

Appendix E

Traffic Impact Assessment

**HIGHWAY 74/79 (HEMET RETAIL DEVELOPMENT)
TRAFFIC IMPACT ANALYSIS**

December 2, 2019

Prepared for:

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Traffic Division

Job Number 17944

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HIGHWAY 74/79 (HEMET RETAIL DEVELOPMENT) TRAFFIC IMPACT ANALYSIS

December 2, 2019

INTRODUCTION

The following Traffic Impact Analysis (TIA) has been prepared to determine any traffic-related impacts within the project area roadways and intersections due to the proposed Hemet Retail Development Project. The proposed project is located on the southeast corner of SR 74 and Winchester Road / SR 79 in the County of Riverside. **Exhibit 1** shows the project area map.

This TIA was prepared following the County of Riverside Transportation Department *Traffic Impact Analysis Preparation Guide* publication, dated April, 2008. Refer to **Appendix A** for the Scoping Agreement.

PROJECT DESCRIPTION

The project involves the construction of a 2,500 square foot fast food restaurant with a drive-thru window and a 2,000 square foot convenience market open 24-hours. There are two vehicular access points to the project site, one driveway via Old State Highway and the second driveway via SR 79. The project will construct approximately 30 parking spaces on the site to accommodate customers/employees. **Exhibit 2** shows the project site plan.

EXISTING TRANSPORTATION CONDITIONS

The following is a brief description of the County of Riverside roadways within the project area.

Winchester Road / SR 79 is classified as a four-lane Major Roadway per the County of Riverside's Circulation Element. Within the project area, it currently provides one vehicular travel lanes in each direction. On-street parking is not permitted and bike lanes are not provided within the project area. A traffic signal is present at its intersection with SR 74.

SR 74 is classified as a six-lane Expressway per the County of Riverside's Circulation Element. Within the project area, it currently provides two lanes in each direction separated by a two-way left-turn lane. On-street parking is not permitted and dedicated bike lanes are not provided within the project area. The posted speed limit is 50 mph. A traffic signal is present at its intersection with Winchester Road / SR 79.

Old State Highway is not classified in the County of Riverside's Circulation Element and is currently built as a collector street with one lane in each direction. Intersections along this roadway in the project area are un-signalized. On-street parking is not permitted and dedicated bike lanes are not provided within the project area. There is no posted speed along this roadway.

The Riverside Transit Agency has one route that travels along SR 74, Bus Route 27, with one bus stop within the study area on SR 74 just west of Winchester Road.



NOT TO SCALE



EXHIBIT 1

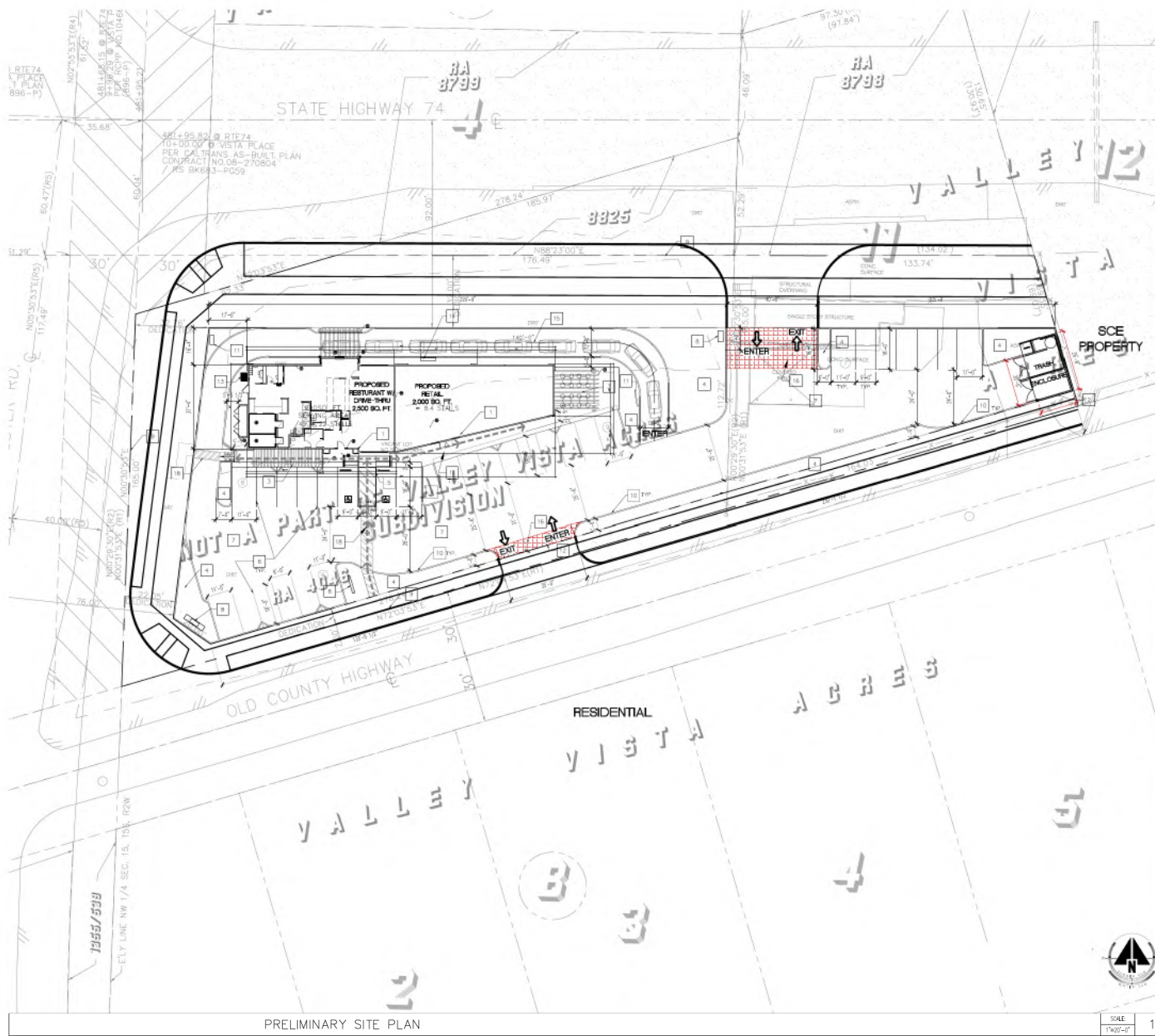
PROJECT AREA MAP

SR-74 / SR-79 PROJECT



EXHIBIT 2 PROJECT SITE PLAN

SR-74 / SR-79 PROJECT



GENERAL NOTES

1. ALL EQUIPMENT MOUNTED ON THE ROOF SIDE OF STRUCTURE OR GROUND SHALL BE SCREENED FROM PUBLIC VIEW.

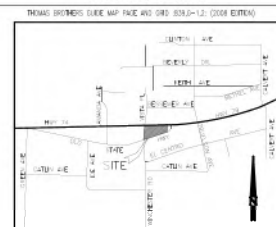
LEGEND

- [Red grid pattern] DRIVEWAY ACCENT PAVING/LANDSCAPE (ENHANCED CONCRETE PAVEMENT)
- [Red dashed grid pattern] BUILDING ENTRY AREA (PAVED ACCENT PAVING/LANDSCAPE (ENHANCED CONCRETE PAVEMENT))
- [Dashed line with arrow] NEW ADA ACCESSIBLE PATH OF TRAVEL

KEYNOTES

1. NEW PROPOSED RESTAURANT & RETAIL SHOPS
2. NEW PROPOSED TRASH ENCLOSURE
3. NEW PROPOSED ACCESS DRIVEWAYS
4. NEW LANDSCAPE AREA
5. NEW ADA ACCESSIBLE PARKING STALL STOPPING
6. NEW PARKING STALL STOPPING
7. NEW ADA PAVEMENT
8. NEW PROPOSED DRIVEWAY - SEE SHEET 05-1
9. EXISTING PROPERTY LINE
10. NEW 6" CONCRETE CURB
11. NEW DRIVEWAY MENU BOARD
12. NEW PROPOSED DRIVEWAY MENU BOARD
13. NEW DRIVE RACKS (2) SPACES CLASS B BIKES
14. NEW MENU ORDER BOARD
15. PROPOSED STANDING DISTANCE OF 140'
16. DRIVEWAY ACCENT PAVING/LANDSCAPE (ENHANCED CONCRETE PAVEMENT)
17. BUILDING ENTRY AREA (PAVED ACCENT PAVING/LANDSCAPE (ENHANCED CONCRETE PAVEMENT))
18. ADA AND PEDESTRIAN PATH OF TRAVEL

VICINITY MAP



PRELIMINARY
SITE PLAN

HEI-ET HWY 74/79 LP
HWY 74/79
COUNTY OF RIVERSIDE

DATE	DATE
10-20-11	2003
AS SHOWN	NO

CUP No. 3479

AS1-

Exhibit 3 shows the existing transportation conditions within the project area. The County of Riverside Circulation Element is included in **Appendix B**.

EXISTING TRAFFIC VOLUMES

Existing traffic volumes at the project area intersections were obtained from traffic counts conducted by Veracity Traffic Group on Wednesday, April 19, 2017. The turning movement counts were conducted during the AM (7:00-9:00) and PM (4:00-6:00) peak periods. Additionally, 24-hour tube counts were conducted on Wednesday, April 19, 2017. **Exhibit 4** shows the existing intersection turning movement counts and ADT's within the study area. **Appendix C** contains the manual turning movement count sheets at the study intersections, as well as the daily roadway segment counts.

TRAFFIC ANALYSIS METHODOLOGY

The intersections and roadways within the project area were analyzed for the following scenarios:

- Existing Traffic Conditions (Year 2017)
- Existing + Ambient Traffic Conditions (Year 2021)
- Existing + Ambient + Project Traffic Conditions (Year 2021)
- Existing + Ambient + Project + Cumulative Conditions (Year 2021)

The level of service for signalized intersections was calculated using the methodologies described in Chapter 19 of the 6th Edition Highway Capacity Manual (HCM 6). The level of service for signalized intersections is defined in terms of control delay, which is made up of a number of factors that relate to right-of-way control, geometrics and traffic volumes. The signalized intersection analysis also takes into account intersection spacing and coordination.

The level of service for un-signalized intersections was calculated using the methodologies described in Chapters 20 and 21 of the 6th Edition HCM. The level of service for a two-way stop-controlled intersection is determined by the computed control delay for each minor street movement and major street left turns, and not for the intersection as a whole. All-way stop-controlled intersection operations are reported for the intersection as a whole.

Level of Service A through D is considered acceptable for peak hour intersection operations. The project area intersections were analyzed during the AM and PM peak hours. The intersection synchro report sheets are contained in **Appendix D**. The LOS criteria ranging from LOS A to LOS F for both signalized and un-signalized intersections are also contained in **Appendix D**.

The LOS for roadway segment operations was calculated based on volume to capacity ratios. The project site is located within Riverside County's Harvest / Winchester Area Plan. Based on the County's General Plan, LOS A through D is considered acceptable for roadway segments for this area plan when compared against the County of Riverside's Roadway Capacity Exhibit D.

EXISTING OPERATIONS

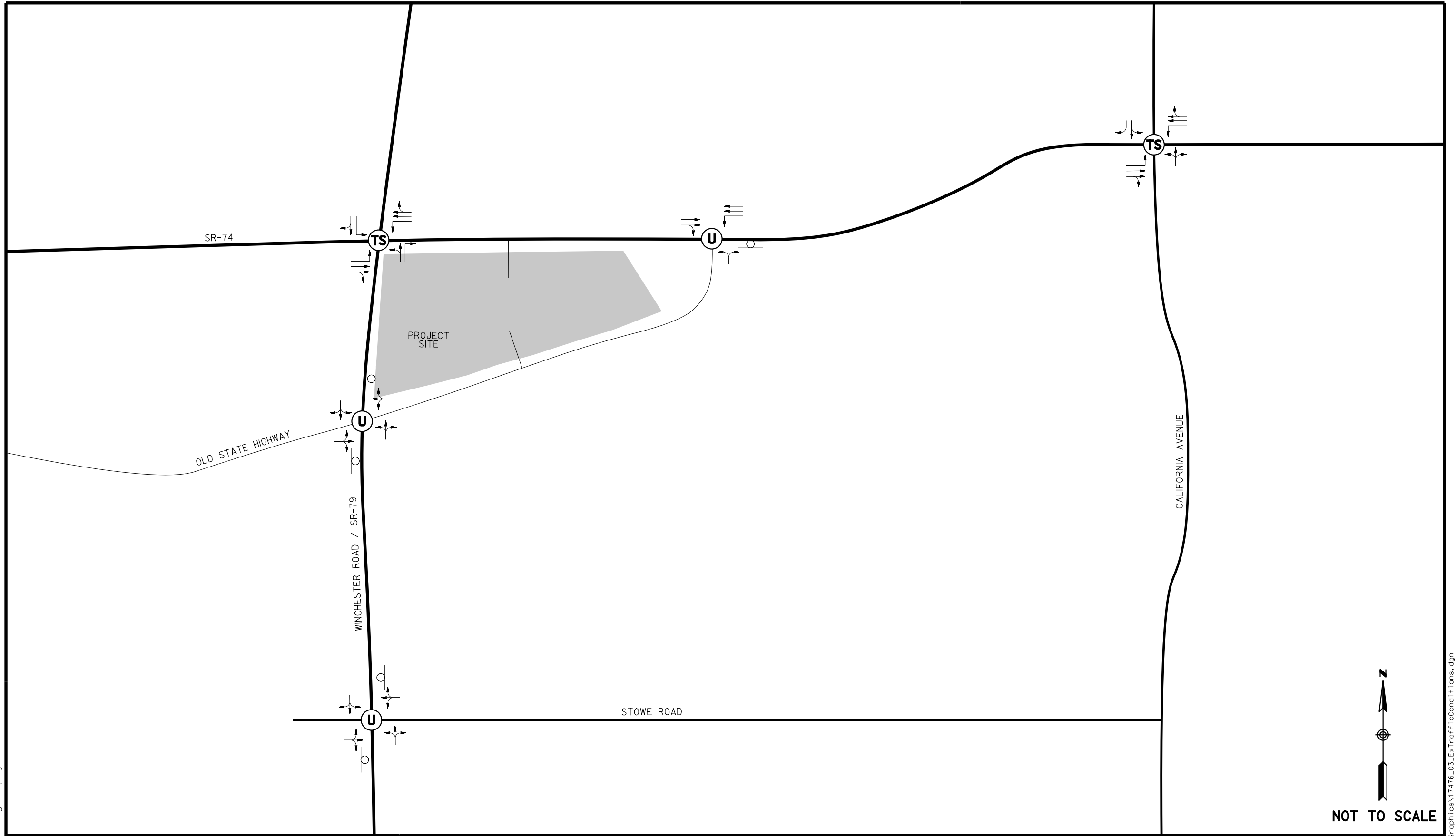
Exhibit 4 shows the existing traffic volumes, as encountered during the traffic counts performed on Wednesday, April 19, 2017.



EXHIBIT 3

EXISTING (2017) TRANSPORTATION CONDITIONS

SR 74 / SR 79 PROJECT



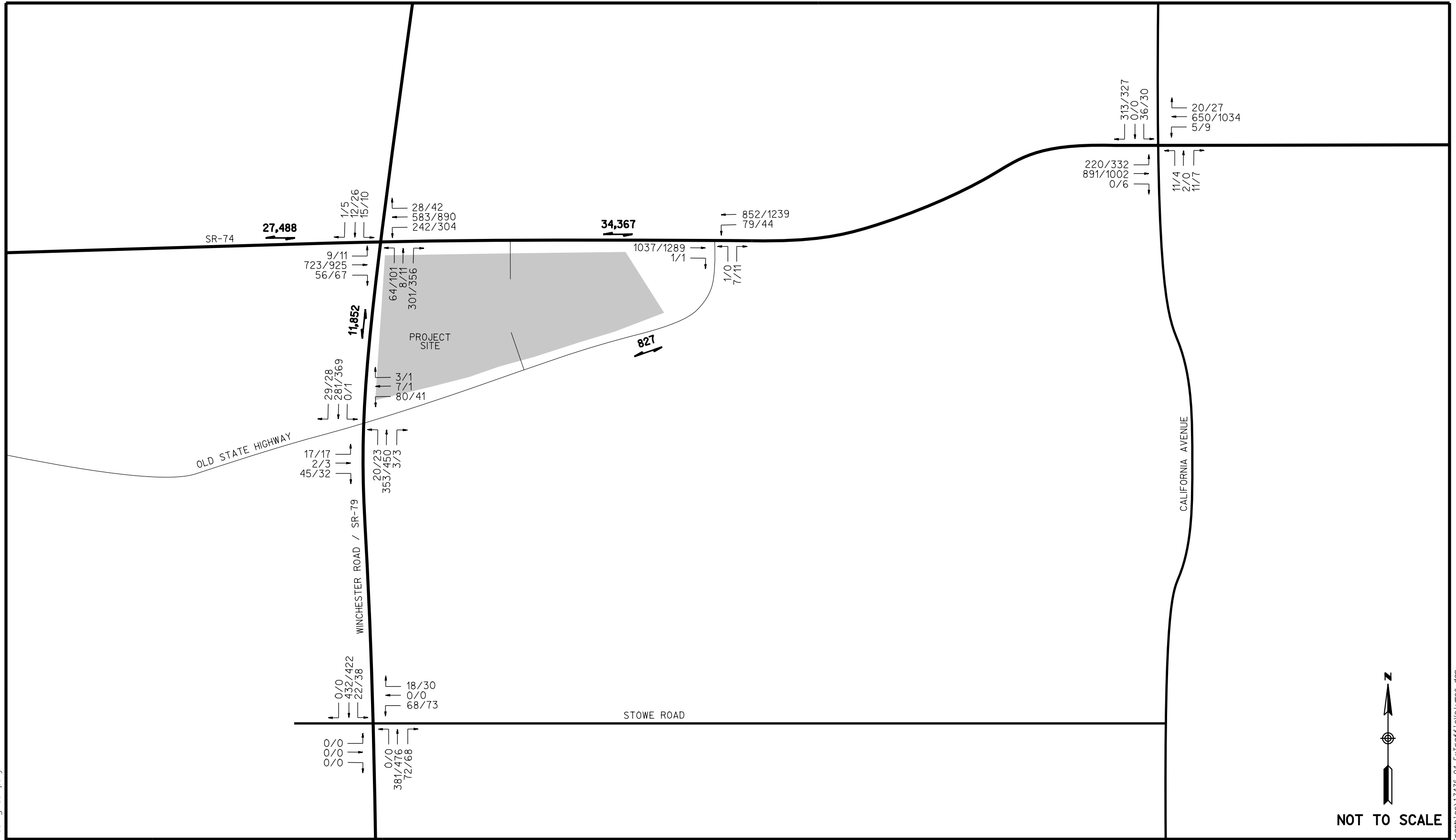
NOT TO SCALE

LEGEND

- TS** =TRAFFIC SIGNAL
- U** =UNSIGNALIZED
- O** =STOP CONTROLLED



EXHIBIT 4
EXISTING (2017) TRAFFIC VOLUMES
SR 74 / SR 79 PROJECT



NOT TO SCALE

LEGEND

XXX/XXX = AM/PM PEAK HR
X,XXX = ADT (TWO-WAY)

Signalized Intersections

The 2 signalized intersections within the study area are:

- SR-74 / Winchester Road
- SR-74 / Florida Avenue / California Avenue

Table 1 shows that all of the project area signalized intersections currently operate at LOS D or better during the AM and PM peak hours.

Un-signalized Intersections

The 3 un-signalized intersections within the study area are:

- SR-74 / Old State Highway
- Old State Highway / Winchester Road / SR-79
- Stowe Road / Winchester Road/SR-79

Table 1 shows that all of the project area un-signalized intersections currently operate at LOS D or better during the AM and PM peak hours, with the exception of the following:

- Stowe Road / Winchester Road / SR-79 – LOS E during the PM Peak Hour

Roadway Segments

The 4 roadway segments analyzed within the study area are:

- SR-74, West of Winchester Road / SR-79
- SR-74, between Winchester Road / SR-79 and Old State Highway
- Winchester Road / SR-79, between SR-74 and Old State Highway
- Old State Highway, between Winchester Road / SR-79 and SR-74

The roadway segment analysis was performed by comparing the Average Daily Traffic (ADT) volumes on each segment analyzed with the traffic volume thresholds contained in the “County of Riverside Roadway Capacity” table. The results are summarized in **Table 2**. As shown, all of the segments analyzed currently operate at LOS D or better.

EXISTING + AMBIENT OPERATIONS (2021)

To estimate the opening year (2021) ambient/background traffic volumes, the existing traffic volumes were increased 2% per year to get from 2017 to 2021. This growth rate was provided by the County of Riverside. **Exhibit 5** shows the 2021 existing plus ambient traffic volumes.

Additionally, it is assumed that the Caltrans Median Improvement Project, which will construct a raised curb median along the frontage of the site on SR 74, will be completed by this scenario. This will restrict westbound left turn movements along SR 74 within the project vicinity. Therefore, existing westbound left turn volumes at Old State Highway and SR 74 were rerouted to turn left at Winchester Road / SR 79.

TABLE 1
SR 79 / SR 74 PROJECT
EXISTING (2017) INTERSECTION OPERATIONS

INTERSECTION			EXISTING (2017)	
			DELAY	LOS
1 SR-74 / Winchester Road/SR-79 (S)	AM peak		34.1	C
	PM peak		41.0	D
2 SR-74 / Old State Highway (U)	AM peak	NBL	15.5	C
	PM peak	NBL	14.8	D
3 SR-74/Florida Avenue / California Avenue (S)	AM peak		26.3	C
	PM peak		27.6	C
4 Old State Highway / Winchester Road/SR-79 (U)	AM peak	WBL	31.4	D
	PM peak	WBL	29.7	D
5 Stowe Road / Winchester Road/SR-79 (U)	AM peak	WBL	24.8	C
	PM peak	WBL	36.5	E
6 SR-74 / Project Driveway North (U)	AM peak	NBR	-	-
	PM peak	NBR	-	-
7 Old State Highway / Project Driveway South (U)	AM peak	EBL	-	-
	PM peak	EBL	-	-

- Delays and Level of Service calculated utilizing the methodologies described in Chapters 18 & 19 of the Highway Capacity Manual 6th Edition (HCM6).

DELAY is measured in seconds, LOS = Level of Service

NB = Northbound, SB = Southbound, T=thru movement, L=left-turn movement, etc.

(S) = Signalized intersection, (U) = Unsignalized intersection

**TABLE 2
SR 79 / SR 74 PROJECT
EXISTING (2017) ROADWAY SEGMENT OPERATIONS**

STREET SEGMENT	ROADWAY CAPACITY ^a	EXISTING (2017) VOLUME		
		ADT	V/C	LOS
1 SR-74, West of Winchester Road/SR-79	40,900	27,488	0.672	C
2 SR-74, Winchester Road/SR-79 to Old State Highway	40,900	34,367	0.840	D
3 Winchester Road/SR-79, Old State Highway to SR-74	18,000	11,852	0.658	C
4 Old State Highway, Winchester Road/SR-79 to SR-74	13,000	827	0.064	A

Footnotes:

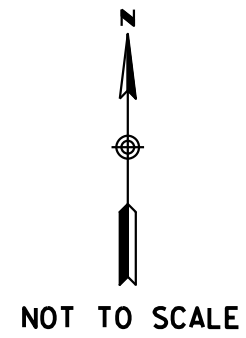
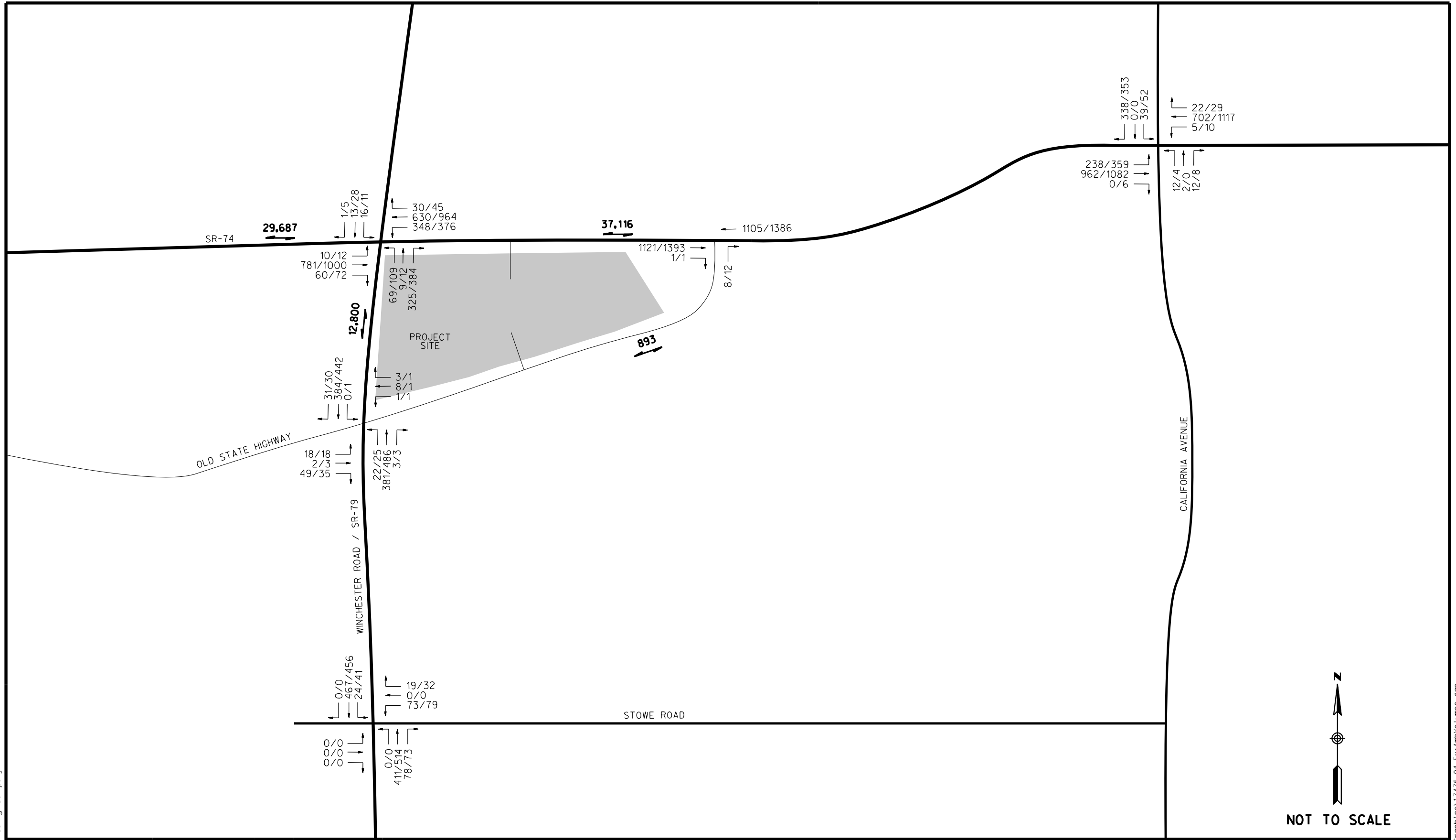
a. Capacity based on the County of Riverside General Plan, Circulation Element, December 2015.



