PHELAN COMMUNITY PARK TRAFFIC IMPACT ANALYSIS

County of San Bernardino

January 31, 2022

gandhi

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

PHELAN COMMUNITY PARK TRAFFIC IMPACT ANALYSIS

County of San Bernardino

January 31, 2022

prepared by

Perrie Ilercil, P.E. (AZ)
Giancarlo Ganddini, PE, PTP

GANDDINI GROUP, INC.
555 Parkcenter Drive, Suite 225
Santa Ana, California 92705
(714) 795-3100 | ganddini.com

Project No. 19395

TABLE OF CONTENTS

EXECUTIVE SUMMARY IV

1. INTRODUCTION 1

Project Description 1
Study Area 1
Analysis Scenarios 1

2. METHODOLOGY 5

Level of Service/Operational Analysis Methodology (Non-CEQA) 5
Intersection Delay Methodology 5
Performance standards 6
Vehicle Miles Traveled Analytical Methodology (CEQA) 7

3. EXISTING CONDITIONS 8

Existing Roadway System 8
Pedestrian Facilities 8
Transit Facilities 8
General Plan Context 9
Bicycle Facilities and Pedestrian Trails 9
Existing Roadway Volumes 9
Existing Intersection Level of Service 9

4. PROJECT TRIP FORECASTS 20

Project Trip Generation 20
Project Trip Distribution & Assignment 20

5. FUTURE VOLUME FORECASTS 27

Method of Projection 27
Ambient Growth 27
Other Developments 27
Model General Buildout Growth 27
Analysis Scenario Volumes 28
Existing Plus Project 28
Opening Year (2027) Without Project 28
Opening Year (2027) With Project 28
Year 2040 Without Project 28
Year 2040 With Project 28

6. FUTURE LEVELS OF SERVICE ANALYSIS 49

Existing Plus Project 49
Opening Year (2027) Without Project 49
Opening Year (2027) With Project 49
Year 2040 Without Project 49
Year 2040 With Project 49
Traffic Signal Warrant Analysis 49

7. SITE ACCESS & ON-SITE CIRCULATION 56

Project Design Features 56
Site Access Queuing Analysis 57

8. CONCLUSIONS 59
Project Description 59
Project Trip Generation 59
Level of Service Analysis 59
Site Access Queuing Analysis 59

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Intersection Count Data
Appendix D Existing Volume Adjustment Factor Calculations
Appendix E Travel Demand Model Plots
Appendix F Post Processing Worksheets
Appendix G Intersection Level of Service Worksheets
Appendix H Traffic Signal Warrant Worksheets

LIST OF TABLES

Table 1. Existing Intersection Levels of Service 10
Table 2. Project Trip Generation 21
Table 3. Other Development Trip Generation 29
Table 4. Existing Plus Project Intersection Levels of Service 51
Table 6. Opening Year (2027) Without Project Intersection Levels of Service 52
Table 7. Opening Year (2027) With Project Intersection Levels of Service 53
Table 8. Year 2040 Without Project Intersection Levels of Service 54
Table 9. Year 2040 With Project Intersection Levels of Service 55
Table 9. Project Queueing Storage Analysis 58

LIST OF FIGURES

Figure 1. Regional Location Map 2
Figure 2. Project Location Map 3
Figure 3. Site Plan 4
Figure 4. Existing Lane Geometry and Intersection Traffic Controls 11
Figure 5. Existing Pedestrian Facilities 12
Figure 6. Existing Transit Routes 13
Figure 7. County of San Bernardino General Plan Circulation Element 14
Figure 8. County of San Bernardino General Plan Roadway Cross-Sections 15
Figure 9. County of San Bernardino Bicycle Facilities and Pedestrian Trails Master Plan 16
Figure 10. Existing Average Daily Traffic Volumes 17
Figure 11. Existing AM Peak Hour Intersection Turning Movement Volumes 18
Figure 12. Existing PM Peak Hour Intersection Turning Movement Volumes 19
Figure 13. Project Trip Distribution (Outbound) 22
Figure 14. Project Trip Distribution (Inbound) 23
Figure 15. Project Average Daily Traffic Volumes 24

Figure 16. Project AM Peak Hour Intersection Turning Movement Volumes 25
Figure 17. Project PM Peak Hour Intersection Turning Movement Volumes 26
Figure 18. Other Development Location Map 30
Figure 19. Other Development Average Daily Traffic Volumes 31
Figure 20. Other Development AM Peak Hour Intersection Turning Movement Volumes 32
Figure 21. Other Development PM Peak Hour Intersection Turning Movement Volumes 33
Figure 22. Existing Plus Project Average Daily Traffic Volumes 34
Figure 23. Existing Plus Project AM Peak Hour Intersection Turning Movement Volumes 35
Figure 24. Existing Plus Project PM Peak Hour Intersection Turning Movement Volumes 36
Figure 25. Opening Year (2027) Without Project Average Daily Traffic Volumes 37
Figure 26. Opening Year (2027) Without Project AM Peak Hour Intersection Turning Movement Volumes 38
Figure 27. Opening Year (2027) Without Project PM Peak Hour Intersection Turning Movement Volumes 39
Figure 28. Opening Year (2027) With Project Average Daily Traffic Volumes 40
Figure 29. Opening Year (2027) With Project AM Peak Hour Intersection Turning Movement Volumes 41
Figure 30. Opening Year (2027) With Project PM Peak Hour Intersection Turning Movement Volumes 42
Figure 31. Year 2040 Without Project Average Daily Traffic Volumes 43
Figure 32. Year 2040 Without Project AM Peak Hour Intersection Turning Movement Volumes 44
Figure 33. Year 2040 Without Project PM Peak Hour Intersection Turning Movement Volumes 45
Figure 34. Year 2040 With Project Average Daily Traffic Volumes 46
Figure 35. Year 2040 With Project AM Peak Hour Intersection Turning Movement Volumes 47
Figure 36. Year 2040 With Project PM Peak Hour Intersection Turning Movement Volumes 48
Figure 37. Recommended Lane Geometry and Intersection Traffic Controls 60

EXECUTIVE SUMMARY

The purpose of this study is to evaluate the potential for transportation impacts resulting from development of the proposed project in the context of the County of San Bernardino's discretionary authority for conformance with locally established operational standards. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with technical terms.

This study was prepared in consultation with County of San Bernardino staff and in accordance with the procedures and methodologies for assessing transportation impacts established by the County of San Bernardino. To assess the project's conformance with local operational standards, this study evaluates the project's effect on traffic operations and, if necessary, identifies recommended improvements or corrective measures to alleviate operational deficiencies substantially caused or worsened by the proposed project. For compliance with California Environmental Quality Act (CEQA) requirements, a vehicle miles traveled (VMT) assessment for the project is provided in a separate document (see *Phelan Community Park Vehicle Miles Traveled Assessment*, Ganddini Group, Inc., January 31, 2022).

Project Description

The Phelan Pinon Hills Community Services District (CSD) has approximately 14-acres for development to expand community services provided to the local area. The currently undeveloped project site is located northeast of the intersection of Sheep Creek Road and Warbler Road in the Phelan community of unincorporated County of San Bernardino, California. While the development may be phased to meet the needs and budget of the community, the proposed project involves the construction of 14.27 acres of local Park with passive open space and 3-Multi-Purpose Fields, 1-Tennis Court, 26,000 SF of Skate Park, 30-Picnic Tables, and 15,730 SF of Aquatic Center [optional] & Splash-Pad [Project]. The Project includes additional parking provided for new services accessible from Sheep Creek Road and Warbler Road.

Access to the proposed Project includes connection to the adjacent Phelan Civic and Community Center north access roadway, Warbler Road extension to the east, as well as, a trail access to the north for hiking/horse access. Vehicular access to the site is provided by two (2) driveways on Sheep Creek Road, and one (1) driveway on Warbler Road in addition to the extension to the east which terminates in with additional parking adjacent to the roadway. Hiking, horse riding and/or horse trailer access is provided by an access on the north side of the property connecting to the unpaved Sahara Road.

Project Trip Generation

The proposed project is forecast to generate approximately 994 daily trips, including 31 trips during the AM peak hour and 144 trips during the PM peak hour.

Level of Service Analysis

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing, Existing Plus Project, Opening Year (2027) Without Project, Opening Year (2027) With Project, Year 2040 Without Project, and Year 2040 With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for the evaluated scenarios.

Site Access Queuing Analysis

The traffic volumes for project site access locations are forecast to operate within the available storage length during the peak hours for the evaluated scenarios conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for evaluated scenarios.

1. INTRODUCTION

This section introduces the proposed project, study area and the general scope of the analysis. Figure 1 and Figure 2 show the regional location map and project location map, respectively. Figure 3 illustrates the project location map and project site plan.

PROJECT DESCRIPTION

The Phelan Pinon Hills Community Services District (CSD) has approximately 14-acres for development to expand community services provided to the local area. The currently undeveloped project site is located northeast of the intersection of Sheep Creek Road and Warbler Road in the Phelan community of unincorporated County of San Bernardino, California. While the development may be phased to meet the needs and budget of the community, the proposed project involves the construction of 14.27 acres of local Park with passive open space and 3-Multi-Purpose Fields, 1-Tennis Court, 26,000 SF of Skate Park, 30-Picnic Tables, and 15,730 SF of Aquatic Center [optional] & Splash-Pad [Project]. The Project includes additional parking provided for new services accessible from Sheep Creek Road and Warbler Road.

Access to the proposed Project includes connection to the adjacent Phelan Civic and Community Center north access roadway, Warbler Road extension to the east, as well as, a trail access to the north for hiking/horse access. Vehicular access to the site is provided by two (2) driveways on Sheep Creek Road, and one (1) driveway on Warbler Road in addition to the extension to the east which terminates in with additional parking adjacent to the roadway. Hiking, horse riding and/or horse trailer access is provided by an access on the north side of the property connecting to the unpaved Sahara Road.

STUDY AREA

Based on the study intersections identified in the approved scoping agreement (Appendix B), the study area consists of the following study intersections within the County of San Bernardino:

Study Intersections[1]	Jurisdiction
1. Sheep Creek Road (NS) at Phelan Road (EW)	County of San Bernardino
2. Sheep Creek Road (NS) at Warbler Road (EW)	County of San Bernardino
3. Sheep Creek Road (NS) at Nelson Road (EW))	County of San Bernardino
4. Sheep Creek Road (NS) at Civic Center North Driveway (EW)	County of San Bernardino
5. Sheep Creek Road (NS) at Civic Center South Driveway (EW)	County of San Bernardino
6. Project South Driveway (NS) at Warbler Road (EW)	County of San Bernardino
7. Project North Access[2] (NS) at Sahara Road (EW)	County of San Bernardino

ANALYSIS SCENARIOS

The traffic study shall evaluate the following analysis scenarios for typical weekday AM and PM peak hour conditions:

- Existing
- Existing Plus Project
- Opening Year (2027) Without Project
- Opening Year (2027) With Project
- General Plan Buildout (Year 2040) Without Project Conditions
- General Plan Buildout (Year 2040) With Project Conditions

[1] NS = north-south roadway; E-W – east-west roadway.
[2] The project north access to the unpaved Sahara Road is an auxiliary access not intended for primary vehicular use.

