Appendix G.4.3 Addendum Haul Route Analysis

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MEMORANDUM

To:	Sergio Valdez Los Angeles Department of Transportation	Date:	August 18, 2016
From:	David S. Shender, P.E. Corinna M. Gutierrez, P.E. Linscott, Law & Greenspan, Engineers	LLG Ref:	5-08-3744-2
Subject:	**Harvard-Westlake School Parking, Safety and Athletics Improvement Plan – Addendum Haul Route Traffic Analysis**		

This memorandum (the "Addendum Haul Route Traffic Analysis") has been prepared by Linscott, Law & Greenspan, Engineers ("LLG") to summarize the addendum to the supplementary traffic analysis prepared for the proposed Harvard-Westlake School Parking, Safety and Athletics Improvement Plan (the "Project") located at 3701 Coldwater Canyon Avenue (the "Project Site") in the Sherman Oaks-Studio City-Toluca Lake-Cahuenga Pass Plan area of the City of Los Angeles, California.

LLG previously prepared the traffic impact study[1] dated October 30, 2012 for the Project (the "2012 Traffic Study"). The findings of the 2012 Traffic Study were confirmed based on the Los Angeles Department of Transportation ("LADOT") assessment letter[2] dated March 26, 2013. LLG also previously prepared a supplemental traffic analysis[3] dated October 6, 2015 for the Project (the "2015 Supplemental Traffic Analysis"), which evaluated the potential traffic impacts related to the revised Project construction information.

This addendum evaluates the potential traffic impacts related to the updated haul route of trucks during the construction grading and material export phase of the Project. It should be noted that no other changes associated with construction-related activities of the Project have occurred since the preparation of the 2015 Supplemental Traffic Analysis. The following study intersection has been evaluated for potential traffic impacts during construction of the Project:

- Tujunga Avenue / Riverside Drive-Camarillo Street

Based on the addendum haul route traffic analysis contained herein, it is concluded that construction of the Project will not create significant impacts at the additional study intersection during the weekday and Saturday analyzed peak hours.

[1] *Traffic & Parking Impact Study – Harvard-Westlake School Parking Improvement Plan*, LLG, October 30, 2012.
[2] *Traffic Assessment for the Proposed Harvard-Westlake School Parking Improvement Plan at 3701 Coldwater Canyon Avenue*, Sergio D. Valdez, March 26, 2013.
[3] *Harvard-Westlake School Parking, Safety and Athletics Improvement Plan – Supplemental Traffic Analysis*, LLG, October 6, 2015.

Updated Haul Route Information

As discussed in the 2012 Traffic Study, regional access related to haul trucks coming to/from the Project Site is provided by the US-101 (Ventura) Freeway. During the construction grading and material export phase of the Project, inbound haul trucks would exit from the Northbound US-101 Freeway at Coldwater Canyon Avenue and continue south to the Project Site. Outbound haul trucks would exit the Project Site onto Coldwater Canyon Avenue, proceed to the Southbound US-101 Freeway, and carry the export material to a receptor site located within 35 miles of the Project Site.

Since the preparation of the 2012 Traffic Study and the 2015 Supplementary Traffic Analysis, the Vulcan Materials Company site located in the Sun Valley area of the City of Los Angeles has been identified as a potential receptor site for the excavated materials. Therefore, in addition to traveling on the US-101 Freeway, haul trucks will utilize the SR-170 (Hollywood) Freeway to travel to/from the Vulcan Materials site. As there is no freeway interchange between the US-101 and SR-170 freeways, this updated haul route will require the use of local City streets in addition to the segment of Coldwater Canyon Avenue analyzed in the 2012 Traffic Study. Specifically, inbound haul trucks traveling southbound on the SR-170 Freeway will exit via the Riverside Drive Off-Ramp and enter the Northbound US-101 Freeway via the Tujunga Avenue On-Ramp. Outbound haul trucks traveling southbound on the US-101 Freeway would exit via the Tujunga Avenue Off-Ramp and continue to the SR-170 Freeway via the Tujunga Avenue On-Ramp.

Thus, based on this updated haul route, the Tujunga Avenue/Riverside Drive-Camarillo Street intersection will be evaluated for potential impacts as part of this addendum haul route traffic analysis. The updated haul route and general project vicinity are shown in ***Figure 1***. Again, it should be noted that no changes related to construction trip generation, hauling hours, or any other construction assumptions are proposed as part of this addendum haul route traffic analysis. The construction trip generation is provided for reference in Table 1 within the 2015 Supplemental Traffic Analysis.

Manual Traffic Counts

Manual traffic counts of vehicular turning movements were conducted at the study intersection during the weekday AM and PM commuter periods as well as on a Saturday during the midday commuter period to determine the peak hour traffic volumes, consistent with the 2015 Supplemental Traffic Analysis. The weekday manual traffic counts were conducted on Tuesday, May 31, 2016. The Saturday manual traffic counts were conducted on Saturday, May 28, 2016.

The weekday commuter AM and PM peak period manual counts of vehicle movements at the study intersections are summarized in ***Table 1***. Note that the

manual traffic counts for the intersection were divided into three separate locations to account for all vehicle turning movements at the five-leg intersection. The three intersection counts were then combined to determine the overall peak hour traffic volumes during the weekday morning, weekday afternoon, and Saturday midday peak periods. The summary data worksheets of the manual traffic counts at the study intersection are provided in ***Appendix A*** attached to this memorandum. Also included in *Appendix A* are tables combining the three manual traffic counts for the study intersection to determine the overall peak hour traffic volumes.

Updated Level of Service Analysis

Pursuant to LADOT's traffic study guidelines, Level of Service calculations have been prepared for the following scenarios for the study intersection to evaluate the traffic effects related to construction of the project:

(a) Existing (2016) conditions.
(b) Condition (a) with completion and occupancy of the Project.
(c) Condition (b) with implementation of Project mitigation measures where necessary.
(d) Condition (a) with two percent (2.0%) annual ambient traffic growth compounded through year 2019.
(e) Condition (d) with completion and occupancy of the Project.
(f) Condition (e) with implementation of Project mitigation measures where necessary.

City of Los Angeles Impact Criteria and Thresholds

Consistent with the 2012 Traffic Study and the 2015 Supplemental Traffic Analysis, the study intersection was evaluated using the Critical Movement Analysis (CMA) method of analysis that determines Volume-to-Capacity (*v/c*) ratios on a critical lane basis. The overall intersection *v/c* ratio is subsequently assigned a Level of Service (LOS) value to describe intersection operations. Level of Service varies from LOS A (free flow) to LOS F (jammed condition). A description of the CMA method and corresponding Level of Service is provided in ***Appendix B***.

The relative impact of the added traffic volumes to be generated by construction of the Project during the weekday and Saturday analyzed peak hours was evaluated based on analysis of existing and future operating conditions at the study intersection. The significance of the potential impacts of Project-generated traffic was identified using the traffic impact criteria set forth in the LADOT's *Traffic Study Policies and Procedures* manual, which is provided for reference on Table 9-1 within the 2012 Traffic Study.

Traffic Impact Analysis

The traffic impact analysis prepared for the study intersection using the Critical Movement Analysis (CMA) methodology and application of the City of Los Angeles significant traffic impact criteria is summarized in ***Table 2***. The CMA data worksheets for the analyzed intersection during the weekday and Saturday analyzed peak hours are contained in *Appendix B*.

Existing + Project Conditions

Column [1] of *Table 2* presents the existing v/c ratios and LOS at the study intersection during the weekday and Saturday analyzed peak hours based on the 2016 traffic counts. As presented in column [2] of *Table 2*, application of the City's threshold criteria to the "Existing With Construction" scenario indicates that the construction phase of the Project is not anticipated to create a significant impact at any of the study intersections under existing conditions. Thus, no direct project mitigation measures are necessary.

Future + Project Conditions

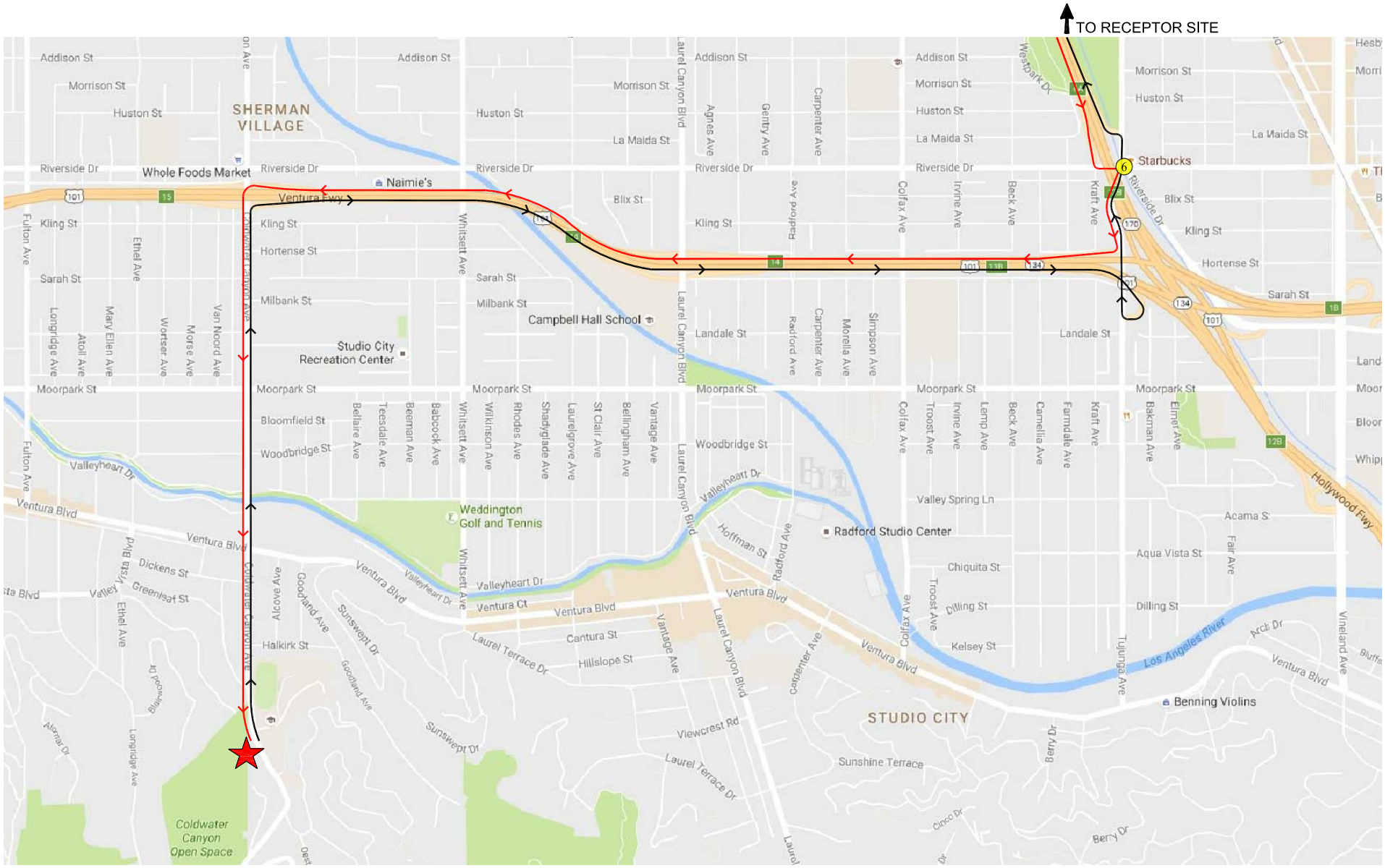
Column [3] of *Table 2* provides the forecast future without Project traffic conditions at the study intersection based on application of the City's highly conservative 2% annual ambient growth traffic factor to year 2019. As presented in column [4] of *Table 2*, application of the City's threshold criteria to the "Future With Construction" scenario indicates that construction of the Project is not anticipated to create a significant impact at the study intersection under future conditions. Thus, no direct Project mitigation measures are necessary.