EXHIBIT 5

EXISTING + AMBIENT GROWTH TRAFFIC VOLUMES (YEAR 2021)

SR 74 / SR 79 PROJECT



LEGEND

xxx/xxx = AM/PM PEAK HR
x,xxx = ADT (TWO-WAY)

Signalized Intersections

Table 3 shows that all project area signalized intersections are anticipated to continue to operate at LOS D or better during the AM and PM peak hours.

Un-signalized Intersections

Table 3 shows that all project area un-signalized intersections are anticipated to continue to operate at LOS D or better during the AM and PM peak hours, with the exception of the following:

- Stowe Road / Winchester Road / SR-79 – LOS E during the PM Peak Hour

Roadway Segments

Table 4 shows that all of the project area roadway segments are anticipated to continue to operate at LOS D or better with the addition the of the (2021) ambient traffic, with the exception of the following:

- SR 74, Winchester Road / SR-79 to Old State Highway – LOS E

PROJECT TRAFFIC GENERATION

Based on the Institute of Transportation Engineer's (ITE's) *Trip Generation* publication (9th edition), the relevant trip generation rates for Fast-food Restaurants w/ Drive-thru (ITE Code 934) and for Convenience Market (24 hour) (ITE Code 851) were utilized along with a 25% trip reduction. The project site is estimated to generate a total of 2,037 new daily trips with 186 trips (94 inbound/92 outbound) during the AM peak hour and 140 trips (73 inbound/67 outbound) during the PM peak hour. Due to the nature of the proposed land use, a 25% pass-by credit was applied to the project trips at the study intersections around the project site, excluding project driveways. **Table 5** shows the project traffic generation for the proposed project.

PROJECT TRAFFIC DISTRIBUTION/ASSIGNMENT

The traffic distribution for opening year (2021) was estimated based on the site's proximity to the nearby major roadways, existing local traffic patterns and existing traffic counts at the project area intersections. **Exhibit 6** shows the project distribution percentages utilized for assigning the project trips.

The project traffic volumes were then added to the project area intersections and roadways. **Exhibit 7** shows the project only traffic.

EXISTING + AMBIENT + PROJECT OPERATIONS (2021)

In order to estimate the traffic volumes at the opening of the proposed project, the calculated project trips were added to the 2021 existing plus ambient traffic. **Exhibit 8** shows the 2021 total traffic volumes (includes project traffic) within the project study area. Two driveways that provide access to the project site are assumed to be project features and added to the analysis for the plus project scenario, one on the north side and one on the south. Both driveways are assumed to be un-signalized.

TABLE 3
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT INTERSECTION OPERATIONS

INTERSECTION			EX + AMB	
			DELAY	LOS
1 SR-74 / Winchester Road/SR-79 (S)	AM peak		42.9	D
	PM peak		49.5	D
2 SR-74 / Old State Highway (U)	AM peak	NBL	16.0	C
	PM peak	NBL	15.7	C
3 SR-74/Florida Avenue / California Avenue (S)	AM peak		27.4	C
	PM peak		32.1	C
4 Old State Highway / Winchester Road/SR-79 (U)	AM peak	WBL	19.6	C
	PM peak	WBL	20.8	C
5 Stowe Road / Winchester Road/SR-79 (U)	AM peak	WBL	30.0	D
	PM peak	WBL	49.9	E
6 SR-74 / Project Driveway North (U)	AM peak	NBR	-	-
	PM peak	NBR	-	-
7 Old State Highway / Project Driveway South (U)	AM peak	EBL	-	-
	PM peak	EBL	-	-

- Delays and Level of Service calculated utilizing the methodologies described in Chapters 18 & 19 of the Highway Capacity Manual 6th Edition (HCM6).

DELAY is measured in seconds, LOS = Level of Service

NB = Northbound, SB = Southbound, T=thru movement, L=left-turn movement, etc.

(S) = Signalized intersection, (U) = Unsignalized intersection

TABLE 4
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT ROADWAY SEGMENT OPERATIONS

STREET SEGMENT	ROADWAY CAPACITY ^a	EX + AMB VOLUME		
		ADT	V/C	LOS
1 SR-74, West of Winchester Road/SR-79	40,900	28,038	0.686	C
2 SR-74, Winchester Road/SR-79 to Old State Highway	40,900	35,054	0.857	D
3 Winchester Road/SR-79, Old State Highway to SR-74	18,000	12,089	0.672	C
4 Old State Highway, Winchester Road/SR-79 to SR-74	13,000	844	0.065	A

Footnotes:

a. Capacity based on the County of Riverside General Plan, Circulation Element, December 2015.

TABLE 5
SR-74 / SR-79 PROJECT
TRIP GENERATION SUMMARY

Land Use	Quantity	Rate	ADT	AM Peak Hour						PM Peak Hour							
				% of ADT	In : Out Split		Volumes			% of ADT	In : Out Split		Volumes				
							In	Out	Total				In	Out	Total		
Fast Food Establishment (w/ Drive-thru)	2,500 SF	496.12 / KSF	1,240	9%	51%	:	49%	58	56	114	7%	52%	:	48%	43	39	82
Convenience Market (24-hour)	2,000 SF	737.99 / KSF	1,476	9%	50%	:	50%	67	67	134	7%	51%	:	49%	54	51	105
Subtotal			2716					125	123	248					97	90	187
Pass-by (25%)			-679					-31	-31	-62					-24	-23	-47
Primary Trips			2,037					94	92	186					73	68	140
Total Total			2,716					125	123	248					97	90	187

-Source: ITE Trip Generation Manual 9th Edition, 2012.



EXHIBIT 6
PROJECT TRAFFIC DISTRIBUTION
SR 74 / SR 79 PROJECT

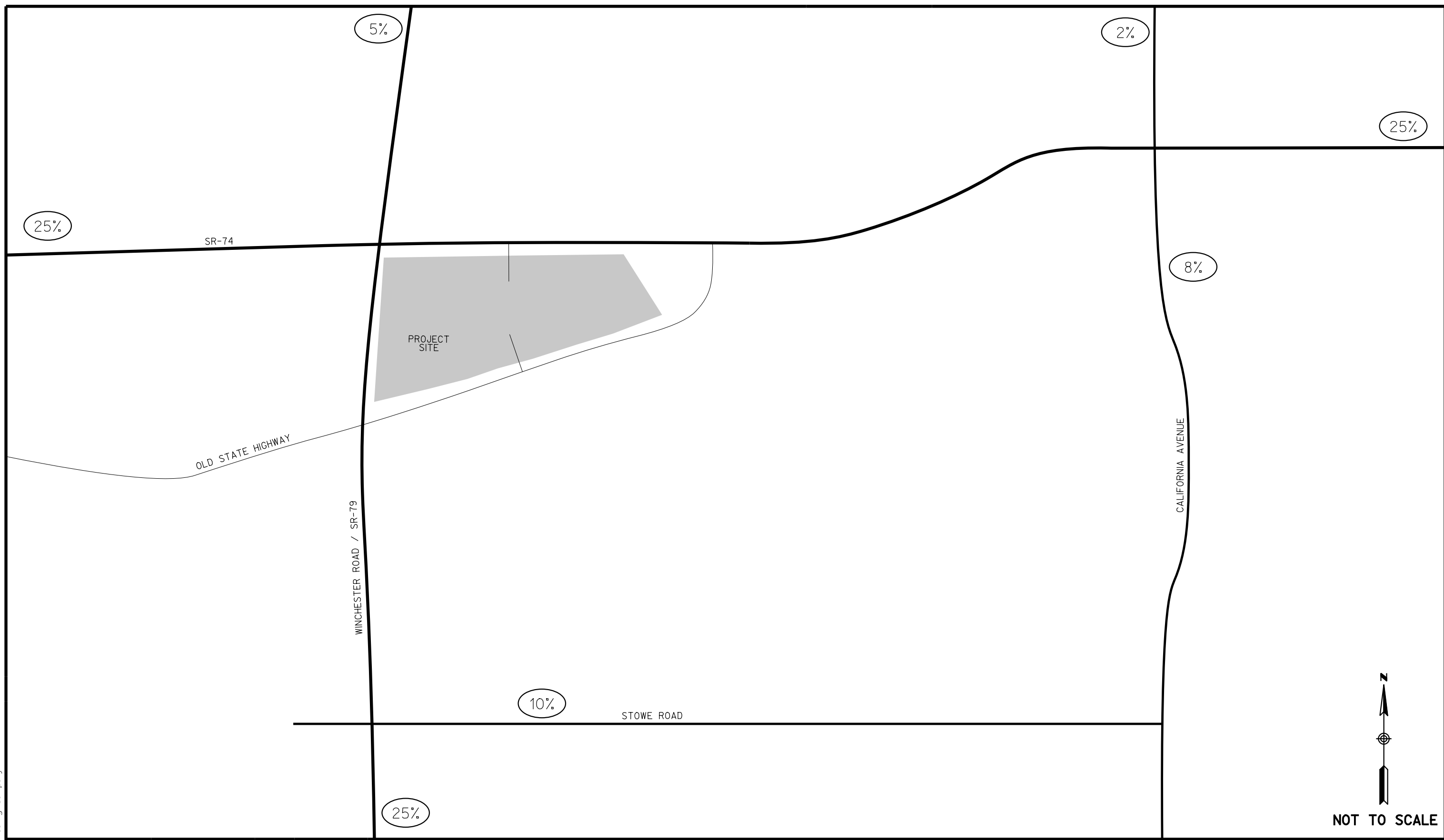
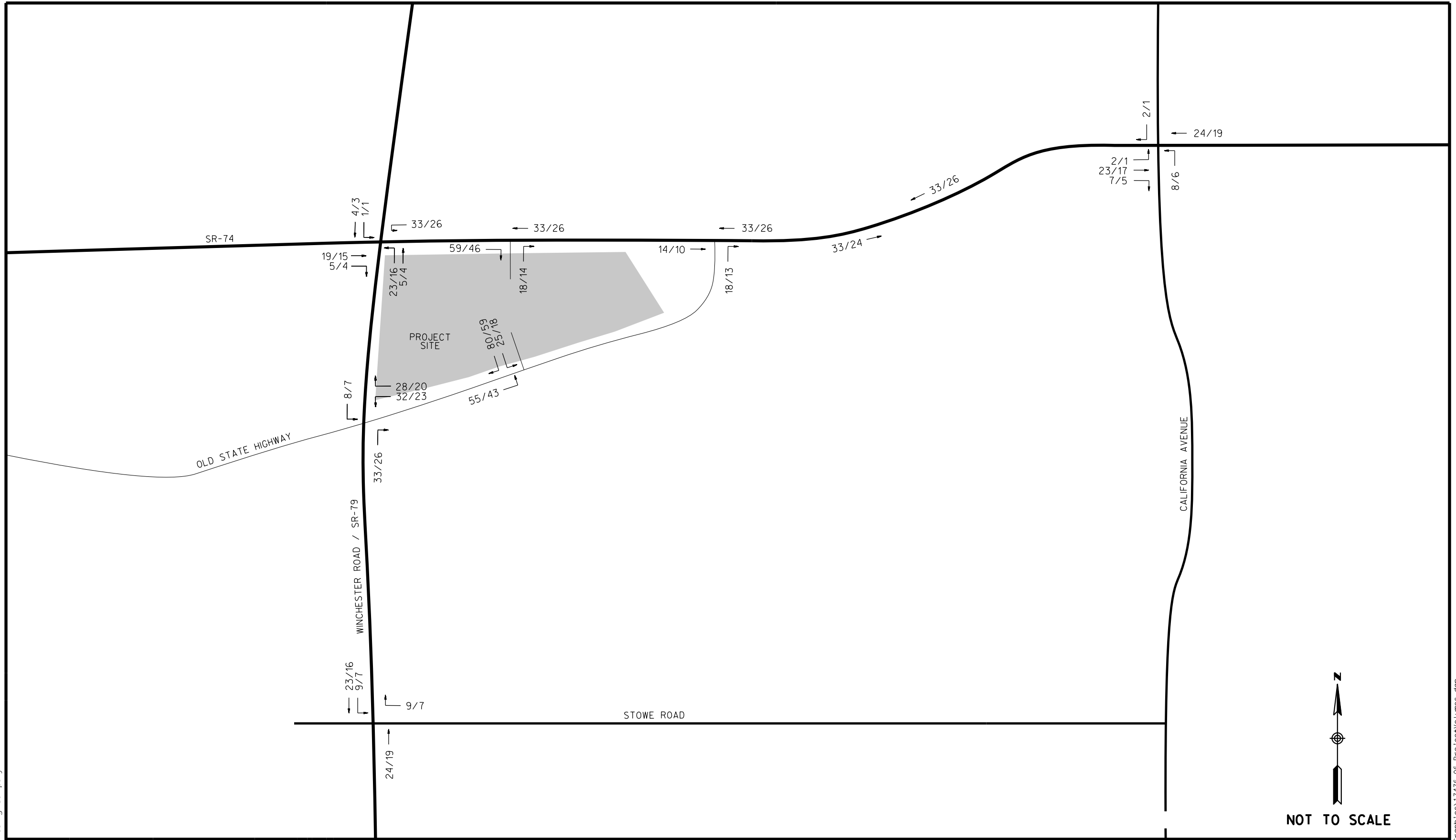




EXHIBIT 7
PROJECT VOLUMES

SR 74 / SR 79 PROJECT



LEGEND

XXX/XXX = AM/PM PEAK HR

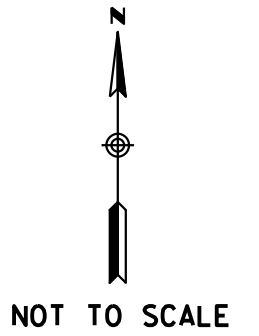
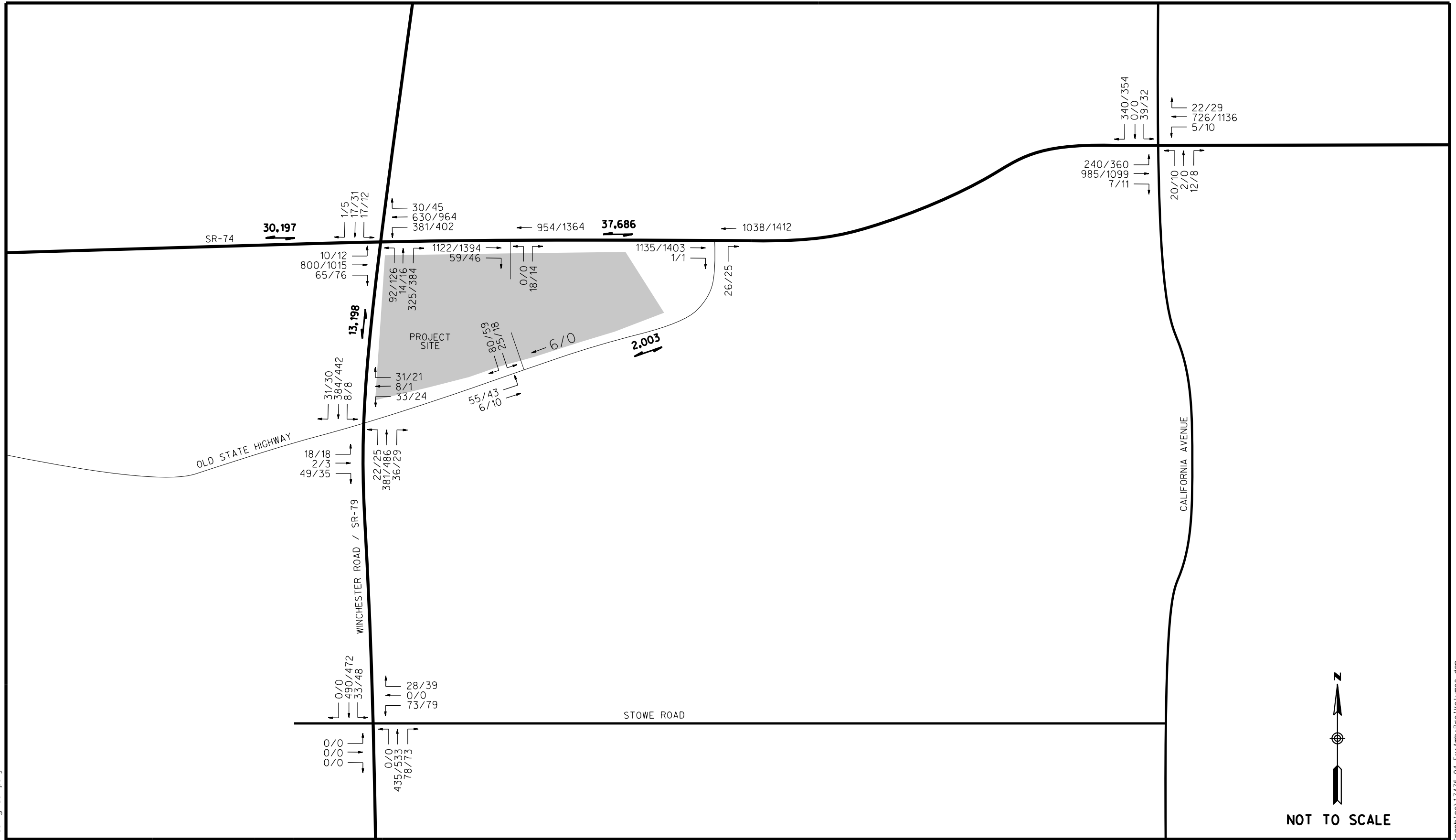




EXHIBIT 8

EXISTING + AMBIENT + PROJECT TRAFFIC VOLUMES (YEAR 2021)

SR 74 / SR 79 PROJECT



LEGEND

XXX/XXX = AM/PM PEAK HR
X,XXX = ADT (TWO-WAY)

In addition, there are planned improvements for the SR-74 / Winchester Road / SR-79 intersection and the Old State Highway / Winchester Road / SR-79 intersection that are assumed to be completed by the plus project scenario (2021). The SR-74 / Winchester Road/SR-79 intersection improvements include improving the northbound approach to provide one shared thru/right lane and one dedicated left-turn lane, and improving the eastbound approach to provide one dedicated right-turn lane, two thru lanes and one dedicated left-turn lane. The Old State Highway / Winchester Road / SR-79 intersection improvements include improving the southbound approach to provide one right-turn lane and one shared thru/left lane.

Signalized Intersections

Table 6 shows that all the project area signalized intersections are anticipated to operate at LOS D or better during the AM and PM peak hours with the addition of project traffic.

Un-signalized Intersections

Table 6 shows that all the project area un-signalized intersections are anticipated to operate at LOS D or better during the AM and PM peak hours with the addition of project traffic, with the exception of the following:

- Stowe Road / Winchester Road / SR-79 – LOS F during the PM Peak Hour

With the following recommended mitigation measures, also described in the conclusions section, Stowe Road / Winchester Road / SR-79 is anticipated to operate at an acceptable level of service: the signalization of this intersection along with the lane configurations from the existing conditions.

Roadway Segments

Table 7 shows that all of the project area roadway segments are anticipated to continue to operate at LOS D or better with the addition of project traffic, with the exception of the following:

- SR 74, Winchester Road / SR-79 to Old State Highway – LOS E

EXISTING + AMBIENT + PROJECT + CUMULATIVE OPERATIONS (2021)

The County of Riverside's Planning Department was contacted to determine a list of cumulative projects to be included in this traffic analysis. Information on 17 projects, within a 2.5 mile radius of the project, was applicable to the analysis and assumed under the plus cumulative scenario.

Trip generation was performed for each of these projects and the cumulative trips were distributed to the project area intersections and roadways based on anticipated trip distribution patterns. The total traffic assignment figure for all the cumulative projects can be found in **Appendix E**. The cumulative traffic volumes were then added to the existing + ambient + project traffic volumes. **Exhibit 9** shows the existing + ambient + project + cumulative traffic volumes (Year 2021).

Signalized Intersections

Table 8 shows that both project area signalized intersections are anticipated to operate at an unacceptable LOS with the addition of cumulative project related traffic:

TABLE 6
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT + PROJECT
INTERSECTION OPERATIONS

INTERSECTION			EX + AMB + PROJ		MITIGATION	
			DELAY	LOS	DELAY	LOS
1 SR-74 / Winchester Road/SR-79 (S)	AM peak		44.0	D	-	-
	PM peak		51.6	D	-	-
2 SR-74 / Old State Highway (U)	AM peak	NBL	16.2	C	-	-
	PM peak	NBL	16.4	C	-	-
3 SR-74/Florida Avenue / California Avenue (S)	AM peak		27.8	C	-	-
	PM peak		33.2	C	-	-
4 Old State Highway / Winchester Road/SR-79 (U)	AM peak	NBL	27.7	D	-	-
	PM peak	NBL	26.9	D	-	-
5 Stowe Road / Winchester Road/SR-79 (U)	AM peak	NBL	33.9	D	4.9	A
	PM peak	NBL	60.3	F	5.2	A
6 SR-74 / Project Driveway North (U)	AM peak	NBR	14.1	B	-	-
	PM peak	NBR	16.2	C	-	-
7 Old State Highway / Project Driveway South (U)	AM peak	SBL	9.0	A	-	-
	PM peak	SBL	8.8	A	-	-

- Delays and Level of Service calculated utilizing the methodologies described in Chapters 18 & 19 of the Highway Capacity Manual 6th Edition (HCM6).

DELAY is measured in seconds, LOS = Level of Service

NB = Northbound, SB = Southbound, T=thru movement, L=left-turn movement, etc.

(S) = Signalized intersection, (U) = Unsignalized intersection

**TABLE 7
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT + PROJECT ROADWAY SEGMENT OPERATIONS**

STREET SEGMENT	ROADWAY CAPACITY ^a	EX + AMB + PROJ VOLUME		
		ADT	V/C	LOS
1 SR-74, West of Winchester Road/SR-79	40,900	28,547	0.698	C
2 SR-74, Winchester Road/SR-79 to Old State Highway	40,900	35,268	0.862	D
3 Winchester Road/SR-79, Old State Highway to SR-74	18,000	12,395	0.689	C
4 Old State Highway, Winchester Road/SR-79 to SR-74	13,000	1,506	0.116	A

Footnotes:

a. Capacity based on the County of Riverside General Plan, Circulation Element, December 2015.

TABLE 8
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT + PROJECT + CUMULATIVE INTERSECTION
OPERATIONS

INTERSECTION			EX + AMB + PROJ + CUM		MITIGATION	
			DELAY	LOS	DELAY	LOS
1 SR-74 / Winchester Road/SR-79 (S)	AM peak		262.2	F	32.3	C
	PM peak		225.7	F	54.8	D
2 SR-74 / Old State Highway (U)	AM peak	WBL	27.0	D	-	-
	PM peak	WBL	28.7	D	-	-
3 SR-74/Florida Avenue / California Avenue (S)	AM peak		35.8	D	-	-
	PM peak		72.4	E	51.3	D
4 Old State Highway / Winchester Road/SR-79 (U)	AM peak	WBL	300+	F	300+	F
	PM peak	WBL	300+	F	300+	F
5 Stowe Road / Winchester Road/SR-79 (U)	AM peak	WBL	300+	F	5.2	A
	PM peak	WBL	300+	F	5.2	A
6 SR-74 / Project Driveway North (U)	AM peak	NBL	19.7	C	-	-
	PM peak	NBL	26.7	D	-	-
7 Old State Highway / Project Driveway South (U)	AM peak	SBL	9.0	A	-	-
	PM peak	SBL	8.8	A	-	-

- Delays and Level of Service calculated utilizing the methodologies described in Chapters 18 & 19 of the Highway Capacity Manual 6th Edition (HCM6).

DELAY is measured in seconds, LOS = Level of Service

NB = Northbound, SB = Southbound, T=thru movement, L=left-turn movement, etc.

