT	TRAFFIC VOLUMES	LEVEL AT 50 FT.	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
1	Sand Hill Road	I-280 to El Camino Real	35,473	71.7	65	140	302
2	El Camino Real	Sand Hill Road to Page Mill Road	41,213	75.5	116	250	539
3	El Camino Real	Page Mill Road to San Antonio Road	34,934	74.8	104	224	483
4	Page Mill Road	I-280 to El Camino Real	35,860	71.8	66	141	304
5	Arastradero Road	I-280 to El Camino Real	20,183	65.5	25	54	117
6	Alma Street	University Avenue to San Antonio Road	32,894	71.0	58	125	270
7	Middlefield road	University Avenue to San Antonio Road	12,492	63.1	17	37	80
8	University Avenue	El Camino Real to Route 101	19,719	65.0	23	50	108
9	Embarcadero Road	El Camino Real to Route 101	31,429	67.5	34	73	157
10	Oregon Expressway	El Camino Real to Route 101	30,925	71.1	59	128	275
11	Charleston Road	El Camino Real to San Antonio Road	14,699	63.9	20	42	91
12	San Antonio Road	El Camino Real to Route 101	37,436	71.9	67	145	313
13	Foothill /Junipero Serra	Sand Hill Road to Arastradero Road	19,447	71.0	58	125	270
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

Scenario: No Growth
Roadway: Sand Hill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	35,473
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2176	41	17	1608	30	12	403	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.6	-14.6	-18.6	1.3	-15.9	-19.9	-4.7	-21.9	-25.9
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.5	61.0	62.2	67.2	59.7	60.9	61.2	53.6	54.9
VEHICULAR NOISE	DAY=	70.0	Leq	EVENING=	68.7	Leq	NIGHT=	62.7	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.1 CNEL= 71.7
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	59	127 274
		CNEL:	65	140 302

Scenario: No Growth
Roadway: El Camino Real
Segment: Sand Hill Road to Page Mill Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	41,213
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2528	48	19	1868	35	14	468	9	4
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	3.3	-14.0	-17.9	2.0	-15.3	-19.2	-4.0	-21.3	-25.2
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.3	64.7	66.0	71.0	63.4	64.7	64.9	57.4	58.7
VEHICULAR NOISE	DAY=	73.8	Leq	EVENING=	72.5	Leq	NIGHT=	66.4	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 74.9 CNEL= 75.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	106	227 490
		CNEL:	116	250 539

Scenario: No Growth
Roadway: El Camino Real
Segment: Page Mill Road to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	34,934
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	84
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2143	40	16	1584	30	12	397	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.6	-14.7	-18.6	1.3	-16.0	-19.9	-4.8	-22.0	-26.0
Distance	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.6	64.0	65.3	70.2	62.7	64.0	64.2	56.7	58.0
VEHICULAR NOISE	DAY=	73.1	Leq	EVENING=	71.7	Leq	NIGHT=	65.7	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 74.1 CNEL= 74.8
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	95	204 439
		CNEL:	104	224 483

Scenario: No Growth
Roadway: Page Mill Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	35,860
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2199	42	17	1626	31	12	407	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.7	-14.6	-18.5	1.4	-15.9	-19.8	-4.6	-21.9	-25.8
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.5	61.0	62.3	67.2	59.7	61.0	61.2	53.7	55.0
VEHICULAR NOISE	DAY=	70.0	Leq	EVENING=	68.7	Leq	NIGHT=	62.7	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 71.1 CNEL= 71.8
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	59	128 276
		CNEL:	66	141 304

Scenario: No Growth
Roadway: Arastradero Road
Segment: I-280 to El Camino Real

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	20,183
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1238	23	9	915	17	7	229	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.6	-15.6	-19.6	0.3	-16.9	-20.9	-5.7	-22.9	-26.9
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.4	55.8	58.0	60.1	54.5	56.7	54.1	48.5	50.7
VEHICULAR NOISE	DAY=	63.8	Leq	EVENING=	62.5	Leq	NIGHT=	56.5	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.9 CNEL= 65.5
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	23	49 106
		CNEL:	25	54 117

Scenario: No Growth
Roadway: Alma Street
Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	32,894
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2017	38	15	1491	28	11	374	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.3	-14.9	-18.9	1.0	-16.2	-20.2	-5.0	-22.3	-26.2
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.8	60.2	61.5	66.4	58.9	60.2	60.4	52.9	54.2
VEHICULAR NOISE	DAY=	69.3	Leq	EVENING=	67.9	Leq	NIGHT=	61.9	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.4 CNEL= 71.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	53	114 245
		CNEL:	58	125 270

Scenario: No Growth
Roadway: Middlefield road
Segment: University Avenue to San Antonio Road

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	12,492
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	766	14	6	566	11	4	142	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	-0.4	-17.7	-21.6	-1.8	-19.0	-22.9	-7.8	-25.0	-29.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.9	53.3	55.5	57.6	52.0	54.2	51.6	46.0	48.2
VEHICULAR NOISE	DAY=	61.3	Leq	EVENING=	60.0	Leq	NIGHT=	54.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 62.4 CNEL= 63.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	16	34
		CNEL:	17	37

