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March 8, 2016 10051.01L01

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SUPPLEMENTAL TRAFFIC ANALYSIS FOR THE CANYON OAKS PROJECT, CITY OF CALABASAS, CALIFORNIA

ATE has prepared the following supplemental traffic analysis for the Canyon Oaks Project proposed in the City of Calabasas. ATE prepared the traffic study for the project in 2015,[1] with the impact analyses based on traffic counts that were collected at the study-area intersections in 2014.

City staff provided new counts for the study-area intersections that were collected on Wednesday, February 17, 2016 (count data attached for reference). City staff requested that the Existing and Existing + Project levels of service be reevaluated with the 2016 to determine if the findings of the original study would change.

2016 Level of Services

The Existing and Existing + Project levels of service were calculated using the 2016 counts (level of service worksheets attached for reference). Levels of service were calculated for the City intersections using the "Intersection Capacity Utilization" (ICU) methodology. Levels of service for the U.S. 101 freeway interchange intersections were calculated using the Highway Capacity Manual (HCM)[2] methodology pursuant to Caltrans' Guide for the Preparation of Traffic Impact Studies.[3]

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[1] Updated Traffic and Circulation Study for the Canyon Oaks Project, Associated Transportation Engineers, June 19, 2015.

[2] Highway Capacity Manual, Transportation Research Board, National Research Council, 2010.

[3] Guide for the Preparation of Traffic Impact Studies, State of California Department of Transportation, December 2002.

Tables 1 and 2 compare the 2016 and 2016 + Project levels of service for the A.M. and P.M. peak hour periods. The tables also show the significance of project-added traffic based on City thresholds.

Table 1
2016 + Project A.M. Peak Hour Levels of Service

Intersection	Existing		Existing + Project		Project Added	
	ICU/Delay	LOS	ICU/Delay	LOS	ICU	Impact?
Las Virgenes Rd./Mureau Rd.	0.510	A	0.511	A	0.001	NO
U.S. 101 NB Ramps/Las Virgenes Rd.	20.9 Sec.	C	21.8 sec.	C	0.016	NO
U.S. 101 SB Ramps/Las Virgenes Rd.	11.8 Sec.	B	11.9 Sec.	B	0.014	NO
Las Virgenes Rd./Agoura Rd.	0.614	B	0.656	B	0.042	NO
Lost Hills Rd./Agoura Rd.	0.531	A	0.531	A	0.000	NO

Table 2
2016 + Project P.M. Peak Hour Levels of Service

Intersection	Existing		Existing + Project		Project Added	
	ICU/Delay	LOS	ICU/Delay	LOS	ICU	Impact?
Las Virgenes Rd./Mureau Rd.	0.931	E	0.936	E	0.005	NO
U.S. 101 NB Ramps/Las Virgenes Rd.	12.2 Sec.	B	12.5 Sec.	B	0.010	NO
U.S. 101 SB Ramps/Las Virgenes Rd.	17.8 Sec.	B	17.7 Sec.	B	0.012	NO
Las Virgenes Rd./Agoura Rd.	0.631	B	0.692	B	0.061	NO
Lost Hills Rd./Agoura Rd.	0.530	A	0.533	A	0.003	NO

As shown in Tables 1 and 2, most of the study-area intersections operate at LOS C or better based on the new counts collected in February 2016. The addition of project traffic would not impact these intersections. The Las Virgenes Road/Mureau Road intersection operates at LOS E during the P.M. peak hour period based on the 2016 counts. The project would add 0.005 to the ICU at this intersection, which is considered a less than significant impact based on City thresholds (City impact threshold for LOS E operations is an increase of 0.015 or more).

Review of the 2016 count data indicates that U.S. 101 was likely congested in the southbound direction during the P.M. peak hour period on the day that the counts were collected; and that a significant volume of southbound freeway traffic diverted onto the surface street system within Calabasas on that day. Comparison of the 2016 counts with the 2014 counts show an increase of 400-500 vehicles on the surface street route from eastbound Agoura Road to northbound Las Virgenes Road to eastbound Mureau Road. The 2016 counts show about 500 vehicles more for the eastbound though movement on Agoura Road at the Lost Hills Road intersection; and about 400 vehicles more for the northbound right-turn movement on Las Virgenes Road at the Mureau Road intersection.

The higher volume of northbound right-turns at the Las Virgenes Road/Mureau Road intersection recorded in 2016 results in LOS E operations compared to the LOS B operations using the 2014 counts. The LOS E operations at the Las Virgenes Road/Mureau Road intersection is directly related to the increase in northbound right turns (+400). Since the City's level of service calculation procedures do not account for right turns that occur on the red phase (right-turns-on-red), all of those right-turns are assumed to require green time and therefore increase the ICU for the intersection – resulting in LOS E operations.

Based on the new traffic counts recorded in 2016, it is recommended that a right-turn overlap phase be installed at the Las Virgenes Road/Mureau Road intersection for the northbound right-turn movement. The right-turn overlap phase would provide a green right-turn arrow indicator that would run concurrent with the westbound left-turn green phase. This improvement would provide LOS C operations during the P.M. peak hour period with the February 2016 counts. The recommended improvement would not be considered a mitigation measure for the Canyon Oaks Project (it does not generate a significant impact at this location), but instead is intended to address the existing deficiency noted with the new traffic count surveys.

This concludes our supplemental traffic analysis for the Canyon Oaks Project proposed in the City of Calabasas.