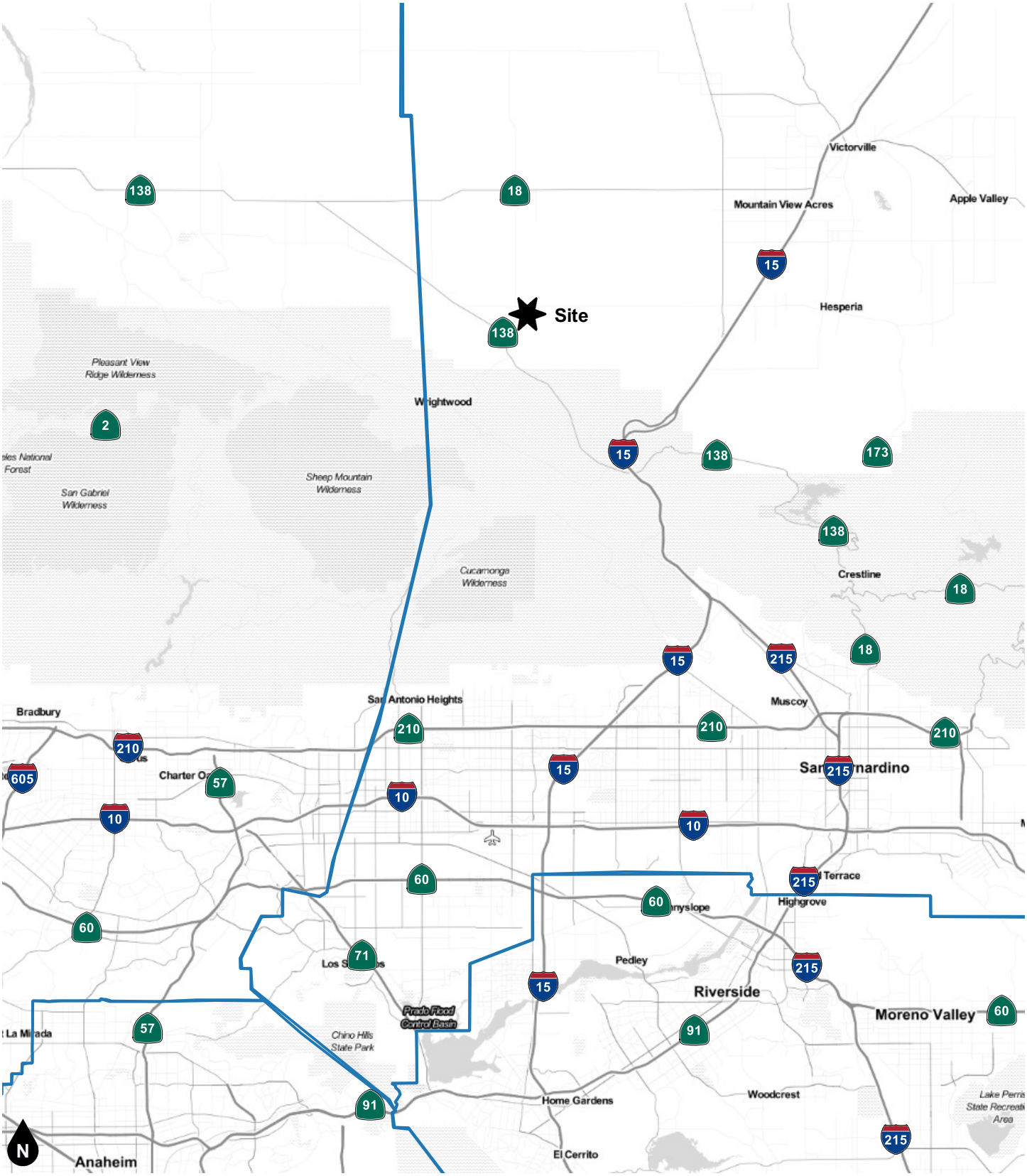
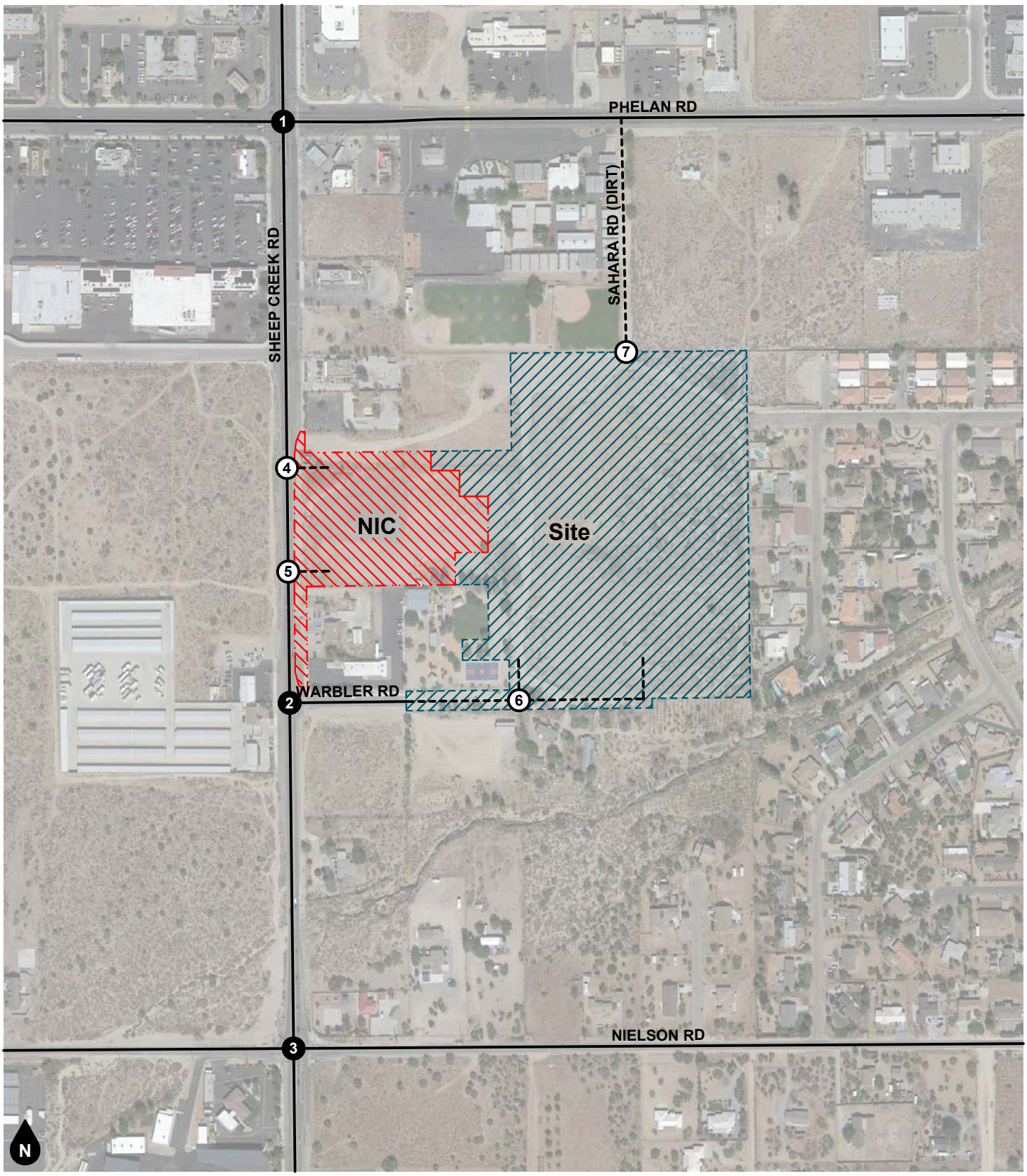


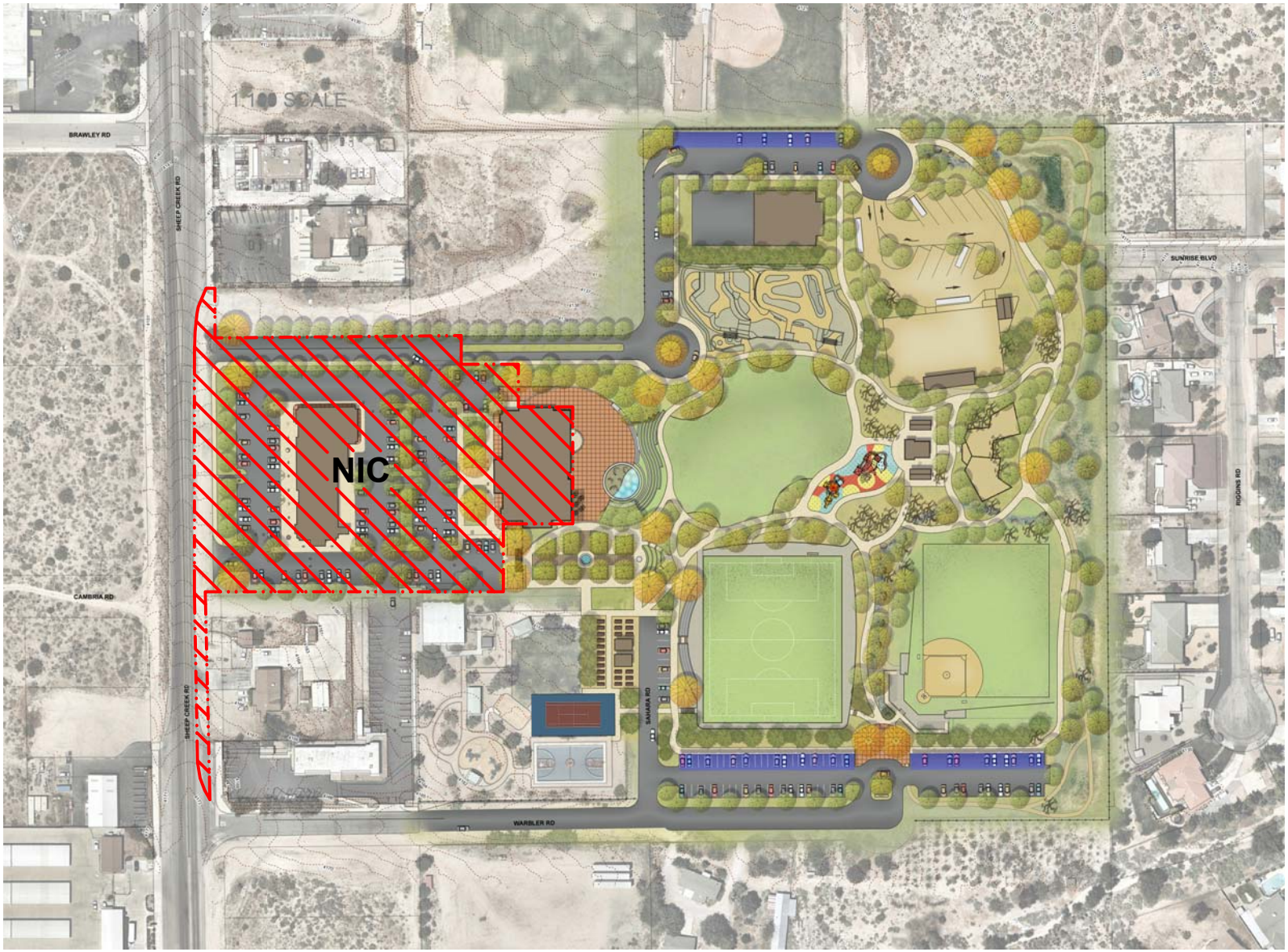
Figure 1
Regional Location Map



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 2
Project Location Map



Legend

Adjacent Project (NIC = Not Included)

Figure 3
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies. This traffic impact analysis is based on by standard County of San Bernardino procedures, and the County of San Bernardino *Transportation Impact Study Guidelines, July 2019*; ["County Guidelines"]

LEVEL OF SERVICE/OPERATIONAL ANALYSIS METHODOLOGY (NON-CEQA)

Level of Service analysis is performed for assessing conformance with General Plan and operational standards established by the applicable agencies. In accordance with current CEQA provisions, a project's effect on automobile delay (as measured by Level of Service) shall not constitute a significant environmental impact.

Intersection Delay Methodology

Unsignalized intersections within the County of San Bernardino and Caltrans jurisdiction are analyzed using the intersection delay methodology based on procedures contained in the *Highway Capacity Manual* (Transportation Research Board, 6th Edition). The methodology considers the traffic volume and distribution of movements, traffic composition, geometric characteristics, and signalization details to calculate the average control delay per vehicle and corresponding Level of Service. Control delay is defined as the portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign) and includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay. The intersection control delay is then correlated to Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board *Highway Capacity Manual* (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). At intersections with traffic signal or all way stop control, Level of Service is determined by the average control delay for the overall intersection. At intersections with cross street stop control (i.e., one- or two-way stop control), Level of Service is determined by the average control delay for the worst minor street approach or major street left-turn movement. Intersection delay analysis was performed using the Vistro software with default capacity values and adjustment factors recommended in the *Highway Capacity Manual*.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase. Traffic signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis. The following formula has been used to calculate the pedestrian minimum times for all Highway Capacity Manual runs:

(Curb to curb distance) / (3.5 feet/second) + 7 seconds.

Saturation flow rates of 1,800 vehicles per hour of green for through and right turn lanes and 1,700 vehicles per lane for single left turn lanes, 1,600 vehicles per lane for dual left turn lanes, and 1,500 vehicles per lane for triple left turn lanes have been assumed for the capacity analysis.

The peak hour intersection turning movement volumes have been adjusted to peak 15-minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed. Where feasible improvements in accordance with the local jurisdiction's General Plan and which result in acceptable operations cannot be identified, the General Plan Buildout (Year 2040) peak hour factor has been adjusted upwards to 0.95. This is to account for the effects of congestion on peak spreading. Peak spreading refers to the tendency of traffic volumes to spread more evenly across time as congestion increases.

If the paved lane width of a shared through/right turn lane is wide enough to permit a separate right turn, it is common practice for a right turn lane to be considered "de facto". To function as a de facto right turn lane there must be sufficient width for right turning vehicles to travel outside the through lane. This analysis uses a minimum lane width of 19 feet from curb to lane stripe, but in most cases the lane was 20 feet or greater. Additionally, a de facto right turn lane was only considered where on-street parking is prohibited near the intersection approach.

PERFORMANCE STANDARDS

The definition of an intersection deficiency has been obtained from the County of San Bernardino General Plan. The General Plan states that peak hour intersection operations of Level of Service D or better are generally acceptable in the Valley or Mountain regions and of Level of Service C or better are generally acceptable in the Desert region. Therefore, any intersection operating at Level of Service D, E or F is considered deficient in all regions of the County with Level of Service D deficient for the Desert regions of the County.

Signalized Intersections

- Any study intersection operating at an acceptable Level of Service (C or better) in the Desert region of the County without project traffic in which the addition of project traffic causes the intersection to degrade to a Level of Service (D, E or F) shall identify improvements to improve operations to Level of Service (C or better).

- Any signalized study intersection that is operating at unacceptable Level of Service (D, E or F) without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

Unsignalized Intersections

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to degrade from an acceptable Level of Service (C or better) in the Desert region of the County to Level of Service D, E or F.