Conclusion

In summary and based on the above, it is concluded that the updated haul route of trucks during the construction grading and material export phase of the Project is not expected to create significant traffic impacts at the additional study intersection of Tujunga Avenue/Riverside Drive-Camarillo Street. These findings are consistent with the 2015 Supplemental Traffic Analysis which concluded that the forecast construction traffic associated with the Project would also not result in significant traffic impacts at the study intersections. Accordingly, no additional analysis of traffic impacts is required or recommended as a result of construction-related activities of the Project.

Attachments

cc: File



NOT TO SCALE

MAP SOURCE: GOOGLE MAPS
PROJECT SITE
STUDY INTERSECTION
INBOUND HAUL ROUTE
OUTBOUND HAUL ROUTE

LINSCOTT, LAW & GREENSPAN, engineers

FIGURE 1
VICINITY MAP

POTENTIAL HAUL ROUTE

HARVARD-WESTLAKE ADDENDUM HAUL ROUTE ANALYSIS

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Table 1
EXISTING TRAFFIC VOLUMES [1]
Commuter Peak Hours

18-Aug-2016

NO.	INTERSECTION	DATE	DIR	AM PEAK HOUR		PM PEAK HOUR	
				BEGAN	VOLUME	BEGAN	VOLUME
6	Tujunga Avenue/ Riverside Drive - Camarillo Street	05/31/2016	NB SB EB WB	9:00	652 721 1,068 599	2:30	1,223 509 1,167 640

[1] Counts conducted by National Data & Surveying Services

Table 2
SUMMARY OF VOLUME TO CAPACITY RATIOS
AND LEVELS OF SERVICE
WEEKDAY AM AND PM, SATURDAY MID-DAY PEAK HOURS
CONSTRUCTION TRAFFIC

			[1]		[2]				[3]		[4]			
NO.	INTERSECTION	PEAK HOUR	YEAR 2012 EXISTING V/C	LOS	YEAR 2012 EXISTING W/ CONSTR. V/C	LOS	CHANGE V/C [(2)-(1)]	SIGNIF. IMPACT	YEAR 2019 FUTURE BASELINE V/C	LOS	YEAR 2019 FUTURE WITH CONSTRUCTION V/C	LOS	CHANGE V/C [(4)-(3)]	SIGNIF. IMPACT
6	Tujunga Avenue/ Riverside Drive - Camarillo Street	AM	0.641	B	0.650	B	0.009	NO	0.686	B	0.695	B	0.009	NO
		2PM	0.678	B	0.691	B	0.013	NO	0.726	C	0.738	C	0.012	NO
		3PM	0.684	B	0.690	B	0.006	NO	0.732	C	0.738	C	0.006	NO
		4PM	0.720	C	0.723	C	0.003	NO	0.770	C	0.773	C	0.003	NO
		SAT	0.681	B	0.696	B	0.015	NO	0.729	C	0.744	C	0.015	NO

(A) According to LADOT's "Traffic Study Policies and Procedures, " August 2014, a transportation impact on an intersection shall be deemed significant in accordance with the following table:

Final v/c	LOS	Project Related Increase in v/c
> 0.701 - 0.800	C	equal to or greater than 0.040
> 0.801 - 0.900	D	equal to or greater than 0.020
> 0.901	E,F	equal to or greater than 0.010

APPENDIX A

MANUAL TRAFFIC COUNT DATA

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

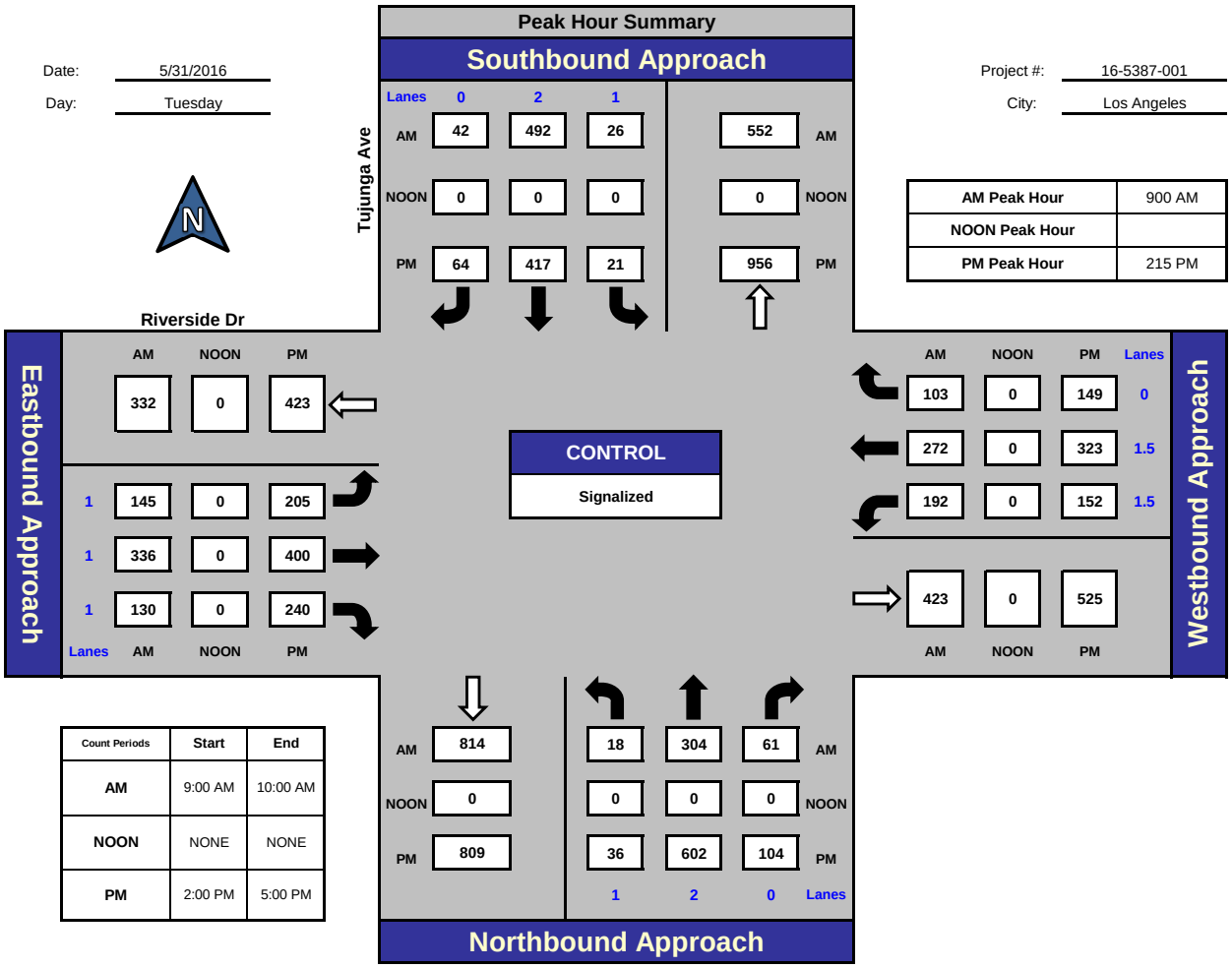
Date: 5/31/2016

Day: Tuesday

Project #: 16-5387-001

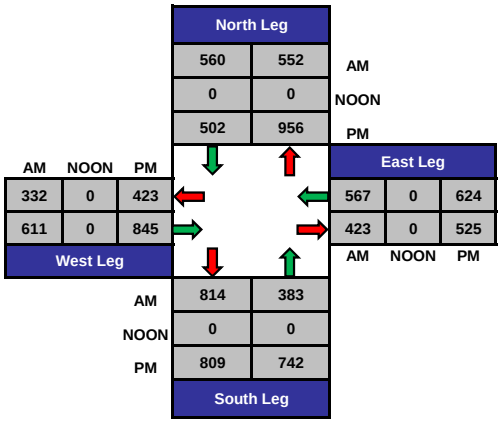
City: Los Angeles

AM Peak Hour	900 AM
NOON Peak Hour	
PM Peak Hour	215 PM

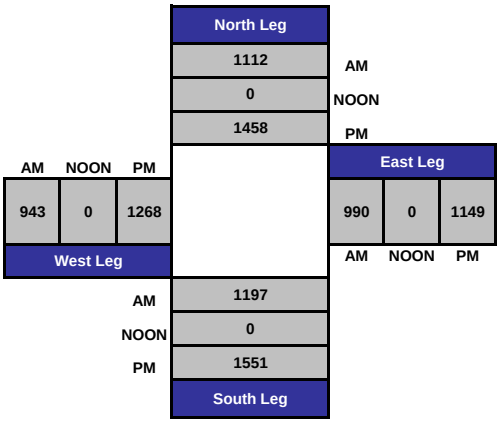


Count Periods	Start	End
AM	9:00 AM	10:00 AM
NOON	NONE	NONE
PM	2:00 PM	5:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-001 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