Associated Transportation Engineers

By: Scott A. Schell, AICP, PTP
Principal Transportation Planner

SAS/DLD

Attachments

#1

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Las Virgenes Rd and Mureau Rd , Calabasas

Date: 2/17/2016

Day: Wednesday

Project #: 16-5073-001

City: Calabasas

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Las Virgenes Rd

Lanes	0	2	1		
AM	0	885	75	534	AM
NOON	0	0	0	0	NOON
PM	0	248	77	574	PM

Mureau Rd

	AM	NOON	PM
	0	0	0

Lanes	AM	NOON	PM
0	0	0	0
0	0	0	0
0	0	0	0

	AM	NOON	PM	Lanes
	30	0	38	1
	0	0	0	0
	212	0	287	1
	302	0	1043	

CONTROL

Signalized

AM	1097	0	504	227	AM
NOON	0	0	0	0	NOON
PM	535	0	536	966	PM
		0	2	1	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

960	534	AM
0	0	NOON
325	574	PM

West Leg

AM	NOON	PM
0	0	0
0	0	0

East Leg

242	0	325
302	0	1043
AM	NOON	PM

South Leg

AM	1097	731
NOON	0	0
PM	535	1502

Total Volume Per Leg

North Leg

1494	AM
0	NOON
899	PM

West Leg

AM	NOON	PM
0	0	0

East Leg

544	0	1368
AM	NOON	PM

South Leg

AM	1828
NOON	0
PM	2037

#2

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Las Virgenes Rd and NB 101 Freeway Ramps , Calabasas

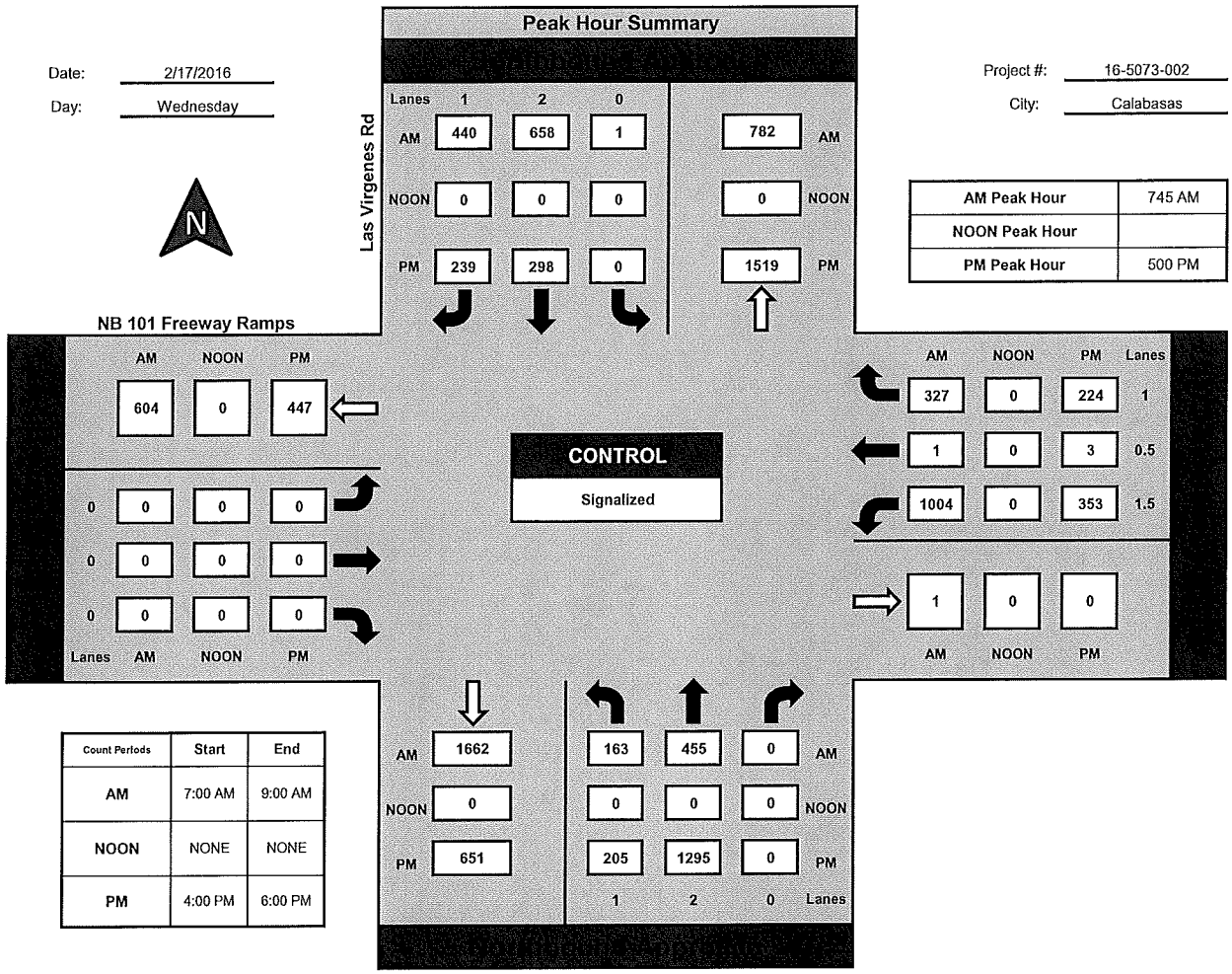
Date: 2/17/2016

Day: Wednesday

Project #: 16-5073-002

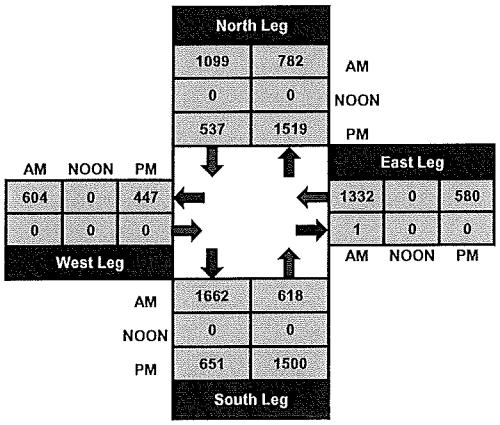
City: Calabasas

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	500 PM

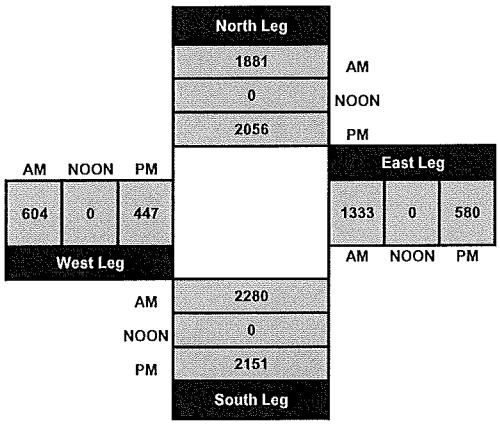


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



ITM Peak Hour Summary

#3

Prepared by:

NDS

National Data & Surveying Services

Las Virgenes Rd and SB 101 Freeway Ramps/Rondell St , Calabasas

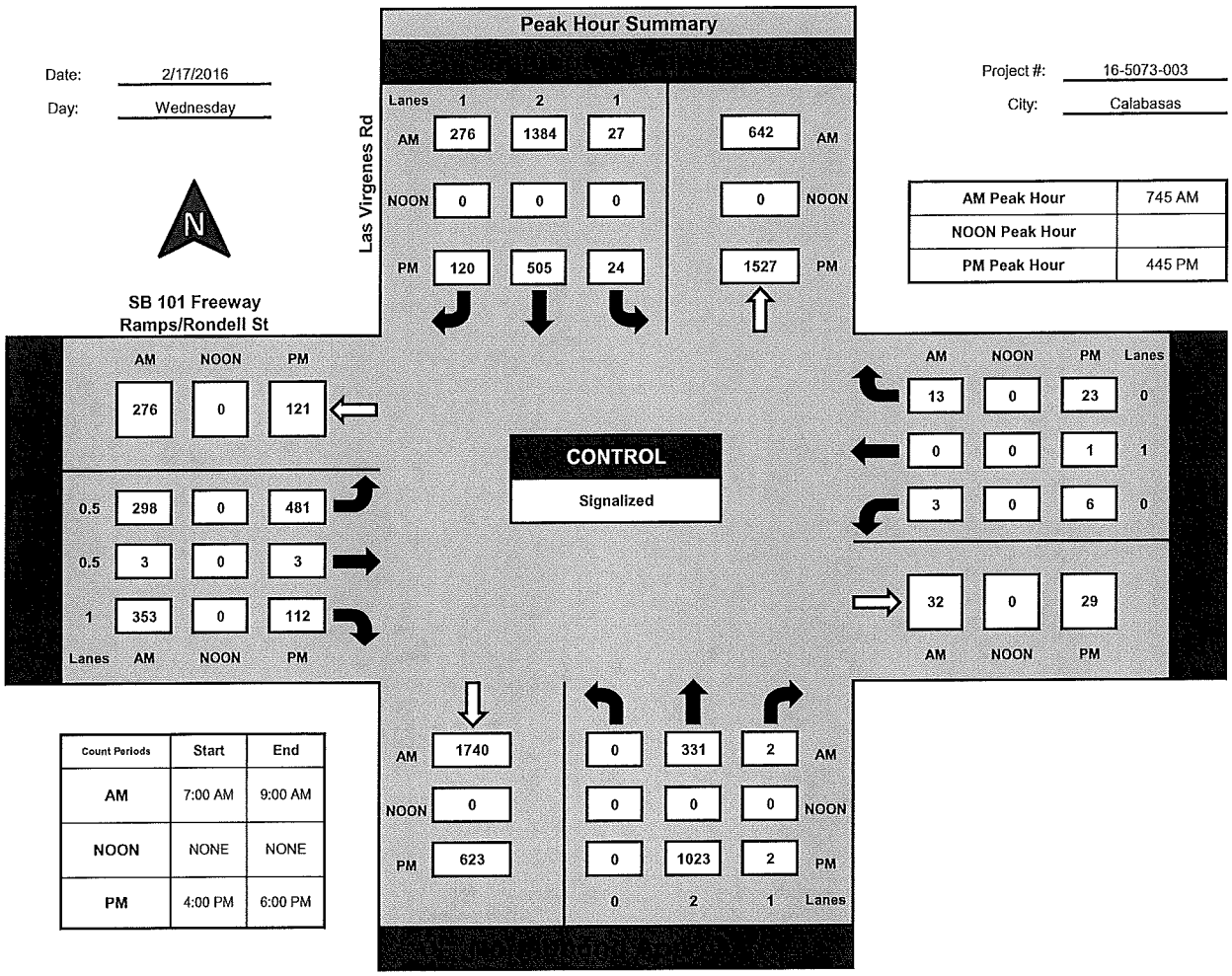
Date: 2/17/2016

Day: Wednesday

Project #: 16-5073-003

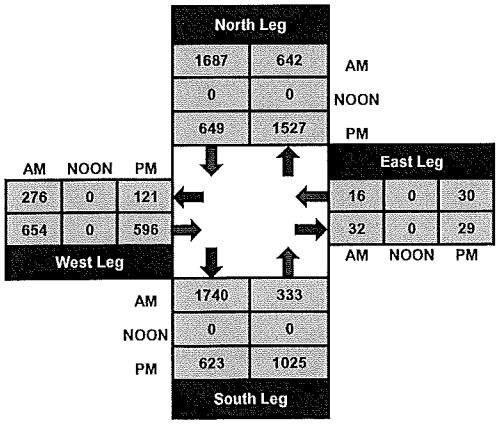
City: Calabasas

AM Peak Hour	745 AM
NOON Peak Hour	
PM Peak Hour	445 PM

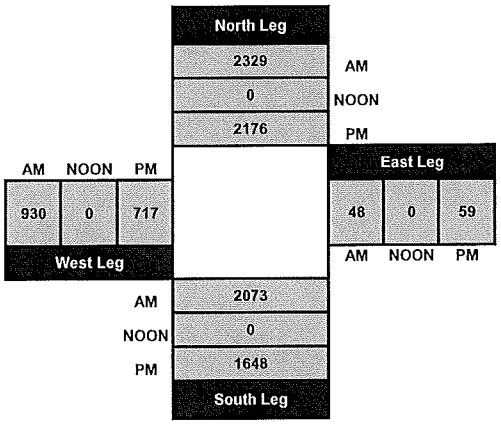


Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



#4

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Las Virgenes Rd and Agoura Rd , Calabasas

Date: 2/17/2016

Day: Wednesday

Project #: 16-5073-004

City: Calabasas

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Peak Hour Summary

Las Virgenes Rd

Lanes	0	2	0		
AM	621	1005	0	853	AM
NOON	0	0	0	0	NOON
PM	222	367	2	1697	PM

Agoura Rd

	AM	NOON	PM
	713	0	335
2	219	0	981
0	0	0	0
1	133	0	123
Lanes	AM	NOON	PM

	AM	NOON	PM	Lanes
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	2	
	AM	NOON	PM	