OR

b) The project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at a Level of Service D, E or F.

AND

c) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

If the conditions above are satisfied, improvements should be identified that achieve the following:

- Level of Service (C or better) for case a) above or to pre-project Level of Service delay for case b) above.

In accordance with County Guidelines, the analysis must identify Level of Service problems under existing conditions and identify improvements that will provide acceptable Level of Service (C or better) in the Desert region of the County. These measures shall be assumed to be in place for subsequent analysis scenarios.

Where improvements are identified to address Level of Service deficiencies, a project fair share cost estimate is provided based on the volume of project traffic using the impacted facility divided by the total "new" traffic (i.e., ambient growth and other developments).

VEHICLE MILES TRAVELED ANALYTICAL METHODOLOGY (CEQA)

The metric used to evaluate the transportation impact of land use and transportation projects under CEQA is known as vehicle miles traveled (VMT). In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Additional information and a detailed project assessment are provided in a separate Vehicle Miles Traveled Analysis Assessment Document.

3. EXISTING CONDITIONS

This section describes the existing transportation setting.

EXISTING ROADWAY SYSTEM

Figure 4 shows the lane geometry and intersection traffic controls for existing conditions based on a field survey of the study area. Regional access to the project site is provided by State Route 138 approximately 1.5 miles to the south-west. Local north-south circulation is provided by Sheep Creek Road, and east-west circulation is provided by Phelan Road, Warbler Road and Nielson Road.

Sheep Creek Road: This two-lane undivided to four-lane divided roadway trends in a north-south direction and is Major Highway (80 feet roadway section and 104 feet of right-of-way) on the County of San Bernardino General Plan Circulation Element in the study area. Based on roadway width, on-street parking is generally prohibited on both sides of the roadway. No bicycle facilities are provided in the study area. Sidewalks are currently not provided in the project vicinity. The posted speed is 40 miles per hour.

Phelan Road: This two-lane undivided to four-lane roadway with two-way left turn lane trends in an east-west direction and is classified as a Major Divided Highway (94 feet roadway section and 120 feet of right-of-way) on the County of San Bernardino General Plan Circulation Element in the study area. On-street parking is generally not permitted adjacent to the commercial and school properties. No bicycle facilities are provided in the study area. Sidewalks are currently provided on both sides of the road east and west of Sheep Creek Road. The posted speed is 35 miles per hour.

Warbler Road: This two-lane undivided roadway trends in an east-west direction and is an unclassified roadway on the County of San Bernardino General Plan Circulation Element in the study area. Based on roadway width, on-street parking is generally prohibited on both sides of the roadway. No bicycle facilities are provided in the study area. Sidewalks are currently provided on the north side of the street adjacent to the existing community center.

Nelson Road: This two-lane undivided roadway trends in an east-west direction and is an unclassified roadway on the County of San Bernardino General Plan Circulation Element in the study area. Based on roadway width, on-street parking is generally prohibited on both sides of the roadway. No bicycle facilities are provided in the study area. Sidewalks are currently not provided in the study area. East of Sheep Creek Road, the posted speed is 45 miles per hour. West of Sheep Creek Road, there is a 25 miles per hour school zone.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 5. As shown on Figure 5, sidewalks are currently not provided along the project site frontage.

TRANSIT FACILITIES

Figure 6 shows the existing Victor Valley Transit (VVT) system map in the project vicinity. As shown on Figure 6, Local Route 21 runs along Sheep Creek Road (South of Nelson Road), Nelson Road (West of Sheep Creek Road) and Phelan Road in an east-west direction. The closest bus stops to the site are one at the northwest corner of Sheep Creek Road and Nelson Road intersection and east-west bus stops located on Phelan Road west Sheep Creek Road.

General Plan Context

Figure 7 shows the County of San Bernardino General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The County of San Bernardino standard roadway cross-sections are illustrated on Figure 8.

Bicycle Facilities and Pedestrian Trails

The County of San Bernardino Bicycle Master Plan is shown Figure 9. This figure shows the bicycle facilities master plan. As shown on Figure 9, there are no bicycle facilities provided in the study area.

Existing Roadway Volumes

Figure 10 shows the existing (year 2021) average daily traffic volumes. The existing average daily traffic volumes have been factored from peak hour intersection turning movement volumes at locations using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 11.5= Leg Volume

Figure 11 and Figure 12 show the existing (year 2021) AM and PM peak hour intersection turning movement volumes. Existing peak hour intersection turning movement volumes are based upon AM peak period and PM peak period intersection turning movement counts obtained in December 2021 during typical weekday conditions. The weekday AM peak period was counted between 7:00 AM and 9:00 AM and the weekday PM peak period was counted between 4:00 PM and 6:00 PM; these periods generally capture the peak times for commuter traffic when the roadway system is typically experiencing peak demand. The actual peak hour within each two-hour count period is determined based on the sum of the four consecutive 15-minute periods with the highest total volume entering the intersection. Thus, the weekday PM peak hour at one intersection may be 4:45 PM to 5:45 PM and may vary at other intersections depending on the four consecutive 15-minute periods that have the highest total volume. Intersection turning movement count worksheets are provided in Appendix C.

To account for lingering effects of the COVID-19 pandemic on current traffic volumes, the peak hour intersection volumes collected in December 2021 were compared to historical traffic counts to assess whether adjustments were necessary to reflect non-pandemic conditions. Appendix D contains adjustment factor calculations for comparing the new 2021 counts to non-pandemic estimates derived from January 2013 counts with application of growth rate of two percent (2%) per year to estimate non-pandemic year 2021 volumes. As shown in Appendix D, the new 2021 counts were determined to be slightly lower than the pre-pandemic volumes with annual growth. To provide a conservative analysis, an adjustment factor of 1.1569 was applied to the traffic counts (15.69% increase).

Existing Intersection Level of Service

The study intersection Levels of Service for Existing (Year 2021) conditions are shown in Table 1. Detailed Level of Service worksheets are provided in Appendix G.

As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (C or better).

Table 1
Existing Intersection Levels of Service

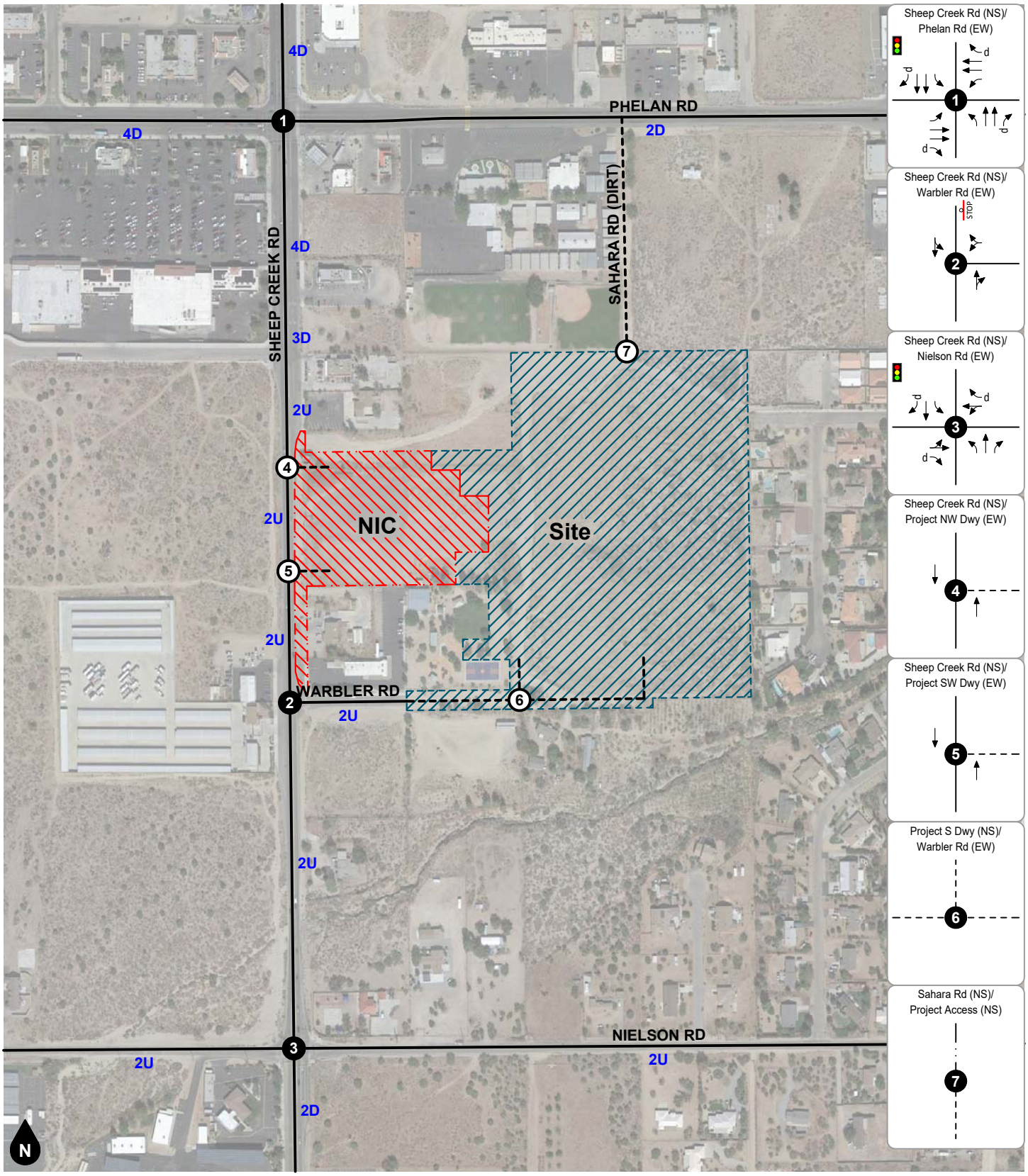
ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1.	Sheep Creek Road at Phelan Road	TS	16.9	B	18.1	B
2.	Sheep Creek Road at Warbler Road	CSS	12.8	B	11.8	B
3.	Sheep Creek Road at Nelson Road	TS	10.4	B	7.3	A

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service



Legend

- Traffic Signal
- Stop Sign
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane
- d De Facto Right Turn Lane
- Project Driveway