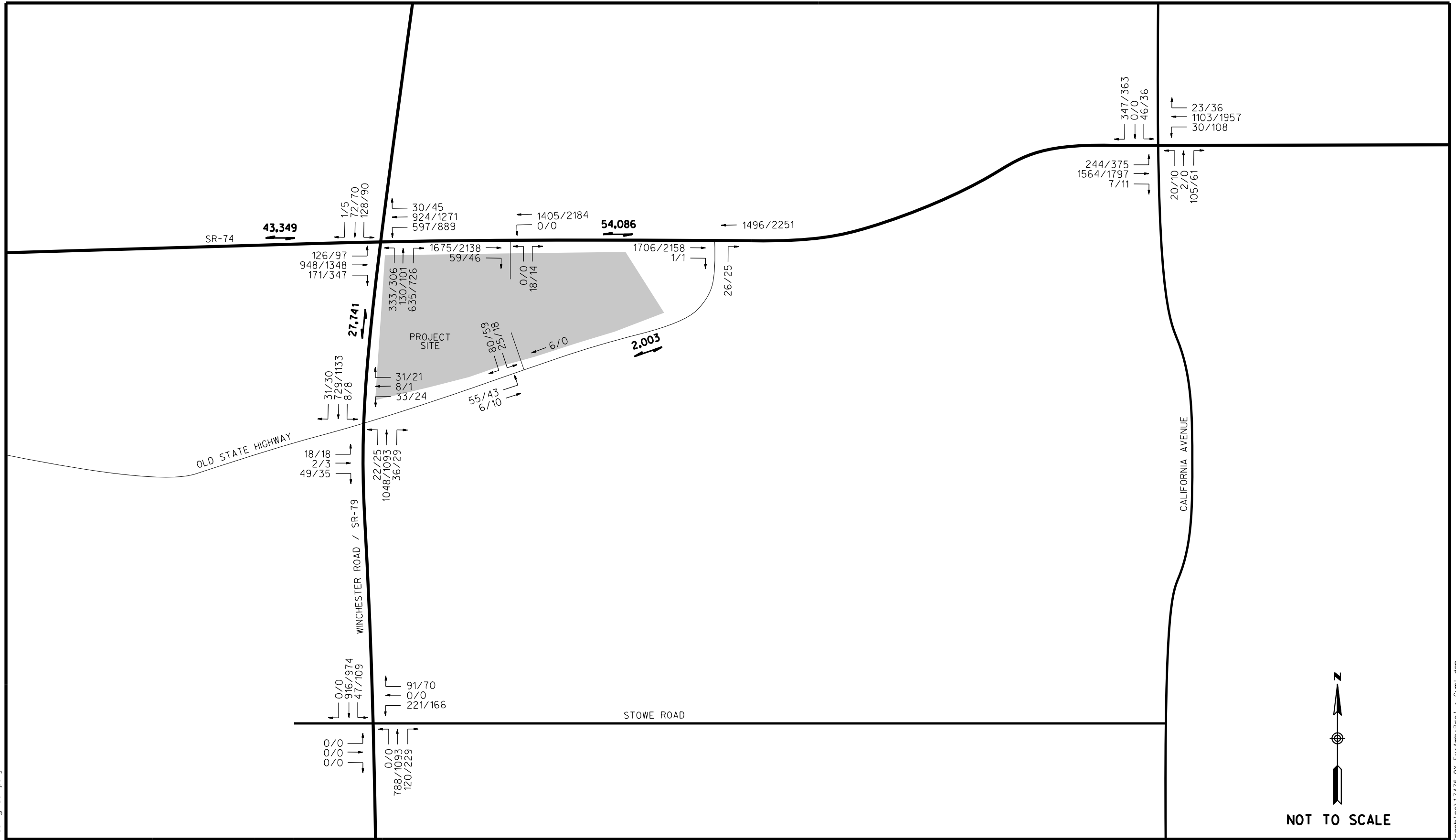
(S) = Signalized intersection, (U) = Unsignalized intersection



EXHIBIT 9

EXISTING + AMBIENT + PROJECT + CUMULATIVE TRAFFIC VOLUMES (YEAR 2021)

SR 74 / SR 79 PROJECT



- SR-74 / Winchester Road / SR-79 – LOS F during both AM/PM Peak Hours
- SR-74 / Florida Avenue / California Avenue – LOS E during the PM Peak Hour

With the following recommended mitigation measures, also described in the conclusions section, SR-74 / Winchester Road / SR-79 is anticipated to operate at an acceptable level of service:

- Reconfigure the westbound approach to include the following:
 - o Two left-turn lanes
 - o One thru lane
 - o One shared thru/right-turn lane
- Reconfigure the northbound approach to include the following:
 - o One left-turn lane
 - o One thru lane
 - o Two right-turn lanes

With the following recommended mitigation measures, also described in the conclusions section, SR-74 / Florida Avenue / California Avenue is anticipated to operate at an acceptable level of service:

- Provide a right-turn overlap phase for the southbound approach

Un-signalized Intersections

Table 8 shows that all the project area un-signalized intersections are anticipated to operate at LOS D or better with the addition of cumulative project related traffic, with the exception of the following:

- Old State Highway / Winchester Road / SR-79 – LOS F during both AM/PM Peak Hours
- Stowe Road / Winchester Road / SR-79 – LOS F during both AM/PM Peak Hours

With the following recommended mitigation measures, also described in the conclusions section, Old State Highway / Winchester Road / SR-79 is anticipated to operate at a greater level of service:

- Restrict southbound left turn movements and westbound left turn and thru movements.

With the following recommended mitigation measures, also described in the conclusions section, Stowe Road / Winchester Road / SR-79 is anticipated to operate at an acceptable level of service:

- The signalization of this intersection is recommended along with the lane configurations from the existing conditions.

Roadway Segments

Table 9 shows that one of the project area roadway segments analyzed will operate at LOS C or better with the addition of cumulative traffic, with the exception of the following:

- SR-74, west of Winchester Road / SR-79 – LOS F
- SR-74, between Winchester Road and Old State Highway – LOS F
- Winchester Road / SR-79, between Old State Highway and SR-74 – LOS F

CONCLUSIONS/RECOMMENDATIONS

The study evaluated any potential traffic impacts due to the proposed project. The project is anticipated to be constructed by 2021, and is anticipated to generate a total of 2,037 new daily trips with 186 trips (94 inbound/92 outbound) during the AM peak hour and 140 trips (73 inbound/67 outbound) during the PM peak hour.

TABLE 9
SR 79 / SR 74 PROJECT
EXISTING + AMBIENT + PROJECT + CUMULATIVE
ROADWAY SEGMENT OPERATIONS

STREET SEGMENT	ROADWAY CAPACITY ^a	EX + AMB + PROJ + CUM VOLUME			WITH GENERAL PLAN BUILDOUT CONFIGURATION			
		ADT	V/C	LOS	CAPACITY	ADT	V/C	LOS
1 SR-74, West of Winchester Road/SR-79	40,900	41,699	1.02	F	61,300	41,699	0.680	C
2 SR-74, Winchester Road/SR-79 to Old State Highway	40,900	51,668	1.26	F	61,300	51,668	0.843	D
3 Winchester Road/SR-79, Old State Highway to SR-74	18,000	26,938	1.497	F	34,100	26,938	0.790	C
4 Old State Highway, Winchester Road/SR-79 to SR-74	13,000	1,506	0.116	>C	13,000	1,506	0.116	A

Footnotes:

a. Capacity based on the County of Riverside General Plan, Circulation Element, December 2015.

Intersections

As shown in the plus project scenario, the following study locations will be adversely affected with the addition of project traffic to the existing + ambient condition (Year 2021). To mitigate these impacts, it is recommended that the project contribute a fair-share percentage towards the improvements of the facilities below. Fair-share calculations are provided in **Appendix G**.

Stowe Road / Winchester Road / SR-79

This intersection is anticipated to degrade from LOS E in the existing + ambient scenario to LOS F in the plus project scenario during the PM Peak hour. It is recommended that the project contribute a fair-share of 4.19% to install the following recommended improvements to ensure an acceptable LOS:

- The signalization of this intersection along with the existing lane configurations.

The volumes at this intersection warrant a signal in the project plus project scenario. Signal warrant calculations for warrant #3, the Peak Hour Volume Warrant, are provided in **Appendix F**.

As shown in the project plus cumulative scenario, the following study locations will be adversely affected with the addition of cumulative traffic to the existing + ambient + project condition (Year 2021). To mitigate these impacts, it is recommended that the project contribute a fair-share percentage towards the improvements of the facilities below. Fair-share calculations are provided in **Appendix G**.

SR-74 / Winchester Road / SR-79

This intersection is anticipated to operate at LOS F in the project plus cumulative scenario during both the AM/PM Peak hours. It is recommended that the project contribute a fair-share of 3.46% to install the following recommended improvements to ensure an acceptable LOS:

- Westbound Approach – two left-turn lanes, one shared thru/right, one thru lane
- Northbound Approach – one left-turn lane, two right-turn lanes, one thru lane

SR-74 / Florida Avenue / California Avenue

This intersection is anticipated to operate at LOS E in the project plus cumulative scenario during the PM Peak hour. It is recommended that the project contribute a fair-share of 3.48% to install the following recommended improvements to ensure an acceptable LOS:

- Provide a right-turn overlap phase on the southbound approach.

Old State Highway / Winchester Road / SR-79

This intersection is anticipated to operate at LOS F in the project plus cumulative scenario during both the AM/PM Peak hours. It is recommended that the project contribute a fair-share of 6.47% to install the following recommended improvements to improve LOS:

- Restrict southbound left turn movements and westbound left turn and thru movements with a raised median and signage on the corresponding approaches.

Stowe Road / Winchester Road / SR-79

This intersection is anticipated to operate at LOS F in the project plus cumulative scenario during both the AM/PM Peak hours. It is recommended that the project contribute a fair-share of 4.19% to install the following recommended improvements to ensure an acceptable LOS:

- The signalization of this intersection is recommended along with the existing lane configurations.

The volumes at this intersection warrant a signal in the project plus project scenario. Signal warrant calculations for warrant #3, the Peak Hour Volume Warrant, are provided in **Appendix F**.

SR-74 / Project Driveway North

This intersection is anticipated to operate at acceptable levels of service in the project + cumulative scenario. To maximize the safety of right-turning vehicles leaving the through traffic along SR-74, it is recommended that the project construct an eastbound right-turn lane along the project frontage between Winchester Road/SR-79 and the Project Driveway to assist cars in decelerating before turning into the project.

Roadway Segments

1. SR-74, West of Winchester Road / SR-79

This roadway segment is anticipated to operate at LOS F in the project plus cumulative scenario. Based on the County of Riverside General Plan Circulation Element, which can be found in **Appendix B**, the roadway segment operation is anticipated to improve to LOS C once the roadway is built out to its ultimate six-lane expressway configuration.

2. SR-74, between Winchester Road / SR-79 and Old State Highway

This roadway segment is anticipated to operate at LOS F in the project plus cumulative scenario. Based on the County of Riverside General Plan Circulation Element, which can be found in **Appendix B**, the roadway segment operation is anticipated to improve to LOS D once the roadway is built out to its ultimate six-lane expressway condition.

3. Winchester Road / SR-79, between Old State Highway and SR-74

This roadway segment is anticipated to operate at LOS F in the project plus cumulative scenario. Based on the County of Riverside General Plan Circulation Element, which can be found in **Appendix B**, the roadway segment operation is anticipated to improve to LOS D once the roadway is built out to its ultimate four-lane major roadway configuration.

REFERENCES

1. Caltrans Division of Traffic Operations, California Manual on Uniform Traffic Control Devices, Sacramento, CA, 2014.
2. County of Riverside General Plan, Circulation Element, Riverside, CA, December 2015.
3. City of Riverside, Traffic Impact Analysis Preparation Guide, Riverside, CA, 2014.
4. Trafficware, SYNCHRO, Version 9, Build 805, Sugar Land, Texas, 2013.
5. Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2010.

APPENDIX A

Signed Scoping Agreement

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Traffic Study Guidelines dated February 2005.

Case No. CUP 03479

Related Cases -

SP No. Provide SP No. and list of other approved or active projects within the SP.

EIR No. N/A

GPA No. N/A

CZ No. N/A

Project Name: Hwy 74 / 79 (Hemet Retail Development)

Project Address: Southeast corner of SR74 and SR79

Project Description: Construction of 2,5000 SF fast-food restaurant with drive-thru and 2,000 SF convenience market (24 hour).

	<u>Consultant</u>	<u>Developer</u>
Name:	<u>Rick Engineering Company</u>	<u>J&T Management, Inc.</u>
Address:	<u>5620 Friars Road, San Diego</u> <u>CA 92110</u>	<u>P.O. Box 1958, Corona, CA</u> <u>92878</u>
Telephone:	<u>(619) 291-0707</u>	<u>(951) 280-3833</u>
Fax:	<u>(619) 291-4165</u>	<u>(591) 280-3832</u>

A. Trip Generation Source: (ITE 7th Edition or other) ITE 9TH EDITION

Current GP Land Use	<u>Provide General Plan Land Use Designation (e.g.: MDR, CR, etc)</u> <u>CR</u>	Proposed Land Use
Current Zoning	<u>C-P-S</u>	<u>CR</u> <u>C-P-S</u>

Current Trip Generation	In	Out	Total	Proposed Trip Generation	In	Out	Total
AM Trips					<u>94</u>	<u>92</u>	<u>186</u>
PM Trips					<u>73</u>	<u>67</u>	<u>140</u>

Internal Trip Allowance	☐ Yes	☐ No	(_____ % Trip Discount)
Pass-By Trip Allowance	☒ Yes	☐ No	(<u>25</u> % Trip Discount)

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic Distribution: N 5 % S 35 % E 35 % W 25 %
(attach exhibit for detailed assignment)

C. Background Traffic

(X = to be provided by County of Riverside)

2.0%

Project Build-out Year: Provide realistic opening year, considering time needed for approvals and construction. Annual Ambient Growth Rate: X %

Phase Year(s) 2018

Other area projects to be analyzed: X

Model/Forecast methodology X

Exhibit B – Scoping Agreement – Page 2

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|---|-----------|
| 1. <u>SR 74 / WINCHESTER RD/SR 79</u> | 6. _____ |
| 2. <u>SR 74 / OLD STATE HWY</u> | 7. _____ |
| 3. <u>SR 74 / CALIFORNIA AVENUE</u> | 8. _____ |
| 4. <u>WINCHESTER RD/SR 79 / OLD STATE HWY</u> | 9. _____ |
| 5. <u>WINCHESTER RD/SR 79 / STOWE ROAD</u> | 10. _____ |

E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|---|-----------|
| 1. <u>SR 74, WINCHESTER RD/SR 79 TO OLD STATE HWY</u> | 6. _____ |
| 2. <u>WINCHESTER RD/SR 79, SR 74 TO OLD STATE HWY</u> | 7. _____ |
| 3. <u>OLD STATE HWY, WINCHESTER RD/SR 79 TO SR 74</u> | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? ☐ Yes ☒ No

If so, name of City Jurisdiction: _____

F. Site Plan (please attach reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Transportation Department)

(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.

Date of counts NEW COUNTS TO BE CONDUCTED ONCE SCOPE IS APPROVED

***NOTE* Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to receipt of the fee.**

Recommended by:

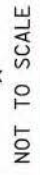
Jesus Cruz 1/3/17
Consultant's Representative Date
Scoping Agreement Submitted on 1/4/2017
Revised on 2/8/17

Approved Scoping Agreement:

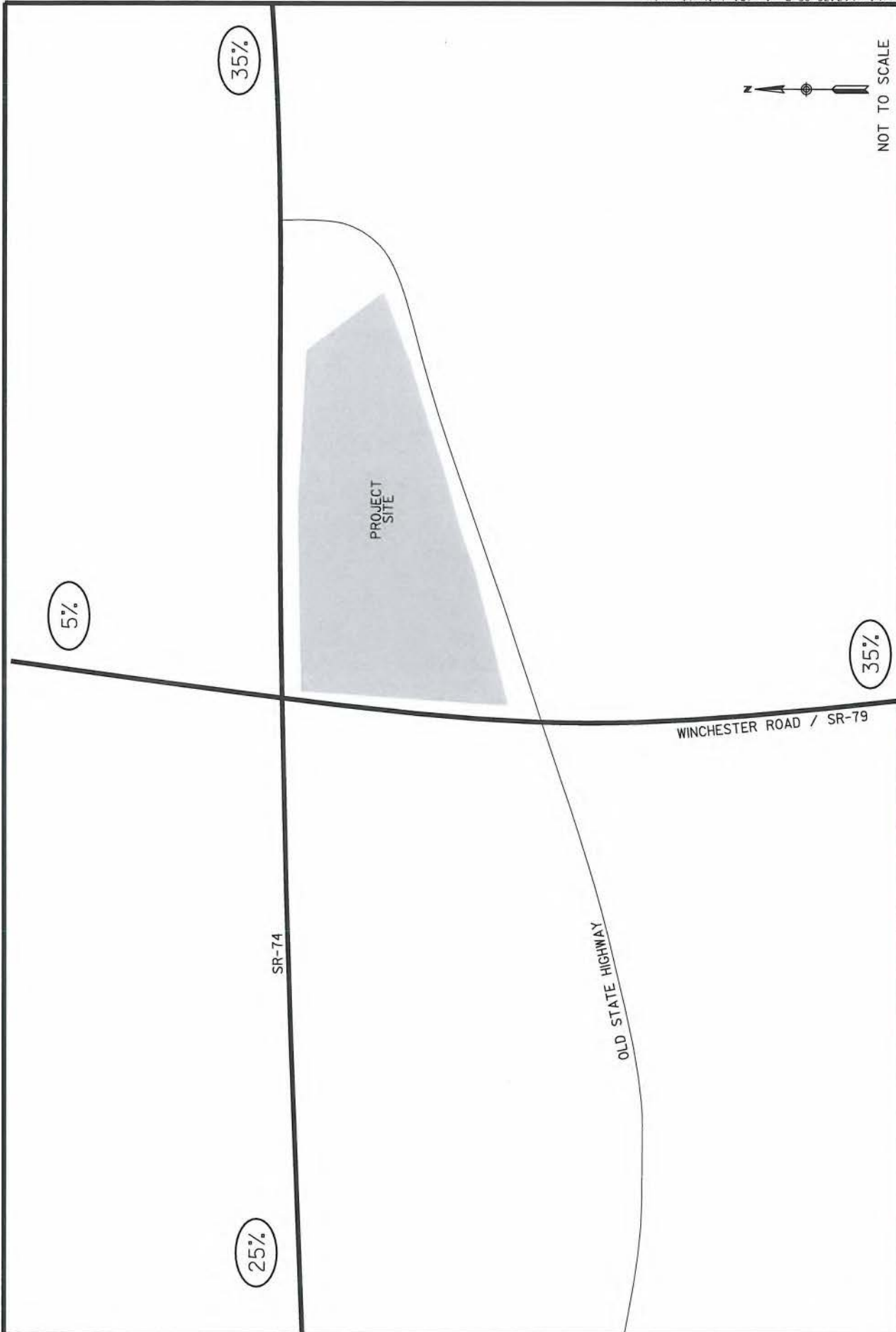
[Signature] 2/22/17
Riverside County Transportation Department Date

TABLE 3
PROJECT TITLE
PROJECT TRIP GENERATION SUMMARY

Land Use	Quantity	Rate	ADT	AM Peak Hour						PM Peak Hour							
				% of ADT	In : Out Split		Volumes			% of ADT	In : Out Split		Volumes				
							In	Out	Total				In	Out	Total		
Fast Food Establishment (w/ Drive-thru)	2,500 SF	496.12 / KSF	1,240	9%	51%	:	49%	58	56	114	7%	52%	:	48%	43	39	82
Convenience Market (24-hour)	2,000 SF	737.99 / KSF	1,476	9%	50%	:	50%	67	67	134	7%	51%	:	49%	54	51	105
	Subtotal		2716					125	123	248					97	90	187
	Pass-by (25%)		-679					-31	-31	-62					-24	-23	-47
	Net Total		2,037					94	92	186					73	67	140



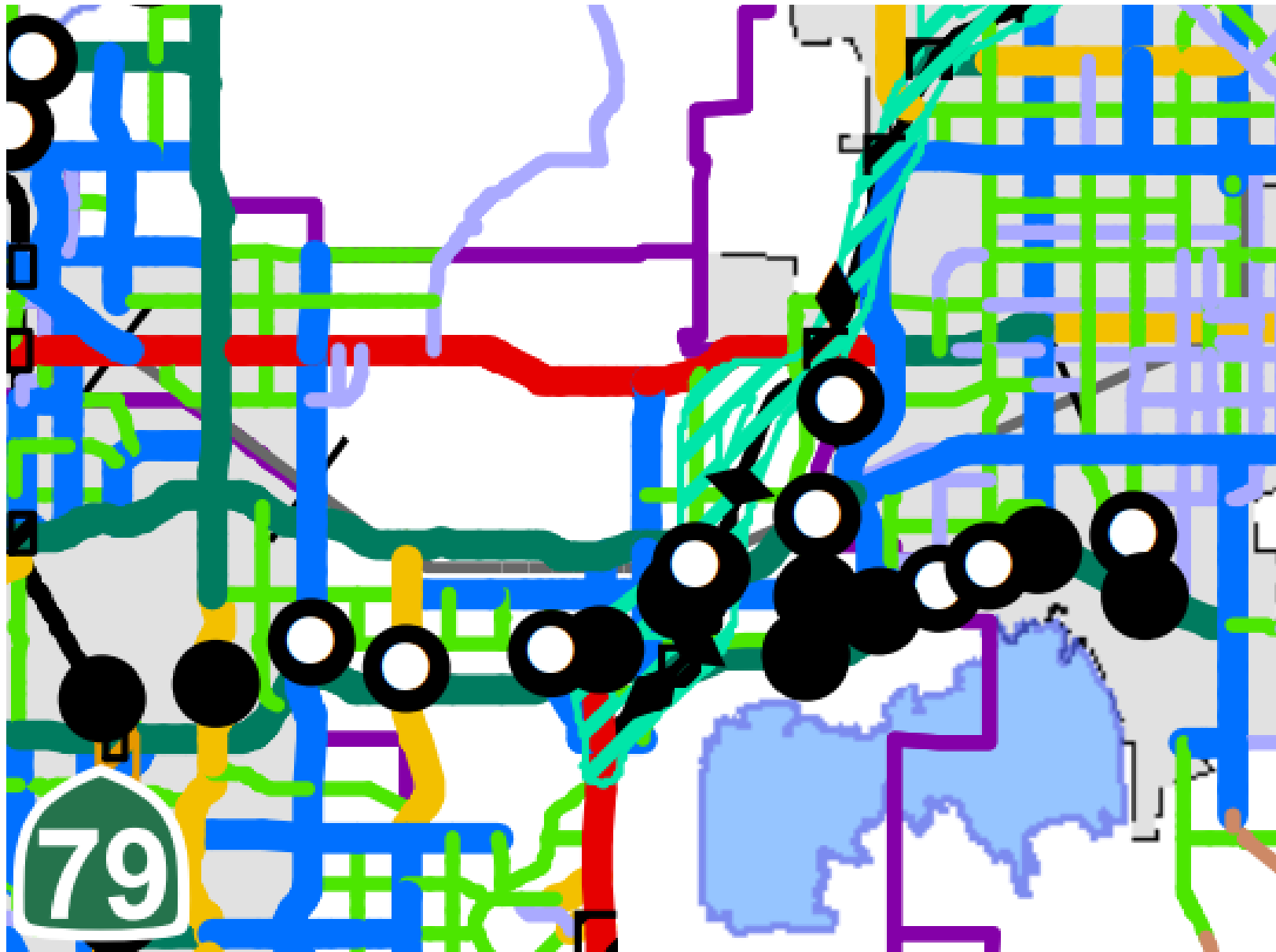
RICK ENGINEERING COMPANY **EXHIBITA**
PROJECT TRAFFIC DISTRIBUTION
SR 74 / SR 79 PROJECT





APPENDIX B

County of Riverside Circulation Element



Circulation Designations

-  Freeway (Variable ROW)
-  Expressway (128' to 220' ROW)
-  Urban Arterial (152' ROW)
-  Arterial (128' ROW)

-  Major (118' ROW)
-  Secondary (100' ROW)
-  Mountain Arterial 4 Ln (110' ROW)
-  Mountain Arterial 2 Ln (110' ROW)
-  Collector (74' ROW)

Interchanges

-  Existing Interchange
-  Proposed Interchange
-  Existing Overpass/Underpass
-  Proposed Overpass/Underpass

CETAP Corridors

-  Moreno Valley to San Bernardino CETAP
-  East-West CETAP Corridor
-  Winchester to Temecula CETAP
-  SR-79 Re-alignment Study Area

Bridges

-  Existing Bridge
-  Proposed Bridge

APPENDIX C

Traffic Volume Counts

Intersection Turning Movement

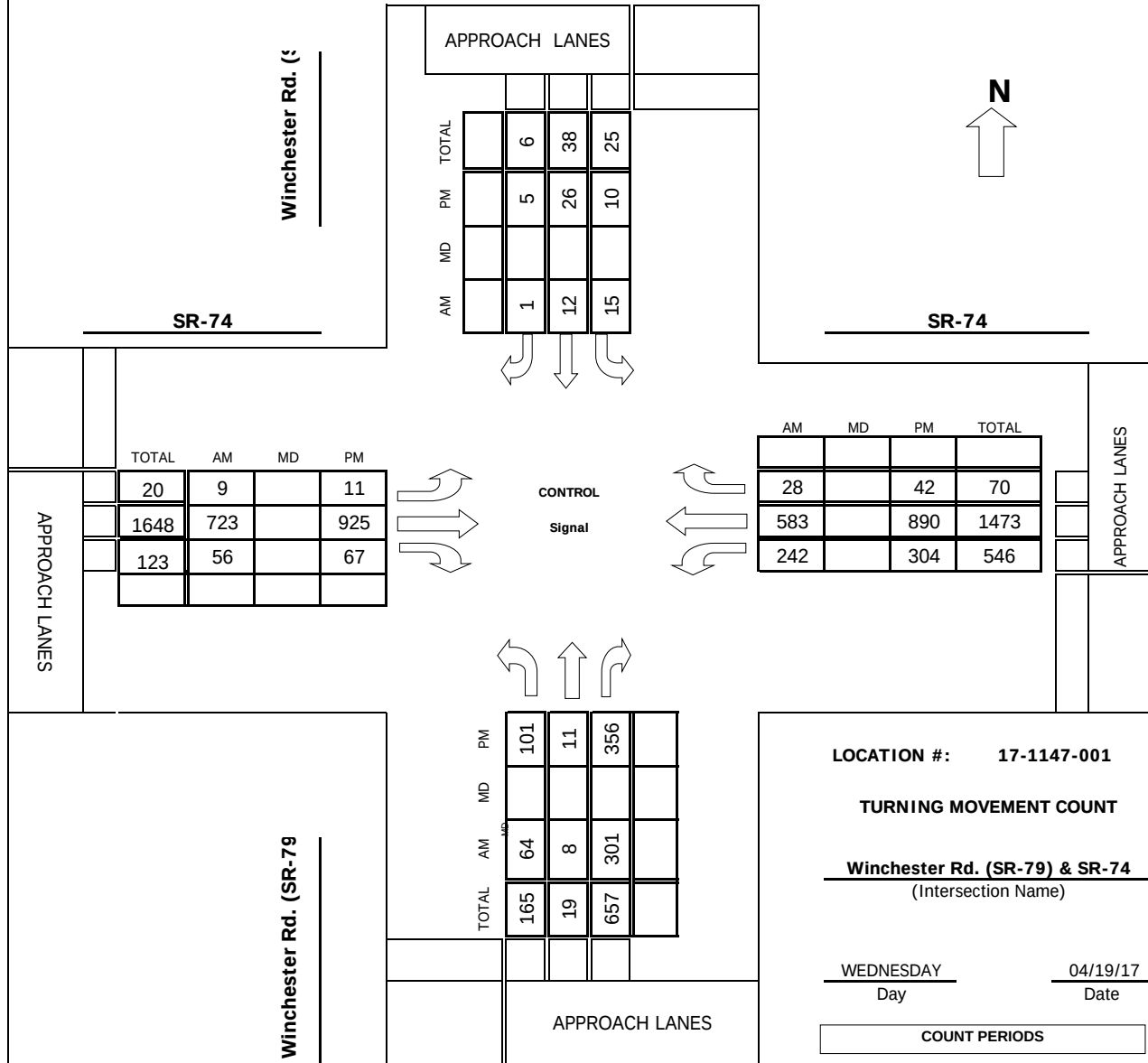
Prepared by:



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 17-1147-001

TMC SUMMARY OF Winchester Rd. (SR-79) & SR-74



AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement

Prepared by:



Project #: 17-1147-002

TMC SUMMARY OF Old State Hwy & SR-74

Old State Hwy

SR-74

APPROACH LANES

TOTAL	0	0	0
PM	0	0	0
MD			
AM	0	0	0

N

SR-74

APPROACH LANES

TOTAL	0	0	0
AM	2326	1037	1289
MD	2	1	1
PM			

CONTROL

1-Way Stop

NB

APPROACH LANES

AM	MD	PM	TOTAL
0		0	0
852		1239	2091
79		44	123

Old State Hwy

APPROACH LANES

TOTAL	1	0	18
AM	1	0	7
MD			
PM	0	0	11

APPROACH LANES

LOCATION #: **17-1147-002**

TURNING MOVEMENT COUNT

Old State Hwy & SR-74

(Intersection Name)

WEDNESDAY

Day

04/19/17

Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR

700 AM

NOON PEAK HOUR

PM PEAK HOUR

400 PM

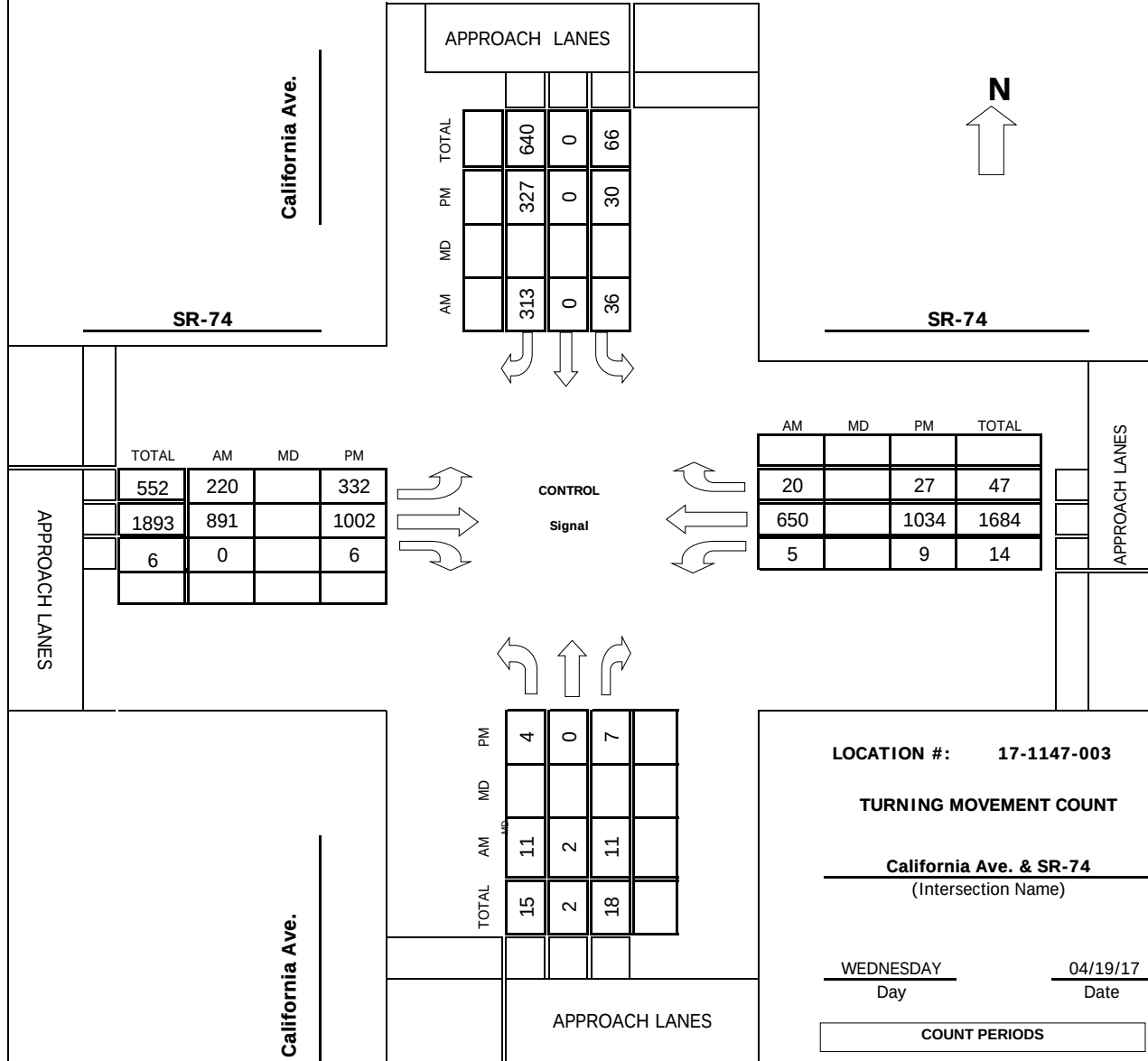
Intersection Turning Movement

Prepared by:



Project #: 17-1147-003

TMC SUMMARY OF California Ave. & SR-74



AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement

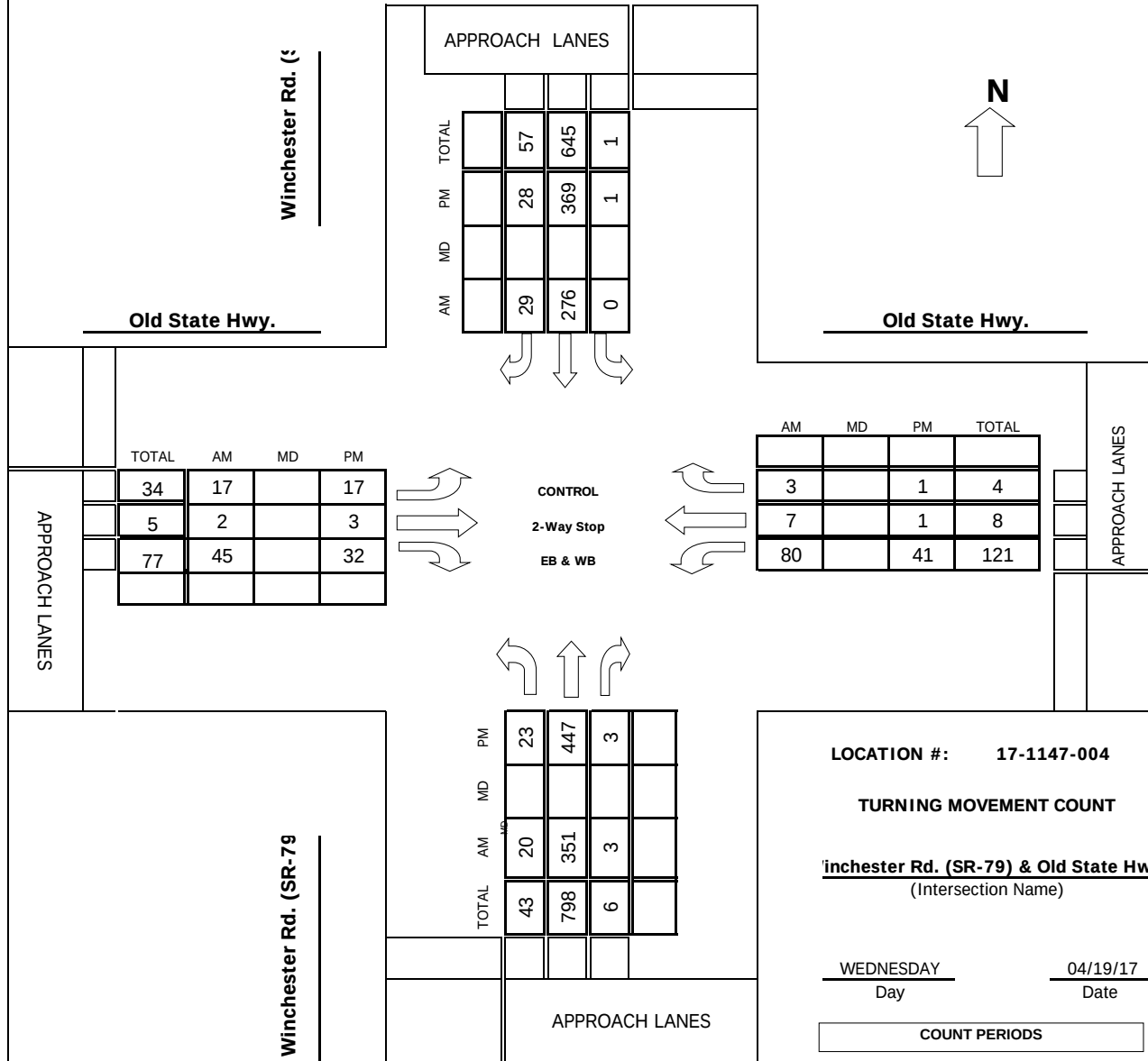
Prepared by:



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 17-1147-004

TMC SUMMARY OF Winchester Rd. (SR-79) & Old State Hwy.



AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 400 PM

Intersection Turning Movement

Prepared by:



FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 17-1147-005

TMC SUMMARY OF Winchester Rd. (SR-79) & Stowe Rd.

Winchester Rd. (SR-79)

Stowe Rd.

Stowe Rd.

APPROACH LANES				
	TOTAL	PM	MD	AM
Left	0	0	0	0
Thru	0	0	0	0
Right	0	0	0	0

CONTROL

2-Way Stop

EB & WB

	AM	MD	PM	TOTAL
Left	18		30	48
Thru	0		0	0
Right	68		73	141

APPROACH LANES				
	TOTAL	PM	MD	AM
Left	0	0	0	0
Thru	0	0	0	0
Right	0	0	0	0

	AM	MD	PM	TOTAL
Left	0	0	0	0
Thru	0	0	0	0
Right	0	0	0	0

LOCATION #: 17-1147-005

TURNING MOVEMENT COUNT

Winchester Rd. (SR-79) & Stowe Rd.
(Intersection Name)

WEDNESDAY

Day

04/19/17

Date

COUNT PERIODS

AM	700AM - 900AM
NOON	-
PM	400PM - 600PM

AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, April 19, 2017

City: Hemet

Project #: 17-1147-001

Location: SR-74 btwn. Winchester Rd. (SR-79) & Old State Hwy.

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			39	13	12:00			241	266
00:15			23	17	12:15			262	284
00:30			19	32	12:30			284	276
00:45			22	103	12:45			277	1064
01:00			19	26	13:00			279	233
01:15			26	28	13:15			294	237
01:30			26	31	13:30			312	286
01:45			27	98	13:45			315	1200
02:00			24	47	14:00			277	264
02:15			20	54	14:15			350	243
02:30			31	66	14:30			362	262
02:45			32	107	14:45			381	1370
03:00			43	111	15:00			356	266
03:15			46	134	15:15			360	296
03:30			52	168	15:30			393	269
03:45			67	208	15:45			305	1414
04:00			73	162	16:00			324	336
04:15			87	209	16:15			348	329
04:30			132	184	16:30			331	320
04:45			128	420	16:45			288	1291
05:00			170	197	17:00			320	256
05:15			181	238	17:15			270	233
05:30			209	284	17:30			255	200
05:45			222	782	17:45			232	1077
06:00			221	250	18:00			228	183
06:15			273	281	18:15			206	172
06:30			286	219	18:30			207	187
06:45			271	1051	18:45			181	822
07:00			256	206	19:00			163	161
07:15			224	225	19:15			168	158
07:30			311	206	19:30			144	138
07:45			248	1039	19:45			142	617
08:00			226	221	20:00			152	127
08:15			220	188	20:15			158	60
08:30			236	189	20:30			121	122
08:45			208	890	20:45			102	533
09:00			252	215	21:00			111	82
09:15			221	221	21:15			95	80
09:30			268	228	21:30			90	77
09:45			214	955	21:45			94	390
10:00			229	231	22:00			67	45
10:15			227	215	22:15			49	40
10:30			234	224	22:30			71	46
10:45			237	927	22:45			55	242
11:00			225	232	23:00			57	32
11:15			232	263	23:15			49	33
11:30			257	247	23:30			45	28
11:45			255	969	23:45			35	186

Total Vol. 7549 8063 **15612** 10206 8549 **18755**

GPS Coordinates:

GPS Coordinates:				Daily Totals				
				NB	SB	EB	WB	Combined
						17755	16612	34367
AM				PM				
Split %	48.4%	51.6%	45.4 %			54.4%	45.6%	54.6 %
Peak Hour	06:15	05:30	11:45			14:45	15:45	14:45
Volume	1086	1087	2097			1490	1264	2609
P.H.E.	0.95	0.96	0.94			0.95	0.94	0.97

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, April 19, 2017

City: Hemet

Project #: 17-1147-002

Location: Winchester Rd. (SR-79) btwn. SR-74 & Old State Hwy.

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	14	5			12:00	106	86		
00:15	9	3			12:15	108	95		
00:30	6	7			12:30	101	89		
00:45	4	33	4	19	12:45	110	425	73	343
01:00	6	4			13:00	131	62		
01:15	9	9			13:15	109	96		
01:30	9	3			13:30	124	100		
01:45	5	29	9	25	13:45	111	475	57	315
02:00	11	7			14:00	93	83		
02:15	9	10			14:15	147	88		
02:30	23	10			14:30	125	83		
02:45	9	52	12	39	14:45	136	501	83	337
03:00	18	19			15:00	123	91		
03:15	25	30			15:15	118	94		
03:30	25	29			15:30	124	91		
03:45	28	96	28	106	15:45	98	463	112	388
04:00	34	33			16:00	107	94		
04:15	33	38			16:15	124	109		
04:30	56	38			16:30	111	108		
04:45	54	177	58	167	16:45	126	468	86	397
05:00	80	68			17:00	100	88		
05:15	60	80			17:15	118	81		
05:30	93	89			17:30	101	57		
05:45	109	342	103	340	17:45	73	392	68	294
06:00	103	91			18:00	92	61		
06:15	134	109			18:15	81	56		
06:30	98	79			18:30	76	61		
06:45	105	440	83	362	18:45	69	318	60	238
07:00	88	62			19:00	49	51		
07:15	85	88			19:15	62	38		
07:30	116	79			19:30	40	43		
07:45	84	373	81	310	19:45	44	195	48	180
08:00	84	66			20:00	30	26		
08:15	71	63			20:15	61	49		
08:30	77	68			20:30	36	66		
08:45	80	312	64	261	20:45	30	157	25	166
09:00	74	96			21:00	34	21		
09:15	82	86			21:15	35	25		
09:30	90	80			21:30	31	21		
09:45	72	318	61	323	21:45	27	127	25	92
10:00	83	68			22:00	19	16		
10:15	70	68			22:15	17	8		
10:30	89	71			22:30	18	15		
10:45	80	322	74	281	22:45	18	72	16	55
11:00	88	63			23:00	18	8		
11:15	77	87			23:15	20	8		
11:30	90	73			23:30	12	14		
11:45	93	348	65	288	23:45	5	55	6	36

Total Vol.	2842	2521	5363	3648	2841	6489
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GPS Coordinates:

				Daily Totals		
				NB	SB	EB
				WB	Combined	
				6490	5362	11852
AM				PM		
Split %	53.0%	47.0%	45.2%	56.2%	43.8%	54.8%
Peak Hour	05:45	05:30	05:30	14:15	15:45	14:15
Volume	444	392	831	531	423	876
P.H.F.	0.83	0.90	0.85	0.90	0.94	0.93

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, April 19, 2017

City: Hemet

Project #: 17-1147-003

Location: Old State Hwy. btwn. Winchester Rd. (SR-79) & SR-74

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			1	0	12:00			0	9
00:15			0	1	12:15			2	2
00:30			0	0	12:30			4	1
00:45			1	2	12:45			1	7
01:00			0	0	13:00			1	7
01:15			0	1	13:15			2	7
01:30			0	1	13:30			7	11
01:45			0	0	13:45			3	13
02:00			0	1	14:00			1	6
02:15			0	1	14:15			1	6
02:30			0	1	14:30			3	8
02:45			0	0	14:45			3	8
03:00			1	2	15:00			3	7
03:15			0	6	15:15			11	5
03:30			0	4	15:30			5	10
03:45			0	1	15:45			7	26
04:00			0	8	16:00			4	8
04:15			0	11	16:15			3	15
04:30			0	16	16:30			3	11
04:45			0	0	16:45			1	11
05:00			0	22	17:00			2	15
05:15			1	17	17:15			5	15
05:30			0	19	17:30			3	8
05:45			0	1	17:45			2	12
06:00			2	12	18:00			1	10
06:15			1	25	18:15			3	7
06:30			1	18	18:30			1	7
06:45			3	7	18:45			3	8
07:00			2	30	19:00			0	6
07:15			0	18	19:15			0	6
07:30			4	16	19:30			0	4
07:45			2	8	19:45			1	1
08:00			1	23	20:00			1	5
08:15			1	19	20:15			0	1
08:30			3	6	20:30			0	4
08:45			1	6	20:45			0	1
09:00			1	12	21:00			0	3
09:15			2	7	21:15			0	3
09:30			2	6	21:30			0	2
09:45			0	5	21:45			0	0
10:00			1	3	22:00			0	2
10:15			1	6	22:15			0	4
10:30			0	3	22:30			1	0
10:45			1	3	22:45			0	1
11:00			1	6	23:00			0	0
11:15			0	8	23:15			0	1
11:30			1	3	23:30			1	0
11:45			0	2	23:45			0	1

Total Vol. 35 429 **464** 89 274 **363**

GPS Coordinates:

				Daily Totals			
				NB	SB	EB	WB
							Combined
						124	703
							827
				PM			
Split %	AM	7.5%	92.5%	24.5%	75.5%		
Peak Hour	06:45	06:15	06:15	15:15	16:15		16:30
Volume	9	89	96	27	52		63
P.H.F.	0.56	0.74	0.75	0.61	0.87		0.79

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, April 19, 2017

City: Hemet

Project #: 17-1147-004

Location: SR-74 btwn. Winchester Rd. (SR-79) & Cortrite Ave.

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00			27	7	12:00			174	213
00:15			17	15	12:15			207	236
00:30			14	26	12:30			229	229
00:45			20	78	12:45			214	824
01:00				24					208
01:15				23					886
01:30				29					1710
01:45			23	81					
02:00				41					
02:15				50					
02:30				63					
02:45			28	80					
03:00				103					
03:15				110					
03:30				147					
03:45			52	162					
04:00				141					
04:15				174					
04:30				168					
04:45			93	311					
05:00				163					
05:15				183					
05:30				228					
05:45			149	587					
06:00				207					
06:15				204					
06:30				179					
06:45			201	775					
07:00				159					
07:15				160					
07:30				169					
07:45			192	788					
08:00				178					
08:15				159					
08:30				156					
08:45			158	714					
09:00				154					
09:15				170					
09:30				189					
09:45			173	784					
10:00				196					
10:15				175					
10:30				178					
10:45			195	744					
11:00				206					
11:15				206					
11:30				218					
11:45			190	774					

Total Vol.

5878

6568

12446

8043

6999

15042

GPS Coordinates:

Daily Totals				
NB	SB	EB	WB	Combined
		13921	13567	27488

	AM				PM		
Split %	47.2%	52.8%	45.3%		53.5%	46.5%	54.7%
Peak Hour	06:15	11:45	11:45		14:45	15:45	14:45
Volume	800	870	1670		1173	1005	2086
P.H.F.	0.89	0.92	0.91		0.94	0.91	0.95

APPENDIX D

Intersection Calculation Sheets

EXISTING (2017)

HCM 6th Signalized Intersection Summary
1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	723	56	242	583	28	64	8	301	15	12	1
Future Volume (veh/h)	9	723	56	242	583	28	64	8	301	15	12	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	893	69	255	614	29	80	10	376	26	21	2
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.80	0.80	0.80	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	1592	123	288	2159	102	358	41	389	249	413	39
Arrive On Green	0.01	0.48	0.48	0.16	0.63	0.63	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3342	258	1781	3455	163	1217	169	1585	997	1681	160
Grp Volume(v), veh/h	11	475	487	255	316	327	90	0	376	26	0	23
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1777	1841	1386	0	1585	997	0	1841
Q Serve(g_s), s	0.7	22.2	22.2	16.2	9.4	9.4	5.6	0.0	27.2	2.5	0.0	1.1
Cycle Q Clear(g_c), s	0.7	22.2	22.2	16.2	9.4	9.4	6.7	0.0	27.2	9.3	0.0	1.1
Prop In Lane	1.00		0.14	1.00		0.09	0.89		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	23	846	869	288	1111	1151	399	0	389	249	0	452
V/C Ratio(X)	0.48	0.56	0.56	0.89	0.28	0.28	0.23	0.00	0.97	0.10	0.00	0.05
Avail Cap(c_a), veh/h	84	846	868	453	1111	1151	399	0	389	249	0	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.9	21.7	21.7	47.6	9.9	9.9	35.8	0.0	43.3	39.3	0.0	33.4
Incr Delay (d2), s/veh	14.7	2.7	2.6	12.3	0.6	0.6	0.3	0.0	36.5	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	9.1	9.3	7.9	3.4	3.5	2.0	0.0	14.1	0.6	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.6	24.4	24.3	59.8	10.6	10.5	36.1	0.0	79.8	39.5	0.0	33.5
LnGrp LOS	E	C	C	E	B	B	D	A	E	D	A	C
Approach Vol, veh/h	973			898			466			49		
Approach Delay, s/veh	24.9			24.5			71.3			36.7		
Approach LOS	C			C			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.3	59.7		33.0	6.0	77.0		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	48.5		28.5	5.5	72.5		28.5				
Max Q Clear Time (g_c+I1), s	18.2	24.2		11.3	2.7	11.4		29.2				
Green Ext Time (p_c), s	0.5	5.7		0.1	0.0	3.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				34.1								
HCM 6th LOS				C								

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1038	1	79	852	1	7
Future Vol, veh/h	1038	1	79	852	1	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	96	96	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1236	1	82	888	2	14
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1237	0	1845	619
Stage 1	-	-	-	-	1237	-
Stage 2	-	-	-	-	608	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	559	-	66	432
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	559	-	56	432
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	432	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		15.5	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	358	-	-	559	-	
HCM Lane V/C Ratio	0.045	-	-	0.147	-	
HCM Control Delay (s)	15.5	-	-	12.5	-	
HCM Lane LOS	C	-	-	B	-	
HCM 95th %tile Q(veh)	0.1	-	-	0.5	-	

HCM 6th Signalized Intersection Summary 3: California Avenue & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	891	0	5	650	20	11	2	11	36	0	313
Future Volume (veh/h)	220	891	0	5	650	20	11	2	11	36	0	313
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	948	0	5	714	22	20	4	20	46	0	401
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.55	0.55	0.55	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	1280	0	112	927	29	281	71	239	660	0	646
Arrive On Green	0.16	0.36	0.00	0.06	0.26	0.26	0.41	0.41	0.41	0.41	0.00	0.41
Sat Flow, veh/h	1781	3647	0	1781	3519	108	527	175	585	1398	0	1585
Grp Volume(v), veh/h	234	948	0	5	360	376	44	0	0	46	0	401
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1851	1288	0	0	1398	0	1585
Q Serve(g_s), s	10.1	18.6	0.0	0.2	14.9	15.0	0.0	0.0	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	10.1	18.6	0.0	0.2	14.9	15.0	1.2	0.0	0.0	1.3	0.0	16.0
Prop In Lane	1.00		0.00	1.00		0.06	0.45		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	284	1280	0	112	468	488	591	0	0	660	0	646
V/C Ratio(X)	0.82	0.74	0.00	0.04	0.77	0.77	0.07	0.00	0.00	0.07	0.00	0.62
Avail Cap(c_a), veh/h	726	2492	0	404	925	963	591	0	0	660	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.4	22.2	0.0	35.1	27.1	27.1	14.4	0.0	0.0	14.4	0.0	18.7
Incr Delay (d2), s/veh	5.9	0.9	0.0	0.2	2.7	2.6	0.2	0.0	0.0	0.2	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	6.9	0.0	0.1	6.0	6.3	0.5	0.0	0.0	0.5	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	23.1	0.0	35.3	29.8	29.7	14.6	0.0	0.0	14.6	0.0	23.2
LnGrp LOS	D	C	A	D	C	C	B	A	A	B	A	C
Approach Vol, veh/h	1182			741			44			447		
Approach Delay, s/veh	26.1			29.8			14.6			22.3		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	33.2		37.0	17.2	25.5		37.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	55.9		32.5	32.5	41.5		32.5				
Max Q Clear Time (g_c+I1), s	2.2	20.6		18.0	12.1	17.0		3.2				
Green Ext Time (p_c), s	0.0	6.9		1.5	0.6	4.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	26.3											
HCM 6th LOS	C											

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	2	45	80	7	3	20	353	3	0	281	29
Future Vol, veh/h	17	2	45	80	7	3	20	353	3	0	281	29
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	79	79	79	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	3	56	107	9	4	25	447	4	0	319	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	850	845	344	864	859	449	360	0	0	451	0	0
Stage 1	344	344	-	499	499	-	-	-	-	-	-	-
Stage 2	506	501	-	365	360	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	280	300	699	274	294	610	1199	-	-	1109	-	-
Stage 1	671	637	-	554	544	-	-	-	-	-	-	-
Stage 2	549	543	-	654	626	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	263	289	694	245	283	610	1190	-	-	1109	-	-
Mov Cap-2 Maneuver	263	289	-	245	283	-	-	-	-	-	-	-
Stage 1	648	632	-	538	529	-	-	-	-	-	-	-
Stage 2	521	528	-	599	621	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.2		31.4		0.4		0	
HCM LOS	B		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1190	-	-	469 253	1109	-	-
HCM Lane V/C Ratio	0.021	-	-	0.171 0.474	-	-	-
HCM Control Delay (s)	8.1	0	-	14.2 31.4	0	-	-
HCM Lane LOS	A	A	-	B D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6 2.4	0	-	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	68	0	18	0	381	72	22	432	0
Future Vol, veh/h	0	0	0	68	0	18	0	381	72	22	432	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	94	94	94	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	72	0	19	0	401	76	23	460	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	955	983	460	945	945	439	460	0	0	477	0	0
Stage 1	506	506	-	439	439	-	-	-	-	-	-	-
Stage 2	449	477	-	506	506	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	238	249	601	242	262	618	1101	-	-	1085	-	-
Stage 1	549	540	-	597	578	-	-	-	-	-	-	-
Stage 2	589	556	-	549	540	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	242	601	237	255	618	1101	-	-	1085	-	-
Mov Cap-2 Maneuver	226	242	-	237	255	-	-	-	-	-	-	-
Stage 1	549	525	-	597	578	-	-	-	-	-	-	-
Stage 2	571	556	-	534	525	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		24.8			0			0.4			
HCM LOS	A		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1101	-	-	-	272	1085	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.336	0.022	-	-				
HCM Control Delay (s)	0	-	-	0	24.8	8.4	0	-				
HCM Lane LOS	A	-	-	A	C	A	A	-				
HCM 95th %tile O(veh)	0	-	-	-	1.4	0.1	-	-				