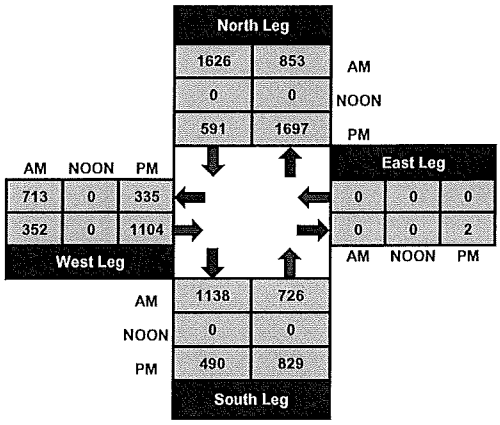
CONTROL

Signalized

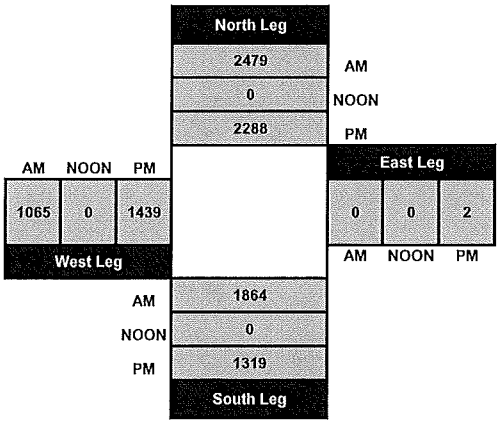
AM	1138	92	634	0	AM
NOON	0	0	0	0	NOON
PM	490	113	716	0	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs



Total Volume Per Leg



#5

ITM Peak Hour Summary

Prepared by:

NDS

National Data & Surveying Services

Lost Hills Rd and Agoura Rd , Calabasas

Date: 2/17/2016

Day: Wednesday

Project #: 16-5073-005

City: Calabasas

AM Peak Hour	800 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Peak Hour Summary

Lost Hills Rd

Lanes	0	2	2		
AM	229	752	256	512	AM
NOON	0	0	0	0	NOON
PM	34	285	175	783	PM

Agoura Rd

	AM	NOON	PM
	412	0	402
1	22	0	131
2	133	0	735
0	32	0	198
Lanes	AM	NOON	PM

	AM	NOON	PM	Lanes
	69	0	234	1
	127	0	184	2
	59	0	83	1
	463	0	961	
	AM	NOON	PM	

CONTROL

Signalized

AM	843	56	421	74	AM
NOON	0	0	0	0	NOON
PM	566	184	418	51	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

North Leg

1237	512	AM
0	0	NOON
494	783	PM

West Leg

AM	NOON	PM
412	0	402
187	0	1064

East Leg

255	0	501
463	0	961
AM	NOON	PM

South Leg

AM	843	551
NOON	0	0
PM	566	653

Total Volume Per Leg

North Leg

1749	AM
0	NOON
1277	PM

West Leg

AM	NOON	PM
599	0	1466

East Leg

718	0	1462
AM	NOON	PM

South Leg

AM	1394
NOON	0
PM	1219

#10051.01 CANYON OAKS PROJECT REF: 01_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *MUREAU ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	0	504	227	75	885	0	0	0	0	212	0	30
(B) PROJECT-ADDED:	0	0	3	0	0	0	0	0	0	2	0	0

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO VOLUMES 3	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4		
NBL	0	0	0	0			- *	- *				
NBT	2	3200	504	504			0.158	0.158				
NBR	1	1600	227	230			0.142	0.144				
SBL	1	1600	75	75			0.047	0.047				
SBT	2	3200	885	885			0.277 *	0.277 *				
SBR	0	0	0	0			-	-				
EBL	0	0	0	0			- *	- *				
EBT	0	0	0	0			-	-				
EBR	0	0	0	0			-	-				
WBL	1	1600	212	214			0.133 *	0.134 *				
WBT	0	0	0	0			-	-				
WBR	1	1600	30	30			0.019	0.019				
						LOST TIME:	0.100 *	0.100 *				
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.510**	**0.511**				
						SCENARIO LEVEL OF SERVICE:	A	A				

NOTES:

Printed: 03/07/16

#10051.01 CANYON OAKS PROJECT REF: 01_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *MUREAU ROAD*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	0	536	966	77	248	0	0	0	0	287	0	38
(B) PROJECT-ADDED:	0	0	3	0	0	0	0	0	0	4	0	0

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO VOLUMES 3	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4
NBL	0	0	0	0			-	-		
NBT	2	3200	536	536			0.168	0.168		
NBR	1	1600	966	969			0.604 *	0.606 *		
SBL	1	1600	77	77			0.048 *	0.048 *		
SBT	2	3200	248	248			0.078	0.078		
SBR	0	0	0	0			-	-		
EBL	0	0	0	0			-	-		
EBT	0	0	0	0			-	-		
EBR	0	0	0	0			-	-		
WBL	1	1600	287	291			0.179 *	0.182 *		
WBT	0	0	0	0			-	-		
WBR	1	1600	38	38			0.024	0.024		
						LOST TIME:	0.100 *	0.100 *		
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.931**	**0.936**		
						SCENARIO LEVEL OF SERVICE:	E	E		

NOTES:

Printed: 03/07/16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1004	1	327	163	455	0	0	658	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1685	1583	1770	3539			3539	1583
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1685	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1091	1	355	177	495	0	0	715	478
RTOR Reduction (vph)	0	0	0	0	0	170	0	0	0	0	0	343
Lane Group Flow (vph)	0	0	0	545	547	185	177	495	0	0	715	135
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				26.0	26.0	26.0	8.7	31.0			18.3	18.3
Effective Green, g (s)				26.0	26.0	26.0	8.7	31.0			18.3	18.3
Actuated g/C Ratio				0.40	0.40	0.40	0.13	0.48			0.28	0.28
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				672	674	633	237	1688			996	446
v/s Ratio Prot				0.32	c0.32		c0.10	0.14			c0.20	
v/s Ratio Perm						0.12						0.08
v/c Ratio				0.81	0.81	0.29	0.75	0.29			0.72	0.30
Uniform Delay, d1				17.3	17.3	13.3	27.1	10.3			21.0	18.3
Progression Factor				1.00	1.00	1.00	1.04	0.49			1.00	1.00
Incremental Delay, d2				7.4	7.4	0.3	11.2	0.4			4.4	1.7
Delay (s)				24.7	24.7	13.5	39.4	5.5			25.5	20.1
Level of Service				C	C	B	D	A			C	C
Approach Delay (s)		0.0			21.9			14.4			23.3	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1022	1	327	179	458	0	0	660	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1685	1583	1770	3539			3539	1583
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1685	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1111	1	355	195	498	0	0	717	478
RTOR Reduction (vph)	0	0	0	0	0	169	0	0	0	0	0	350
Lane Group Flow (vph)	0	0	0	555	557	186	195	498	0	0	717	128
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				26.0	26.0	26.0	9.6	31.0			17.4	17.4
Effective Green, g (s)				26.0	26.0	26.0	9.6	31.0			17.4	17.4
Actuated g/C Ratio				0.40	0.40	0.40	0.15	0.48			0.27	0.27
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				672	674	633	261	1688			947	424
v/s Ratio Prot				0.33	c0.33		c0.11	0.14			c0.20	
v/s Ratio Perm						0.12						0.08
v/c Ratio				0.83	0.83	0.29	0.75	0.30			0.76	0.30
Uniform Delay, d1				17.5	17.5	13.3	26.5	10.3			21.9	19.0
Progression Factor				1.00	1.00	1.00	1.03	0.53			1.00	1.00
Incremental Delay, d2				8.2	8.2	0.3	10.3	0.4			5.6	1.8
Delay (s)				25.7	25.7	13.5	37.5	5.9			27.5	20.8
Level of Service				C	C	B	D	A			C	C
Approach Delay (s)		0.0			22.7			14.8			24.8	
Approach LOS		A			C			B			C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

#10051.01 CANYON OAKS PROJECT REF: 02_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *US. 101 NB RAMPS*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	163	455	0	0	658	440	0	0	0	1004	1	327
(B) PROJECT-ADDED:	16	3	0	0	2	0	0	0	0	18	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	TT R		L LT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	163	179			0.102 *	0.112 *		
NBT	2	3200	455	458			0.142	0.143		
NBR	0	0	0	0			-	-		
SBL	0	0	0	0			-	-		
SBT	2	3200	658	660			0.206	0.206		
SBR	1	1600	440	440			0.275 *	0.275 *		
EBL	0	0	0	0			-	-		
EBT	0	0	0	0			-	-		
EBR	0	0	0	0			-	-		
WBL	0	0	1004	1022			-	-		
WBT	2	3200	1	1			0.314 *	0.320 *		
WBR	1	1600	327	327			0.204	0.204		
						LOST TIME:	0.100 *	0.100 *		
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.791**	**0.807**		
						SCENARIO LEVEL OF SERVICE:	**C**	**D**		

NOTES:

Printed: 03/07/16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	353	3	224	205	1295	0	0	298	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1687	1583	1770	3539			3539	1583
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1687	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	364	3	231	211	1335	0	0	307	246
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	0	172
Lane Group Flow (vph)	0	0	0	182	185	191	211	1335	0	0	307	74
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				16.0	16.0	16.0	14.0	36.0			18.0	18.0
Effective Green, g (s)				16.0	16.0	16.0	14.0	36.0			18.0	18.0
Actuated g/C Ratio				0.27	0.27	0.27	0.23	0.60			0.30	0.30
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				448	450	422	413	2123			1062	475
v/s Ratio Prot				0.11	0.11		0.12	c0.38			0.09	
v/s Ratio Perm						c0.12						0.05
v/c Ratio				0.41	0.41	0.45	0.51	0.63			0.29	0.16
Uniform Delay, d1				18.1	18.1	18.3	20.0	7.7			16.1	15.4
Progression Factor				1.00	1.00	1.00	0.92	0.72			1.00	1.00
Incremental Delay, d2				0.6	0.6	0.8	0.7	0.9			0.7	0.7
Delay (s)				18.7	18.7	19.1	19.0	6.4			16.8	16.1
Level of Service				B	B	B	B	A			B	B
Approach Delay (s)		0.0			18.9			8.2			16.5	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	381	3	224	220	1298	0	0	302	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95			0.95	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1681	1687	1583	1770	3539			3539	1583
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1681	1687	1583	1770	3539			3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	393	3	231	227	1338	0	0	311	246
RTOR Reduction (vph)	0	0	0	0	0	40	0	0	0	0	0	176
Lane Group Flow (vph)	0	0	0	196	200	191	227	1338	0	0	311	70
Turn Type				Prot		Perm	Prot					Perm
Protected Phases				3	8		5	2			6	
Permitted Phases						8						6
Actuated Green, G (s)				16.0	16.0	16.0	15.0	36.0			17.0	17.0
Effective Green, g (s)				16.0	16.0	16.0	15.0	36.0			17.0	17.0
Actuated g/C Ratio				0.27	0.27	0.27	0.25	0.60			0.28	0.28
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)				448	450	422	443	2123			1003	449
v/s Ratio Prot				0.12	0.12		0.13	c0.38			0.09	
v/s Ratio Perm						c0.12						0.04
v/c Ratio				0.44	0.44	0.45	0.51	0.63			0.31	0.16
Uniform Delay, d1				18.3	18.3	18.3	19.4	7.7			16.9	16.1
Progression Factor				1.00	1.00	1.00	0.91	0.71			1.00	1.00
Incremental Delay, d2				0.7	0.7	0.8	0.6	0.9			0.8	0.7
Delay (s)				18.9	19.0	19.1	18.3	6.4			17.7	16.9
Level of Service				B	B	B	B	A			B	B
Approach Delay (s)		0.0			19.0			8.1			17.3	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