Scenario: No Growth
 Roadway: University Avenue
 Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	19,719
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1209	23	9	894	17	7	224	4	2
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	1.5	-15.7	-19.7	0.2	-17.0	-21.0	-5.8	-23.0	-27.0
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.9	55.3	57.5	59.6	54.0	56.2	53.6	48.0	50.2
VEHICULAR NOISE	DAY=	63.3	Leq	EVENING=	62.0	Leq	NIGHT=	56.0	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 64.4 CNEL= 65.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	21	46 98
		CNEL:	23	50 108

Scenario: No Growth
Roadway: Embarcadero Road
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	31,429
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	36
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1928	36	15	1425	27	11	357	7	3
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	3.6	-13.7	-17.6	2.3	-15.0	-18.9	-3.8	-21.0	-25.0
Distance	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.4	57.8	60.0	62.0	56.4	58.6	56.0	50.4	52.6
VEHICULAR NOISE	DAY=	65.7	Leq	EVENING=	64.4	Leq	NIGHT=	58.4	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):	Ldn= 66.8	
			CNEL= 67.5	
NOISE CONTOUR:			70 dBA	65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	31	66 143
		CNEL:	34	73 157

Scenario: No Growth
Roadway: Oregon Expressway
Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
Analyst: CTS
Date: 29-Nov-16

ROADWAY INPUTS	
ADT	30,925
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1897	36	14	1402	26	11	351	7	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.0	-15.2	-19.2	0.7	-16.5	-20.5	-5.3	-22.5	-26.5
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.9	60.4	61.6	66.6	59.1	60.3	60.6	53.0	54.3
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	68.1	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT	50	FEET FROM CENTERLINE (dBA):		Ldn= 70.5 CNEL= 71.1
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):		Ldn:	54 116 250	
		CNEL:	59 128 275	

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: No Growth Project: Palo Alto Comprehensive Plan
 Roadway: Charleston Road Analyst: CTS
 Segment: El Camino Real to San Antonio Road Date: 29-Nov-16

ROADWAY INPUTS	
ADT	14,699
SPEED (mph)	25
ROAD NEAR-FAR LN. DIST.	24
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	902	17	7	666	13	5	167	3	1
Speed in MPH	25	25	25	25	25	25	25	25	25
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	59.4	71.1	77.2	59.4	71.1	77.2	59.4	71.1	77.2
ADJUSTMENTS									
Flow	0.3	-17.0	-20.9	-1.0	-18.3	-22.2	-7.1	-24.3	-28.3
Distance	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.8	54.2	56.4	58.5	52.9	55.1	52.5	46.9	49.1
VEHICULAR NOISE	DAY=	62.2	Leq	EVENING=	60.9	Leq	NIGHT=	54.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 63.3 CNEL= 63.9
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):				Ldn: 18 38 83 CNEL: 20 42 91

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: No Growth
 Roadway: San Antonio Road
 Segment: El Camino Real to Route 101

Project: Palo Alto Comprehensive Plan
 Analyst: CTS
 Date: 29-Nov-16

ROADWAY INPUTS	
ADT	37,436
SPEED (mph)	35
ROAD NEAR-FAR LN. DIST.	48
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2296	43	17	1697	32	13	425	8	3
Speed in MPH	35	35	35	35	35	35	35	35	35
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	65.1	74.8	80.0	65.1	74.8	80.0	65.1	74.8	80.0
ADJUSTMENTS									
Flow	2.9	-14.4	-18.3	1.6	-15.7	-19.6	-4.5	-21.7	-25.7
Distance	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.2	62.5	67.4	59.9	61.2	61.4	53.9	55.1
VEHICULAR NOISE	DAY=	70.2	Leq	EVENING=	68.9	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 71.3 CNEL= 71.9
NOISE CONTOUR:		70 dBA	65 dBA	60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	Ldn:	61	132	284
	CNEL:	67	145	313

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: No Growth Project: Palo Alto Comprehensive Plan
 Roadway: Foothill /Junipero Serra Analyst: CTS
 Segment: Sand Hill Road to Arastradero Road Date: 29-Nov-16

ROADWAY INPUTS	
ADT	19,447
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	50
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	97.4%	DAY	75.5%
% MT	1.8%	EVENING	14.0%
% HT	0.7%	NIGHT	10.5%

CALCULATION AREA									
	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1193	23	9	882	17	7	221	4	2
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-1.1	-18.3	-22.3	-2.4	-19.6	-23.6	-8.4	-25.6	-29.6
Distance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.2	59.3	59.8	66.9	57.9	58.5	60.9	51.9	52.5
VEHICULAR NOISE	DAY=	69.3	Leq	EVENING=	67.9	Leq	NIGHT=	61.9	Leq

RESULTS				
NOISE LEVELS AT 50 FEET FROM CENTERLINE (dBA):				Ldn= 70.4 CNEL= 71.0
NOISE CONTOUR:				70 dBA 65 dBA 60 dBA
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):				Ldn: 53 114 245 CNEL: 58 125 270

Comprehensive Plan Update Supplement to the Draft EIR
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Volume 2: Appendices

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