Figure 4
Existing Lane Geometry and Intersection Traffic Controls

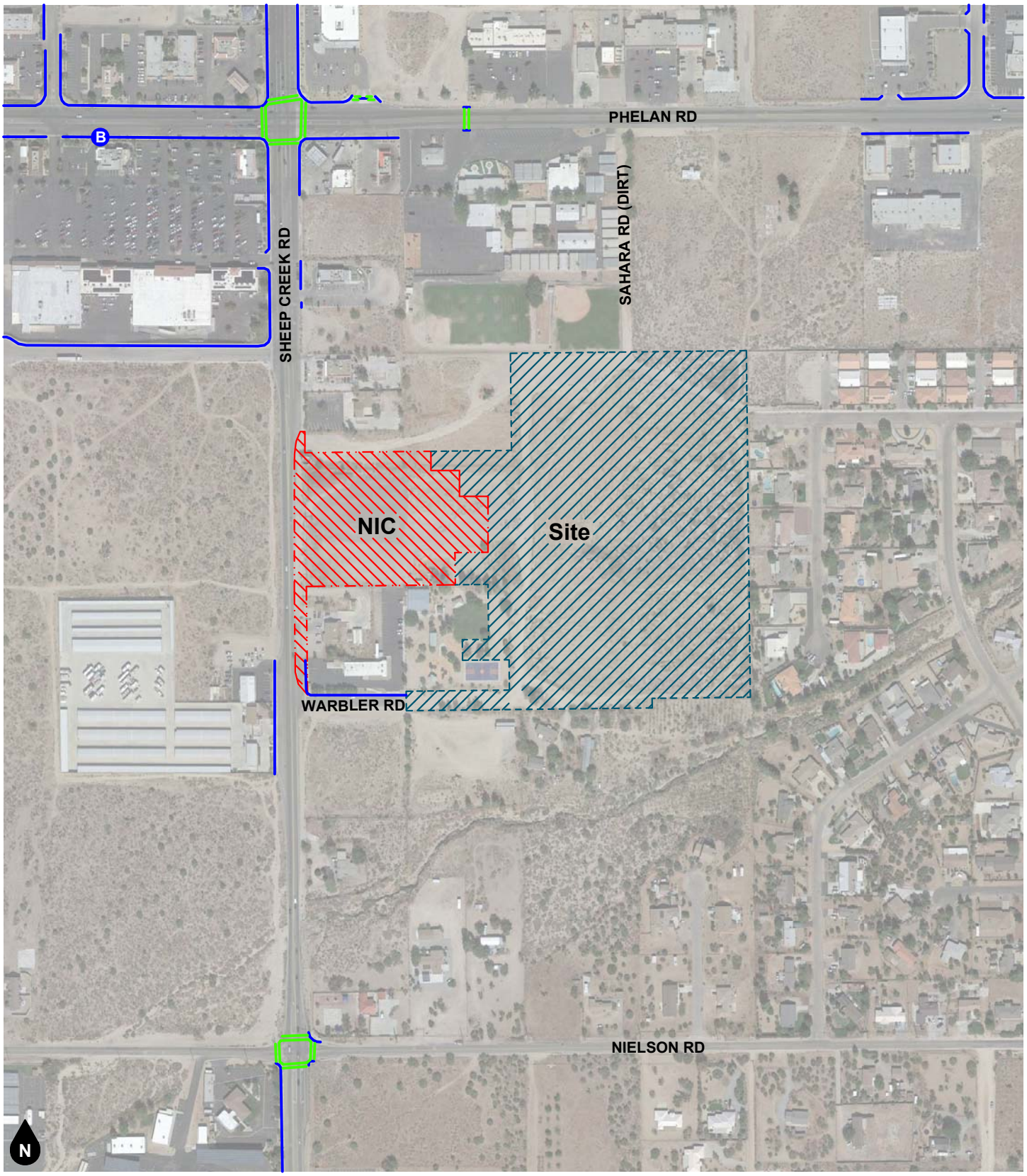


Figure 5
Existing Pedestrian Facilities

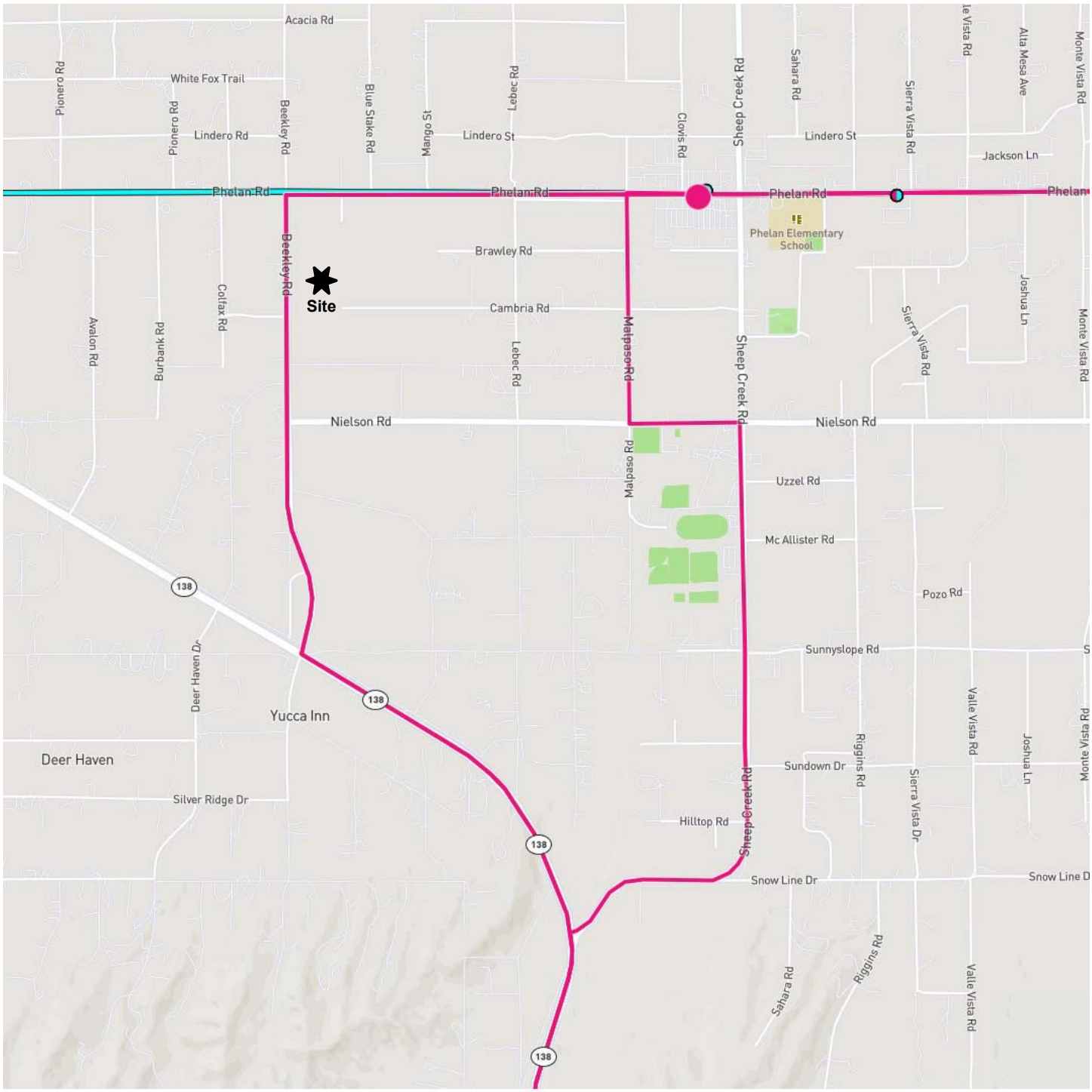
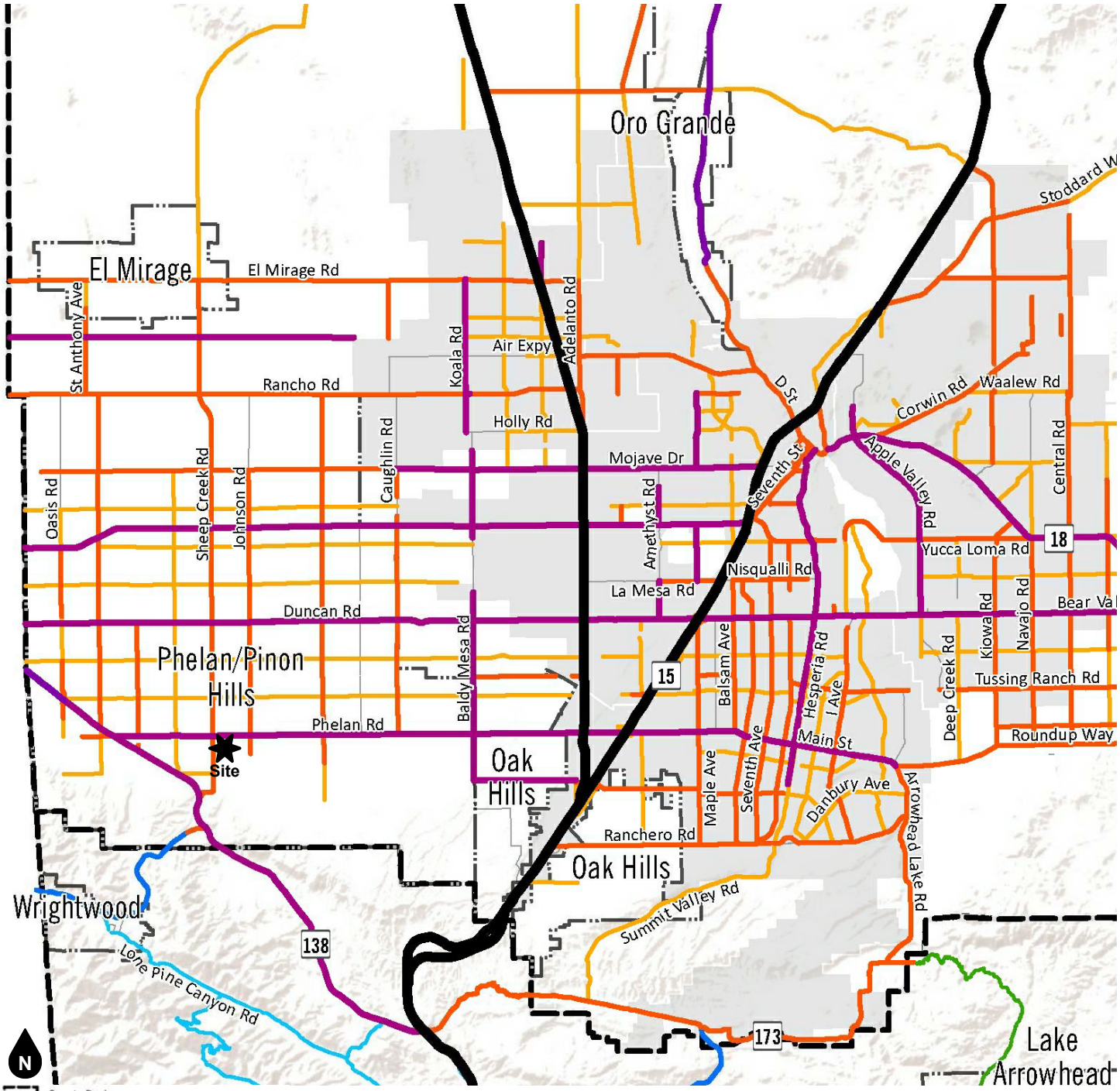