AM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	
9:00 AM	4	76	18	4	106	12	42	88	25	52	86	24	537
9:15 AM	3	77	14	11	153	14	36	66	31	39	42	21	507
9:30 AM	5	65	14	5	122	8	39	105	32	63	82	27	567
9:45 AM	6	86	15	6	111	8	28	77	42	38	62	31	510
TOTAL VOLUMES :	18	304	61	26	492	42	145	336	130	192	272	103	2121
APPROACH %'s :	4.70%	79.37%	15.93%	4.64%	87.86%	7.50%	23.73%	54.99%	21.28%	33.86%	47.97%	18.17%	
PEAK HR START TIME :	900 AM												TOTAL
PEAK HR VOL :	18	304	61	26	492	42	145	336	130	192	272	103	2121
PEAK HR FACTOR :		0.895			0.787			0.868			0.824		0.935

UTURNS	NB	SB	EB	WB
	0	3	1	0
	0	0	0	0
	0	0	0	0
	1	0	0	0
TOTAL VOLUMES :	1	3	1	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-001 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

PM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	
2:00 PM	12	167	33	6	93	12	45	83	57	40	66	32	646
2:15 PM	8	117	21	6	102	18	47	106	64	40	82	45	656
2:30 PM	5	168	25	5	108	19	52	85	68	38	72	31	676
2:45 PM	9	140	22	5	112	8	55	114	60	37	95	40	697
3:00 PM	14	177	36	5	95	19	51	95	48	37	74	33	684
3:15 PM	4	137	22	9	78	10	51	115	51	35	92	41	645
3:30 PM	8	118	26	2	86	19	47	86	60	40	69	33	594
3:45 PM	10	182	29	6	98	20	51	90	57	24	71	28	666
4:00 PM	8	152	20	8	67	20	44	117	33	37	78	43	627
4:15 PM	6	172	35	7	72	17	46	97	31	35	83	27	628
4:30 PM	6	179	26	6	65	22	47	120	35	33	92	38	669
4:45 PM	5	164	24	4	72	19	37	96	31	28	83	34	597
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	95	1873	319	69	1048	203	573	1204	595	424	957	425	7785
APPROACH %'s :	4.15%	81.90%	13.95%	5.23%	79.39%	15.38%	24.16%	50.76%	25.08%	23.48%	52.99%	23.53%	
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	36	602	104	21	417	64	205	400	240	152	323	149	2713
PEAK HR FACTOR :		0.817			0.951			0.922			0.907		0.973

UTURNS	NB	SB	EB	WB
	0	3	0	0
	0	1	0	0
	0	0	0	0
	0	0	0	0
	0	3	0	0
	0	3	0	0
	0	1	0	0
	0	2	0	0
	1	4	0	0
	0	2	0	0
	0	1	0	0
	0	1	0	0
	NB	SB	EB	WB
	1	21	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

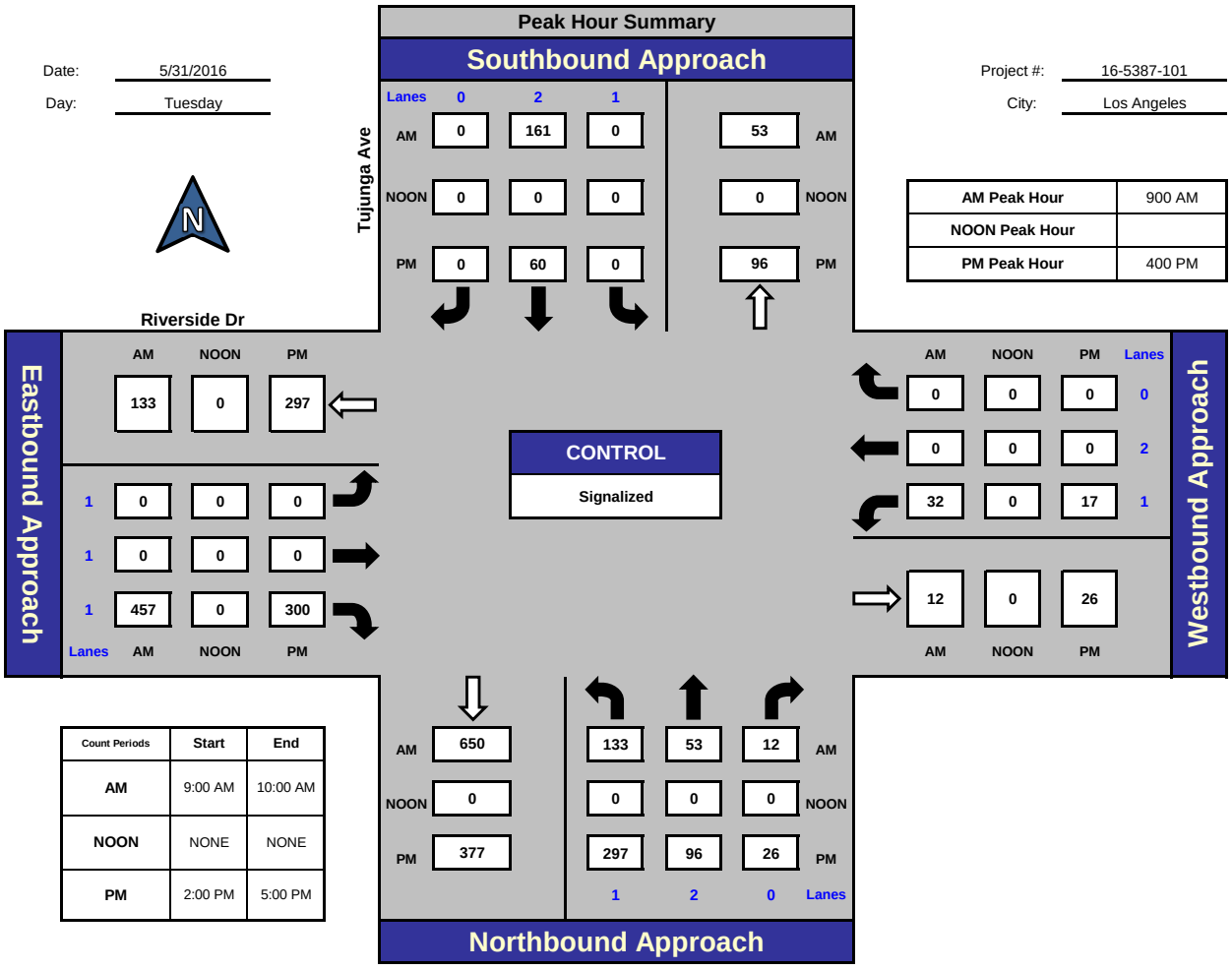
Date: 5/31/2016

Day: Tuesday

Project #: 16-5387-101

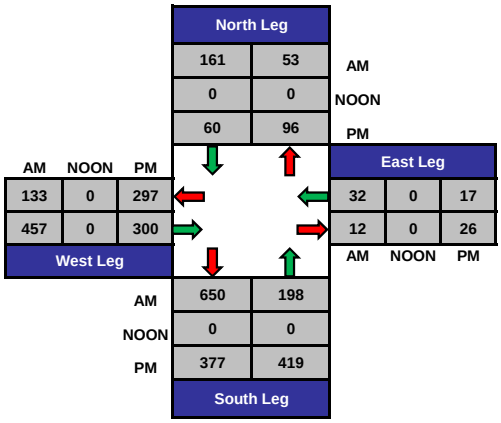
City: Los Angeles

AM Peak Hour	900 AM
NOON Peak Hour	
PM Peak Hour	400 PM

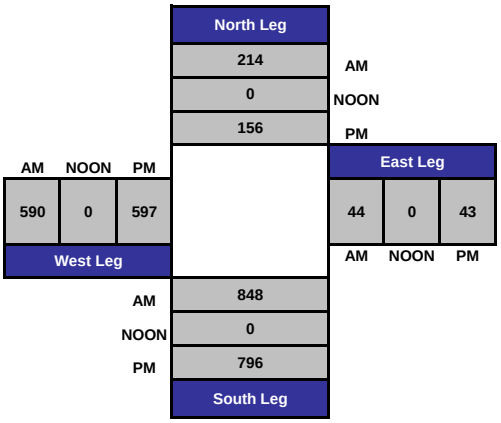


Count Periods	Start	End
AM	9:00 AM	10:00 AM
NOON	NONE	NONE
PM	2:00 PM	5:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-101 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

AM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1	2	0	
9:00 AM	31	15	1	0	39	0	0	0	124	7	0	0	217
9:15 AM	32	10	1	0	47	0	0	0	97	10	0	0	197
9:30 AM	30	10	4	0	33	0	0	0	123	4	0	0	204
9:45 AM	40	18	6	0	42	0	0	0	113	11	0	0	230
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	133	53	12	0	161	0	0	0	457	32	0	0	848
APPROACH %'s :	67.17%	26.77%	6.06%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	900 AM												TOTAL
PEAK HR VOL :	133	53	12	0	161	0	0	0	457	32	0	0	848
PEAK HR FACTOR :		0.773			0.856			0.921			0.727		0.922