HCM 6th Signalized Intersection Summary
1: Winchester Road / SR-79 & SR-74

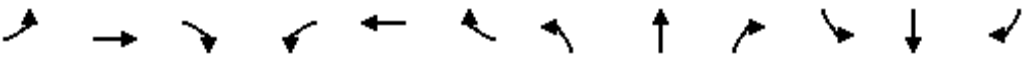
SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	925	68	304	893	42	101	11	356	10	26	5
Future Volume (veh/h)	11	925	68	304	893	42	101	11	356	10	26	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	1028	76	330	971	46	109	12	383	12	31	6
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1577	117	363	2280	108	305	31	333	181	320	62
Arrive On Green	0.01	0.47	0.47	0.20	0.66	0.66	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3355	248	1781	3454	164	1170	146	1585	989	1523	295
Grp Volume(v), veh/h	12	544	560	330	499	518	121	0	383	12	0	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1826	1781	1777	1841	1315	0	1585	989	0	1817
Q Serve(g_s), s	0.8	27.3	27.3	21.1	15.5	15.5	8.5	0.0	24.5	1.3	0.0	1.9
Cycle Q Clear(g_c), s	0.8	27.3	27.3	21.1	15.5	15.5	10.4	0.0	24.5	11.7	0.0	1.9
Prop In Lane	1.00		0.14	1.00		0.09	0.90		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	25	835	858	363	1173	1215	335	0	333	181	0	382
V/C Ratio(X)	0.49	0.65	0.65	0.91	0.43	0.43	0.36	0.00	1.15	0.07	0.00	0.10
Avail Cap(c_a), veh/h	78	835	858	497	1173	1215	335	0	333	181	0	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.0	23.6	23.6	45.3	9.4	9.4	41.1	0.0	46.0	45.6	0.0	37.1
Incr Delay (d2), s/veh	14.2	3.9	3.8	16.6	1.1	1.1	0.7	0.0	96.1	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.4	11.7	10.6	5.4	5.6	3.0	0.0	18.1	0.3	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	27.5	27.4	61.9	10.5	10.5	41.8	0.0	142.1	45.7	0.0	37.2
LnGrp LOS	E	C	C	E	B	B	D	A	F	D	A	D
Approach Vol, veh/h	1116			1347			504			49		
Approach Delay, s/veh	28.0			23.1			118.0			39.3		
Approach LOS	C			C			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.3	59.3		29.0	6.1	81.4		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	49.5		24.5	5.1	76.9		24.5				
Max Q Clear Time (g_c+I1), s	23.1	29.3		13.7	2.8	17.5		26.5				
Green Ext Time (p_c), s	0.7	6.5		0.1	0.0	6.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				41.0								
HCM 6th LOS				D								

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	
Traffic Vol, veh/h	1290	1	44	1239	0	11
Future Vol, veh/h	1290	1	44	1239	0	11
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	94	94	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1387	1	47	1318	0	16
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1389	0	2142	695
Stage 1	-	-	-	-	1389	-
Stage 2	-	-	-	-	753	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	489	-	42	385
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	489	-	38	385
Mov Cap-2 Maneuver	-	-	-	-	134	-
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	385	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		14.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	385	-	-	489	-	
HCM Lane V/C Ratio	0.041	-	-	0.096	-	
HCM Control Delay (s)	14.8	-	-	13.1	-	
HCM Lane LOS	B	-	-	B	-	
HCM 95th %tile O(veh)	0.1	-	-	0.3	-	

HCM 6th Signalized Intersection Summary 3: California Avenue & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	332	1002	6	9	1034	27	4	0	7	30	0	327
Future Volume (veh/h)	332	1002	6	9	1034	27	4	0	7	30	0	327
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	332	1002	6	9	1066	28	4	0	8	32	0	348
Peak Hour Factor	1.00	1.00	1.00	0.97	0.97	0.97	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	1895	11	99	1297	34	155	25	253	464	0	431
Arrive On Green	0.21	0.52	0.52	0.06	0.37	0.37	0.27	0.00	0.27	0.27	0.00	0.27
Sat Flow, veh/h	1781	3622	22	1781	3538	93	375	90	931	1413	0	1585
Grp Volume(v), veh/h	332	492	516	9	535	559	12	0	0	32	0	348
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1854	1397	0	0	1413	0	1585
Q Serve(g_s), s	16.3	16.4	16.4	0.4	24.6	24.6	0.0	0.0	0.0	0.9	0.0	18.5
Cycle Q Clear(g_c), s	16.3	16.4	16.4	0.4	24.6	24.6	0.5	0.0	0.0	1.4	0.0	18.5
Prop In Lane	1.00		0.01	1.00		0.05	0.33		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	378	930	976	99	651	680	433	0	0	464	0	431
V/C Ratio(X)	0.88	0.53	0.53	0.09	0.82	0.82	0.03	0.00	0.00	0.07	0.00	0.81
Avail Cap(c_a), veh/h	682	1259	1323	358	936	976	433	0	0	464	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	14.2	14.2	40.4	25.9	25.9	24.1	0.0	0.0	24.4	0.0	30.6
Incr Delay (d2), s/veh	6.7	0.5	0.4	0.4	4.0	3.8	0.1	0.0	0.0	0.3	0.0	15.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	5.7	5.9	0.2	10.0	10.4	0.2	0.0	0.0	0.5	0.0	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	14.6	14.6	40.8	29.9	29.7	24.2	0.0	0.0	24.7	0.0	45.6
LnGrp LOS	D	B	B	D	C	C	C	A	A	C	A	D
Approach Vol, veh/h	1340				1103				12			
Approach Delay, s/veh	21.2				29.9				24.2			
Approach LOS	C				C				C			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	51.7		29.0	23.6	37.6		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	63.9		24.5	34.5	47.5		24.5				
Max Q Clear Time (g_c+I1), s	2.4	18.4		20.5	18.3	26.6		2.5				
Green Ext Time (p_c), s	0.0	6.7		0.6	0.8	6.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	27.6											
HCM 6th LOS	C											

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	3	32	41	1	1	23	450	3	1	369	28
Future Vol, veh/h	17	3	32	41	1	1	23	450	3	1	369	28
Conflicting Peds, #/hr	0	0	4	4	0	0	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	67	67	67	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	3	32	61	1	1	25	495	3	1	405	31
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	977	977	431	991	991	497	442	0	0	498	0	0
Stage 1	429	429	-	547	547	-	-	-	-	-	-	-
Stage 2	548	548	-	444	444	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	230	251	624	225	246	573	1118	-	-	1066	-	-
Stage 1	604	584	-	521	517	-	-	-	-	-	-	-
Stage 2	521	517	-	593	575	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	241	618	205	237	573	1112	-	-	1066	-	-
Mov Cap-2 Maneuver	221	241	-	205	237	-	-	-	-	-	-	-
Stage 1	582	580	-	505	501	-	-	-	-	-	-	-
Stage 2	502	501	-	557	571	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.4		29.7		0.4		0					
HCM LOS	C		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1112	-	-	368	209	1066	-	-				
HCM Lane V/C Ratio	0.023	-	-	0.141	0.307	0.001	-	-				
HCM Control Delay (s)	8.3	0	-	16.4	29.7	8.4	0	-				
HCM Lane LOS	A	A	-	C	D	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0.5	1.2	0	-	-				

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	73	0	30	0	476	68	38	422	0
Future Vol, veh/h	0	0	0	73	0	30	0	476	68	38	422	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	86	86	91	91	91	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	85	0	35	0	523	75	40	440	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1098	1118	440	1081	1081	561	440	0	0	598	0	0
Stage 1	520	520	-	561	561	-	-	-	-	-	-	-
Stage 2	578	598	-	520	520	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	190	207	617	195	218	527	1120	-	-	979	-	-
Stage 1	539	532	-	512	510	-	-	-	-	-	-	-
Stage 2	501	491	-	539	532	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	196	617	187	206	527	1120	-	-	979	-	-
Mov Cap-2 Maneuver	170	196	-	187	206	-	-	-	-	-	-	-
Stage 1	539	503	-	512	510	-	-	-	-	-	-	-
Stage 2	468	491	-	510	503	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		36.5			0			0.7			
HCM LOS	A		E									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1120	-	-	-	230	979	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.521	0.04	-	-				
HCM Control Delay (s)	0	-	-	0	36.5	8.8	0	-				
HCM Lane LOS	A	-	-	A	E	A	A	-				
HCM 95th %tile O(veh)	0	-	-	-	2.7	0.1	-	-				

EXISTING + AMBIENT

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	781	60	348	630	30	69	9	325	16	13	1
Future Volume (veh/h)	10	781	60	348	630	30	69	9	325	16	13	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	964	74	366	663	32	86	11	406	28	22	2
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.80	0.80	0.80	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1394	107	396	2157	104	355	42	388	239	414	38
Arrive On Green	0.01	0.42	0.42	0.22	0.63	0.63	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1781	3344	257	1781	3451	166	1212	172	1585	969	1689	154
Grp Volume(v), veh/h	12	512	526	366	341	354	97	0	406	28	0	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1824	1781	1777	1840	1383	0	1585	969	0	1842
Q Serve(g_s), s	0.8	27.5	27.5	23.4	10.4	10.4	6.1	0.0	28.5	2.8	0.0	1.2
Cycle Q Clear(g_c), s	0.8	27.5	27.5	23.4	10.4	10.4	7.3	0.0	28.5	10.1	0.0	1.2
Prop In Lane	1.00		0.14	1.00		0.09	0.89		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	25	741	760	396	1111	1151	397	0	388	239	0	451
V/C Ratio(X)	0.49	0.69	0.69	0.92	0.31	0.31	0.24	0.00	1.05	0.12	0.00	0.05
Avail Cap(c_a), veh/h	84	741	760	452	1111	1151	397	0	388	239	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.0	27.8	27.8	44.3	10.1	10.1	36.2	0.0	43.9	40.1	0.0	33.6
Incr Delay (d2), s/veh	14.2	5.2	5.1	23.3	0.7	0.7	0.3	0.0	58.1	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.9	12.2	12.4	3.7	3.9	2.2	0.0	16.9	0.7	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	33.0	32.9	67.6	10.8	10.8	36.5	0.0	102.0	40.3	0.0	33.7
LnGrp LOS	E	C	C	E	B	B	D	A	F	D	A	C
Approach Vol, veh/h	1050			1061			503			52		
Approach Delay, s/veh	33.4			30.4			89.4			37.2		
Approach LOS	C			C			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.3	53.0		33.0	6.1	77.2		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	48.5		28.5	5.5	72.5		28.5				
Max Q Clear Time (g_c+I1), s	25.4	29.5		12.1	2.8	12.4		30.5				
Green Ext Time (p_c), s	0.4	5.8		0.1	0.0	4.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	42.9											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1121	1	0	1005	1	8
Future Vol, veh/h	1121	1	0	1005	1	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	96	96	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1335	1	0	1047	2	16
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1336	0	1860	668
Stage 1	-	-	-	-	1336	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	512	-	65	401
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	512	-	65	401
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	210	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		16		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	345	-	-	512	-	
HCM Lane V/C Ratio	0.052	-	-	-	-	
HCM Control Delay (s)	16	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile O(veh)	0.2	-	-	0	-	

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	238	962	0	5	702	22	12	2	12	39	0	338
Future Volume (veh/h)	238	962	0	5	702	22	12	2	12	39	0	338
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	253	1023	0	5	771	24	22	4	22	50	0	433
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.55	0.55	0.55	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	301	1379	0	107	981	31	266	63	226	632	0	618
Arrive On Green	0.17	0.39	0.00	0.06	0.28	0.28	0.39	0.39	0.39	0.39	0.00	0.39
Sat Flow, veh/h	1781	3647	0	1781	3518	109	522	163	579	1399	0	1585
Grp Volume(v), veh/h	253	1023	0	5	389	406	48	0	0	50	0	433
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1850	1264	0	0	1399	0	1585
Q Serve(g_s), s	11.5	20.6	0.0	0.2	16.9	16.9	0.0	0.0	0.0	0.0	0.0	19.1
Cycle Q Clear(g_c), s	11.5	20.6	0.0	0.2	16.9	16.9	1.5	0.0	0.0	1.5	0.0	19.1
Prop In Lane	1.00		0.00	1.00		0.06	0.46		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	301	1379	0	107	496	516	556	0	0	632	0	618
V/C Ratio(X)	0.84	0.74	0.00	0.05	0.79	0.79	0.09	0.00	0.00	0.08	0.00	0.70
Avail Cap(c_a), veh/h	695	2383	0	387	885	921	556	0	0	632	0	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	21.9	0.0	36.9	27.7	27.7	16.0	0.0	0.0	16.0	0.0	21.3
Incr Delay (d2), s/veh	6.2	0.8	0.0	0.2	2.8	2.7	0.3	0.0	0.0	0.2	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.6	0.0	0.1	6.8	7.1	0.6	0.0	0.0	0.6	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	22.7	0.0	37.1	30.5	30.4	16.3	0.0	0.0	16.2	0.0	27.8
LnGrp LOS	D	C	A	D	C	C	B	A	A	B	A	C
Approach Vol, veh/h	1276			800			48			483		
Approach Delay, s/veh	26.1			30.5			16.3			26.6		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	36.8		37.0	18.6	27.8		37.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	55.9		32.5	32.5	41.5		32.5				
Max Q Clear Time (g_c+I1), s	2.2	22.6		21.1	13.5	18.9		3.5				
Green Ext Time (p_c), s	0.0	7.6		1.5	0.6	4.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				27.4								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	2	49	1	8	3	22	381	3	0	384	31
Future Vol, veh/h	18	2	49	1	8	3	22	381	3	0	384	31
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	79	79	79	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	3	61	1	11	4	28	482	4	0	436	35
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1010	1004	462	1026	1019	484	479	0	0	486	0	0
Stage 1	462	462	-	540	540	-	-	-	-	-	-	-
Stage 2	548	542	-	486	479	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	218	242	600	213	237	583	1083	-	-	1077	-	-
Stage 1	580	565	-	526	521	-	-	-	-	-	-	-
Stage 2	521	520	-	563	555	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	201	231	595	184	227	583	1075	-	-	1077	-	-
Mov Cap-2 Maneuver	201	231	-	184	227	-	-	-	-	-	-	-
Stage 1	555	560	-	507	502	-	-	-	-	-	-	-
Stage 2	488	501	-	503	551	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17.2		19.6		0.5		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1075	-	-	382	262	1077	-	-				
HCM Lane V/C Ratio	0.026	-	-	0.226	0.061	-	-	-				
HCM Control Delay (s)	8.4	0	-	17.2	19.6	0	-	-				
HCM Lane LOS	A	A	-	C	C	A	-	-				
HCM 95th %tile O(veh)	0.1	-	-	0.9	0.2	0	-	-				

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	73	0	19	0	411	78	24	467	0
Future Vol, veh/h	0	0	0	73	0	19	0	411	78	24	467	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	94	94	94	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	78	0	20	0	433	82	26	497	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1033	1064	497	1023	1023	474	497	0	0	515	0	0
Stage 1	549	549	-	474	474	-	-	-	-	-	-	-
Stage 2	484	515	-	549	549	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	211	223	573	214	236	590	1067	-	-	1051	-	-
Stage 1	520	516	-	571	558	-	-	-	-	-	-	-
Stage 2	564	535	-	520	516	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	199	215	573	208	228	590	1067	-	-	1051	-	-
Mov Cap-2 Maneuver	199	215	-	208	228	-	-	-	-	-	-	-
Stage 1	520	498	-	571	558	-	-	-	-	-	-	-
Stage 2	545	535	-	502	498	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	30	0	0.4
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1067	-	-	-	240	1051	-
HCM Lane V/C Ratio	-	-	-	-	0.408	0.024	-
HCM Control Delay (s)	0	-	-	0	30	8.5	0
HCM Lane LOS	A	-	-	A	D	A	A
HCM 95th %tile Q(veh)	0	-	-	-	1.9	0.1	-

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1000	72	376	964	45	109	12	384	11	28	5
Future Volume (veh/h)	12	1000	72	376	964	45	109	12	384	11	28	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	1111	80	409	1048	49	117	13	413	13	33	6
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	1438	103	439	2279	107	303	31	333	171	324	59
Arrive On Green	0.01	0.43	0.43	0.25	0.66	0.66	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3362	242	1781	3457	162	1161	146	1585	961	1540	280
Grp Volume(v), veh/h	13	587	604	409	539	558	130	0	413	13	0	39
Grp Sat Flow(s),veh/h/ln	1781	1777	1827	1781	1777	1841	1307	0	1585	961	0	1820
Q Serve(g_s), s	0.8	32.9	33.0	26.2	17.3	17.3	9.3	0.0	24.5	1.4	0.0	2.0
Cycle Q Clear(g_c), s	0.8	32.9	33.0	26.2	17.3	17.3	11.3	0.0	24.5	12.7	0.0	2.0
Prop In Lane	1.00		0.13	1.00		0.09	0.90		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	26	760	782	439	1172	1214	333	0	333	171	0	382
V/C Ratio(X)	0.50	0.77	0.77	0.93	0.46	0.46	0.39	0.00	1.24	0.08	0.00	0.10
Avail Cap(c_a), veh/h	78	760	782	496	1172	1214	333	0	333	171	0	382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.0	28.5	28.5	43.0	9.7	9.7	41.6	0.0	46.1	46.5	0.0	37.2
Incr Delay (d2), s/veh	13.7	7.5	7.3	23.2	1.3	1.3	0.7	0.0	131.1	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	14.5	14.9	13.8	6.0	6.2	3.3	0.0	21.3	0.4	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.7	36.0	35.8	66.2	11.0	11.0	42.3	0.0	177.2	46.7	0.0	37.3
LnGrp LOS	E	D	D	E	B	B	D	A	F	D	A	D
Approach Vol, veh/h	1204			1506			543			52		
Approach Delay, s/veh	36.3			26.0			144.9			39.6		
Approach LOS	D			C			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.2	54.4		29.0	6.2	81.4		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	32.5	49.5		24.5	5.1	76.9		24.5				
Max Q Clear Time (g_c+I1), s	28.2	35.0		14.7	2.8	19.3		26.5				
Green Ext Time (p_c), s	0.5	6.1		0.1	0.0	7.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				49.5								
HCM 6th LOS				D								

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑↑	
Traffic Vol, veh/h	1393	1	0	1386	0	12
Future Vol, veh/h	1393	1	0	1386	0	12
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	94	94	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1498	1	0	1474	0	17
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1500	0	2237	751
Stage 1	-	-	-	-	1500	-
Stage 2	-	-	-	-	737	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	443	-	36	353
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	434	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	443	-	36	353
Mov Cap-2 Maneuver	-	-	-	-	125	-
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	434	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		15.7	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	353	-	-	443	-	
HCM Lane V/C Ratio	0.049	-	-	-	-	
HCM Control Delay (s)	15.7	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile O(veh)	0.2	-	-	0	-	

HCM 6th Signalized Intersection Summary 3: California Avenue & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	359	1082	6	10	1117	29	4	0	8	32	0	353
Future Volume (veh/h)	359	1082	6	10	1117	29	4	0	8	32	0	353
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	359	1082	6	10	1152	30	4	0	9	34	0	376
Peak Hour Factor	1.00	1.00	1.00	0.97	0.97	0.97	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	2034	11	93	1374	36	132	24	239	422	0	389
Arrive On Green	0.23	0.56	0.56	0.05	0.39	0.39	0.25	0.00	0.25	0.25	0.00	0.25
Sat Flow, veh/h	1781	3623	20	1781	3538	92	336	97	973	1413	0	1585
Grp Volume(v), veh/h	359	531	557	10	578	604	13	0	0	34	0	376
Grp Sat Flow(s),veh/h/ln	1781	1777	1867	1781	1777	1854	1406	0	0	1413	0	1585
Q Serve(g_s), s	18.7	17.9	17.9	0.5	28.3	28.3	0.0	0.0	0.0	1.1	0.0	22.5
Cycle Q Clear(g_c), s	18.7	17.9	17.9	0.5	28.3	28.3	0.6	0.0	0.0	1.6	0.0	22.5
Prop In Lane	1.00		0.01	1.00		0.05	0.31		0.69	1.00		1.00
Lane Grp Cap(c), veh/h	401	997	1048	93	690	720	394	0	0	422	0	389
V/C Ratio(X)	0.89	0.53	0.53	0.11	0.84	0.84	0.03	0.00	0.00	0.08	0.00	0.97
Avail Cap(c_a), veh/h	623	1205	1266	337	919	959	394	0	0	422	0	389
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	13.1	13.1	43.2	26.6	26.6	27.5	0.0	0.0	27.8	0.0	35.7
Incr Delay (d2), s/veh	10.4	0.4	0.4	0.5	5.3	5.1	0.2	0.0	0.0	0.4	0.0	37.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.1	6.4	0.2	11.7	12.2	0.2	0.0	0.0	0.6	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	13.6	13.6	43.7	31.9	31.7	27.6	0.0	0.0	28.2	0.0	73.6
LnGrp LOS	D	B	B	D	C	C	C	A	A	C	A	E
Approach Vol, veh/h	1447				1192				13		410	
Approach Delay, s/veh	21.7				31.9				27.6		69.9	
Approach LOS	C				C				C		E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	58.2		28.0	26.1	41.7		28.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	64.9		23.5	33.5	49.5		23.5				
Max Q Clear Time (g_c+I1), s	2.5	19.9		24.5	20.7	30.3		2.6				
Green Ext Time (p_c), s	0.0	7.5		0.0	0.8	6.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	32.1											
HCM 6th LOS	C											

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	3	35	1	1	1	25	486	3	1	442	30
Future Vol, veh/h	18	3	35	1	1	1	25	486	3	1	442	30
Conflicting Peds, #/hr	0	0	4	4	0	0	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	67	67	67	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	35	1	1	1	27	534	3	1	486	33
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1102	1102	513	1118	1117	536	525	0	0	537	0	0
Stage 1	511	511	-	590	590	-	-	-	-	-	-	-
Stage 2	591	591	-	528	527	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	189	212	561	184	207	545	1042	-	-	1031	-	-
Stage 1	545	537	-	494	495	-	-	-	-	-	-	-
Stage 2	493	494	-	534	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	203	556	165	198	545	1036	-	-	1031	-	-
Mov Cap-2 Maneuver	181	203	-	165	198	-	-	-	-	-	-	-
Stage 1	522	533	-	476	477	-	-	-	-	-	-	-
Stage 2	472	476	-	495	524	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	18.8		20.8		0.4		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1036	-	-	316	232	1031	-	-				
HCM Lane V/C Ratio	0.027	-	-	0.177	0.019	0.001	-	-				
HCM Control Delay (s)	8.6	0	-	18.8	20.8	8.5	0	-				
HCM Lane LOS	A	A	-	C	C	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0.6	0.1	0	-	-				

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	79	0	32	0	514	73	41	456	0
Future Vol, veh/h	0	0	0	79	0	32	0	514	73	41	456	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	86	86	91	91	91	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	92	0	37	0	565	80	43	475	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1185	1206	475	1166	1166	605	475	0	0	645	0	0
Stage 1	561	561	-	605	605	-	-	-	-	-	-	-
Stage 2	624	645	-	561	561	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	166	184	590	171	194	498	1087	-	-	940	-	-
Stage 1	512	510	-	485	487	-	-	-	-	-	-	-
Stage 2	473	467	-	512	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	146	173	590	163	182	498	1087	-	-	940	-	-
Mov Cap-2 Maneuver	146	173	-	163	182	-	-	-	-	-	-	-
Stage 1	512	478	-	485	487	-	-	-	-	-	-	-
Stage 2	438	467	-	480	478	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	49.9	0	0.7
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	- 202	940	-	-
HCM Lane V/C Ratio	-	-	-	- 0.639	0.045	-	-
HCM Control Delay (s)	0	-	-	0 49.9	9	0	-
HCM Lane LOS	A	-	-	A E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	- 3.8	0.1	-	-

EXISTING + AMBIENT + PROJECT

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	800	65	381	630	30	92	14	325	17	17	1
Future Volume (veh/h)	10	800	65	381	630	30	92	14	325	17	17	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	988	80	401	663	32	115	18	406	29	29	2
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.80	0.80	0.80	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	25	1389	620	426	2127	103	395	17	392	61	443	31
Arrive On Green	0.01	0.39	0.39	0.24	0.62	0.62	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1781	3554	1585	1781	3451	166	1374	68	1528	963	1729	119
Grp Volume(v), veh/h	12	988	80	401	341	354	115	0	424	29	0	31
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1840	1374	0	1595	963	0	1848
Q Serve(g_s), s	0.8	27.9	3.9	26.3	10.8	10.9	8.2	0.0	30.5	0.0	0.0	1.5
Cycle Q Clear(g_c), s	0.8	27.9	3.9	26.3	10.8	10.9	9.7	0.0	30.5	30.5	0.0	1.5
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.96	1.00		0.06
Lane Grp Cap(c), veh/h	25	1389	620	426	1095	1134	395	0	409	61	0	474
V/C Ratio(X)	0.49	0.71	0.13	0.94	0.31	0.31	0.29	0.00	1.04	0.48	0.00	0.07
Avail Cap(c_a), veh/h	76	1389	620	442	1095	1134	395	0	409	61	0	474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.3	30.6	23.2	44.4	10.8	10.8	37.1	0.0	44.2	59.5	0.0	33.5
Incr Delay (d2), s/veh	14.3	3.1	0.4	28.0	0.7	0.7	0.4	0.0	54.3	5.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	11.8	1.4	14.4	4.0	4.1	2.7	0.0	17.6	1.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	33.7	23.7	72.4	11.6	11.6	37.5	0.0	98.5	65.3	0.0	33.5
LnGrp LOS	E	C	C	E	B	B	D	A	F	E	A	C
Approach Vol, veh/h	1080			1096			539			60		
Approach Delay, s/veh	33.4			33.8			85.5			48.9		
Approach LOS	C			C			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.0	51.0		35.0	6.1	77.8		35.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	46.5		30.5	5.1	70.9		30.5				
Max Q Clear Time (g_c+I1), s	28.3	29.9		32.5	2.8	12.9		32.5				
Green Ext Time (p_c), s	0.2	6.0		0.0	0.0	4.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	44.0											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1135	1	0	1038	1	26
Future Vol, veh/h	1135	1	0	1038	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	96	96	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1351	1	0	1081	2	52
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1352	0	1893	676
Stage 1	-	-	-	-	1352	-
Stage 2	-	-	-	-	541	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	505	-	62	396
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	548	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	505	-	62	396
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	548	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		16.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	375	-	-	505	-	
HCM Lane V/C Ratio	0.144	-	-	-	-	
HCM Control Delay (s)	16.2	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile O(veh)	0.5	-	-	0	-	