Figure 6
County of San Bernardino Transit Routes

Source: Victory Valley Transit Authority



Source: County of San Bernardino

Figure 7
County of San Bernardino General Plan Circulation Element

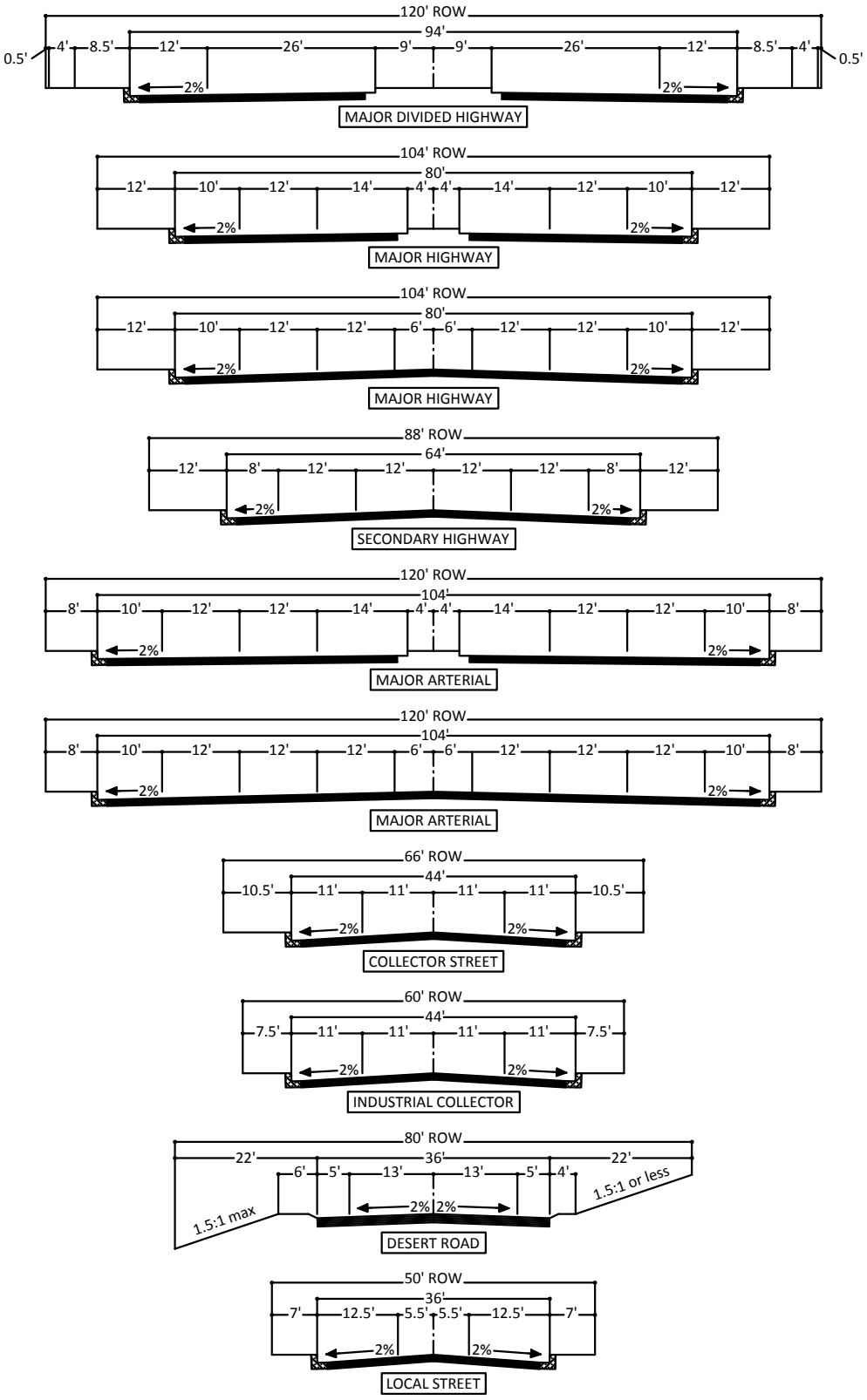


Figure 8
County of San Bernardino General Plan Roadway Cross-Sections

Source: County of San Bernardino

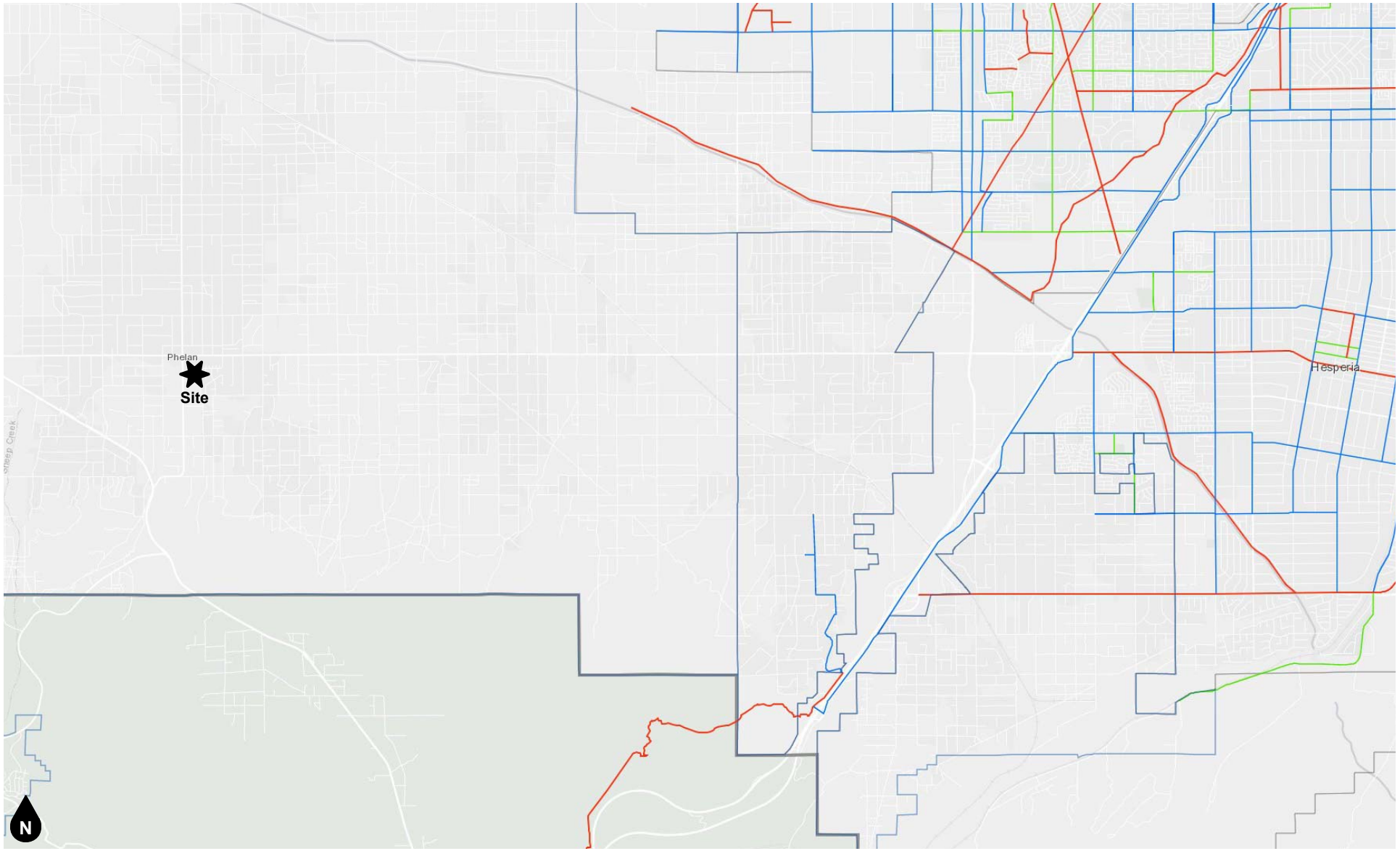
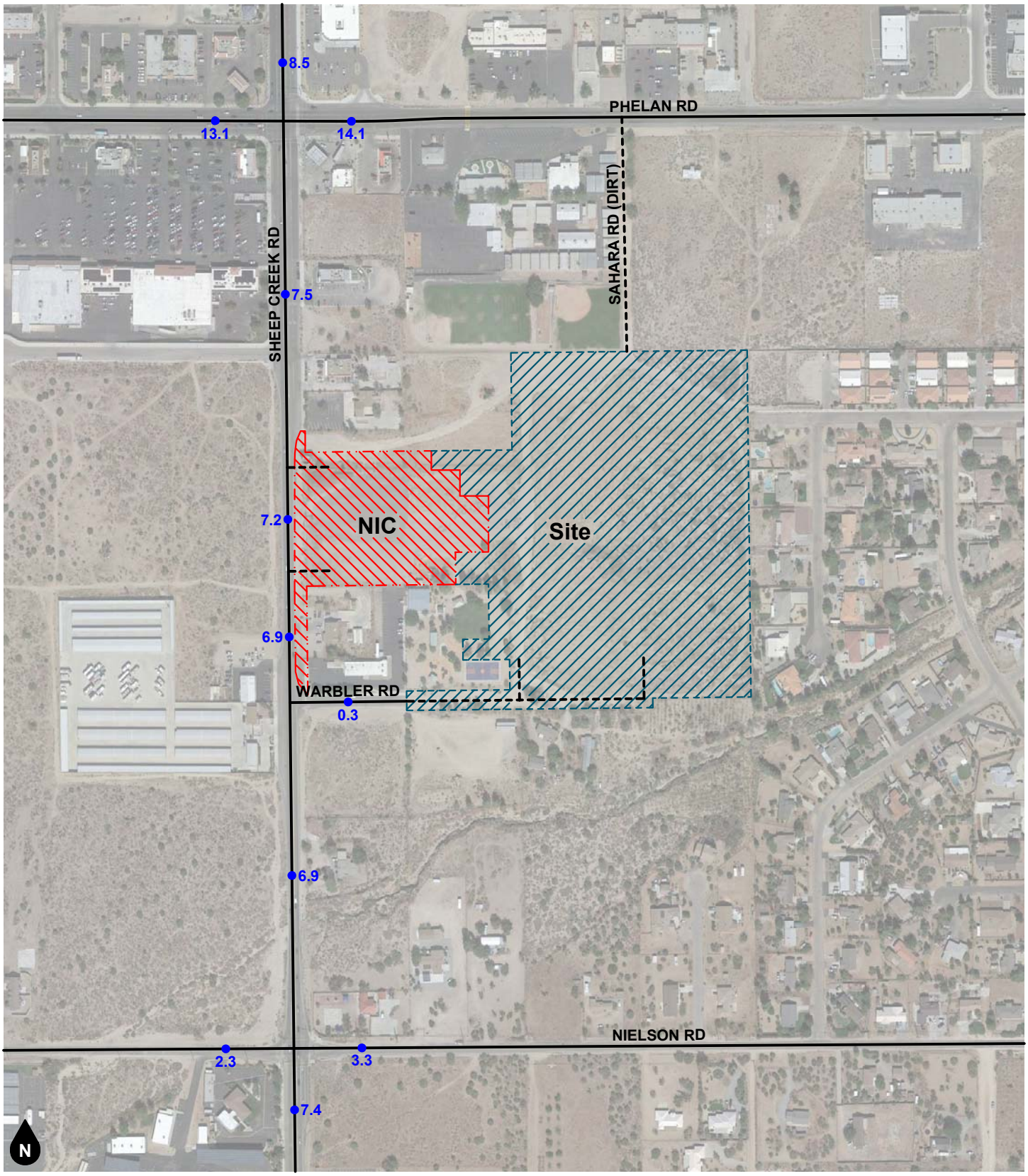


Figure 9
County of San Bernardino Bicycle Facilities and Pedestrian Trails Master Plan

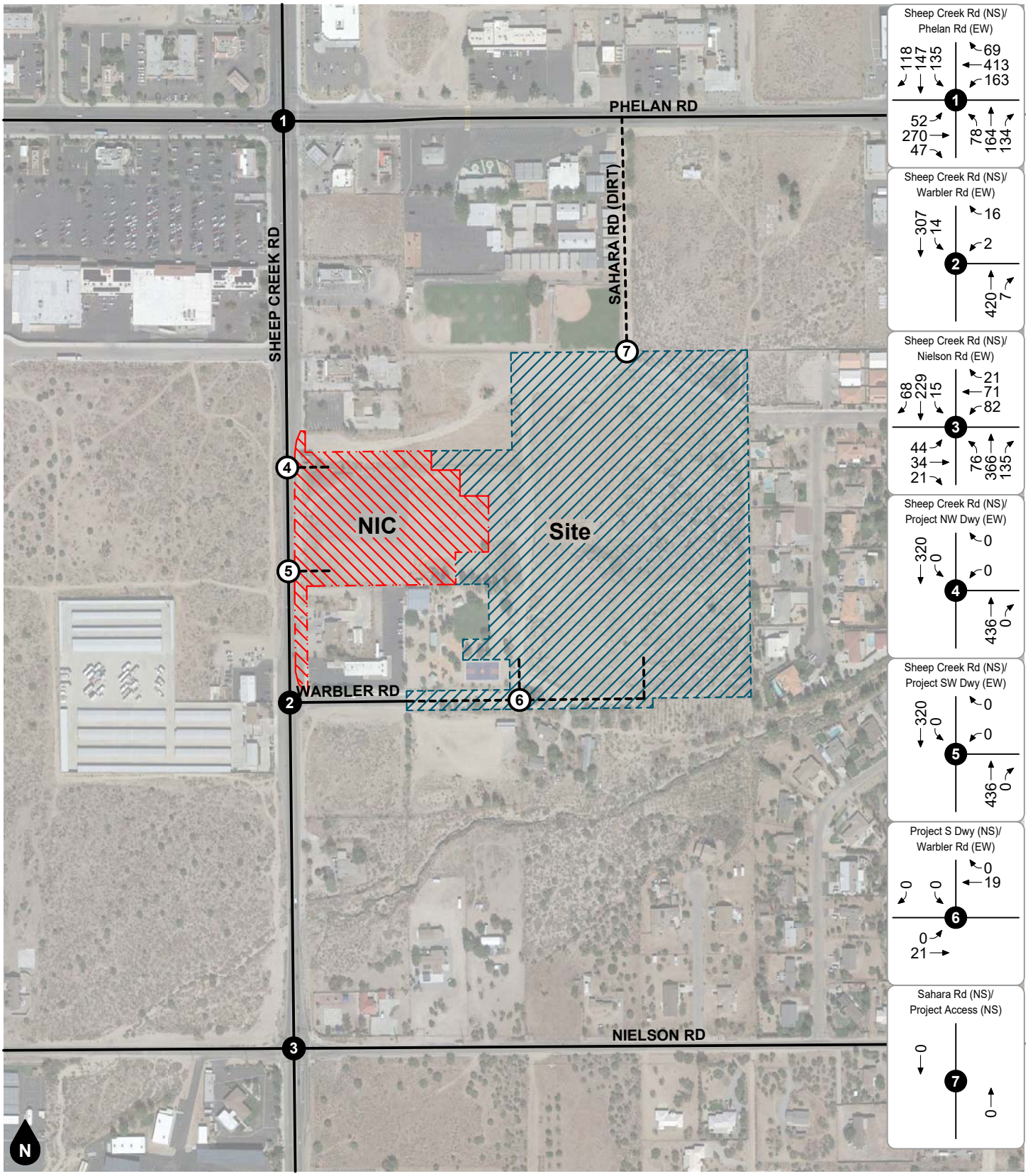
Source: County of San Bernardino



Legend

●## Vehicles Per Day (1,000's)

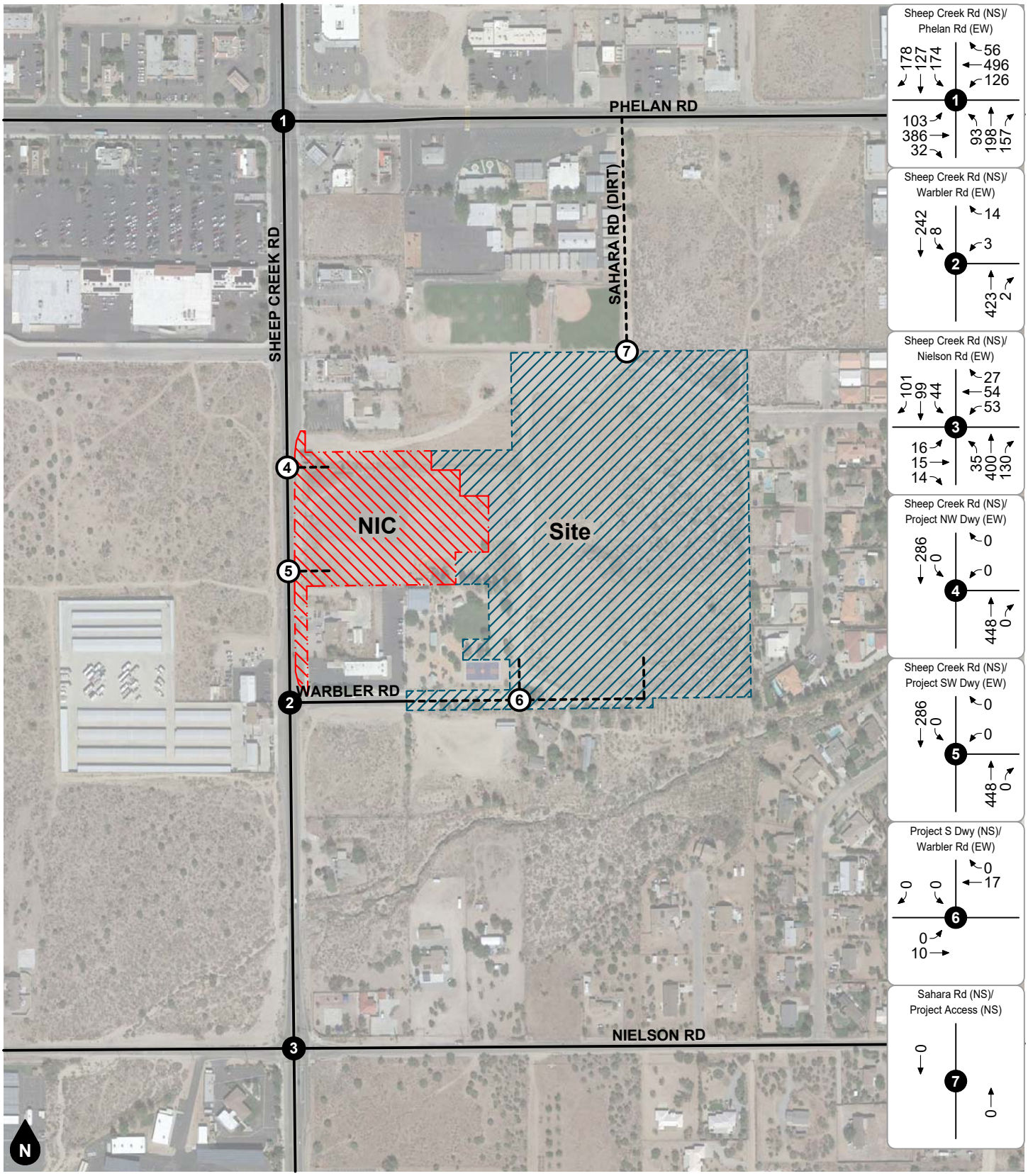
Figure 10
Existing Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 11
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 12
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT TRIP GENERATION