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-101 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

PM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr				UTURNS			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND							
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
LANES:	1	2	0	1	2	0	1	1	1	1	2	0					
2:00 PM	69	24	3	0	14	0	0	0	88	4	0	0	202				
2:15 PM	57	27	8	0	9	0	0	0	79	4	0	0	184				
2:30 PM	59	22	5	0	10	0	0	0	59	3	0	0	158				
2:45 PM	50	25	6	0	14	0	0	0	90	3	0	0	188				
3:00 PM	84	37	7	0	5	0	0	0	83	3	0	0	219				
3:15 PM	63	28	4	0	7	0	0	0	90	6	0	0	198				
3:30 PM	71	25	6	0	16	0	0	0	67	3	0	0	188				
3:45 PM	62	23	4	0	10	0	0	0	78	2	0	0	179				
4:00 PM	69	26	7	0	13	0	0	0	72	7	0	0	194				
4:15 PM	77	27	7	0	19	0	0	0	70	2	0	0	202				
4:30 PM	64	29	4	0	12	0	0	0	89	6	0	0	204				
4:45 PM	87	14	8	0	16	0	0	0	69	2	0	0	196				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB	SB	EB	WB
TOTAL VOLUMES :	812	307	69	0	145	0	0	0	934	45	0	0	2312	0	0	0	0
APPROACH %'s :	68.35%	25.84%	5.81%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%					
PEAK HR START TIME :	400 PM												TOTAL				
PEAK HR VOL :	297	96	26	0	60	0	0	0	300	17	0	0	796				
PEAK HR FACTOR :		0.944			0.789			0.843			0.607		0.975				

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

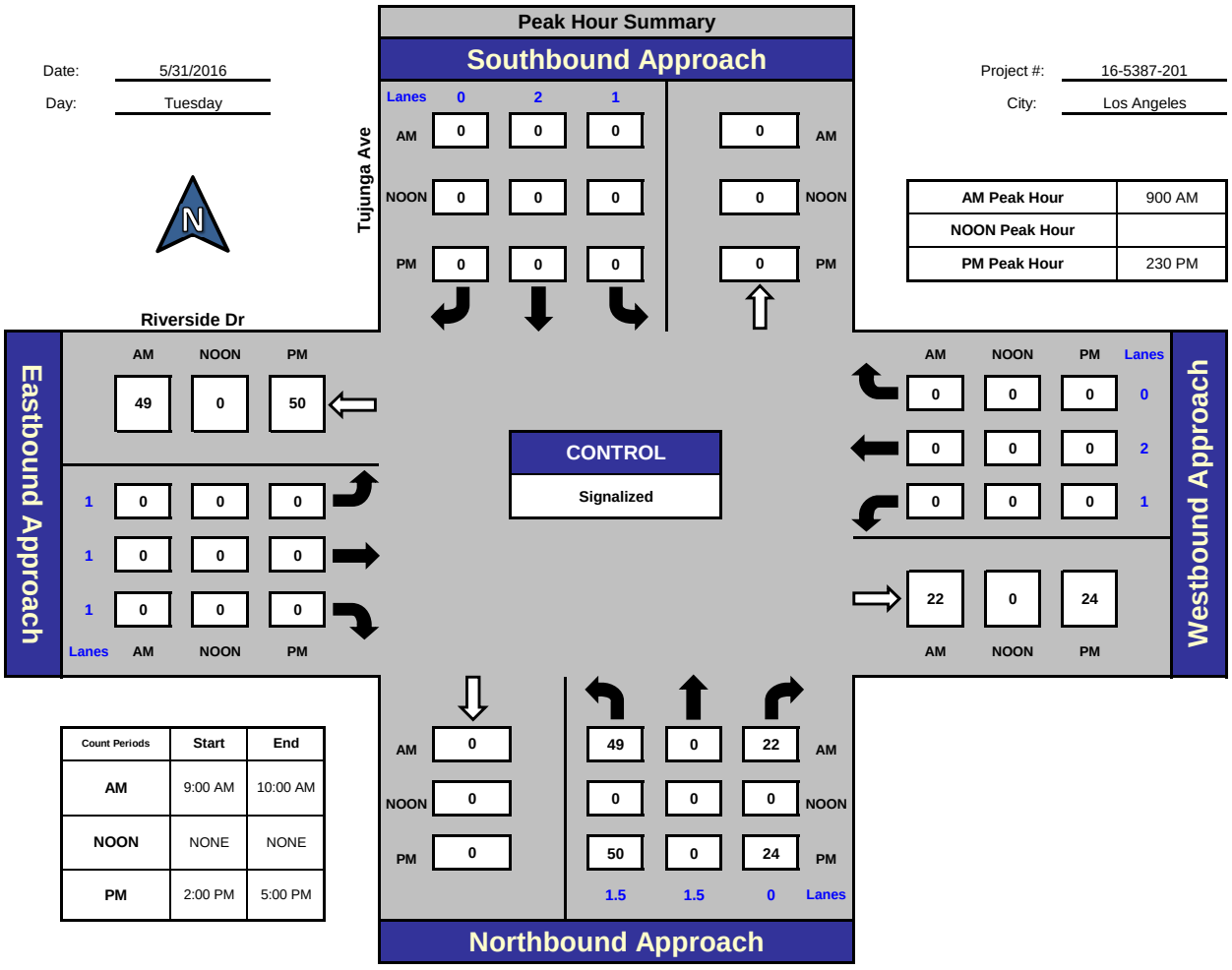
Date: 5/31/2016

Day: Tuesday

Project #: 16-5387-201

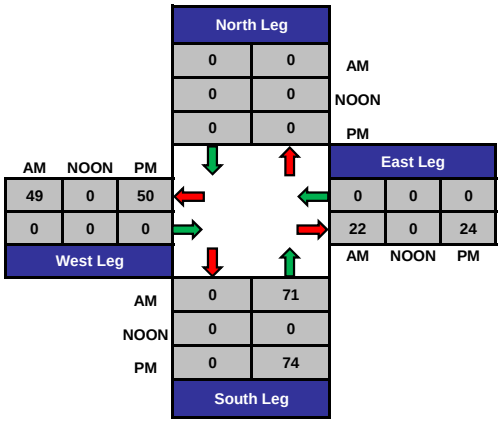
City: Los Angeles

AM Peak Hour	900 AM
NOON Peak Hour	
PM Peak Hour	230 PM

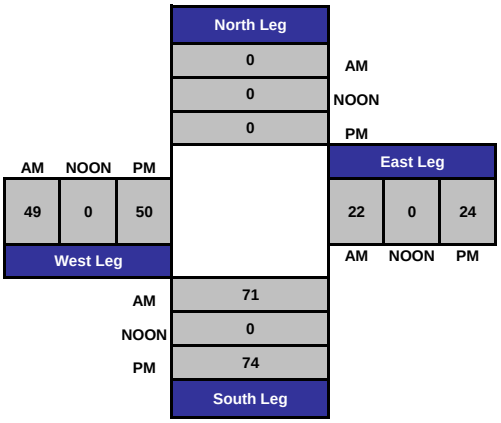


Count Periods	Start	End
AM	9:00 AM	10:00 AM
NOON	NONE	NONE
PM	2:00 PM	5:00 PM

Total Ins & Outs



Total Volume Per Leg



Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-201 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

AM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	0	1	2	0	1	1	1	1	2	0	
9:00 AM	14	0	2	0	0	0	0	0	0	0	0	0	16
9:15 AM	8	0	7	0	0	0	0	0	0	0	0	0	15
9:30 AM	12	0	4	0	0	0	0	0	0	0	0	0	16
9:45 AM	15	0	9	0	0	0	0	0	0	0	0	0	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	49	0	22	0	0	0	0	0	0	0	0	0	71
APPROACH %'s :	69.01%	0.00%	30.99%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	900 AM												TOTAL
PEAK HR VOL :	49	0	22	0	0	0	0	0	0	0	0	0	71
PEAK HR FACTOR :	0.740			0.000			0.000			0.000			0.740

UTURNS

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-201 **Day:** Tuesday

City: Los Angeles **Date:** 5/31/2016

PM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	0	1	2	0	1	1	1	1	2	0	
2:00 PM	12	0	6	0	0	0	0	0	0	0	0	0	18
2:15 PM	7	0	8	0	0	0	0	0	0	0	0	0	15
2:30 PM	14	0	7	0	0	0	0	0	0	0	0	0	21
2:45 PM	7	0	5	0	0	0	0	0	0	0	0	0	12
3:00 PM	13	0	6	0	0	0	0	0	0	0	0	0	19
3:15 PM	16	0	6	0	0	0	0	0	0	0	0	0	22
3:30 PM	12	0	5	0	0	0	0	0	0	0	0	0	17
3:45 PM	6	0	6	0	0	0	0	0	0	0	0	0	12
4:00 PM	9	0	4	0	0	0	0	0	0	0	0	0	13
4:15 PM	10	0	6	0	0	0	0	0	0	0	0	0	16
4:30 PM	7	0	2	0	0	0	0	0	0	0	0	0	9
4:45 PM	14	0	7	0	0	0	0	0	0	0	0	0	21
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	127	0	68	0	0	0	0	0	0	0	0	0	195
APPROACH %'s :	65.13%	0.00%	34.87%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	50	0	24	0	0	0	0	0	0	0	0	0	74
PEAK HR FACTOR :	0.841			0.000			0.000			0.000			0.841

UTURNS

NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

Date: 5/28/2016

Day: Saturday

Project #: 16-5387-001

City: Los Angeles

AM Peak Hour	
NOON Peak Hour	145 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Lanes	0	2	1		
AM	0	0	0	0	AM
NOON	53	340	75	790	NOON
PM	0	0	0	0	PM