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	985	7	5	726	22	20	2	12	39	0	340
Future Volume (veh/h)	240	985	7	5	726	22	20	2	12	39	0	340
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	255	1048	7	5	798	24	36	4	22	50	0	436
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.55	0.55	0.55	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1436	10	105	1008	30	312	47	160	626	0	609
Arrive On Green	0.17	0.40	0.40	0.06	0.29	0.29	0.38	0.38	0.38	0.38	0.00	0.38
Sat Flow, veh/h	1781	3619	24	1781	3522	106	637	121	417	1408	0	1585
Grp Volume(v), veh/h	255	515	540	5	403	419	62	0	0	50	0	436
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1851	1176	0	0	1408	0	1585
Q Serve(g_s), s	11.7	20.8	20.8	0.2	17.7	17.7	0.7	0.0	0.0	0.0	0.0	19.8
Cycle Q Clear(g_c), s	11.7	20.8	20.8	0.2	17.7	17.7	2.2	0.0	0.0	1.5	0.0	19.8
Prop In Lane	1.00		0.01	1.00		0.06	0.58		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	303	705	741	105	509	530	519	0	0	626	0	609
V/C Ratio(X)	0.84	0.73	0.73	0.05	0.79	0.79	0.12	0.00	0.00	0.08	0.00	0.72
Avail Cap(c_a), veh/h	685	1174	1233	381	872	908	519	0	0	626	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	21.6	21.6	37.5	27.9	27.9	16.6	0.0	0.0	16.5	0.0	22.1
Incr Delay (d2), s/veh	6.3	1.5	1.4	0.2	2.8	2.7	0.5	0.0	0.0	0.2	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.8	8.2	0.1	7.2	7.4	0.8	0.0	0.0	0.6	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	23.1	23.0	37.7	30.7	30.6	17.1	0.0	0.0	16.7	0.0	29.2
LnGrp LOS	D	C	C	D	C	C	B	A	A	B	A	C
Approach Vol, veh/h	1310			827			62			486		
Approach Delay, s/veh	26.4			30.7			17.1			27.9		
Approach LOS	C			C			B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	38.1		37.0	18.9	28.7		37.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	55.9		32.5	32.5	41.5		32.5				
Max Q Clear Time (g_c+I1), s	2.2	22.8		21.8	13.7	19.7		4.2				
Green Ext Time (p_c), s	0.0	6.9		1.5	0.6	4.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				27.8								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↗
Traffic Vol, veh/h	18	2	49	33	8	31	22	381	36	8	384	31
Future Vol, veh/h	18	2	49	33	8	31	22	381	36	8	384	31
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	79	79	79	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	3	61	44	11	41	28	482	46	9	436	35

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1049	1046	444	1065	1058	505	479	0	0	528	0	0
Stage 1	462	462	-	561	561	-	-	-	-	-	-	-
Stage 2	587	584	-	504	497	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	228	614	200	225	567	1083	-	-	1039	-	-
Stage 1	580	565	-	512	510	-	-	-	-	-	-	-
Stage 2	496	498	-	550	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	215	609	172	212	567	1075	-	-	1039	-	-
Mov Cap-2 Maneuver	175	215	-	172	212	-	-	-	-	-	-	-
Stage 1	554	554	-	493	491	-	-	-	-	-	-	-
Stage 2	433	480	-	487	534	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	18.2		27.7		0.4		0.2	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1075	-	-	358	253	1039	-
HCM Lane V/C Ratio	0.026	-	-	0.241	0.379	0.009	-
HCM Control Delay (s)	8.4	0	-	18.2	27.7	8.5	0
HCM Lane LOS	A	A	-	C	D	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.9	1.7	0	-

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	73	0	28	0	435	78	33	490	0
Future Vol, veh/h	0	0	0	73	0	28	0	435	78	33	490	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	94	94	94	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	78	0	30	0	458	82	35	521	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1105	1131	521	1090	1090	499	521	0	0	540	0	0
Stage 1	591	591	-	499	499	-	-	-	-	-	-	-
Stage 2	514	540	-	591	591	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	188	203	555	193	215	572	1045	-	-	1028	-	-
Stage 1	493	494	-	554	544	-	-	-	-	-	-	-
Stage 2	543	521	-	493	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	172	193	555	186	205	572	1045	-	-	1028	-	-
Mov Cap-2 Maneuver	172	193	-	186	205	-	-	-	-	-	-	-
Stage 1	493	470	-	554	544	-	-	-	-	-	-	-
Stage 2	515	521	-	469	470	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	33.9	0	0.5
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1045	-	-	-	229	1028	-
HCM Lane V/C Ratio	-	-	-	-	0.469	0.034	-
HCM Control Delay (s)	0	-	-	0	33.9	8.6	0
HCM Lane LOS	A	-	-	A	D	A	A
HCM 95th %tile Q(veh)	0	-	-	-	2.3	0.1	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1122	59	0	954	0	18
Future Vol, veh/h	1122	59	0	954	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1220	64	0	1037	0	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	642
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	417
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	417
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		14.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	417	-	-	-		
HCM Lane V/C Ratio	0.047	-	-	-		
HCM Control Delay (s)	14.1	-	-	-		
HCM Lane LOS	B	-	-	-		
HCM 95th %tile O(veh)	0.1	-	-	-		

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	6	6	0	25	80
Future Vol, veh/h	55	6	6	0	25	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	7	7	0	27	87
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	7	0	-	0	134	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	860	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	899	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1614	-	-	-	828	1075
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	899	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.6	0		9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1614	-	-	-	1004	
HCM Lane V/C Ratio	0.037	-	-	-	0.114	
HCM Control Delay (s)	7.3	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1015	76	402	964	45	126	16	384	12	31	5
Future Volume (veh/h)	12	1015	76	402	964	45	126	16	384	12	31	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	1128	84	437	1048	49	135	17	413	14	36	6
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	1472	656	466	2284	107	322	13	320	61	327	54
Arrive On Green	0.01	0.41	0.41	0.26	0.66	0.66	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1781	3457	162	1365	63	1532	958	1563	260
Grp Volume(v), veh/h	13	1128	84	437	539	558	135	0	430	14	0	42
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1841	1365	0	1595	958	0	1823
Q Serve(g_s), s	0.8	31.9	3.8	28.1	17.3	17.3	10.4	0.0	24.5	0.0	0.0	2.2
Cycle Q Clear(g_c), s	0.8	31.9	3.8	28.1	17.3	17.3	12.6	0.0	24.5	24.5	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.09	1.00		0.96	1.00		0.14
Lane Grp Cap(c), veh/h	26	1472	656	466	1174	1217	322	0	334	61	0	381
V/C Ratio(X)	0.50	0.77	0.13	0.94	0.46	0.46	0.42	0.00	1.29	0.23	0.00	0.11
Avail Cap(c_a), veh/h	76	1472	656	510	1174	1217	322	0	334	61	0	381
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.3	29.4	21.2	42.3	9.7	9.7	42.6	0.0	46.3	58.6	0.0	37.5
Incr Delay (d2), s/veh	13.7	3.9	0.4	24.4	1.3	1.2	0.9	0.0	150.7	1.9	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	13.4	1.4	14.9	6.0	6.2	3.5	0.0	23.2	0.4	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.0	33.3	21.6	66.7	11.0	10.9	43.4	0.0	197.0	60.4	0.0	37.6
LnGrp LOS	E	C	C	E	B	B	D	A	F	E	A	D
Approach Vol, veh/h	1225			1534			565			56		
Approach Delay, s/veh	32.9			26.8			160.3			43.3		
Approach LOS	C			C			F			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.1	53.0		29.0	6.2	81.9		29.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	33.5	48.5		24.5	5.0	77.0		24.5				
Max Q Clear Time (g_c+I1), s	30.1	33.9		26.5	2.8	19.3		26.5				
Green Ext Time (p_c), s	0.5	6.5		0.0	0.0	7.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	51.6											
HCM 6th LOS	D											

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1403	1	0	1412	0	25
Future Vol, veh/h	1403	1	0	1412	0	25
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	94	94	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1509	1	0	1502	0	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1511	0	2262	756
Stage 1	-	-	-	-	1511	-
Stage 2	-	-	-	-	751	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	439	-	35	351
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	427	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	439	-	35	351
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	427	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		16.4	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	351	-	-	439	-	
HCM Lane V/C Ratio	0.103	-	-	-	-	
HCM Control Delay (s)	16.4	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile O(veh)	0.3	-	-	0	-	

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	1099	11	10	1136	29	10	0	8	32	0	354
Future Volume (veh/h)	360	1099	11	10	1136	29	10	0	8	32	0	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	360	1099	11	10	1171	30	11	0	9	34	0	377
Peak Hour Factor	1.00	1.00	1.00	0.97	0.97	0.97	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	1974	20	131	1399	36	204	16	132	411	0	375
Arrive On Green	0.23	0.55	0.55	0.07	0.40	0.40	0.24	0.00	0.24	0.24	0.00	0.24
Sat Flow, veh/h	1781	3605	36	1781	3540	91	614	69	559	1419	0	1585
Grp Volume(v), veh/h	360	542	568	10	588	613	20	0	0	34	0	377
Grp Sat Flow(s),veh/h/ln	1781	1777	1864	1781	1777	1854	1241	0	0	1419	0	1585
Q Serve(g_s), s	18.6	18.9	18.9	0.5	28.4	28.4	0.0	0.0	0.0	0.7	0.0	22.5
Cycle Q Clear(g_c), s	18.6	18.9	18.9	0.5	28.4	28.4	0.8	0.0	0.0	1.6	0.0	22.5
Prop In Lane	1.00		0.02	1.00		0.05	0.55		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	403	973	1021	131	702	733	352	0	0	411	0	375
V/C Ratio(X)	0.89	0.56	0.56	0.08	0.84	0.84	0.06	0.00	0.00	0.08	0.00	1.00
Avail Cap(c_a), veh/h	628	1232	1292	339	944	985	352	0	0	411	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	14.0	14.0	41.0	26.0	26.0	28.0	0.0	0.0	28.3	0.0	36.3
Incr Delay (d2), s/veh	10.3	0.5	0.5	0.2	5.0	4.8	0.1	0.0	0.0	0.1	0.0	47.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	6.5	6.8	0.2	11.7	12.1	0.4	0.0	0.0	0.6	0.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	14.5	14.5	41.3	31.0	30.8	28.1	0.0	0.0	28.3	0.0	84.0
LnGrp LOS	D	B	B	D	C	C	C	A	A	C	A	F
Approach Vol, veh/h	1470			1211			20			411		
Approach Delay, s/veh	22.2			31.0			28.1			79.4		
Approach LOS	C			C			C			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	56.6		27.0	26.0	42.1		27.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	65.9		22.5	33.5	50.5		22.5				
Max Q Clear Time (g_c+I1), s	2.5	20.9		24.5	20.6	30.4		2.8				
Green Ext Time (p_c), s	0.0	7.7		0.0	0.9	7.2		0.1				
Intersection Summary												
HCM 6th Ctrl Delay				33.2								
HCM 6th LOS				C								

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	3	35	24	1	21	25	486	29	8	442	30
Future Vol, veh/h	18	3	35	24	1	21	25	486	29	8	442	30
Conflicting Peds, #/hr	0	0	4	4	0	0	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	67	67	67	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	35	36	1	31	27	534	32	9	486	33
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1130	1130	496	1148	1147	550	525	0	0	566	0	0
Stage 1	510	510	-	604	604	-	-	-	-	-	-	-
Stage 2	620	620	-	544	543	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	181	204	574	176	199	535	1042	-	-	1006	-	-
Stage 1	546	538	-	485	488	-	-	-	-	-	-	-
Stage 2	476	480	-	523	520	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	162	193	569	156	188	535	1036	-	-	1006	-	-
Mov Cap-2 Maneuver	162	193	-	156	188	-	-	-	-	-	-	-
Stage 1	523	528	-	467	469	-	-	-	-	-	-	-
Stage 2	430	462	-	480	510	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	19.9		26.9		0.4		0.1					
HCM LOS	C		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1036	-	-	298	232	1006	-	-				
HCM Lane V/C Ratio	0.027	-	-	0.188	0.296	0.009	-	-				
HCM Control Delay (s)	8.6	0	-	19.9	26.9	8.6	0	-				
HCM Lane LOS	A	A	-	C	D	A	A	-				
HCM 95th %tile O(veh)	0.1	-	-	0.7	1.2	0	-	-				

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	79	0	39	0	533	73	48	472	0
Future Vol, veh/h	0	0	0	79	0	39	0	533	73	48	472	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	86	86	91	91	91	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	92	0	45	0	586	80	50	492	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	1241	1258	492	1218	1218	626	492	0	0	666	0	0
Stage 1	592	592	-	626	626	-	-	-	-	-	-	-
Stage 2	649	666	-	592	592	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	152	171	577	157	181	484	1071	-	-	923	-	-
Stage 1	493	494	-	472	477	-	-	-	-	-	-	-
Stage 2	458	457	-	493	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	130	158	577	148	167	484	1071	-	-	923	-	-
Mov Cap-2 Maneuver	130	158	-	148	167	-	-	-	-	-	-	-
Stage 1	493	457	-	472	477	-	-	-	-	-	-	-
Stage 2	415	457	-	456	457	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		60.3			0			0.8			
HCM LOS	A		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1071	-	-	-	192	923	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.715	0.054	-	-				
HCM Control Delay (s)	0	-	-	0	60.3	9.1	0	-				
HCM Lane LOS	A	-	-	A	F	A	A	-				
HCM 95th %tile O(veh)	0	-	-	-	4.5	0.2	-	-				

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1394	46	0	1364	0	14
Future Vol, veh/h	1394	46	0	1364	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1515	50	0	1483	0	15
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	783
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	337
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	337
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		16.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT		
Capacity (veh/h)	337	-	-	-		
HCM Lane V/C Ratio	0.045	-	-	-		
HCM Control Delay (s)	16.2	-	-	-		
HCM Lane LOS	C	-	-	-		
HCM 95th %tile O(veh)	0.1	-	-	-		

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	10	0	0	18	59
Future Vol, veh/h	43	10	0	0	18	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	11	0	0	20	64
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	106	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	892	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	866	1084
Mov Cap-2 Maneuver	-	-	-	-	866	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	919	-
Approach	EB	WB		SB		
HCM Control Delay, s	5.9	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	1024	
HCM Lane V/C Ratio	0.029	-	-	-	0.082	
HCM Control Delay (s)	7.3	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3	

**EXISTING + AMBIENT + PROJECT +
CUMULATIVE**

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	948	171	597	924	30	333	130	635	128	72	1
Future Volume (veh/h)	126	948	171	597	924	30	333	130	635	128	72	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	1170	211	628	973	32	416	162	794	221	124	2
Peak Hour Factor	0.81	0.81	0.81	0.95	0.95	0.95	0.80	0.80	0.80	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	814	363	245	1027	34	674	144	704	60	956	15
Arrive On Green	0.07	0.23	0.23	0.14	0.29	0.29	0.52	0.52	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1781	3554	1585	1781	3511	115	1263	276	1351	587	1835	30
Grp Volume(v), veh/h	156	1170	211	628	492	513	416	0	956	221	0	126
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1850	1263	0	1627	587	0	1865
Q Serve(g_s), s	8.9	27.5	14.2	16.5	32.5	32.5	30.3	0.0	62.5	0.0	0.0	4.2
Cycle Q Clear(g_c), s	8.9	27.5	14.2	16.5	32.5	32.5	34.4	0.0	62.5	62.5	0.0	4.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.83	1.00		0.02
Lane Grp Cap(c), veh/h	132	814	363	245	520	541	674	0	847	60	0	971
V/C Ratio(X)	1.18	1.44	0.58	2.56	0.95	0.95	0.62	0.00	1.13	3.68	0.00	0.13
Avail Cap(c_a), veh/h	132	814	363	245	520	541	674	0	847	60	0	971
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.5	46.2	41.1	51.7	41.5	41.5	23.6	0.0	28.8	60.0	0.0	14.8
Incr Delay (d2), s/veh	135.0	203.5	6.6	715.7	28.4	27.7	1.7	0.0	72.5	1247.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	34.6	6.0	55.8	17.6	18.2	8.6	0.0	38.6	22.6	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.5	249.8	47.8	767.4	69.9	69.2	25.3	0.0	101.3	1307.4	0.0	14.8
LnGrp LOS	F	F	D	F	E	E	C	A	F	F	A	B
Approach Vol, veh/h	1537			1633			1372			347		
Approach Delay, s/veh	216.0			337.9			78.2			838.0		
Approach LOS	F			F			E			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	32.0		67.0	13.4	39.6		67.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	16.5	27.5		62.5	8.9	35.1		62.5				
Max Q Clear Time (g_c+I1), s	18.5	29.5		64.5	10.9	34.5		64.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	262.2											
HCM 6th LOS	F											

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑	↘	
Traffic Vol, veh/h	1706	1	0	1496	1	26
Future Vol, veh/h	1706	1	0	1496	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	96	96	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2031	1	0	1558	2	52
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2032	0	2811	1016
Stage 1	-	-	-	-	2032	-
Stage 2	-	-	-	-	779	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	275	-	14	236
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	413	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	275	-	14	236
Mov Cap-2 Maneuver	-	-	-	-	69	-
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	413	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		27	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	217	-	-	275	-	
HCM Lane V/C Ratio	0.249	-	-	-	-	
HCM Control Delay (s)	27	-	-	0	-	
HCM Lane LOS	D	-	-	A	-	
HCM 95th %tile O(veh)	0.9	-	-	0	-	

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	1564	7	30	1103	23	20	2	105	46	0	347
Future Volume (veh/h)	244	1564	7	30	1103	23	20	2	105	46	0	347
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	1664	7	33	1212	25	36	4	191	59	0	445
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.55	0.55	0.55	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1986	8	96	1535	32	81	29	314	312	0	402
Arrive On Green	0.17	0.55	0.55	0.05	0.43	0.43	0.25	0.25	0.25	0.25	0.00	0.25
Sat Flow, veh/h	1781	3629	15	1781	3560	73	144	116	1240	925	0	1585
Grp Volume(v), veh/h	260	814	857	33	605	632	231	0	0	59	0	445
Grp Sat Flow(s),veh/h/ln	1781	1777	1868	1781	1777	1857	1499	0	0	925	0	1585
Q Serve(g_s), s	13.2	35.5	35.6	1.7	27.2	27.2	3.7	0.0	0.0	0.0	0.0	23.5
Cycle Q Clear(g_c), s	13.2	35.5	35.6	1.7	27.2	27.2	12.0	0.0	0.0	6.6	0.0	23.5
Prop In Lane	1.00		0.01	1.00		0.04	0.16		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	303	972	1022	96	766	801	425	0	0	312	0	402
V/C Ratio(X)	0.86	0.84	0.84	0.34	0.79	0.79	0.54	0.00	0.00	0.19	0.00	1.11
Avail Cap(c_a), veh/h	567	1245	1309	346	1025	1071	425	0	0	312	0	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	17.6	17.6	42.3	22.7	22.7	30.2	0.0	0.0	28.3	0.0	34.6
Incr Delay (d2), s/veh	7.1	4.1	4.0	2.1	3.0	2.9	4.9	0.0	0.0	1.3	0.0	77.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	12.9	13.6	0.7	10.6	11.1	5.0	0.0	0.0	1.2	0.0	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	21.7	21.5	44.4	25.8	25.7	35.1	0.0	0.0	29.7	0.0	112.1
LnGrp LOS	D	C	C	D	C	C	D	A	A	C	A	F
Approach Vol, veh/h	1931			1270			231			504		
Approach Delay, s/veh	24.7			26.2			35.1			102.4		
Approach LOS	C			C			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	55.2		28.0	20.3	44.5		28.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.0	65.0		23.5	29.5	53.5		23.5				
Max Q Clear Time (g_c+I1), s	3.7	37.6		25.5	15.2	29.2		14.0				
Green Ext Time (p_c), s	0.0	13.2		0.0	0.6	8.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				35.8								
HCM 6th LOS				D								

Intersection												
Int Delay, s/veh	66.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↕
Traffic Vol, veh/h	18	2	49	33	8	31	22	1048	36	8	729	31
Future Vol, veh/h	18	2	49	33	8	31	22	1048	36	8	729	31
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	79	79	79	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	3	61	44	11	41	28	1327	46	9	828	35
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2286	2283	836	2302	2295	1350	871	0	0	1373	0	0
Stage 1	854	854	-	1406	1406	-	-	-	-	-	-	-
Stage 2	1432	1429	-	896	889	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	28	40	367	~ 27	39	184	774	-	-	500	-	-
Stage 1	353	375	-	172	206	-	-	-	-	-	-	-
Stage 2	167	200	-	335	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 14	32	364	~ 18	31	184	768	-	-	500	-	-
Mov Cap-2 Maneuver	~ 14	32	-	~ 18	31	-	-	-	-	-	-	-
Stage 1	295	359	-	145	174	-	-	-	-	-	-	-
Stage 2	102	169	-	267	345	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s\$	583.4		1162.8		0.2		0.1					
HCM LOS	F		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	768	-	-	47	32	500	-	-				
HCM Lane V/C Ratio	0.036	-	-	1.835	3	0.018	-	-				
HCM Control Delay (s)	9.9	0		\$ 583.4	\$ 1162.8	12.3	0	-				
HCM Lane LOS	A	A	-	F	F	B	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	8.6	11.2	0.1	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Intersection												
Int Delay, s/veh	339.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	221	0	91	0	788	120	47	916	0
Future Vol, veh/h	0	0	0	221	0	91	0	788	120	47	916	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	94	94	94	95	95	95	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	235	0	97	0	829	126	50	974	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2015	2029	974	1966	1966	892	974	0	0	955	0	0
Stage 1	1074	1074	-	892	892	-	-	-	-	-	-	-
Stage 2	941	955	-	1074	1074	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	44	57	306	~ 47	63	341	708	-	-	720	-	-
Stage 1	266	296	-	337	360	-	-	-	-	-	-	-
Stage 2	316	337	-	266	296	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	48	306	~ 42	53	341	708	-	-	720	-	-
Mov Cap-2 Maneuver	28	48	-	~ 42	53	-	-	-	-	-	-	-
Stage 1	266	251	-	337	360	-	-	-	-	-	-	-
Stage 2	226	337	-	~ 226	251	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		\$ 2361.3		0		0.5					
HCM LOS	A		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	708	-	-	-	56	720	-	-				
HCM Lane V/C Ratio	-	-	-	-	5.927	0.069	-	-				
HCM Control Delay (s)	0	-	-	\$ 2361.3	10.4	0	-					
HCM Lane LOS	A	-	-	A	F	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	-	37.8	0.2	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	1675	59	0	1405	0	18
Future Vol, veh/h	1675	59	0	1405	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1821	64	0	1527	0	20
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	943
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	264
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	264
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		19.7	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	264		-	-	-	
HCM Lane V/C Ratio	0.074		-	-	-	
HCM Control Delay (s)	19.7		-	-	-	
HCM Lane LOS	C		-	-	-	
HCM 95th %tile O(veh)	0.2		-	-	-	

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	6	6	0	25	80
Future Vol, veh/h	55	6	6	0	25	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	7	7	0	27	87
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	7	0	-	0	134	7
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	860	1075
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	899	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1614	-	-	-	828	1075
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	899	-
Approach	EB	WB		SB		
HCM Control Delay, s	6.6	0		9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1614	-	-	-	1004	
HCM Lane V/C Ratio	0.037	-	-	-	0.114	
HCM Control Delay (s)	7.3	0	-	-	9	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1348	347	889	1271	45	306	101	726	90	70	5
Future Volume (veh/h)	97	1348	347	889	1271	45	306	101	726	90	70	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	1498	386	966	1382	49	329	109	781	106	82	6
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.93	0.93	0.93	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	1051	469	497	1752	62	424	62	443	60	538	39
Arrive On Green	0.07	0.30	0.30	0.28	0.50	0.50	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1781	3554	1585	1781	3501	124	1309	198	1417	625	1722	126
Grp Volume(v), veh/h	108	1498	386	966	700	731	329	0	890	106	0	88
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1848	1309	0	1615	625	0	1848
Q Serve(g_s), s	7.2	35.5	27.2	33.5	39.0	39.2	29.1	0.0	37.5	0.0	0.0	4.1
Cycle Q Clear(g_c), s	7.2	35.5	27.2	33.5	39.0	39.2	33.2	0.0	37.5	37.5	0.0	4.1
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.88	1.00		0.07
Lane Grp Cap(c), veh/h	133	1051	469	497	889	925	424	0	505	60	0	577
V/C Ratio(X)	0.81	1.42	0.82	1.94	0.79	0.79	0.78	0.00	1.76	1.77	0.00	0.15
Avail Cap(c_a), veh/h	162	1051	469	497	889	925	424	0	505	60	0	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.7	42.3	39.3	43.3	24.7	24.8	41.8	0.0	41.3	60.0	0.0	29.8
Incr Delay (d2), s/veh	22.3	196.8	15.0	431.5	7.0	6.8	8.8	0.0	351.5	404.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	43.4	12.0	73.6	16.6	17.3	10.0	0.0	63.3	8.6	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.0	239.0	54.4	474.7	31.7	31.6	50.5	0.0	392.7	464.0	0.0	29.9
LnGrp LOS	E	F	D	F	C	C	D	A	F	F	A	C
Approach Vol, veh/h	1992			2397			1219			194		
Approach Delay, s/veh	194.5			210.2			300.4			267.1		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.0	40.0		42.0	13.5	64.5		42.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	33.5	35.5		37.5	10.9	58.1		37.5				
Max Q Clear Time (g_c+I1), s	35.5	37.5		39.5	9.2	41.2		39.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.3		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	225.7											
HCM 6th LOS	F											