Table 2 shows proposed project trip generation is based upon trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2021). To provide a conservative assessment of the proposed park trip generation, public park rates were used for the passive open space of the park, in combination with rates for recreational components included in the park. The forecast trip generation of the park is representative of May to October with the combined usage of the water park and all multi-purpose fields. Based on the ITE land use descriptions, trip generation rates for Land Use Codes ITE 411 – Public Park, ITE 488 – Soccer Field, ITE 491 Tennis Court, ITE 482 – Water Park were determined to adequately describe the proposed land uses and were selected for this analysis. In addition to the ITE land use rates, the skate park trip generation rates were obtained from the *Center Avenue Skate Park Traffic Study* (Austin-Foust Associates, Inc., 2011) for the skate park that is currently under construction in the park. The passive open space of the park was quantified by ITE 411 per acre (10th Edition) while the Central Plaza picnic tables were quantified by ITE 411 per picnic table (9th Edition) due to absence of picnic table data in the 10th Edition.

As shown in Table 2, the proposed project is forecast to generate approximately 994 daily trips, including 31 trips during the AM peak hour and 144 trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION & ASSIGNMENT

Figure 13 and Figure 14 show the forecast outbound and inbound directional distribution patterns for the project generated trips, respectively. The project trip distribution patterns were determined in consultation with County staff based on review of existing traffic data, surrounding land uses, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project weekday average daily traffic volumes are shown on Figure 15. Project-generated AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 16 and Figure 17.

Table 2
Project Trip Generation

Trip Generation Rates									
			AM Peak Hour			PM Peak Hour			
Land Use	Source[1]	Land Use Variable[2]	% In	% Out	Rate	% In	% Out	Rate	Daily Rate
Public Park	ITE 411	AC	59%	41%	0.02	55%	45%	0.11	0.78
Soccer Complex	ITE 488	FLD	61%	39%	0.99	66%	34%	16.43	71.33
Tennis Courts	ITE 490 [a]	CRT	50%	50%	1.52	50%	50%	4.21	30.32
Picnic Table at Park	ITE 411 [b]	PT	50%	50%	0.23	50%	50%	0.47	5.87
Skate Park	TIA [c]	TSF	53%	47%	0.30	46%	54%	1.36	9.10
Water Park	ITE 482 [d]	TSF	70%	30%	0.73	21%	79%	2.56	20.75

Trips Generated									
				AM Peak Hour			PM Peak Hour			
Land Use	Source	Quantity		In	Out	Total	In	Out	Total	Daily
Public Park	ITE 411	14.27	AC	0	0	0	1	1	2	11
Soccer Complex	ITE 488	3	FLD	2	1	3	33	16	49	214
Tennis Courts	ITE 490	1	CRT	1	1	2	2	2	4	30
Picnic Table at Park	ITE 411	30	PT	4	3	7	7	7	14	176
Skate Park	TIA	26.000	TSF	4	4	8	16	19	35	237
Aquatic Center [optional] & Splash Pad	ITE 482	15.730	TSF	8	3	11	8	32	40	326
NET NEW TRIPS GENERATED				**+ 19**	**+ 12**	**+ 31**	**+ 67**	**+ 77**	**+ 144**	**+ 994**

Notes:

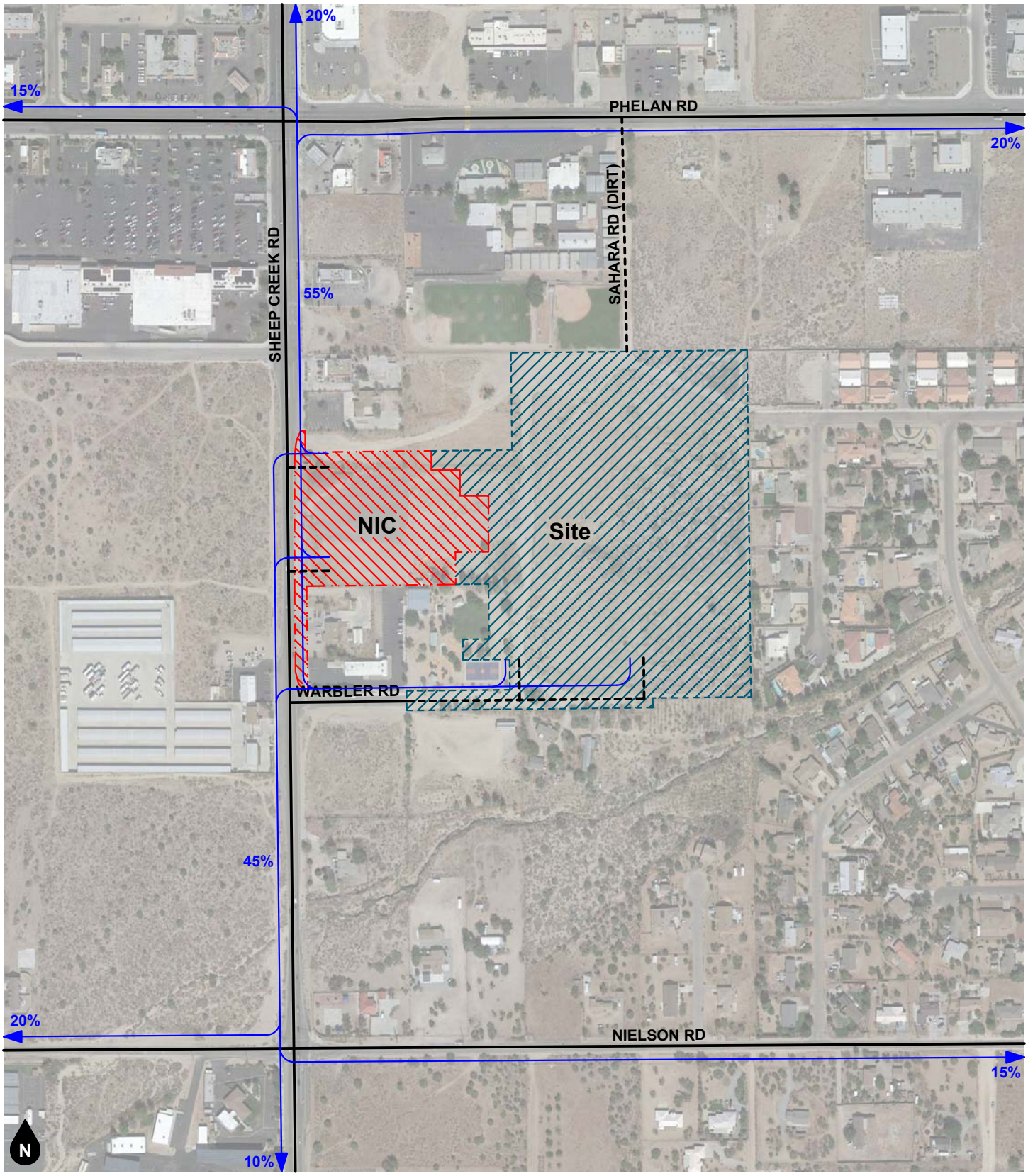
(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code. All rates based on General Urban / Suburban rates, unless otherwise noted.

[a] = San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used. AM/Daily rate 5%.

[b] = AM and PM peak hourly rate derived from SANDAG *Brief Guide of Vehicular Traffic Generation Rate*s AM/Daily percentage (4%) and PM/Daily percentage (8%) using ITE daily total. The park daily total rate per picnic table is from ITE *Trip Generation Manual*, 9th Edition due to absence of picnic table data in the 11th Edition. Saturday midday and Saturday weekend rate derived from trip generation ratio of PM rate per picnic site to PM rate per acre.

[d] = AM peak hour and Daily rate derived from ITE "Specialized Land Use Data" shown on the land use description page 482 of ITE *Trip Generation Manual* using trip generation PM hourly rate per thousand square feet and trip generation rates based on parking spaces.

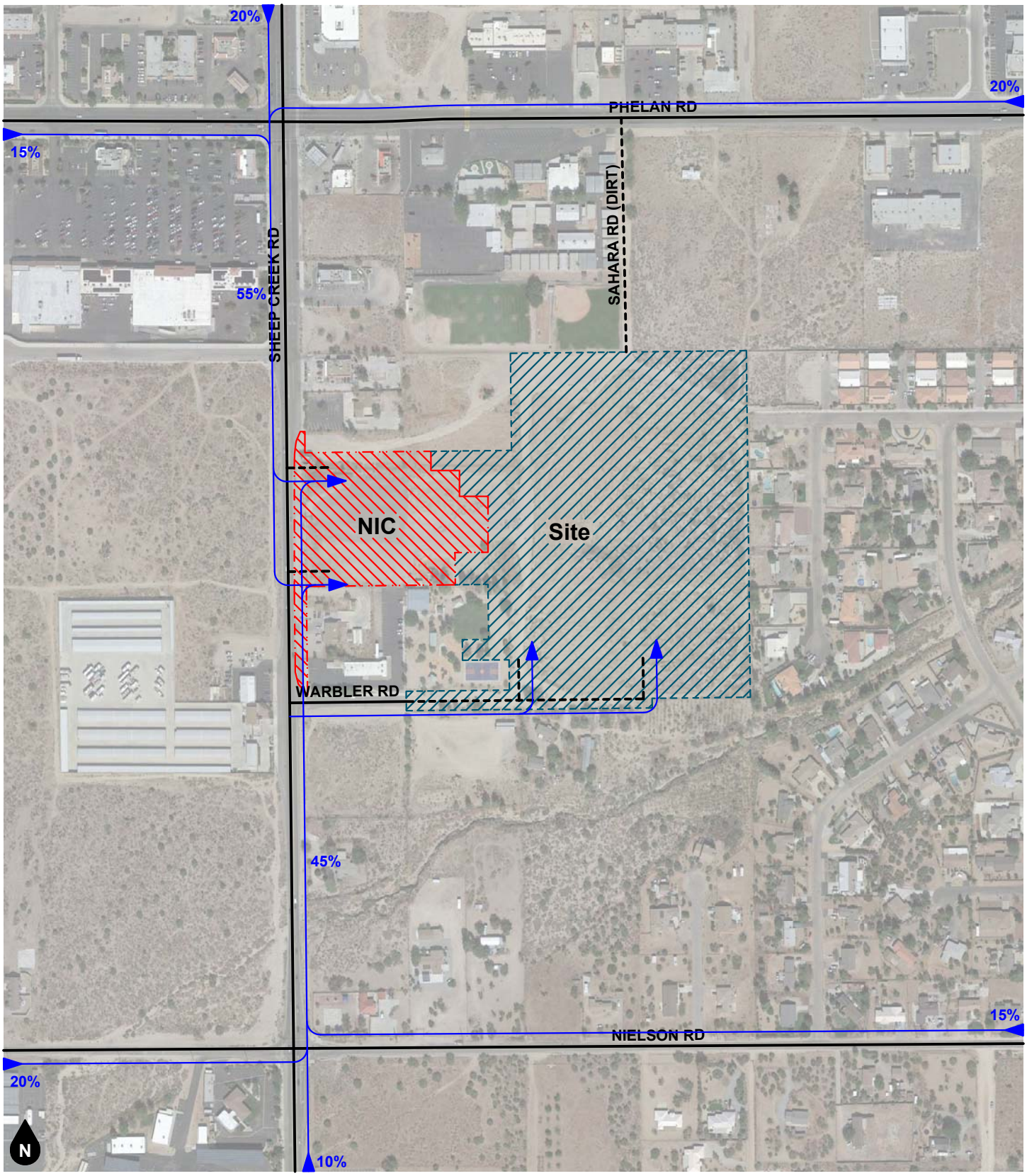
(2) AC = Acre; TSF = Thousand Square Feet; FLD = Sport Field; CRT = Tennis Court; PT = Picnic Table.