Tujunga Ave

Riverside Dr

Eastbound Approach

Lanes	AM	NOON	PM
	0	326	0
1	0	152	0
1	0	378	0
1	0	255	0

Westbound Approach

Lanes	AM	NOON	PM
0	0	127	0
1.5	0	240	0
1.5	0	200	0
	0	549	0

CONTROL

Signalized

Count Periods	Start	End
AM	NONE	NONE
NOON	1:00 PM	2:45 PM
PM	NONE	NONE

Northbound Approach

Lanes	1	2	0	
AM	0	0	0	AM
NOON	795	33	511	96 NOON
PM	0	0	0	0 PM

Total Ins & Outs

	North Leg		
AM	0	0	AM
NOON	468	790	NOON
PM	0	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	326	0	0	567	0
0	785	0	0	549	0

	South Leg	
AM	0	0
NOON	795	640
PM	0	0

Total Volume Per Leg

	North Leg	
AM	0	AM
NOON	1258	NOON
PM	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	1111	0	0	1116	0

	South Leg	
AM	0	
NOON	1435	
PM	0	

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-001 **Day:** Saturday

City: Los Angeles **Date:** 5/28/2016

NOON

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	
1:00 PM	7	66	14	13	57	4	40	88	35	50	67	28	469
1:15 PM	15	110	29	15	87	18	29	85	38	39	58	21	544
1:30 PM	4	121	23	14	79	11	38	97	61	60	62	38	608
1:45 PM	10	127	26	23	107	13	39	99	62	59	64	26	655
2:00 PM	7	142	24	15	80	17	42	95	58	44	69	32	625
2:15 PM	6	107	24	19	79	11	32	76	59	56	53	36	558
2:30 PM	10	135	22	18	74	12	39	108	76	41	54	33	622
2:45 PM	2	100	22	11	84	10	50	121	89	48	64	33	634
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	61	908	184	128	647	96	309	769	478	397	491	247	4715
APPROACH %'s :	5.29%	78.75%	15.96%	14.70%	74.28%	11.02%	19.86%	49.42%	30.72%	34.98%	43.26%	21.76%	
PEAK HR START TIME :	145 PM												TOTAL
PEAK HR VOL :	33	511	96	75	340	53	152	378	255	200	240	127	2460
PEAK HR FACTOR :	0.925			0.818			0.880			0.951			0.939

UTURNS	NB	SB	EB	WB
	0	0	0	0
	1	1	2	0
	0	0	0	0
	0	2	0	1
	0	0	1	0
	1	0	1	0
	1	3	0	0
	0	1	0	0
	NB	SB	EB	WB
	3	7	4	1

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

Date: 5/28/2016

Day: Saturday

Project #: 16-5387-101

City: Los Angeles

AM Peak Hour	
NOON Peak Hour	130 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Lanes	0	2	1		
AM	0	0	0	0	AM
NOON	0	40	0	93	NOON
PM	0	0	0	0	PM

Tujunga Ave

Riverside Dr

Eastbound Approach

Lanes	AM	NOON	PM
	0	205	0
1	0	0	0
1	0	0	0
1	0	241	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	2
0	8	0	1
0	28	0	
AM	NOON	PM	

Count Periods	Start	End
AM	NONE	NONE
NOON	1:00 PM	2:45 PM
PM	NONE	NONE

Northbound Approach

AM	0	0	0	AM
NOON	289	205	93	28 NOON
PM	0	0	0	0 PM
		1	2	0 Lanes

Total Ins & Outs

	North Leg		
	0	0	AM
	40	93	NOON
	0	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	205	0	0	8	0
0	241	0	0	28	0
AM	NOON	PM	AM	NOON	PM

	South Leg	
AM	0	0
NOON	289	326
PM	0	0

Total Volume Per Leg

	North Leg	
	0	AM
	133	NOON
	0	PM

West Leg			East Leg		
AM	NOON	PM			
0	446	0	0	36	0
AM	NOON	PM	AM	NOON	PM

	South Leg
AM	0
NOON	615
PM	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-101 **Day:** Saturday

City: Los Angeles **Date:** 5/28/2016

NOON

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1	2	0	
1:00 PM	30	34	5	0	11	0	0	0	36	4	0	0	120
1:15 PM	57	30	7	0	8	0	0	0	47	6	0	0	155
1:30 PM	51	12	5	0	6	0	0	0	79	2	0	0	155
1:45 PM	46	22	9	0	14	0	0	0	47	0	0	0	138
2:00 PM	42	24	8	0	7	0	0	0	58	3	0	0	142
2:15 PM	66	35	6	0	13	0	0	0	57	3	0	0	180
2:30 PM	39	11	5	0	10	0	0	0	41	1	0	0	107
2:45 PM	46	24	7	0	9	0	0	0	57	1	0	0	144
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	377	192	52	0	78	0	0	0	422	20	0	0	1141
APPROACH %'s :	60.71%	30.92%	8.37%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	
PEAK HR START TIME :	130 PM												TOTAL
PEAK HR VOL :	205	93	28	0	40	0	0	0	241	8	0	0	615
PEAK HR FACTOR :	0.762			0.714			0.763			0.667			0.854

UTURNS			
NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Tujunga Ave and Riverside Dr , Los Angeles

Date: 5/28/2016

Day: Saturday

Project #: 16-5387-201

City: Los Angeles

AM Peak Hour	
NOON Peak Hour	145 PM
PM Peak Hour	

Peak Hour Summary

Southbound Approach

Lanes	0	2	1		
AM	0	0	0	0	AM
NOON	0	0	0	0	NOON
PM	0	0	0	0	PM

Tujunga Ave

Riverside Dr

Eastbound Approach

	AM	NOON	PM
	0	49	0
1	0	0	0
1	0	0	0
1	0	0	0
Lanes	AM	NOON	PM

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
	0	0	0	0
	0	0	0	2
	0	0	0	1
	0	21	0	
	AM	NOON	PM	

Count Periods	Start	End
AM	NONE	NONE
NOON	1:00 PM	2:45 PM
PM	NONE	NONE

Northbound Approach

AM	0	0	0	AM
NOON	0	49	0	NOON
PM	0	0	0	PM
		1.5	1.5	0 Lanes

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg				East Leg		
AM	NOON	PM		AM	NOON	PM
0	49	0		0	0	0
0	0	0		0	21	0

	South Leg	
AM	0	0
NOON	0	70
PM	0	0

Total Volume Per Leg

	North Leg	
	0	AM
	0	NOON
	0	PM

West Leg			East Leg		
AM	NOON	PM	AM	NOON	PM
0	49	0	0	21	0

	South Leg
AM	0
NOON	70
PM	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5387-201 **Day:** Saturday

City: Los Angeles **Date:** 5/28/2016

NOON

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	1.5	0	1	2	0	1	1	1	1	2	0	
1:00 PM	6	0	1	0	0	0	0	0	0	0	0	0	7
1:15 PM	4	0	3	0	0	0	0	0	0	0	0	0	7
1:30 PM	6	0	1	0	0	0	0	0	0	0	0	0	7
1:45 PM	23	0	6	0	0	0	0	0	0	0	0	0	29
2:00 PM	8	0	3	0	0	0	0	0	0	0	0	0	11
2:15 PM	10	0	7	0	0	0	0	0	0	0	0	0	17
2:30 PM	8	0	5	0	0	0	0	0	0	0	0	0	13
2:45 PM	9	0	2	0	0	0	0	0	0	0	0	0	11
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	74	0	28	0	0	0	0	0	0	0	0	0	102
APPROACH %'s :	72.55%	0.00%	27.45%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	145 PM												TOTAL
PEAK HR VOL :	49	0	21	0	0	0	0	0	0	0	0	0	70
PEAK HR FACTOR :	0.603			0.000			0.000			0.000			0.603

UTURNS				
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
NB	SB	EB	WB
0	0	0	1

CONTROL : Signalized

APPENDIX A TABLE 1
COMBINED TRAFFIC COUNTS (9:00 AM to 10:00 AM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201 **Day:** Tuesday

TOTALS

City: Los Angeles **Date:** 5/31/2016

AM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
9:00 AM	4	76	20	43	106	12	42	88	149	59	86	24	45	15	1	770
9:15 AM	3	77	21	58	153	14	36	66	128	49	42	21	40	10	1	719
9:30 AM	5	65	18	38	122	8	39	105	155	67	82	27	42	10	4	787
9:45 AM	6	86	24	48	111	8	28	77	155	49	62	31	55	18	6	764
PEAK HR START TIME :	900 AM															TOTAL
PEAK HR VOL :	18	304	83	187	492	42	145	336	587	224	272	103	182	53	12	3040

CONTROL : Signalized

APPENDIX A TABLE 2
COMBINED TRAFFIC COUNTS (2:00 PM to 5:00 PM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201 **Day:** Tuesday

TOTALS

City: Los Angeles **Date:** 5/31/2016

PM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
2:00 PM	12	167	39	20	93	12	45	83	145	44	66	32	81	24	3	866
2:15 PM	8	117	29	15	102	18	47	106	143	44	82	45	64	27	8	855
2:30 PM	5	168	32	15	108	19	52	85	127	41	72	31	73	22	5	855
2:45 PM	9	140	27	19	112	8	55	114	150	40	95	40	57	25	6	897
3:00 PM	14	177	42	10	95	19	51	95	131	40	74	33	97	37	7	922
3:15 PM	4	137	28	16	78	10	51	115	141	41	92	41	79	28	4	865
3:30 PM	8	118	31	18	86	19	47	86	127	43	69	33	83	25	6	799
3:45 PM	10	182	35	16	98	20	51	90	135	26	71	28	68	23	4	857
4:00 PM	8	152	24	21	67	20	44	117	105	44	78	43	78	26	7	834
4:15 PM	6	172	41	26	72	17	46	97	101	37	83	27	87	27	7	846
4:30 PM	6	179	28	18	65	22	47	120	124	39	92	38	71	29	4	882
4:45 PM	5	164	31	20	72	19	37	96	100	30	83	34	101	14	8	814
PEAK HR START TIME :	230 PM															TOTAL
PEAK HR VOL :	32	622	129	60	393	56	209	409	549	162	333	145	306	112	22	3539