#10051.01 CANYON OAKS PROJECT REF: 02_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *US. 101 NB RAMPS*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	205	1295	0	0	298	239	0	0	0	353	3	224
(B) PROJECT-ADDED:	15	3	0	0	4	0	0	0	0	28	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	TT R		L LT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	205	220			0.128 *	0.138 *		
NBT	2	3200	1295	1298			0.405	0.406		
NBR	0	0	0	0			-	-		
SBL	0	0	0	0			-	-		
SBT	2	3200	298	302			0.093	0.094		
SBR	1	1600	239	239			0.149 *	0.149 *		
EBL	0	0	0	0			-	-		
EBT	0	0	0	0			-	-		
EBR	0	0	0	0			-	-		
WBL	0	0	353	381			-	-		
WBT	2	3200	3	3			0.111	0.120		
WBR	1	1600	224	224			0.140 *	0.140 *		
						LOST TIME:	0.100 *	0.100 *		
						TOTAL INTERSECTION CAPACITY UTILIZATION:	**0.517**	**0.527**		
						SCENARIO LEVEL OF SERVICE:	A	A		

NOTES:

Printed: 03/07/16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	3	353	3	0	13	0	331	2	27	1384	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00			0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.89			1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99			1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1641			3539	1583	1770	3539	1583
Flt Permitted		0.72	1.00		0.95			1.00	1.00	0.54	1.00	1.00
Satd. Flow (perm)		1334	1583		1578			3539	1583	1000	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	324	3	384	3	0	14	0	360	2	29	1504	300
RTOR Reduction (vph)	0	0	18	0	10	0	0	0	1	0	0	127
Lane Group Flow (vph)	0	327	367	0	7	0	0	360	1	29	1504	173
Turn Type	Perm		Perm	Perm					Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8					2	6		6
Actuated Green, G (s)		19.5	19.5		19.5			37.5	37.5	37.5	37.5	37.5
Effective Green, g (s)		19.5	19.5		19.5			37.5	37.5	37.5	37.5	37.5
Actuated g/C Ratio		0.30	0.30		0.30			0.58	0.58	0.58	0.58	0.58
Clearance Time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		400	475		473			2042	913	577	2042	913
v/s Ratio Prot								0.10			c0.42	
v/s Ratio Perm		c0.25	0.23		0.00				0.00	0.03		0.11
v/c Ratio		0.82	0.77		0.02			0.18	0.00	0.05	0.74	0.19
Uniform Delay, d1		21.1	20.7		16.0			6.5	5.8	6.0	10.1	6.5
Progression Factor		1.00	1.00		1.00			1.00	1.00	0.45	0.44	0.56
Incremental Delay, d2		12.2	7.6		0.0			0.2	0.0	0.1	1.5	0.3
Delay (s)		33.3	28.3		16.0			6.7	5.8	2.8	5.9	3.9
Level of Service		C	C		B			A	A	A	A	A
Approach Delay (s)		30.6			16.0			6.7			5.5	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	3	366	3	0	13	0	374	2	27	1384	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00			0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.89			1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99			1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1641			3539	1583	1770	3539	1583
Flt Permitted		0.72	1.00		0.95			1.00	1.00	0.51	1.00	1.00
Satd. Flow (perm)		1334	1583		1578			3539	1583	955	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	324	3	398	3	0	14	0	407	2	29	1504	300
RTOR Reduction (vph)	0	0	18	0	10	0	0	0	1	0	0	127
Lane Group Flow (vph)	0	327	381	0	7	0	0	407	1	29	1504	173
Turn Type	Perm		Perm	Perm					Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8					2	6		6
Actuated Green, G (s)		19.5	19.5		19.5			37.5	37.5	37.5	37.5	37.5
Effective Green, g (s)		19.5	19.5		19.5			37.5	37.5	37.5	37.5	37.5
Actuated g/C Ratio		0.30	0.30		0.30			0.58	0.58	0.58	0.58	0.58
Clearance Time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		400	475		473			2042	913	551	2042	913
v/s Ratio Prot								0.11			c0.42	
v/s Ratio Perm		c0.25	0.24		0.00				0.00	0.03		0.11
v/c Ratio		0.82	0.80		0.02			0.20	0.00	0.05	0.74	0.19
Uniform Delay, d1		21.1	21.0		16.0			6.6	5.8	6.0	10.1	6.5
Progression Factor		1.00	1.00		1.00			1.00	1.00	0.42	0.41	0.47
Incremental Delay, d2		12.2	9.4		0.0			0.2	0.0	0.1	1.4	0.3
Delay (s)		33.3	30.4		16.0			6.8	5.8	2.6	5.5	3.3
Level of Service		C	C		B			A	A	A	A	A
Approach Delay (s)		31.7			16.0			6.8			5.1	
Approach LOS		C			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

#10051.01 CANYON OAKS PROJECT REF: 03_AM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *A.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *US. 101 SB RAMPS*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	0	331	2	27	1384	276	298	3	353	3	0	13
(B) PROJECT-ADDED:	0	43	0	0	20	0	0	0	13	0	0	0

GEOMETRICS

LANE GEOMETRICS	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
	L TT	TT R		L LT R

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO VOLUMES 3	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4
NBL	0	0	0	0			- *	- *		
NBT	2	3200	331	374			0.103	0.117		
NBR	1	1600	2	2			0.001	0.001		
SBL	1	1600	27	27			0.017	0.017		
SBT	2	3200	1384	1404			0.433 *	0.439 *		
SBR	1	1600	276	276			0.173	0.173		
EBL	0	0	298	298			-	-		
EBT	1	1600	3	3			0.188	0.188		
EBR	1	1600	353	366			0.221 *	0.229 *		
WBL	0	0	3	3			-	-		
WBT	1	1600	0	0			0.010 *	0.010 *		
WBR	0	0	13	13			-	-		
						LOST TIME:	0.100 *	0.100 *		
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.764	0.778		
						SCENARIO LEVEL OF SERVICE:	C	C		

NOTES:

Printed: 03/07/16

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	481	3	112	6	1	23	0	1023	2	24	505	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00			0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.89			1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99			1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1651			3539	1583	1770	3539	1583
Flt Permitted		0.70	1.00		0.93			1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)		1311	1583		1554			3539	1583	290	3539	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	517	3	120	6	1	25	0	1100	2	26	543	129
RTOR Reduction (vph)	0	0	67	0	14	0	0	0	1	0	0	74
Lane Group Flow (vph)	0	520	53	0	18	0	0	1100	1	26	543	55
Turn Type	Perm		Perm	Perm					Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8					2	6		6
Actuated Green, G (s)		26.3	26.3		26.3			25.7	25.7	25.7	25.7	25.7
Effective Green, g (s)		26.3	26.3		26.3			25.7	25.7	25.7	25.7	25.7
Actuated g/C Ratio		0.44	0.44		0.44			0.43	0.43	0.43	0.43	0.43
Clearance Time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		575	694		681			1516	678	124	1516	678
v/s Ratio Prot								c0.31			0.15	
v/s Ratio Perm		c0.40	0.03		0.01				0.00	0.09		0.03
v/c Ratio		0.90	0.08		0.03			0.73	0.00	0.21	0.36	0.08
Uniform Delay, d1		15.7	9.8		9.6			14.2	9.8	10.8	11.6	10.2
Progression Factor		1.00	1.00		1.00			1.00	1.00	0.58	0.56	1.44
Incremental Delay, d2		17.6	0.0		0.0			3.1	0.0	3.6	0.6	0.2
Delay (s)		33.3	9.8		9.6			17.3	9.8	9.9	7.1	14.8
Level of Service		C	A		A			B	A	A	A	B
Approach Delay (s)		28.9			9.6			17.3			8.7	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	481	3	132	6	1	23	0	1063	2	24	537	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		1.00	1.00		1.00			0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.89			1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00		0.99			1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1775	1583		1651			3539	1583	1770	3539	1583
Flt Permitted		0.70	1.00		0.93			1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)		1311	1583		1554			3539	1583	290	3539	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	517	3	142	6	1	25	0	1143	2	26	577	129
RTOR Reduction (vph)	0	0	80	0	12	0	0	0	1	0	0	74
Lane Group Flow (vph)	0	520	62	0	20	0	0	1143	1	26	577	55
Turn Type	Perm		Perm	Perm					Perm	Perm		Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8					2	6		6
Actuated Green, G (s)		26.3	26.3		26.3			25.7	25.7	25.7	25.7	25.7
Effective Green, g (s)		26.3	26.3		26.3			25.7	25.7	25.7	25.7	25.7
Actuated g/C Ratio		0.44	0.44		0.44			0.43	0.43	0.43	0.43	0.43
Clearance Time (s)		4.0	4.0		4.0			4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0			3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		575	694		681			1516	678	124	1516	678
v/s Ratio Prot								c0.32			0.16	
v/s Ratio Perm		c0.40	0.04		0.01				0.00	0.09		0.03
v/c Ratio		0.90	0.09		0.03			0.75	0.00	0.21	0.38	0.08
Uniform Delay, d1		15.7	9.9		9.6			14.5	9.8	10.8	11.7	10.2
Progression Factor		1.00	1.00		1.00			1.00	1.00	0.54	0.52	1.35
Incremental Delay, d2		17.6	0.1		0.0			3.5	0.0	3.6	0.7	0.2
Delay (s)		33.3	9.9		9.6			18.0	9.8	9.4	6.8	13.9
Level of Service		C	A		A			B	A	A	A	B
Approach Delay (s)		28.3			9.6			18.0			8.2	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	17.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

#10051.01 CANYON OAKS PROJECT REF: 03_PM

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *P.M. PEAK HOUR*

N/S STREET: *LAS VIRGENES ROAD*

E/W STREET: *US. 101 SB RAMPS*

CONTROL TYPE: *SIGNAL*

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING:	0	1023	2	24	505	120	481	3	112	6	1	23
(B) PROJECT-ADDED:	0	40	0	0	32	0	0	0	20	0	0	0

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1 = EXISTING VOLUMES (A)

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

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	0	0	0	0			-	-		
NBT	2	3200	1023	1063			0.320 *	0.332 *		
NBR	1	1600	2	2			0.001	0.001		
SBL	1	1600	24	24			0.015 *	0.015 *		
SBT	2	3200	505	537			0.158	0.168		
SBR	1	1600	120	120			0.075	0.075		
EBL	0	0	481	481			-	-		
EBT	1	1600	3	3			0.303 *	0.303 *		
EBR	1	1600	112	132			0.070	0.083		
WBL	0	0	6	6			-	-		
WBT	1	1600	1	1			0.019 *	0.019 *		
WBR	0	0	23	23			-	-		
						LOST TIME:	0.100 *	0.100 *		
						TOTAL INTERSECTION CAPACITY UTILIZATION:	0.757	0.769		
						SCENARIO LEVEL OF SERVICE:	C	C		

NOTES:

Printed: 03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #04AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *AM*

N/S STREET: *LAS VIRGENES RD.*

E/W STREET: *AGOURA RD.* ***EXISITNG GEOMETRY***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	92	634	0	0	1005	621	219	0	133	0	0	0

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	92			0.058 *			
NBT	2	3200	634			0.198			
NBR	0	0	0			0.000			
SBL	0	0	0			0.000			
SBT	2	3200	1005			0.314			
SBR *(a)*	1	1600	621			0.388 *			
EBL	2	3200	219			0.068 *			
EBT	0	0	0			0.000			
EBR	1	1600	133			0.083			
WBL	0	0	0			0.000			
WBT	0	0	0			0.000			
WBR	0	0	0			0.000			
					LOST TIME:	0.100 *			
			INTERSECTION CAPACITY UTILIZATION:			**0.614**			
			LEVEL OF SERVICE:			**B**			

NOTES:

(a) 23-foot wide #2 through lane acts as de-facto right-turn lane.

03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #04AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: ***AM***

N/S STREET: ***LAS VIRGENES RD.***

E/W STREET: ***AGOURA RD.*** ***FUTURE GEOMETRY WITH SPLIT PHASE***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	92	634	0	0	1005	621	219	0	133	0	0	0
(B) PROJECT	0	0	13	33	0	0	0	5	0	16	6	43

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1:

SCENARIO 2: EXISTING + PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600		92				0.058 *		
NBT	2	3200		634				0.198		
NBR	1	1600		13				0.008		
SBL	1	1600		33				0.021		
SBT	2	3200		1005				0.314		
SBR *(a)*	1	1600		621				0.388 *		
EBL	0	0		219				0.000		
EBT	2	3200		5				0.070		
EBR	1	1600		133				0.083 *		
WBL	0	0		16				0.000		
WBT	1	1600		6				0.014		
WBR	1	1600		43				0.027 *		
						LOST TIME:		0.100 *		
						INTERSECTION CAPACITY UTILIZATION:		**0.656**		
						LEVEL OF SERVICE:		**B**		

NOTES:

(a) 23-foot wide #2 through lane acts as de-facto right-turn lane.