Legend

10% Percent From Project

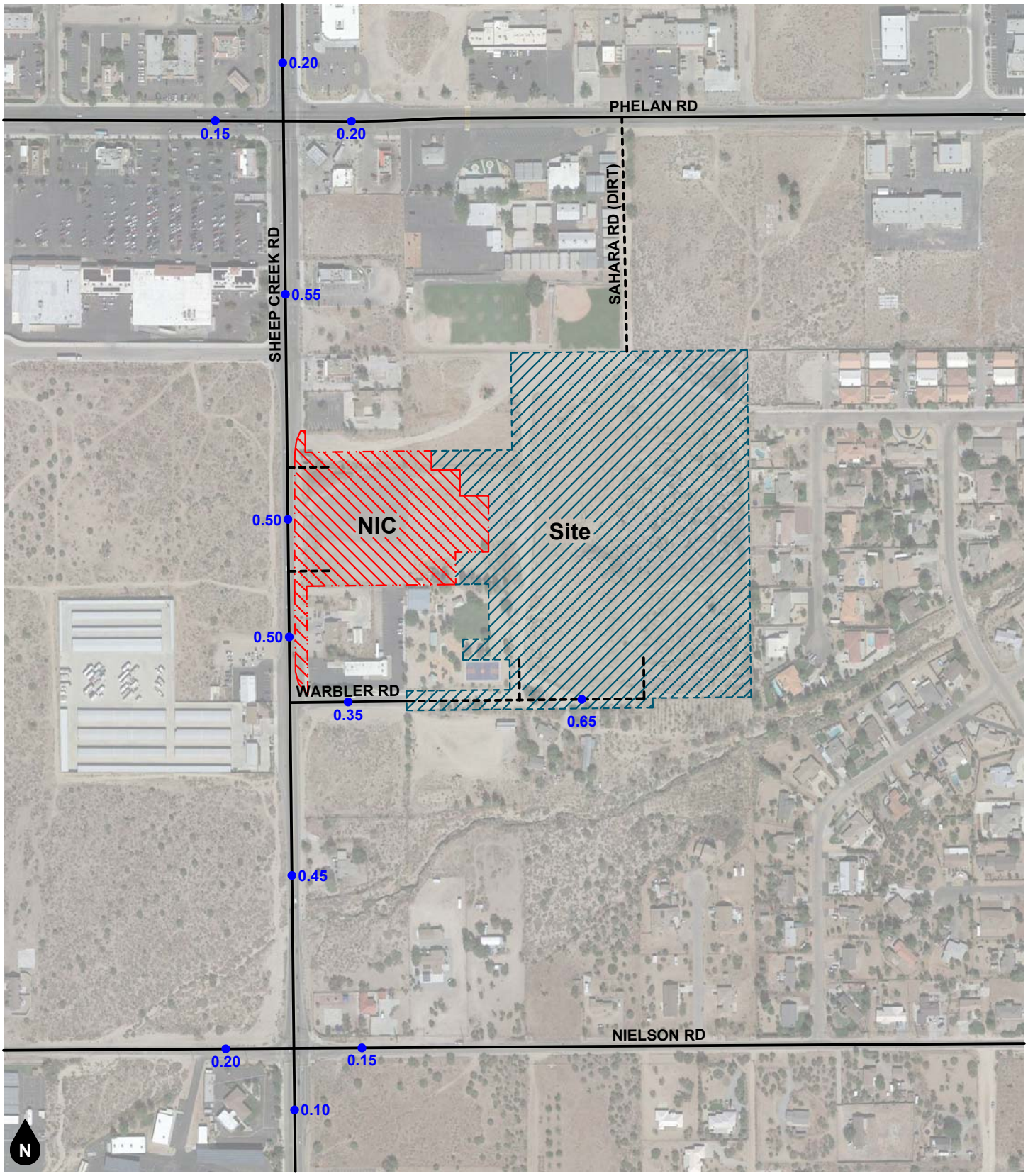
Figure 13
Project Trip Distribution (Outbound)



Legend

10% Percent To Project

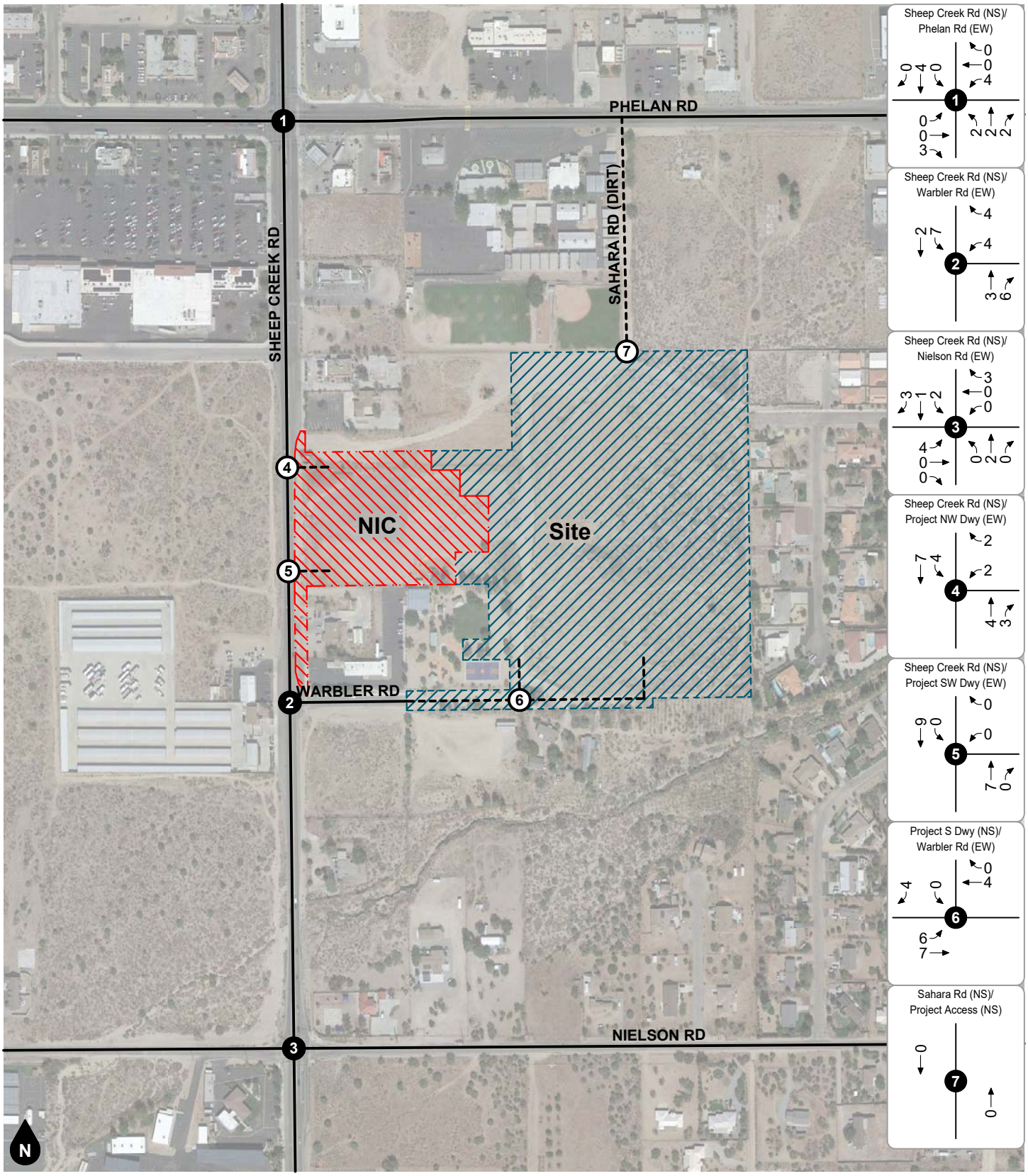
Figure 14
Project Trip Distribution (Inbound)



Legend

●## Vehicles Per Day (1,000's)

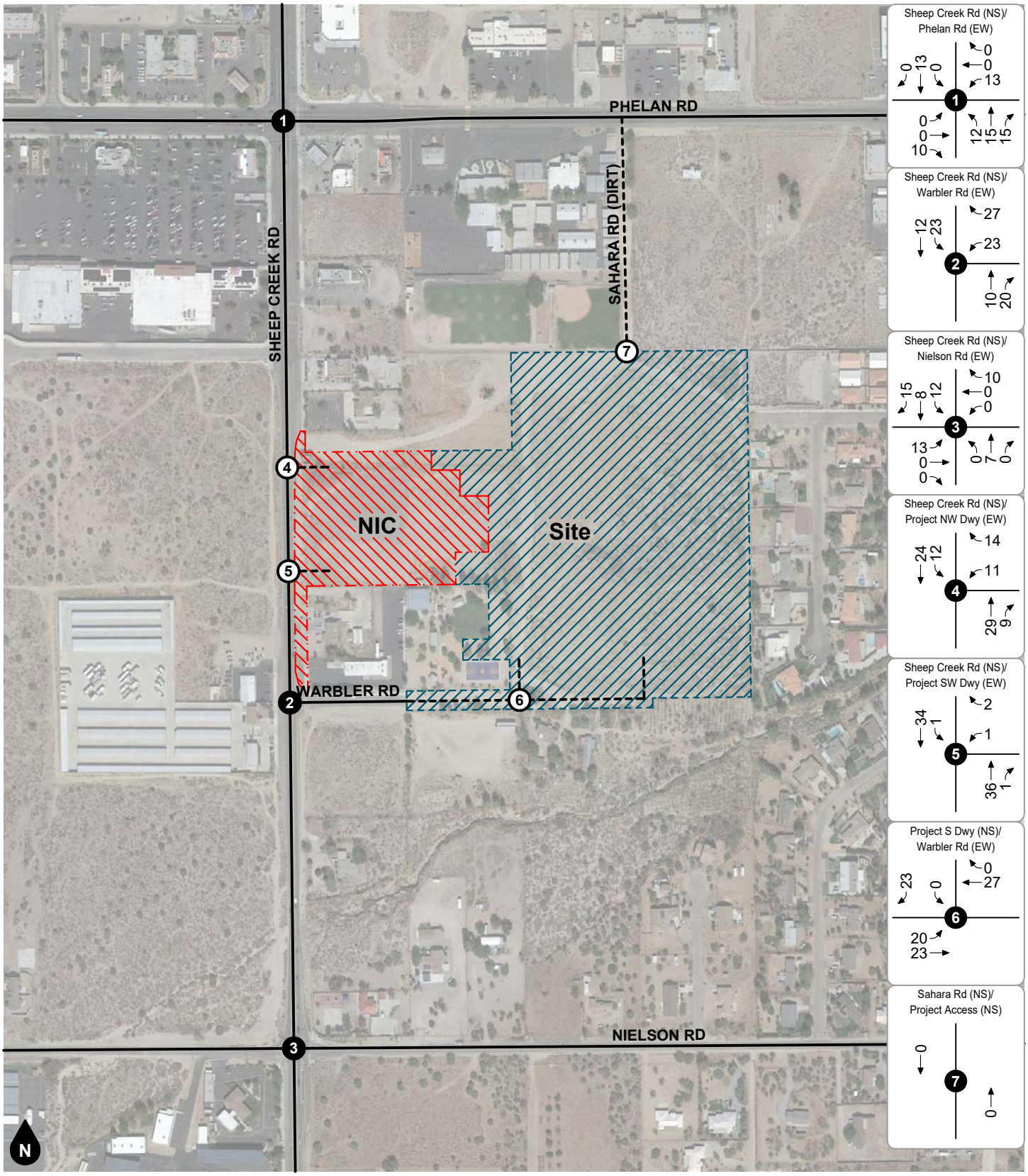
Figure 15
Project Average Daily Traffic Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 16
Project AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 17
Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

METHOD OF PROJECTION

To assess future conditions, existing volumes were combined with project trips, ambient growth, and other development trips. The project completion year for analysis purposes in this report is 2027.

Ambient Growth

To account for ambient growth on roadways, existing (year 2021) volumes were increased by a growth rate of one percent (2.0%) per year over a six-year period. This equates to a total growth factor of approximately 1.126. This is a conservative assumption since the ambient growth was applied to all movements at the study intersections.

Other Developments

To account for growth associated with other development projects, trips generated by other pending or approved but unconstructed developments in the County of San Bernardino were reviewed and added to the study area as appropriate. The other development trip generation summary is shown in Table 3. The regional ambient growth is assumed to account for any additional trips generated by other developments not specifically listed in Table 3. Figure 18 shows the other development location map.

Average daily traffic volumes generated by other developments are shown on Figure 19. Figure 20 and Figure 21 show the forecast AM peak hour and PM peak hour intersection turning movement volumes for trips generated by other developments.