CONTROL : Signalized

APPENDIX A TABLE 3
COMBINED TRAFFIC COUNTS (1:00 PM to 3:00 PM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201 **Day:** Saturday

TOTALS

City: Los Angeles **Date:** 5/28/2016

NOON

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
1:00 PM	7	66	15	24	57	4	40	88	71	54	67	28	36	34	5	596
1:15 PM	15	110	32	23	87	18	29	85	85	45	58	21	61	30	7	706
1:30 PM	4	121	24	20	79	11	38	97	140	62	62	38	57	12	5	770
1:45 PM	10	127	32	37	107	13	39	99	109	59	64	26	69	22	9	822
2:00 PM	7	142	27	22	80	17	42	95	116	47	69	32	50	24	8	778
2:15 PM	6	107	31	32	79	11	32	76	116	59	53	36	76	35	6	755
2:30 PM	10	135	27	28	74	12	39	108	117	42	54	33	47	11	5	742
2:45 PM	2	100	24	20	84	10	50	121	146	49	64	33	55	24	7	789
PEAK HR START TIME :	130 PM															TOTAL
PEAK HR VOL :	27	497	114	111	345	52	151	367	481	227	248	132	252	93	28	3125

CONTROL : Signalized

APPENDIX A TABLE 1
COMBINED TRAFFIC COUNTS (9:00 AM to 10:00 AM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201 **Day:** Tuesday

TOTALS

City: Los Angeles **Date:** 5/31/2016

AM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
9:00 AM	4	76	20	43	106	12	42	88	149	59	86	24	45	15	1	770
9:15 AM	3	77	21	58	153	14	36	66	128	49	42	21	40	10	1	719
9:30 AM	5	65	18	38	122	8	39	105	155	67	82	27	42	10	4	787
9:45 AM	6	86	24	48	111	8	28	77	155	49	62	31	55	18	6	764
PEAK HR START TIME :	900 AM															TOTAL
PEAK HR VOL :	18	304	83	187	492	42	145	336	587	224	272	103	182	53	12	3040

CONTROL : Signalized

APPENDIX A TABLE 2
COMBINED TRAFFIC COUNTS (2:00 PM to 5:00 PM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201

Day: Tuesday

TOTALS

City: Los Angeles

Date: 5/31/2016

PM

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
2:00 PM	12	167	39	20	93	12	45	83	145	44	66	32	81	24	3	866
2:15 PM	8	117	29	15	102	18	47	106	143	44	82	45	64	27	8	855
2:30 PM	5	168	32	15	108	19	52	85	127	41	72	31	73	22	5	855
2:45 PM	9	140	27	19	112	8	55	114	150	40	95	40	57	25	6	897
3:00 PM	14	177	42	10	95	19	51	95	131	40	74	33	97	37	7	922
3:15 PM	4	137	28	16	78	10	51	115	141	41	92	41	79	28	4	865
3:30 PM	8	118	31	18	86	19	47	86	127	43	69	33	83	25	6	799
3:45 PM	10	182	35	16	98	20	51	90	135	26	71	28	68	23	4	857
4:00 PM	8	152	24	21	67	20	44	117	105	44	78	43	78	26	7	834
4:15 PM	6	172	41	26	72	17	46	97	101	37	83	27	87	27	7	846
4:30 PM	6	179	28	18	65	22	47	120	124	39	92	38	71	29	4	882
4:45 PM	5	164	31	20	72	19	37	96	100	30	83	34	101	14	8	814
PEAK HR START TIME :	230 PM															TOTAL
PEAK HR VOL :	32	622	129	60	393	56	209	409	549	162	333	145	306	112	22	3539

CONTROL : Signalized

APPENDIX A TABLE 3
COMBINED TRAFFIC COUNTS (1:00 PM to 3:00 PM)
Tujunga Avenue / Riverside Drive - Camarillo Street

Project ID: 16-5387-001, 16-5387-101, 16-5387-201 **Day:** Saturday

TOTALS

City: Los Angeles **Date:** 5/28/2016

NOON

NS/EW Streets:	Tujunga Ave			Tujunga Ave			Riverside Dr			Camarillo St			Riverside Dr			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			NORTHBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	NL	NT	NR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	1.5	1.5	0	1	2	0	
1:00 PM	7	66	15	24	57	4	40	88	71	54	67	28	36	34	5	596
1:15 PM	15	110	32	23	87	18	29	85	85	45	58	21	61	30	7	706
1:30 PM	4	121	24	20	79	11	38	97	140	62	62	38	57	12	5	770
1:45 PM	10	127	32	37	107	13	39	99	109	59	64	26	69	22	9	822
2:00 PM	7	142	27	22	80	17	42	95	116	47	69	32	50	24	8	778
2:15 PM	6	107	31	32	79	11	32	76	116	59	53	36	76	35	6	755
2:30 PM	10	135	27	28	74	12	39	108	117	42	54	33	47	11	5	742
2:45 PM	2	100	24	20	84	10	50	121	146	49	64	33	55	24	7	789
PEAK HR START TIME :	130 PM															TOTAL
PEAK HR VOL :	27	497	114	111	345	52	151	367	481	227	248	132	252	93	28	3125

CONTROL : Signalized

APPENDIX B

CMA AND LEVELS OF SERVICE EXPLANATION
CMA DATA WORKSHEETS – WEEKDAY AM AND PM PEAK HOURS

CRITICAL MOVEMENT ANALYSIS (CMA) DESCRIPTION

Level of Service is a term used to describe prevailing conditions and their effect on traffic. Broadly interpreted, the Level of Service concept denotes any one of a number of differing combinations of operating conditions which may take place as a roadway is accommodating various traffic volumes. Level of Service is a qualitative measure of the effect of such factors as travel speed, travel time, interruptions, freedom to maneuver, safety, driving comfort and convenience.

Six Levels of Service, A through F, have been defined in the 1965 *Highway Capacity Manual*. Level of Service A describes a condition of free flow, with low traffic volumes and relatively high speeds, while Level of Service F describes forced traffic flow at low speeds with jammed conditions and queues which cannot clear during the green phases.

Critical Movement Analysis (CMA) is a procedure which provides a capacity and level of service geometry and traffic signal operation and results in a level of service determination for the intersection as a whole operating unit.

The per lane volume for each movement in the intersection is determined and the per lane intersection capacity based on the Transportation Research Board (TRB) Report 212 (*Interim Materials on Highway Capacity*). The resulting CMA represents the ratio of the intersection's cumulative volume over its respective capacity (V/C ratio). Critical Movement Analysis takes into account lane widths, bus and truck operations, pedestrian activity and parking activity, as well as number of lanes and geometrics.

The Level of Service (abbreviated from the *Highway Capacity Manual*) are listed here with their corresponding CMA and Load Factor equivalents. Load Factor is that proportion of the signal cycles during the peak hour which are fully loaded; i.e. when all of the vehicles waiting at the beginning of green are not able to clear on that green phase.

Critical Movement Analysis Characteristics

Level of Service	Load Factor	Equivalent CMA
A (free flow)	0.0	0.00 - 0.60
B (rural design)	0.0 - 0.1	0.61 - 0.70
C (urban design)	0.1 - 0.3	0.71 - 0.80
D (maximum urban design)	0.3 - 0.7	0.81 - 0.90
E (capacity)	0.7 - 1.0	0.91 - 1.00
F (force flow)	Not Applicable	Not Applicable

SERVICE LEVEL A
There are no loaded cycles and few are even close to loaded at this service level. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.

SERVICE LEVEL B
This level represents stable operation where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.

SERVICE LEVEL C
At this level stable operation continues. Loading is still intermittent but more frequent than at Level B. Occasionally drivers may have to wait through more one red signal indication and backups may develop behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so.

SERVICE LEVEL D
This level encompasses a zone of increasing restriction approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak hour, but enough cycles with lower demand occur to permit periodic clearance of queues, thus preventing excessive backups. Drivers frequently have to wait through more than one red signal. This level is the lower limit of acceptable operation to most drivers.

SERVICE LEVEL E
This represents near capacity and capacity operation. At capacity (CMA = 1.0) it represents the most vehicles that the particular intersection can accommodate. However, full utilization of every signal cycle is seldom attained no matter how great the demand. At this level all drivers wait through more than one red signal, and frequently through several.

SERVICE LEVEL F
Jammed conditions. Traffic backed up from a downstream location on one of the street restricts or prevents movement of traffic through the intersection under consideration.