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑↑	
Traffic Vol, veh/h	2158	1	0	2251	0	25
Future Vol, veh/h	2158	1	0	2251	0	25
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	94	94	69	69
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2320	1	0	2395	0	36
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	2322	0	3520	1162
Stage 1	-	-	-	-	2322	-
Stage 2	-	-	-	-	1198	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	211	-	5	188
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	249	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	211	-	5	188
Mov Cap-2 Maneuver	-	-	-	-	46	-
Stage 1	-	-	-	-	60	-
Stage 2	-	-	-	-	249	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		28.7		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	188	-	-	211	-	
HCM Lane V/C Ratio	0.193	-	-	-	-	
HCM Control Delay (s)	28.7	-	-	0	-	
HCM Lane LOS	D	-	-	A	-	
HCM 95th %tile O(veh)	0.7	-	-	0	-	

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	1797	11	108	1957	36	10	0	61	36	0	363
Future Volume (veh/h)	375	1797	11	108	1957	36	10	0	61	36	0	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	375	1797	11	111	2018	37	11	0	66	38	0	386
Peak Hour Factor	1.00	1.00	1.00	0.97	0.97	0.97	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	2324	14	141	2023	37	53	18	219	284	0	264
Arrive On Green	0.15	0.64	0.64	0.08	0.57	0.57	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1781	3621	22	1781	3570	65	110	109	1315	1346	0	1585
Grp Volume(v), veh/h	375	881	927	111	1001	1054	77	0	0	38	0	386
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1859	1534	0	0	1346	0	1585
Q Serve(g_s), s	18.5	42.3	42.4	7.3	67.1	68.0	0.0	0.0	0.0	0.0	0.0	20.0
Cycle Q Clear(g_c), s	18.5	42.3	42.4	7.3	67.1	68.0	5.0	0.0	0.0	2.8	0.0	20.0
Prop In Lane	1.00		0.01	1.00		0.04	0.14		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	275	1140	1198	141	1007	1053	290	0	0	284	0	264
V/C Ratio(X)	1.37	0.77	0.77	0.79	0.99	1.00	0.27	0.00	0.00	0.13	0.00	1.46
Avail Cap(c_a), veh/h	275	1140	1198	267	1007	1053	290	0	0	284	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	15.3	15.3	54.3	25.8	26.0	43.7	0.0	0.0	42.8	0.0	50.0
Incr Delay (d2), s/veh	186.1	3.3	3.2	9.4	26.9	27.9	0.5	0.0	0.0	0.2	0.0	227.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.1	15.3	16.1	3.6	31.9	34.1	2.0	0.0	0.0	1.0	0.0	24.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	236.9	18.6	18.5	63.6	52.7	53.9	44.2	0.0	0.0	43.1	0.0	277.2
LnGrp LOS	F	B	B	E	D	F	D	A	A	D	A	F
Approach Vol, veh/h	2183			2166			77			424		
Approach Delay, s/veh	56.1			53.8			44.2			256.2		
Approach LOS	E			D			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	81.5		24.5	23.0	72.5		24.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.0	68.5		20.0	18.5	68.0		20.0				
Max Q Clear Time (g_c+I1), s	9.3	44.4		22.0	20.5	70.0		7.0				
Green Ext Time (p_c), s	0.1	13.8		0.0	0.0	0.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay	72.4											
HCM 6th LOS	E											

Intersection												
Int Delay, s/veh	52.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	↕
Traffic Vol, veh/h	18	3	35	24	1	21	25	1093	29	8	1133	30
Future Vol, veh/h	18	3	35	24	1	21	25	1093	29	8	1133	30
Conflicting Peds, #/hr	0	0	4	4	0	0	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	67	67	67	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	35	36	1	31	27	1201	32	9	1245	33

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2556	2556	1255	2574	2573	1217	1284	0	0	1233	0	0
Stage 1	1269	1269	-	1271	1271	-	-	-	-	-	-	-
Stage 2	1287	1287	-	1303	1302	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	18	26	209	~ 17	26	220	540	-	-	565	-	-
Stage 1	206	239	-	206	239	-	-	-	-	-	-	-
Stage 2	202	235	-	197	231	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 12	20	207	~ 11	20	220	537	-	-	565	-	-
Mov Cap-2 Maneuver	~ 12	20	-	~ 11	20	-	-	-	-	-	-	-
Stage 1	172	224	-	173	201	-	-	-	-	-	-	-
Stage 2	144	197	-	152	217	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	659.4		\$ 1492.4		0.3		0.1	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	537	-	-	31 20	565	-	-
HCM Lane V/C Ratio	0.051	-	-	1.806 3.433	0.016	-	-
HCM Control Delay (s)	12.1	0	-	\$ 659.4 \$ 1492.4	11.5	0	-
HCM Lane LOS	B	A	-	F F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	6.4 9	0	-	-

Notes			
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection												
Int Delay, s/veh	924.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	166	0	70	0	1093	229	109	974	0
Future Vol, veh/h	0	0	0	166	0	70	0	1093	229	109	974	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	86	86	86	91	91	91	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	193	0	81	0	1201	252	114	1015	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	2611	2696	1015	2570	2570	1327	1015	0	0	1453	0	0
Stage 1	1243	1243	-	1327	1327	-	-	-	-	-	-	-
Stage 2	1368	1453	-	1243	1243	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	16	21	289	~ 17	26	190	683	-	-	466	-	-
Stage 1	214	246	-	~ 191	225	-	-	-	-	-	-	-
Stage 2	181	195	-	214	246	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	9	289	~ 9	11	190	683	-	-	466	-	-
Mov Cap-2 Maneuver	5	9	-	~ 9	11	-	-	-	-	-	-	-
Stage 1	214	108	-	~ 191	225	-	-	-	-	-	-	-
Stage 2	103	195	-	~ 94	108	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		\$ 9612.9			0			1.5			
HCM LOS	A		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	683	-	-	-	13	466	-	-				
HCM Lane V/C Ratio	-	-	-	-	21.109	0.244	-	-				
HCM Control Delay (s)	0	-	-	\$ 9612.9	15.2	0	-					
HCM Lane LOS	A	-	-	A	F	C	A	-				
HCM 95th %tile Q(veh)	0	-	-	-	35.6	0.9	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon				

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↱			↑↑		↱
Traffic Vol, veh/h	2138	46	0	2184	0	14
Future Vol, veh/h	2138	46	0	2184	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2324	50	0	2374	0	15
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	1187
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	-	0	181
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	181
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		26.7	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBT	
Capacity (veh/h)	181		-	-	-	
HCM Lane V/C Ratio	0.084		-	-	-	
HCM Control Delay (s)	26.7		-	-	-	
HCM Lane LOS	D		-	-	-	
HCM 95th %tile O(veh)	0.3		-	-	-	

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	10	0	0	18	59
Future Vol, veh/h	43	10	0	0	18	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	11	0	0	20	64
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	106	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1622	-	-	-	892	1084
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1622	-	-	-	866	1084
Mov Cap-2 Maneuver	-	-	-	-	866	-
Stage 1	-	-	-	-	992	-
Stage 2	-	-	-	-	919	-
Approach	EB	WB		SB		
HCM Control Delay, s	5.9	0		8.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1622	-	-	-	1024	
HCM Lane V/C Ratio	0.029	-	-	-	0.082	
HCM Control Delay (s)	7.3	0	-	-	8.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile O(veh)	0.1	-	-	-	0.3	

**EXISTING + AMBIENT + PROJECT
(MITIGATION)**

HCM 6th Signalized Intersection Summary
5: Winchester Road / SR-79 & Stowe Road

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	0	28	0	435	78	33	490	0
Future Volume (veh/h)	0	0	0	73	0	28	0	435	78	33	490	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	78	0	30	0	458	82	35	521	0
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	206	0	0	0	174	0	739	132	200	842	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.48	0.48	0.48	0.48	0.00
Sat Flow, veh/h	0	1870	0	0	0	1585	0	1544	276	51	1759	0
Grp Volume(v), veh/h	0	0	0	0	0	30	0	0	540	556	0	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	0	1585	0	0	1821	1811	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	4.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	4.8	4.8	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.00		0.15	0.06		0.00
Lane Grp Cap(c), veh/h	0	206	0	0	0	174	0	0	871	1041	0	0
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.62	0.53	0.00	0.00
Avail Cap(c_a), veh/h	0	1540	0	0	0	1994	0	0	4455	4473	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	4.2	4.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.7	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	9.3	0.0	0.0	5.0	4.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h	0				30			540			556	
Approach Delay, s/veh	0.0				9.3			5.0			4.7	
Approach LOS					A			A			A	
Timer - Assigned Phs	2		3	4		6		8				
Phs Duration (G+Y+Rc), s	15.0		0.0	6.9		15.0		6.9				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s	53.5		5.0	18.0		53.5		27.5				
Max Q Clear Time (g_c+I1), s	6.8		0.0	0.0		6.8		2.4				
Green Ext Time (p_c), s	3.4		0.0	0.0		3.6		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			4.9									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary
5: Winchester Road / SR-79 & Stowe Road

SR 79 / SR 74 Project
10/31/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	79	0	39	0	533	73	48	472	0
Future Volume (veh/h)	0	0	0	79	0	39	0	533	73	48	472	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	92	0	45	0	586	80	50	492	0
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	227	0	0	0	193	0	848	116	193	867	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.53	0.53	0.53	0.53	0.00
Sat Flow, veh/h	0	1870	0	0	0	1585	0	1611	220	74	1646	0
Grp Volume(v), veh/h	0	0	0	0	0	45	0	0	666	542	0	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	0	1585	0	0	1831	1720	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	6.9	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	6.9	7.1	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.00		0.12	0.09		0.00
Lane Grp Cap(c), veh/h	0	227	0	0	0	193	0	0	964	1059	0	0
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.69	0.51	0.00	0.00
Avail Cap(c_a), veh/h	0	1316	0	0	0	1704	0	0	3828	3645	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	4.5	4.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.9	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0	5.4	4.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	0			45			666			542		
Approach Delay, s/veh	0.0			10.8			5.4			4.4		
Approach LOS				B			A			A		
Timer - Assigned Phs	2		3	4		6		8				
Phs Duration (G+Y+Rc), s	18.0		0.0	7.6		18.0		7.6				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s	53.5		5.0	18.0		53.5		27.5				
Max Q Clear Time (g_c+I1), s	8.9		0.0	0.0		9.1		2.7				
Green Ext Time (p_c), s	4.5		0.0	0.0		3.7		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				5.2								
HCM 6th LOS				A								

**EXISTING + AMBIENT + PROJECT +
CUMULATIVE (MITIGATION)**

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	953	166	597	924	30	371	130	635	132	68	1
Future Volume (veh/h)	126	953	166	597	924	30	371	130	635	132	68	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	1036	180	649	1004	33	403	141	690	143	74	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	1144	510	714	1541	51	467	599	1469	256	589	8
Arrive On Green	0.09	0.32	0.32	0.21	0.44	0.44	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1781	3554	1585	3456	3511	115	1325	1870	2790	660	1841	25
Grp Volume(v), veh/h	137	1036	180	649	508	529	403	141	690	143	0	75
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1850	1325	1870	1395	660	0	1866
Q Serve(g_s), s	6.7	24.9	7.7	16.3	20.0	20.0	26.0	4.9	13.9	18.1	0.0	2.5
Cycle Q Clear(g_c), s	6.7	24.9	7.7	16.3	20.0	20.0	28.5	4.9	13.9	23.0	0.0	2.5
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	169	1144	510	714	780	812	467	599	1469	256	0	597
V/C Ratio(X)	0.81	0.91	0.35	0.91	0.65	0.65	0.86	0.24	0.47	0.56	0.00	0.13
Avail Cap(c_a), veh/h	200	1177	525	718	780	812	467	599	1469	256	0	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	28.9	23.1	34.5	19.6	19.6	32.1	22.3	13.3	30.7	0.0	21.5
Incr Delay (d2), s/veh	18.8	9.9	0.4	15.6	1.9	1.9	15.3	0.2	0.2	2.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	11.7	2.9	8.2	8.2	8.6	10.5	2.2	4.1	3.0	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.3	38.9	23.5	50.1	21.6	21.5	47.4	22.5	13.5	33.5	0.0	21.5
LnGrp LOS	E	D	C	D	C	C	D	C	B	C	A	C
Approach Vol, veh/h	1353			1686			1234			218		
Approach Delay, s/veh	38.8			32.5			25.6			29.4		
Approach LOS	D			C			C			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.9	33.2		33.0	12.5	43.6		33.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.0	4.5		4.5				
Max Green Setting (Gmax), s	18.5	29.5		28.5	10.0	38.5		28.5				
Max Q Clear Time (g_c+I1), s	18.3	26.9		25.0	8.7	22.0		30.5				
Green Ext Time (p_c), s	0.1	1.8		0.4	0.0	6.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				32.3								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary 3: California Avenue & SR-74

SR 79 / SR 74 Project
11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	1564	7	30	1103	23	20	2	105	46	0	347
Future Volume (veh/h)	244	1564	7	30	1103	23	20	2	105	46	0	347
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	1664	7	33	1212	25	36	4	191	59	0	445
Peak Hour Factor	0.94	0.94	0.94	0.91	0.91	0.91	0.55	0.55	0.55	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1986	8	96	1535	32	81	29	314	312	0	402
Arrive On Green	0.17	0.55	0.55	0.05	0.43	0.43	0.25	0.25	0.25	0.25	0.00	0.25
Sat Flow, veh/h	1781	3629	15	1781	3560	73	144	116	1240	925	0	1585
Grp Volume(v), veh/h	260	814	857	33	605	632	231	0	0	59	0	445
Grp Sat Flow(s),veh/h/ln	1781	1777	1868	1781	1777	1857	1499	0	0	925	0	1585
Q Serve(g_s), s	13.2	35.5	35.6	1.7	27.2	27.2	3.7	0.0	0.0	0.0	0.0	23.5
Cycle Q Clear(g_c), s	13.2	35.5	35.6	1.7	27.2	27.2	12.0	0.0	0.0	6.6	0.0	23.5
Prop In Lane	1.00		0.01	1.00		0.04	0.16		0.83	1.00		1.00
Lane Grp Cap(c), veh/h	303	972	1022	96	766	801	425	0	0	312	0	402
V/C Ratio(X)	0.86	0.84	0.84	0.34	0.79	0.79	0.54	0.00	0.00	0.19	0.00	1.11
Avail Cap(c_a), veh/h	567	1245	1309	346	1025	1071	425	0	0	312	0	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	17.6	17.6	42.3	22.7	22.7	30.2	0.0	0.0	28.3	0.0	34.6
Incr Delay (d2), s/veh	7.1	4.1	4.0	2.1	3.0	2.9	4.9	0.0	0.0	1.3	0.0	77.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	12.9	13.6	0.7	10.6	11.1	5.0	0.0	0.0	1.2	0.0	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	21.7	21.5	44.4	25.8	25.7	35.1	0.0	0.0	29.7	0.0	112.1
LnGrp LOS	D	C	C	D	C	C	D	A	A	C	A	F
Approach Vol, veh/h	1931			1270			231			504		
Approach Delay, s/veh	24.7			26.2			35.1			102.4		
Approach LOS	C			C			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	55.2		28.0	20.3	44.5		28.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.0	65.0		23.5	29.5	53.5		23.5				
Max Q Clear Time (g_c+I1), s	3.7	37.6		25.5	15.2	29.2		14.0				
Green Ext Time (p_c), s	0.0	13.2		0.0	0.6	8.0		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				35.8								
HCM 6th LOS				D								

Intersection												
Int Delay, s/veh	35.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	2	49	0	8	69	22	1048	36	0	729	31
Future Vol, veh/h	18	2	49	0	8	69	22	1048	36	0	729	31
Conflicting Peds, #/hr	0	0	0	0	0	0	8	0	0	0	0	8
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	75	75	75	79	79	79	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	3	61	0	11	92	28	1327	46	0	828	35
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	2294	2265	836	-	2277	1350	871	0	0	-	-	0
Stage 1	836	836	-	-	1406	-	-	-	-	-	-	-
Stage 2	1458	1429	-	-	871	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	-	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	-	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	27	41	367	0	40	184	774	-	-	0	-	-
Stage 1	362	382	-	0	206	-	-	-	-	0	-	-
Stage 2	161	200	-	0	368	-	-	-	-	0	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	~ 10	39	364	-	38	184	768	-	-	-	-	-
Mov Cap-2 Maneuver	~ 10	39	-	-	38	-	-	-	-	-	-	-
Stage 1	346	379	-	-	199	-	-	-	-	-	-	-
Stage 2	73	193	-	-	365	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s\$	909.1		92		0.2			0				
HCM LOS	F		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR					
Capacity (veh/h)	768	-	-	35	132	-	-					
HCM Lane V/C Ratio	0.036	-	-	2.464	0.778	-	-					
HCM Control Delay (s)	9.9	-	-	\$ 909.1	92	-	-					
HCM Lane LOS	A	-	-	F	F	-	-					
HCM 95th %tile Q(veh)	0.1	-	-	9.7	4.6	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 6th Signalized Intersection Summary
5: Winchester Road / SR-79 & Stowe Road

SR 79 / SR 74 Project
11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	221	0	91	0	788	120	47	916	0
Future Volume (veh/h)	0	0	0	221	0	91	0	788	120	47	916	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	235	0	97	0	829	126	50	974	0
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	299	0	0	0	254	0	1642	250	174	1729	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.53	0.53	0.53	0.53	0.00
Sat Flow, veh/h	0	1870	0	0	0	1585	0	3186	470	73	3340	0
Grp Volume(v), veh/h	0	0	0	0	0	97	0	476	479	530	494	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	0	1585	0	1777	1786	1711	1617	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	5.0	5.0	0.0	6.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	5.0	5.0	5.4	6.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.00		0.26	0.09		0.00
Lane Grp Cap(c), veh/h	0	299	0	0	0	254	0	944	948	1044	859	0
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.50	0.50	0.51	0.58	0.00
Avail Cap(c_a), veh/h	0	1156	0	0	0	1496	0	3263	3280	3069	2970	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	10.9	0.0	4.4	4.4	4.5	4.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.4	0.4	0.4	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.1	0.1	0.1	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	11.9	0.0	4.8	4.8	4.9	5.2	0.0
LnGrp LOS	A	A	A	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	0		97				955			1024		
Approach Delay, s/veh	0.0		11.9				4.8			5.0		
Approach LOS			B				A			A		
Timer - Assigned Phs	2		3		4		6		8			
Phs Duration (G+Y+Rc), s	20.0		0.0		9.2		20.0		9.2			
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5		4.5			
Max Green Setting (Gmax), s	53.5		5.0		18.0		53.5		27.5			
Max Q Clear Time (g_c+I1), s	7.0		0.0		0.0		8.0		3.6			
Green Ext Time (p_c), s	6.3		0.0		0.0		7.5		0.5			
Intersection Summary												
HCM 6th Ctrl Delay			5.2									
HCM 6th LOS			A									

HCM 6th Signalized Intersection Summary

1: Winchester Road / SR-79 & SR-74

SR 79 / SR 74 Project
11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	1352	343	889	1271	45	330	101	726	93	67	5
Future Volume (veh/h)	97	1352	343	889	1271	45	330	101	726	93	67	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	1470	373	966	1382	49	359	110	789	101	73	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	1425	635	918	2091	74	286	379	1307	160	351	24
Arrive On Green	0.07	0.40	0.40	0.27	0.60	0.60	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	3456	3501	124	1321	1870	2790	619	1730	119
Grp Volume(v), veh/h	105	1470	373	966	700	731	359	110	789	101	0	78
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1848	1321	1870	1395	619	0	1849
Q Serve(g_s), s	6.4	44.5	20.5	29.5	29.1	29.2	18.6	5.5	22.5	17.0	0.0	3.9
Cycle Q Clear(g_c), s	6.4	44.5	20.5	29.5	29.1	29.2	22.5	5.5	22.5	22.5	0.0	3.9
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	132	1425	635	918	1061	1104	286	379	1307	160	0	375
V/C Ratio(X)	0.80	1.03	0.59	1.05	0.66	0.66	1.25	0.29	0.60	0.63	0.00	0.21
Avail Cap(c_a), veh/h	225	1425	635	918	1061	1104	286	379	1307	160	0	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.6	33.3	26.1	40.8	14.9	14.9	48.3	37.5	21.9	47.5	0.0	36.8
Incr Delay (d2), s/veh	10.5	32.4	1.4	44.3	1.5	1.5	139.8	0.4	0.8	7.9	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	23.8	7.4	17.4	10.4	10.9	18.9	2.5	7.2	3.2	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	65.7	27.5	85.0	16.4	16.4	188.1	37.9	22.7	55.4	0.0	37.1
LnGrp LOS	E	F	C	F	B	B	F	D	C	E	A	D
Approach Vol, veh/h	1948			2397			1258			179		
Approach Delay, s/veh	58.1			44.0			71.2			47.4		
Approach LOS	E			D			E			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	50.0		27.0	12.2	71.8		27.0				
Change Period (Y+Rc), s	4.5	* 5.5		4.5	4.0	5.5		4.5				
Max Green Setting (Gmax), s	29.5	* 45		22.5	14.0	59.5		22.5				
Max Q Clear Time (g_c+I1), s	31.5	46.5		24.5	8.4	31.2		24.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	10.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay 54.8

HCM 6th LOS D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

3: California Avenue & SR-74

SR 79 / SR 74 Project

11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	375	1797	11	108	1957	36	10	0	61	36	0	363
Future Volume (veh/h)	375	1797	11	108	1957	36	10	0	61	36	0	363
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	375	1797	11	111	2018	37	11	0	66	38	0	386
Peak Hour Factor	1.00	1.00	1.00	0.97	0.97	0.97	0.92	0.92	0.92	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	2381	15	141	1901	35	50	17	199	262	0	563
Arrive On Green	0.20	0.66	0.66	0.08	0.53	0.53	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	1781	3621	22	1781	3570	65	105	115	1319	1341	0	1585
Grp Volume(v), veh/h	375	881	927	111	1001	1054	77	0	0	38	0	386
Grp Sat Flow(s),veh/h/ln	1781	1777	1866	1781	1777	1859	1538	0	0	1341	0	1585
Q Serve(g_s), s	24.5	40.4	40.5	7.3	63.9	63.9	0.0	0.0	0.0	0.0	0.0	18.1
Cycle Q Clear(g_c), s	24.5	40.4	40.5	7.3	63.9	63.9	5.1	0.0	0.0	2.9	0.0	18.1
Prop In Lane	1.00		0.01	1.00		0.04	0.14		0.86	1.00		1.00
Lane Grp Cap(c), veh/h	364	1168	1227	141	946	990	266	0	0	262	0	563
V/C Ratio(X)	1.03	0.75	0.76	0.79	1.06	1.06	0.29	0.00	0.00	0.14	0.00	0.69
Avail Cap(c_a), veh/h	364	1168	1227	269	946	990	266	0	0	262	0	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	14.0	14.0	54.3	28.0	28.1	45.4	0.0	0.0	44.5	0.0	33.0
Incr Delay (d2), s/veh	55.4	2.8	2.7	9.4	45.9	47.5	0.6	0.0	0.0	0.3	0.0	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	14.3	15.0	3.6	36.0	38.1	2.1	0.0	0.0	1.0	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	103.2	16.8	16.7	63.6	73.9	75.6	46.0	0.0	0.0	44.8	0.0	36.5
LnGrp LOS	F	B	B	E	F	F	D	A	A	D	A	D
Approach Vol, veh/h	2183			2166			77			424		
Approach Delay, s/veh	31.6			74.2			46.0			37.2		
Approach LOS	C			E			D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	83.4		22.6	29.0	68.4		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.1	70.3		18.1	24.5	63.9		18.1				
Max Q Clear Time (g_c+I1), s	9.3	42.5		20.1	26.5	65.9		7.1				
Green Ext Time (p_c), s	0.1	15.0		0.0	0.0	0.0		0.2				
Intersection Summary												
HCM 6th Ctrl Delay	51.3											
HCM 6th LOS	D											

Intersection												
Int Delay, s/veh	16.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	3	35	0	1	45	25	1093	29	0	1133	30
Future Vol, veh/h	18	3	35	0	1	45	25	1093	29	0	1133	30
Conflicting Peds, #/hr	0	0	4	4	0	0	6	0	0	0	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	67	67	67	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	3	35	0	1	67	27	1201	32	0	1245	33
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	2556	2538	1255	-	2555	1217	1284	0	0	-	-	0
Stage 1	1251	1251	-	-	1271	-	-	-	-	-	-	-
Stage 2	1305	1287	-	-	1284	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	-	6.52	6.22	4.12	-	-	-	-	-
Critical Hdwy Stg 1	6.12	5.52	-	-	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	-	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	-	4.018	3.318	2.218	-	-	-	-	-
Pot Cap-1 Maneuver	18	27	209	0	27	220	540	-	-	0	-	-
Stage 1	211	244	-	0	239	-	-	-	-	0	-	-
Stage 2	197	235	-	0	235	-	-	-	-	0	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 11	25	207	-	25	220	537	-	-	-	-	-
Mov Cap-2 Maneuver	~ 11	25	-	-	25	-	-	-	-	-	-	-
Stage 1	199	243	-	-	227	-	-	-	-	-	-	-
Stage 2	129	223	-	-	234	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s\$	728.2		34.8		0.3			0				
HCM LOS	F		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBT	SBR					
Capacity (veh/h)	537	-	-	29	188	-	-					
HCM Lane V/C Ratio	0.051	-	-	1.931	0.365	-	-					
HCM Control Delay (s)	12.1	-	-	\$ 728.2	34.8	-	-					
HCM Lane LOS	B	-	-	F	D	-	-					
HCM 95th %tile Q(veh)	0.2	-	-	6.6	1.6	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 6th Signalized Intersection Summary
5: Winchester Road / SR-79 & Stowe Road