03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #04PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: ***PM***

N/S STREET: ***LAS VIRGENES RD.***

E/W STREET: ***AGOURA RD.***

CONTROL TYPE: SIGNAL

EXISTING GEOMETRY

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	113	716	0	2	367	222	981	0	123	0	0	0

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	113				0.071			
NBT	2	3200	716				0.224 *			
NBR	0	0	0				0.000			
SBL	0	0	2				0.000 *			
SBT	2	3200	367				0.115			
SBR *(a)*	1	1600	191				0.119			
EBL	2	3200	981				0.307 *			
EBT	0	0	0				0.000			
EBR	1	1600	28				0.018			
WBL	0	0	0				0.000			
WBT	0	0	0				0.000			
WBR	0	0	0				0.000			
						LOST TIME:	0.100 *			
						INTERSECTION CAPACITY UTILIZATION:	**0.631**			
						LEVEL OF SERVICE:	**B**			

NOTES:

(a) 23-foot wide #2 through lane acts as de-facto right-turn lane.

03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #04PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *PM*

N/S STREET: *LAS VIRGENES RD.*

E/W STREET: *AGOURA RD.* ***FUTURE GEOMETRY WITH SPLIT PHASE***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	113	716	0	2	367	222	981	0	123	0	0	0
(B) PROJECT	0	0	21	52	0	0	0	8	0	15	6	40

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 2: EXISTING + PROJECT (A+B)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600		113				0.071		
NBT	2	3200		716				0.224 *		
NBR	1	1600		21				0.013		
SBL	1	1600		54				0.034 *		
SBT	2	3200		367				0.115		
SBR (a)	1	1600		222				0.139		
EBL	0	0		981				0.000		
EBT	2	3200		8				0.309 *		
EBR	1	1600		123				0.077		
WBL	0	0		15				0.000		
WBT	1	1600		6				0.013		
WBR	1	1600		40				0.025 *		
						LOST TIME:		0.100 *		
						INTERSECTION CAPACITY UTILIZATION:		**0.692**		
						LEVEL OF SERVICE:		**B**		

NOTES:

(a) 23-foot wide #2 through lane acts as de-facto right-turn lane.

03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #05AM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: ***AM***

N/S STREET: ***LOST HILLS RD.***

E/W STREET: ***AGOURA RD.***

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	56	421	74	256	752	229	22	133	32	59	127	69
(B) PROJECT	0	0	0	3	0	0	0	2	0	0	3	3

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING + PROJECT (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	SCENARIO VOLUMES 2	SCENARIO VOLUMES 3	SCENARIO VOLUMES 4	SCENARIO V/C RATIOS 1	SCENARIO V/C RATIOS 2	SCENARIO V/C RATIOS 3	SCENARIO V/C RATIOS 4
NBL	1	1600	56	56			0.035 *	0.035 *		
NBT	2	3200	421	421			0.155	0.155		
NBR	0	0	74	74			0.000	0.000		
SBL	2	3200	256	259			0.080	0.081		
SBT	2	3200	752	752			0.307 *	0.307 *		
SBR	0	0	229	229			0.000	0.000		
EBL	1	1600	22	22			0.014	0.014		
EBT	2	3200	133	135			0.052 *	0.052 *		
EBR	0	0	32	32			0.000	0.000		
WBL	1	1600	59	59			0.037 *	0.037 *		
WBT	2	3200	127	130			0.040	0.041		
WBR	1	1600	69	72			0.043	0.045		
						LOST TIME:	0.100 *	0.100 *		
						INTERSECTION CAPACITY UTILIZATION:	**0.531**	**0.531**		
						LEVEL OF SERVICE:	A	A		

NOTES:

03/07/16

#10051.01 CANYON OAKS PROJECT **REFERENCE #05PM**

INTERSECTION CAPACITY UTILIZATION WORKSHEET

COUNT DATE: *February 17, 2016*

TIME PERIOD: *PM*

N/S STREET: *LOST HILLS RD.*

E/W STREET: *AGOURA RD.*

CONTROL TYPE: SIGNAL

TRAFFIC VOLUME SUMMARY

VOLUMES	NORTH BOUND L	NORTH BOUND T	NORTH BOUND R	SOUTH BOUND L	SOUTH BOUND T	SOUTH BOUND R	EAST BOUND L	EAST BOUND T	EAST BOUND R	WEST BOUND L	WEST BOUND T	WEST BOUND R
(A) EXISTING	184	418	51	175	285	34	131	735	198	83	184	234
(B) PROJECT	0	0	0	4	0	0	0	4	0	0	3	3

GEOMETRICS

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

TRAFFIC SCENARIOS

SCENARIO 1: EXISTING (A)

SCENARIO 2: EXISTING + PROJECT (B+C)

LEVEL OF SERVICE CALCULATIONS

MOVE-MENTS	# OF LANES	CAPACITY	SCENARIO VOLUMES 1	2	3	4	SCENARIO V/C RATIOS 1	2	3	4
NBL	1	1600	184	184			0.115	0.115		
NBT	2	3200	418	418			0.147 *	0.147 *		
NBR	0	0	51	51			0.000	0.000		
SBL	2	3200	175	179			0.055 *	0.056 *		
SBT	2	3200	285	285			0.100	0.100		
SBR	0	0	34	34			0.000	0.000		
EBL	1	1600	131	131			0.082 *	0.082 *		
EBT	2	3200	735	739			0.292	0.293		
EBR	0	0	198	198			0.000	0.000		
WBL	1	1600	83	83			0.052	0.052		
WBT	2	3200	184	187			0.058	0.058		
WBR	1	1600	234	237			0.146 *	0.148 *		
						LOST TIME:	0.100 *	0.100 *		
						INTERSECTION CAPACITY UTILIZATION:	**0.530**	**0.533**		
						LEVEL OF SERVICE:	**A**	**A**		

NOTES:

03/07/16