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CRITICAL MOVEMENT ANALYSIS

Tujunga Avenue @ Riverside Drive - Camarillo Street

N-S St: Tujunga Avenue
E-W St: Riverside Drive - Camarillo Street
Project: Harvard Westlake School Parking Improvement Plan Addendum/5-08-3744-2
File Name: CMA1
Counts by: National Data & Surveying Services

Peak Hour: AM
Annual Growth: 2.0%

Date: 08/12/2016
Date of Count: 2016
Buildout Year: 2019

	2016 EXIST. TRAFFIC			2016 EXIST. + PROJECT				2016 EXIST. + PROJ. + MIT				2019 FUTURE BASELINE				2019 FUTURE W/PROJECT				2019 FUTURE W/MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	18	1	18	0	18	1	18	0	18	1	18	1	19	1	19	0	19	1	19	0	19	1	19
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
NB Thru	304	1	194	12	316	1	200	0	316	1	200	19	323	1	205	12	335	1	211	0	335	1	211
Comb. T-R		1	194			1	200			1	200			1	205			1	211			1	211
NB Right	83	0	-	0	83	0	-	0	83	0	-	5	88	0	-	0	88	0	-	0	88	0	-
Comb. L-T-R -		0				0				0				0				0				0	
SB Left	187	1	187	0	187	1	187	0	187	1	187	11	198	1	198	0	198	1	198	0	198	1	198
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
SB Thru	492	1	267	0	492	1	267	0	492	1	267	30	522	1	283	0	522	1	283	0	522	1	283
Comb. T-R		1	267			1	267			1	267			1	283			1	283			1	283
SB Right	42	0	-	0	42	0	-	0	42	0	-	3	45	0	-	0	45	0	-	0	45	0	-
Comb. L-T-R -		0				0				0				0				0				0	
EB Left	145	1	145	0	145	1	145	0	145	1	145	9	154	1	154	0	154	1	154	0	154	1	154
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
EB Thru	336	1	300	0	336	1	303	0	336	1	303	21	357	1	318	0	357	1	321	0	357	1	321
Comb. T-R		1	300			1	303			1	303			1	318			1	321			1	321
EB Right	587	1	323	12	599	1	329	0	599	1	329	36	623	1	343	12	635	1	349	0	635	1	349
Comb. L-T-R -		0				0				0				0				0				0	
WB Left	224	1	224	0	224	1	224	0	224	1	224	14	238	1	238	0	238	1	238	0	238	1	238
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
WB Thru	272	1	188	0	272	1	188	0	272	1	188	17	289	1	199	0	289	1	199	0	289	1	199
Comb. T-R		1	188			1	188			1	188			1	199			1	199			1	199
WB Right	103	0	-	0	103	0	-	0	103	0	-	6	109	0	-	0	109	0	-	0	109	0	-
Comb. L-T-R -		0				0				0				0				0				0	
NW Left	182	1	100	0	182	1	100	0	182	1	100	11	193	1	106	0	193	1	106	0	193	1	106
Comb. L-T		1	82			1	82			1	82			1	87			1	87			1	87
NW Thru	53	0	-	0	53	0	-	0	53	0	-	3	56	0	-	0	56	0	-	0	56	0	-
Comb. T-R		1	65			1	65			1	65			1	69			1	69			1	69
NW Right	12	0	-	0	12	0	-	0	12	0	-	1	13	0	-	0	13	0	-	0	13	0	-
Comb. L-T-R -		0				0				0				0				0				0	
Crit. Volumes:		N-S:	381			N-S:	387			N-S:	387			N-S:	404			N-S:	410			N-S:	410
		E-W:	538			E-W:	544			E-W:	544			E-W:	571			E-W:	577			E-W:	577
		NW:	100			NW:	100			NW:	100			NW:	106			NW:	106			NW:	106
		SUM:	1018			SUM:	1031			SUM:	1031			SUM:	1081			SUM:	1093			SUM:	1093
No. of Phases:			5				5				5				5				5				5
(N/A=0, ATSAC=1, ATCS=2)			*2*				*2*				*2*				*2*				*2*				*2*
Volume / Capacity:			0.641				0.650				0.650				0.686				0.695				0.695
Level of Service:			B				B				B				B				B				B

Assumptions:
Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 55% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

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CRITICAL MOVEMENT ANALYSIS

Tujunga Avenue @ Riverside Drive - Camarillo Street

N-S St: Tujunga Avenue
E-W St: Riverside Drive - Camarillo Street
Project: Harvard Westlake School Parking Improvement Plan Addendum/5-08-3744-2
File Name: CMA1
Counts by: National Data & Surveying Services

Peak Hour: 2PM
Annual Growth: 2.0%

Date: 08/12/2016
Date of Count: 2016
Buildout Year: 2019

	2013 EXIST. TRAFFIC			2016 EXIST. + PROJECT				2016 EXIST. + PROJ. + MIT				2019 FUTURE BASELINE				2019 FUTURE W/PROJECT				2019 FUTURE W/MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	34	1	34	0	34	1	34	0	34	1	34	2	36	1	36	0	36	1	36	0	36	1	36
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
NB Thru	592	1	360	24	616	1	372	0	616	1	372	36	628	1	382	24	652	1	394	0	652	1	394
Comb. T-R		1	360			1	372			1	372			1	382			1	394			1	394
NB Right	127	0	-	0	127	0	-	0	127	0	-	8	135	0	-	0	135	0	-	0	135	0	-
Comb. L-T-R	-	0				0				0				0				0				0	
SB Left	69	1	69	0	69	1	69	0	69	1	69	4	73	1	73	0	73	1	73	0	73	1	73
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
SB Thru	415	1	236	0	415	1	236	0	415	1	236	25	440	1	250	0	440	1	250	0	440	1	250
Comb. T-R		1	236			1	236			1	236			1	250			1	250			1	250
SB Right	57	0	-	0	57	0	-	0	57	0	-	3	60	0	-	0	60	0	-	0	60	0	-
Comb. L-T-R	-	0				0				0				0				0				0	
EB Left	199	1	199	0	199	1	199	0	199	1	199	12	211	1	211	0	211	1	211	0	211	1	211
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
EB Thru	388	1	321	0	388	1	327	0	388	1	327	24	412	1	341	0	412	1	346	0	412	1	346
Comb. T-R		1	321			1	327			1	327			1	341			1	346			1	346
EB Right	565	1	311	24	589	1	324	0	589	1	324	35	600	1	330	24	624	1	343	0	624	1	343
Comb. L-T-R	-	0				0				0				0				0				0	
WB Left	169	1	169	0	169	1	169	0	169	1	169	10	179	1	179	0	179	1	179	0	179	1	179
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
WB Thru	315	1	232	0	315	1	232	0	315	1	232	19	334	1	246	0	334	1	246	0	334	1	246
Comb. T-R		1	232			1	232			1	232			1	246			1	246			1	246
WB Right	148	0	-	0	148	0	-	0	148	0	-	9	157	0	-	0	157	0	-	0	157	0	-
Comb. L-T-R	-	0				0				0				0				0				0	
NW Left	275	1	151	0	275	1	151	0	275	1	151	17	292	1	161	0	292	1	161	0	292	1	161
Comb. L-T		1	124			1	124			1	124			1	131			1	131			1	131
NW Thru	98	0	-	0	98	0	-	0	98	0	-	6	104	0	-	0	104	0	-	0	104	0	-
Comb. T-R		1	120			1	120			1	120			1	127			1	127			1	127
NW Right	22	0	-	0	22	0	-	0	22	0	-	1	23	0	-	0	23	0	-	0	23	0	-
Comb. L-T-R	-	0				0				0				0				0				0	
Crit. Volumes:	N-S:		429		N-S:		441		N-S:		441		N-S:		455		N-S:		467		N-S:		467
	E-W:		490		E-W:		496		E-W:		496		E-W:		520		E-W:		526		E-W:		526
	NW:		151		NW:		151		NW:		151		NW:		161		NW:		161		NW:		161
	SUM:		1070		SUM:		1087		SUM:		1087		SUM:		1135		SUM:		1153		SUM:		1153
No. of Phases:			5				5				5				5				5				5
(N/A=0, ATSAC=1, ATCS=2)			*2*				*2*				*2*				*2*				*2*				*2*
Volume / Capacity:			0.678				0.691				0.691				0.726				0.738				0.738
Level of Service:			B				B				B				C				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 55% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

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CRITICAL MOVEMENT ANALYSIS

Tujunga Avenue @ Riverside Drive - Camarillo Street

N-S St: Tujunga Avenue
E-W St: Riverside Drive - Camarillo Street
Project: Harvard Westlake School Parking Improvement Plan Addendum/5-08-3744-2
File Name: CMA2
Counts by: National Data & Surveying Services

Peak Hour: 3PM
Annual Growth: 2.0%

Date: 08/12/2016
Date of Count: 2016
Buildout Year: 2019

	2016 EXIST. TRAFFIC			2016 EXIST. + PROJECT				2016 EXIST. + PROJ. + MIT				2019 FUTURE BASELINE				2019 FUTURE W/PROJECT				2019 FUTURE W/MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	36	1	36	0	36	1	36	0	36	1	36	2	38	1	38	0	38	1	38	0	38	1	38
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
NB Thru	614	1	375	12	626	1	381	0	626	1	381	38	652	1	398	12	664	1	404	0	664	1	404
Comb. T-R		1	375			1	381			1	381			1	398			1	404			1	404
NB Right	136	0	-	0	136	0	-	0	136	0	-	8	144	0	-	0	144	0	-	0	144	0	-
Comb. L-T-R -		0				0				0				0				0				0	
SB Left	60	1	60	0	60	1	60	0	60	1	60	4	64	1	64	0	64	1	64	0	64	1	64
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
SB Thru	357	1	213	0	357	1	213	0	357	1	213	22	379	1	226	0	379	1	226	0	379	1	226
Comb. T-R		1	213			1	213			1	213			1	226			1	226			1	226
SB Right	68	0	-	0	68	0	-	0	68	0	-	4	72	0	-	0	72	0	-	0	72	0	-
Comb. L-T-R -		0				0				0				0				0				0	
EB Left	200	1	200	0	200	1	200	0	200	1	200	12	212	1	212	0	212	1	212	0	212	1	212
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
EB Thru	386	1	313	0	386	1	316	0	386	1	316	24	410	1	332	0	410	1	335	0	410	1	335
Comb. T-R		1	313			1	316			1	316			1	332			1	335			1	335
EB Right	534	1	294	12	546	1	300	0	546	1	300	33	567	1	312	12	579	1	318	0	579	1	318
Comb. L-T-R -		0				0				0				0				0				0	
WB Left	150	1	150	0	150	1	150	0	150	1	150	9	159	1	159	0	159	1	159	0	159	1	159
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
WB Thru	306	1	221	0	306	1	221	0	306	1	221	19	325	1	234	0	325	1	234	0	325	1	234
Comb. T-R		1	221			1	221			1	221			1	234			1	234			1	234
WB Right	135	0	-	0	135	0	-	0	135	0	-	8	143	0	-	0	143	0	-	0	143	0	-
Comb. L-T-R -		0				0				0				0				0				0	
NW Left	327	1	180	0	327	1	180	0	327	1	180	20	347	1	191	0	347	1	191	0	347	1	191
Comb. L-T		1	147			1	147			1	147			1	156			1	156			1	156
NW Thru	113	0	-	0	113	0	-	0	113	0	-	7	120	0	-	0	120	0	-	0	120	0	-
Comb. T-R		1	134			1	134			1	134			1	142			1	142			1	142
NW Right	21	0	-	0	21	0	-	0	21	0	-	1	22	0	-	0	22	0	-	0	22	0	-
Comb. L-T-R -		0				0				0				0				0				0	
Crit. Volumes:	N-S:		435		N-S:		441		N-S:		441		N-S:		462		N-S:		468		N-S:		468
	E-W:		463		E-W:		466		E-W:		466		E-W:		491		E-W:		494		E-W:		494
	NW:		180		NW:		180		NW:		180		NW:		191		NW:		191		NW:		191
	SUM:		1078		SUM:		1087		SUM:		1087		SUM:		1144		SUM:		1153		SUM:		1153
No. of Phases:			5				5				5				5				5				5
(N/A=0, ATSAC=1, ATCS=2)			*2*				*2*				*2*				*2*				*2*				*2*
Volume / Capacity:			0.684				0.690				0.690				0.732				0.738				0.738
Level of Service:			B				B				B				C				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 55% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