SR 79 / SR 74 Project
11/21/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	166	0	70	0	1093	229	109	974	0
Future Volume (veh/h)	0	0	0	166	0	70	0	1093	229	109	974	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	193	0	81	0	1201	252	114	1015	0
Peak Hour Factor	0.92	0.92	0.92	0.86	0.86	0.86	0.91	0.91	0.91	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	240	0	0	0	204	0	1830	381	201	1603	0
Arrive On Green	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.62	0.62	0.62	0.62	0.00
Sat Flow, veh/h	0	1870	0	0	0	1585	0	3022	609	128	2650	0
Grp Volume(v), veh/h	0	0	0	0	0	81	0	725	728	495	634	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	0	0	1585	0	1777	1761	1075	1617	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	1.7	0.0	9.4	9.7	3.5	8.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	1.7	0.0	9.4	9.7	13.2	8.8	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.00		0.35	0.23		0.00
Lane Grp Cap(c), veh/h	0	240	0	0	0	204	0	1110	1100	793	1010	0
V/C Ratio(X)	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.65	0.66	0.62	0.63	0.00
Avail Cap(c_a), veh/h	0	923	0	0	0	2150	0	1534	1520	1023	1396	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	14.6	0.0	4.3	4.4	3.8	4.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.7	0.7	0.8	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.2	0.2	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	0.0	0.0	15.9	0.0	5.0	5.1	4.6	4.9	0.0
LnGrp LOS	A	A	A	A	A	B	A	A	A	A	A	A
Approach Vol, veh/h	0			81			1453			1129		
Approach Delay, s/veh	0.0			15.9			5.0			4.8		
Approach LOS				B			A			A		
Timer - Assigned Phs	2		3	4		6		8				
Phs Duration (G+Y+Rc), s	27.3		0.0	9.2		27.3		9.2				
Change Period (Y+Rc), s	4.5		4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s	31.5		27.0	18.0		31.5		49.5				
Max Q Clear Time (g_c+I1), s	11.7		0.0	0.0		15.2		3.7				
Green Ext Time (p_c), s	9.3		0.0	0.0		7.6		0.5				
Intersection Summary												
HCM 6th Ctrl Delay	5.2											
HCM 6th LOS	A											

APPENDIX E

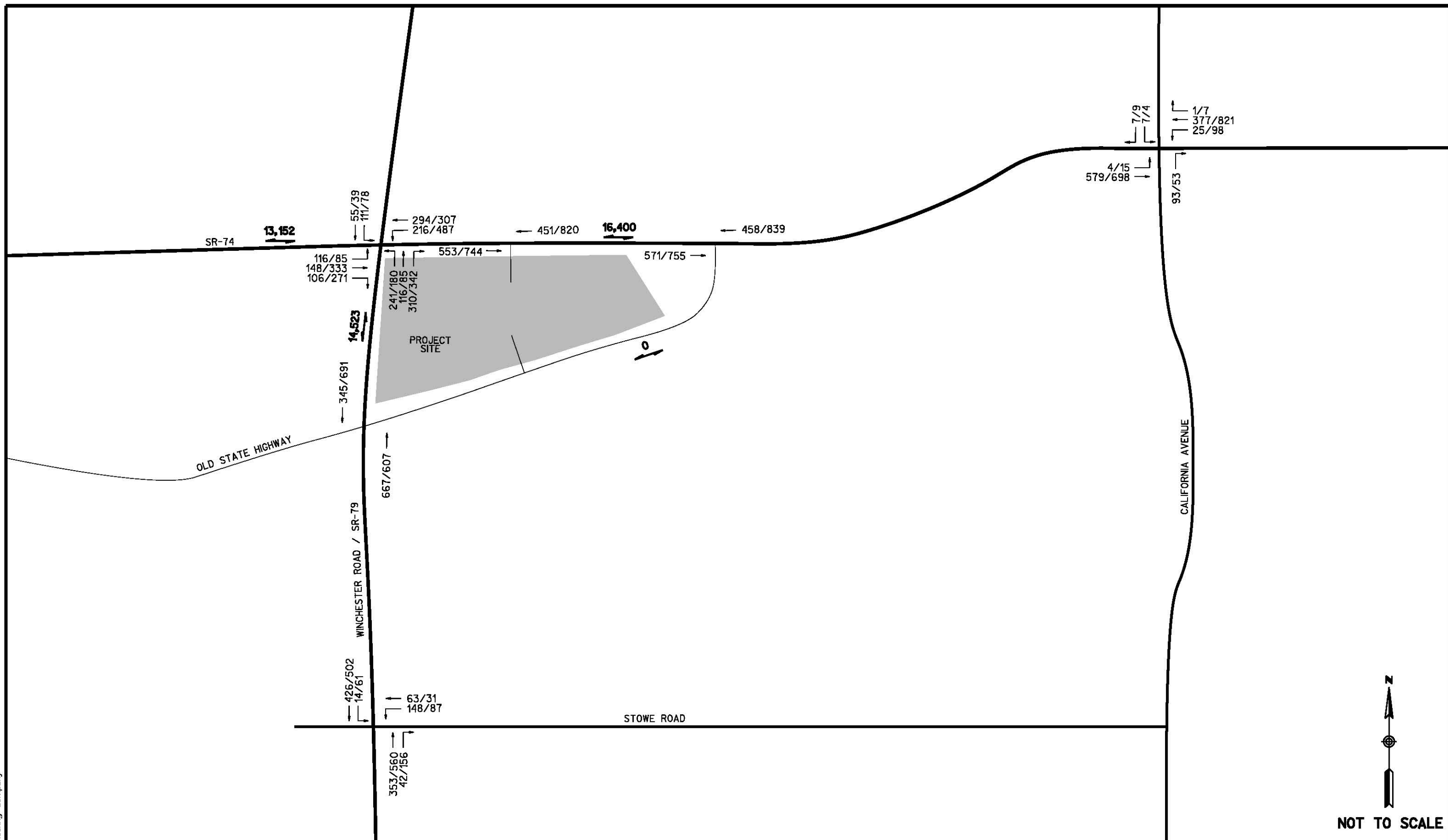
Cumulative Project Assignment

Cumulative Projects List for SR-74 / SR-79 Project (Hemet Retail Development)

1. Jack in the Box w/ drive thru
2. 180 Apt units within 10 buildings
3. 86 Single Family Residential units
4. 57 Residential Lots
5. 36 Single Family Residential Lots
6. 432 Single Family Residential Lots
7. 150 unit Condominiums
8. 138 unit Condominiums
9. 562 Single Family Residential Lots
10. 60 space mobile home park
11. 21.87 acres of mobile home park space
12. Manufacturing (25 KSF)
13. Auto Parts and Supply store (95 KSF)
14. 273 Single Family Residential Lots
15. 140 Single Family Residential Lots
16. 185 Single Family Residential Lots
17. 127 Single Family Residential Lots



EXHIBIT 1
CUMULATIVE PROJECT TRAFFIC VOLUMES
SR 74 / SR 79 PROJECT

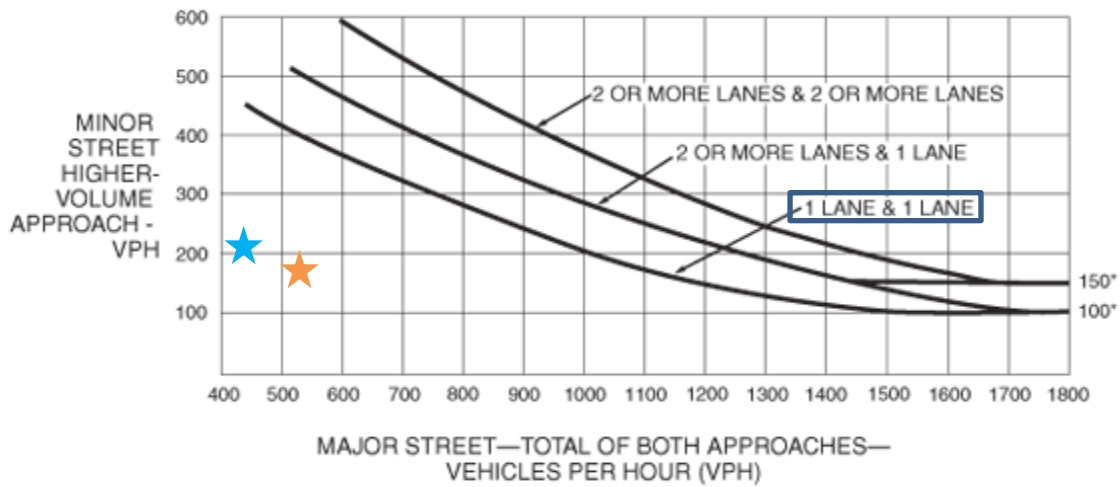


LEGEND
XXX/XXX = AM/PM PEAK HR
X,XXX = ADT (TWO-WAY)

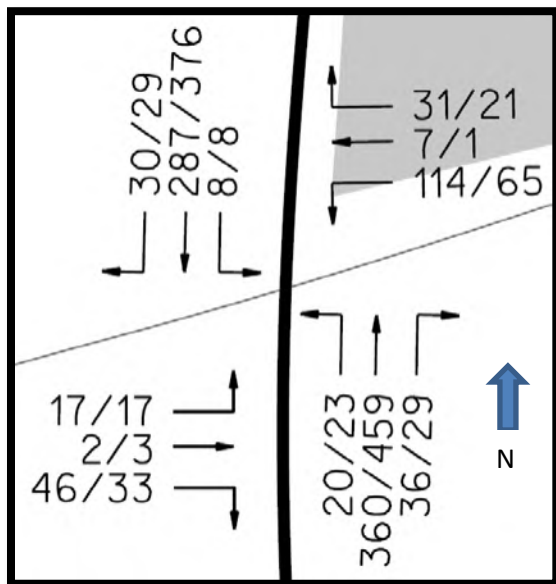
APPENDIX F

Signal Warrants

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

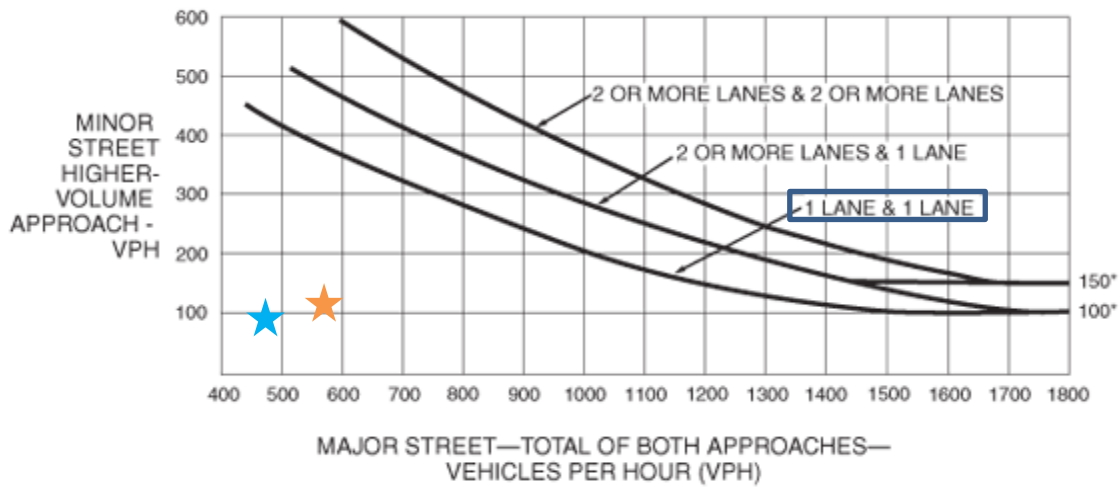


	AM	PM
Major Street Volume: (Winchester Road/SR-79)	416	511
Minor Street Volume: (Old State Highway)	217	140

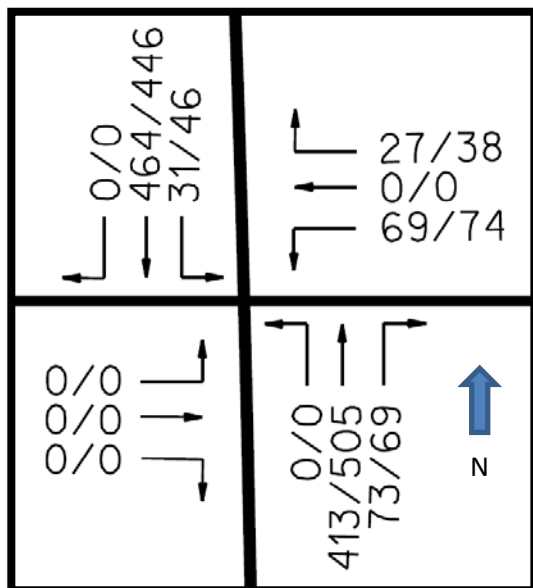
EXISTING + AMBIENT + PROJECT (2018)

RESULT: **NOT WARRANTED**

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

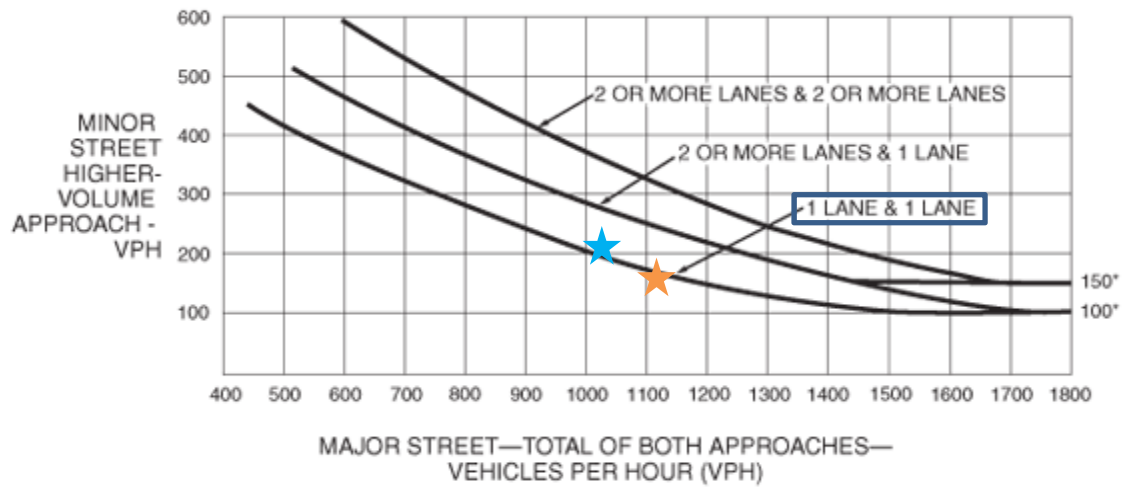


	AM	PM
Major Street Volume:	477	574
(Winchester Road/SR-79)		
Minor Street Volume:	96	112
(Stowe Road)		

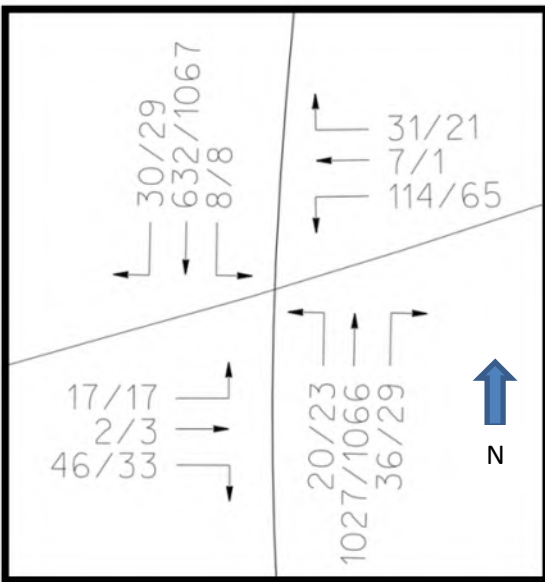
EXISTING + AMBIENT + PROJECT (2018)

RESULT: **NOT WARRANTED**

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.



AM PM

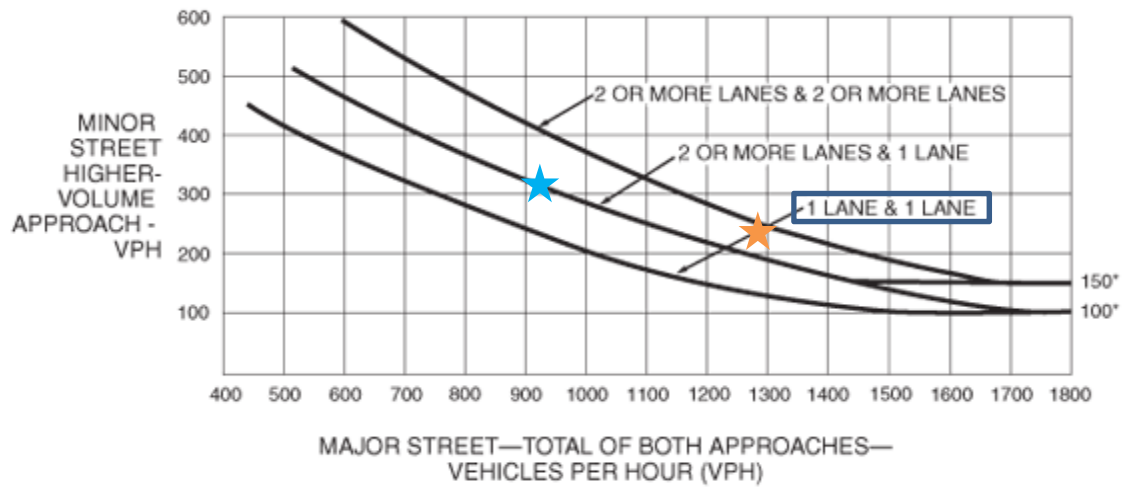
Major Street Volume: 1,083 1,118
(Winchester Road/SR-79)

Minor Street Volume: 217 140
(Old State Highway)

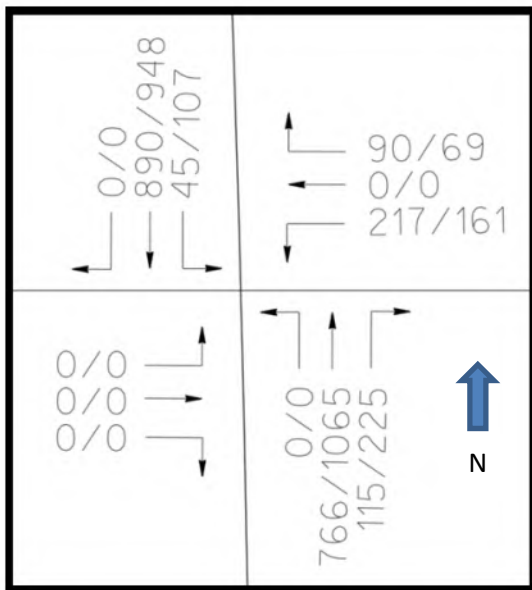
EXISTING + AMBIENT + PROJECT + CUMULATIVE (2018)

RESULT: **WARRANTED**

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.



AM PM

Major Street Volume: 935 1,290
(Winchester Road/SR-79)

Minor Street Volume: 307 230
(Stowe Road)

EXISTING + AMBIENT + PROJECT + CUMULATIVE (2018)

RESULT: **WARRANTED**

APPENDIX G

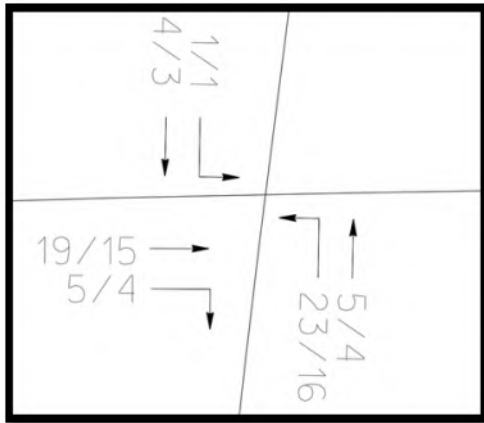
Fair-share Calculations

Fair-share Calculations

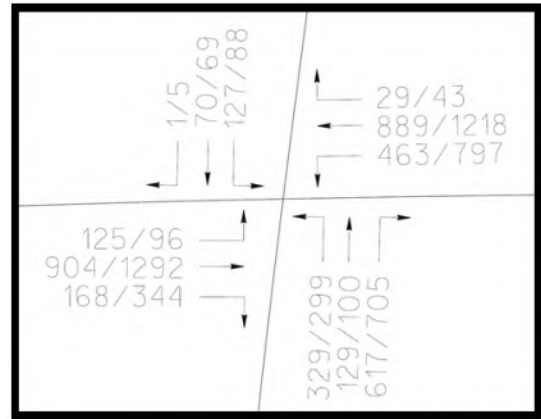
Fair-share Calculation = (Project Volumes) / (Existing + Ambient + Project + Cumulative)

INTERSECTIONS

1. SR-74 / Winchester Road/SR-79



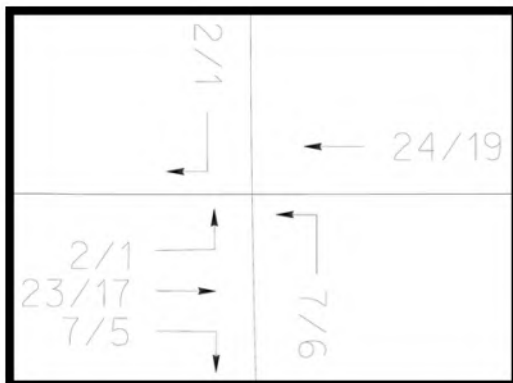
Project Volumes



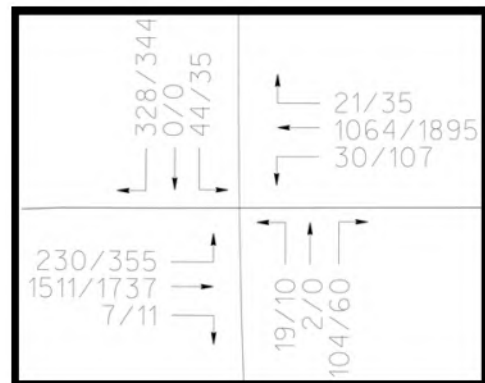
Existing + Ambient + Project + Cum

Fair-share = (100) / (8,907) = 0.01123 = **1.12%**

3. SR-74/Florida Avenue / California Avenue



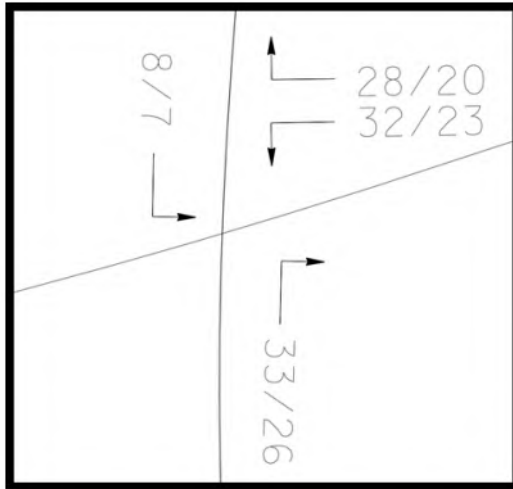
Project Volumes



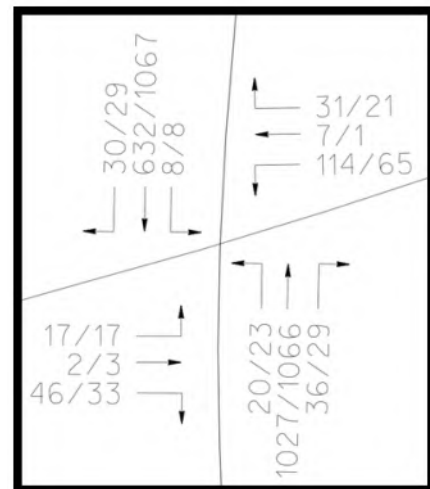
Existing + Ambient + Project + Cum

Fair-share = (114) / (7,949) = 0.01434 = **1.43%**

4. Old State Highway / Winchester Road/SR-79



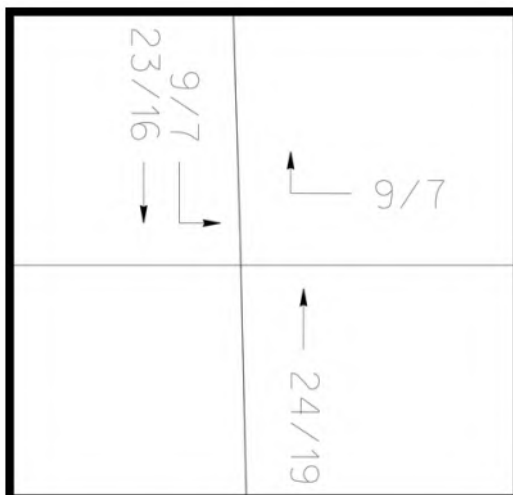
Project Volumes



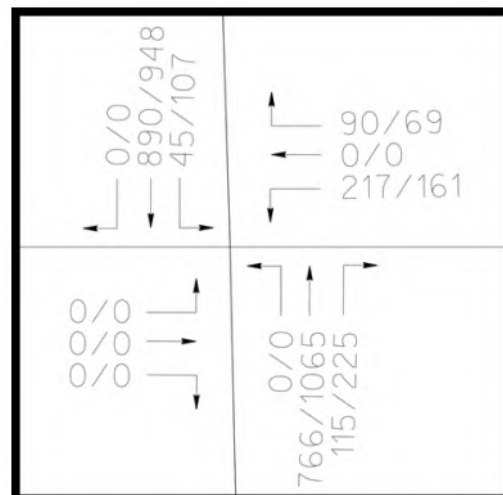
Existing + Ambient + Project + Cum

Fair-share = $(177) / (4,332) = 0.04056 = \mathbf{4.06\%}$

5. Stowe Road / Winchester Road/SR-79



Project Volumes



Existing + Ambient + Project + Cum

Fair-share = $(114) / (4,698) = 0.02427 = \mathbf{2.43\%}$

ROADWAY SEGMENTS

1. SR-74, west of Winchester Road/SR-79

Fair-share = $(509) / (41,699) = 0.01221 = 1.22\%$

2. SR-74, between Winchester Road/SR-79 and Old State Highway

Fair-share = $(214) / (51,668) = 0.00414 = 0.41\%$

3. Winchester Road/SR-79, between Old State Highway and SR-74

Fair-share = $(306) / (26,938) = 0.01135 = 1.14\%$