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CRITICAL MOVEMENT ANALYSIS

Tujunga Avenue @ Riverside Drive - Camarillo Street

N-S St: Tujunga Avenue
E-W St: Riverside Drive - Camarillo Street
Project: Harvard Westlake School Parking Improvement Plan Addendum/5-08-3744-2
File Name: CMA2
Counts by: National Data & Surveying Services

Peak Hour: 4PM
Annual Growth: 2.0%

Date: 08/12/2016
Date of Count: 2016
Buildout Year: 2019

	2013 EXIST. TRAFFIC			2016 EXIST. + PROJECT				2016 EXIST. + PROJ. + MIT				2019 FUTURE BASELINE				2019 FUTURE W/PROJECT				2019 FUTURE W/MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	25	1	25	0	25	1	25	0	25	1	25	2	27	1	27	0	27	1	27	0	27	1	27
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
NB Thru	667	1	396	7	674	1	399	0	674	1	399	41	708	1	420	7	715	1	423	0	715	1	423
Comb. T-R		1	396			1	399			1	399			1	420			1	423			1	423
NB Right	124	0	-	0	124	0	-	0	124	0	-	8	132	0	-	0	132	0	-	0	132	0	-
Comb. L-T-R -		0				0				0				0				0				0	
SB Left	85	1	85	0	85	1	85	0	85	1	85	5	90	1	90	0	90	1	90	0	90	1	90
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
SB Thru	276	1	177	0	276	1	177	0	276	1	177	17	293	1	188	0	293	1	188	0	293	1	188
Comb. T-R		1	177			1	177			1	177			1	188			1	188			1	188
SB Right	78	0	-	0	78	0	-	0	78	0	-	5	83	0	-	0	83	0	-	0	83	0	-
Comb. L-T-R -		0				0				0				0				0				0	
EB Left	174	1	174	0	174	1	174	0	174	1	174	11	185	1	185	0	185	1	185	0	185	1	185
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
EB Thru	430	1	312	0	430	1	312	0	430	1	312	26	456	1	331	0	456	1	331	0	456	1	331
Comb. T-R		1	312			1	312			1	312			1	331			1	331			1	331
EB Right	430	1	237	0	430	1	237	0	430	1	237	26	456	1	251	0	456	1	251	0	456	1	251
Comb. L-T-R -		0				0				0				0				0				0	
WB Left	150	1	150	0	150	1	150	0	150	1	150	9	159	1	159	0	159	1	159	0	159	1	159
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
WB Thru	336	1	239	0	336	1	239	0	336	1	239	21	357	1	254	0	357	1	254	0	357	1	254
Comb. T-R		1	239			1	239			1	239			1	254			1	254			1	254
WB Right	142	0	-	0	142	0	-	0	142	0	-	9	151	0	-	0	151	0	-	0	151	0	-
Comb. L-T-R -		0				0				0				0				0				0	
NW Left	337	1	185	0	337	1	185	0	337	1	185	21	358	1	197	0	358	1	197	0	358	1	197
Comb. L-T		1	152			1	152			1	152			1	161			1	161			1	161
NW Thru	96	0	-	0	96	0	-	0	96	0	-	6	102	0	-	0	102	0	-	0	102	0	-
Comb. T-R		1	122			1	122			1	122			1	129			1	129			1	129
NW Right	26	0	-	0	26	0	-	0	26	0	-	2	28	0	-	0	28	0	-	0	28	0	-
Comb. L-T-R -		0				0				0				0				0				0	
Crit. Volumes:		N-S:	481			N-S:	484			N-S:	484			N-S:	510			N-S:	513			N-S:	513
		E-W:	462			E-W:	462			E-W:	462			E-W:	490			E-W:	490			E-W:	490
		NW:	185			NW:	185			NW:	185			NW:	197			NW:	197			NW:	197
		SUM:	1128			SUM:	1131			SUM:	1131			SUM:	1197			SUM:	1200			SUM:	1200
No. of Phases:			5				5				5				5				5				5
(N/A=0, ATSAC=1, ATCS=2)			*2*				*2*				*2*				*2*				*2*				*2*
Volume / Capacity:			0.720				0.723				0.723				0.770				0.773				0.773
Level of Service:			C				C				C				C				C				C

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
For dual turn lanes, 55% of volume is assigned to heavier lane.
For one excl. and one opt. turn lane, 55% of volume is assigned to exclusive lane.
Right turns on red from excl. lanes = 50% of overlapping left turn.

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CRITICAL MOVEMENT ANALYSIS

Tujunga Avenue @ Riverside Drive - Camarillo Street

N-S St: Tujunga Avenue
E-W St: Riverside Drive - Camarillo Street
Project: Harvard Westlake School Parking Improvement Plan Addendum/5-08-3744-2
File Name: CMA3
Counts by: National Data & Surveying Services

Peak Hour: SAT
Annual Growth: 2.0%

Date: 08/12/2016
Date of Count: 2016
Buildout Year: 2019

	2016 EXIST. TRAFFIC			2016 EXIST. + PROJECT				2016 EXIST. + PROJ. + MIT				2019 FUTURE BASELINE				2019 FUTURE W/PROJECT				2019 FUTURE W/MITIGATION			
Movement	Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NB Left	27	1	27	0	27	1	27	0	27	1	27	2	29	1	29	0	29	1	29	0	29	1	29
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
NB Thru	497	1	306	28	525	1	320	0	525	1	320	30	527	1	324	28	555	1	338	0	555	1	338
Comb. T-R		1	306			1	320			1	320			1	324			1	338			1	338
NB Right	114	0	-	0	114	0	-	0	114	0	-	7	121	0	-	0	121	0	-	0	121	0	-
Comb. L-T-R -		0				0				0				0				0				0	
SB Left	111	1	111	0	111	1	111	0	111	1	111	7	118	1	118	0	118	1	118	0	118	1	118
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
SB Thru	345	1	199	0	345	1	199	0	345	1	199	21	366	1	211	0	366	1	211	0	366	1	211
Comb. T-R		1	199			1	199			1	199			1	211			1	211			1	211
SB Right	52	0	-	0	52	0	-	0	52	0	-	3	55	0	-	0	55	0	-	0	55	0	-
Comb. L-T-R -		0				0				0				0				0				0	
EB Left	151	1	151	0	151	1	151	0	151	1	151	9	160	1	160	0	160	1	160	0	160	1	160
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
EB Thru	367	1	292	0	367	1	298	0	367	1	298	22	389	1	310	0	389	1	316	0	389	1	316
Comb. T-R		1	292			1	298			1	298			1	310			1	316			1	316
EB Right	481	1	265	28	509	1	280	0	509	1	280	29	510	1	281	28	538	1	296	0	538	1	296
Comb. L-T-R -		0				0				0				0				0				0	
WB Left	227	1	227	0	227	1	227	0	227	1	227	14	241	1	241	0	241	1	241	0	241	1	241
Comb. L-T		0	-			0	-			0	-			0	-			0	-			0	-
WB Thru	248	1	190	0	248	1	190	0	248	1	190	15	263	1	202	0	263	1	202	0	263	1	202
Comb. T-R		1	190			1	190			1	190			1	202			1	202			1	202
WB Right	132	0	-	0	132	0	-	0	132	0	-	8	140	0	-	0	140	0	-	0	140	0	-
Comb. L-T-R -		0				0				0				0				0				0	
NW Left	252	1	139	0	252	1	139	0	252	1	139	15	267	1	147	0	267	1	147	0	267	1	147
Comb. L-T		1	117			1	117			1	117			1	124			1	124			1	124
NW Thru	93	0	-	0	93	0	-	0	93	0	-	6	99	0	-	0	99	0	-	0	99	0	-
Comb. T-R		1	117			1	117			1	117			1	124			1	124			1	124
NW Right	28	0	-	0	28	0	-	0	28	0	-	2	30	0	-	0	30	0	-	0	30	0	-
Comb. L-T-R -		0				0				0				0				0				0	
Crit. Volumes:	N-S:	417		N-S:	431			N-S:	431			N-S:	442			N-S:	456			N-S:	456		
	E-W:	519		E-W:	525			E-W:	525			E-W:	550			E-W:	557			E-W:	557		
	NW:	139		NW:	139			NW:	139			NW:	147			NW:	147			NW:	147		
	SUM:	1074		SUM:	1094			SUM:	1094			SUM:	1140			SUM:	1160			SUM:	1160		
No. of Phases:		5			5				5				5				5				5		
(N/A=0, ATSAC=1, ATCS=2)		*2*			*2*				*2*				*2*				*2*				*2*		
Volume / Capacity:		0.681			0.696				0.696				0.729				0.744				0.744		
Level of Service:		B			B				B				C				C				C		

Assumptions: *Maximum Sum of Critical Volumes (Intersection Capacity): 2 Phase=1500, 3 Phase=1425, 4+ Phase=1375, Unsignalized=1200.*
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