Model General Buildout Growth

General Buildout (Year 2040) forecasts have been determined using a growth increment approach with the San Bernardino Transportation Analysis Model (SBTAM) base year and horizon year travel demand model plots. This difference defines the incremental growth in forecast volumes over the model growth period. The incremental growth in average daily traffic volume has been factored to reflect the forecast growth between the measured count year (2021) and year 2040. For analysis purposes, linear growth between the base year condition and the horizon year condition was assumed.

To derive am and pm peak hour intersection turning movement volumes, the traffic volume growth forecasts were further refined using a spreadsheet program developed by the federal highway administration and consistent with traffic volume forecasting procedures outlined in the national cooperative highway research program report 255. The spreadsheet program uses a linear programming algorithm to calculate future turning movements based on the relationship of existing intersection turning movements and forecast model growth. The forecast turning movements developed by the spreadsheet program were reviewed for reasonableness and adjusted as necessary to ensure growth over near-term forecasts. The end results of the post-processing procedures are future intersection turning movement volumes suitable for analysis. Travel demand model plots are provided in Appendix E. Travel demand model post-processing worksheets are provided in Appendix F.

ANALYSIS SCENARIO VOLUMES

Existing Plus Project

The Existing Plus Project volume forecast was developed by adding project-generated trips to existing (year 2021) volumes. Existing Plus Project average daily traffic volumes are shown on Figure 22. Existing Plus Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 23 and Figure 24.

Opening Year (2027) Without Project

The Opening Year (2027) Without Project volume forecast was developed by applying the ambient growth factor to existing (year 2021) volumes and adding trips generated by other developments. Opening Year (2027) Without Project average daily traffic volumes are shown on Figure 25. Opening Year (2027) Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 26 and Figure 27.

Opening Year (2027) With Project

The Opening Year (2027) With Project volume forecast was developed by adding project-generated trips to the Opening Year (2027) Without Project volumes. Opening Year (2027) With Project average daily traffic volumes are shown on Figure 28. Opening Year (2027) With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 29 and Figure 30.

Year 2040 Without Project

The Year 2040 Without Project volume forecast was developed based on SBTAM travel demand growth forecasts and post-processing procedures described above. Year 2040 Without Project average daily traffic volumes are shown on Figure 31. Year 2040 Without Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 32and Figure 33.

Year 2040 With Project

The Year 2040 With Project volume forecast was developed by adding project-generated trips to the Year 2040 Without Project scenario. Year 2040 With Project average daily traffic volumes are shown on Figure 34. Year 2040 With Project AM peak hour and PM peak hour intersection turning movement volumes are shown on Figure 35 and Figure 36.

Table 3
Other Development Trip Generation

Other Development		Land Use	Source	Quantity	Units	AM Peak Hour			PM Peak Hour			Daily
ID	Name/Address					In	Out	Total	In	Out	Total	
Community of Phelan												
P1	SWC Valle Vista / Phelan Rd PEXT-2019-00009	Shopping Center with Gas Station	[a]	68.270	TSF	151	118	269	225	228	453	8,895
P2	9551 Sheep Creek Rd	Recreational Community Center	ITE 495	17.284	TSF	22	11	33	20	23	43	498
	PEXT-2020-00001	Civic Center	ITE 715 [b]	14.034	TSF	23	3	26	4	21	25	183
P3	NE of Nelson/Sheep Creek Rd PEXT-2020-00015	Church	ITE 560	1.400	TSF	0	0	0	0	1	1	11
P4	SW of Johnson/Phelan Rd PEXT-2020-00035	Single Tenant Office Building	ITE 715	4.800	TSF	8	1	9	1	7	8	63
P5	3975 Brawley Rd PROJ-2020-00063	Animal Hospital Veterinary Clinic	ITE 640	5.350	TSF	13	6	19	8	11	19	115
		Shopping Plaza (40-150k without Su	ITE 821 [c]	59.725	TSF	64	39	103	152	158	310	4,033
		Pass-by: 0% AM, 40% PM & 20%	[d]			0	0	0	-64	-67	-131	-829
P6	2560 Lindero St PROJ-2020-00067	Single Tenant Office Building	ITE 715	10.000	TSF	16	3	19	3	15	18	131
P7	9551 Monte Vista Rd PROJ-2020-00078	Warehousing	ITE 150	5.500	TSF	1	0	1	0	1	1	9
P8	NWC Berkley Rd/ US138	Convenience Store Gas Station (2-8	ITE 945	4.998	TSF	101	102	203	121	121	242	3,120
	PROJ-2020-00196	Pass-by: 60% AM, 56% PM & 28	[d]			-60	-62	-122	-67	-68	-135	-873
P9	NEC Buckwheat/ White Fox PROJ-2020-00215	Automobile Care Center	ITE 942 [e]	6.480	TSF	10	5	15	10	10	20	183
P10	2770 White Fox Trail PROJ-2021-00130	Warehousing	ITE 150	6.000	TSF	1	0	1	0	1	1	10
TOTAL TRIPS GENERATED						+ 350	+ 226	+ 576	+ 413	+ 462	+ 875	+ 15,549

Notes:

(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code. All rates based on General Urban/Suburban rates, unless otherwise noted.

[a] = VVR, LLC Commercial Project Traffic Impact Analysis (Revised), Kunzman & Associates (July 7, 2016).

[b] = Civic center trip generation based on the ITE 815 Single Tenant Office as per the previously approved traffic report.

[c] = Square footage estimate for commercial development based on the County of San Bernardino rural commercial floor area ratio (FAR) of 0.3:1.

[d] = ITE *Trip Generation Handbook* (3rd Edition, 2017), pass-by rates calculated in accordance with procedures in the handbook. For time periods with no pass-by data provided in ITE Trip Generation Handbook, pass-by rates assumed as half of ITE peak hour rate.

[e] = San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used.

(2) TSF = Thousand Square Feet.

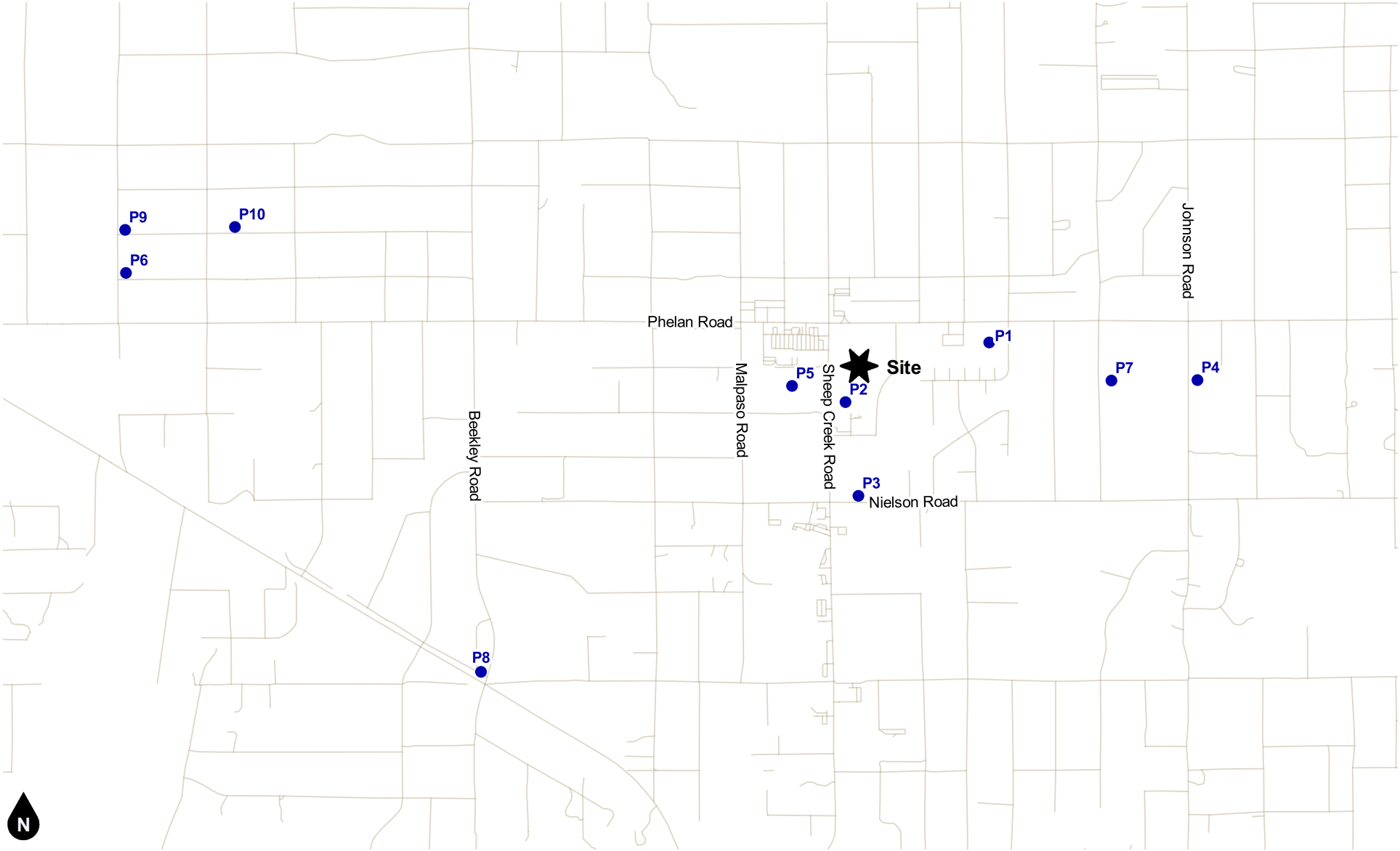
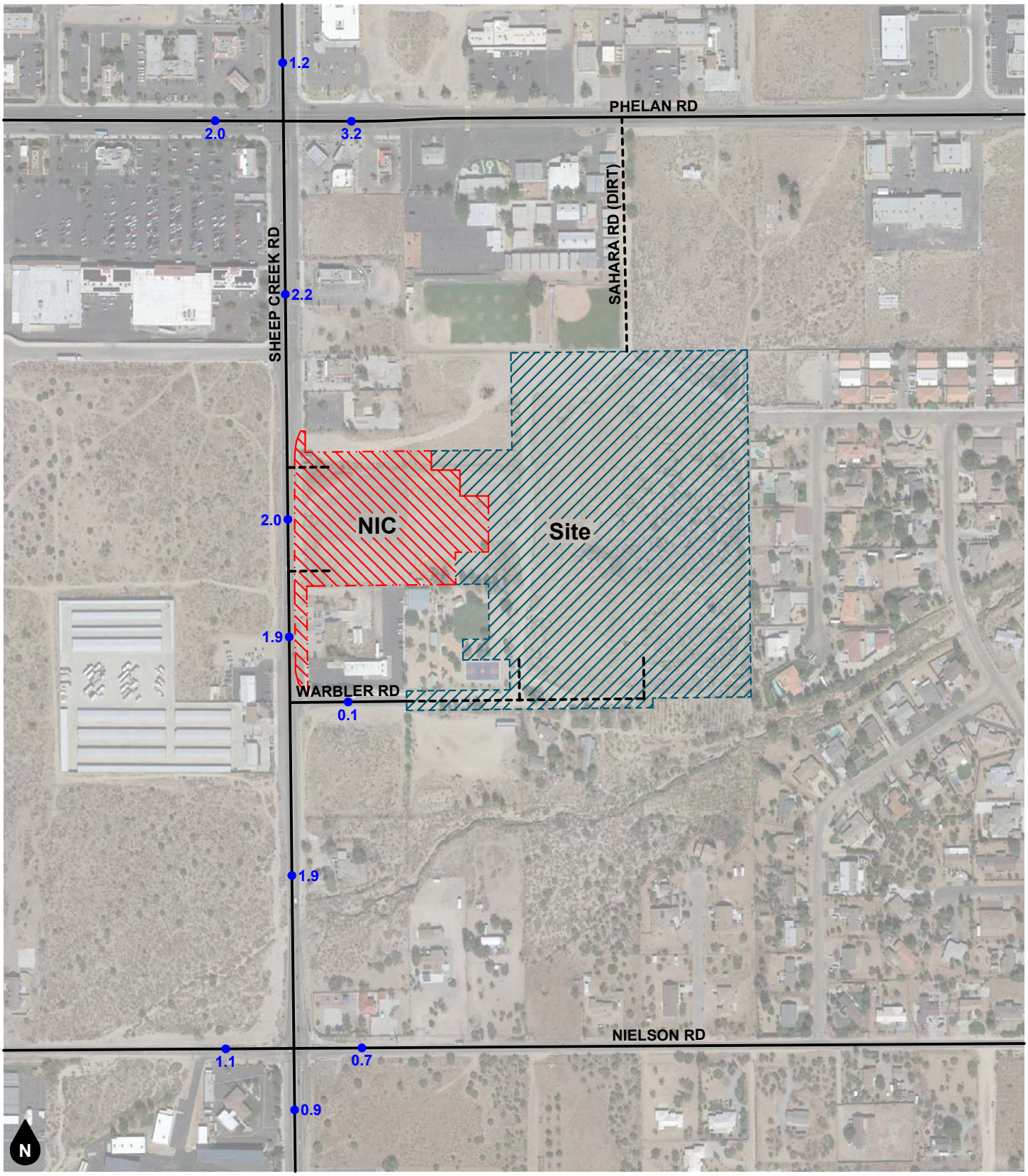


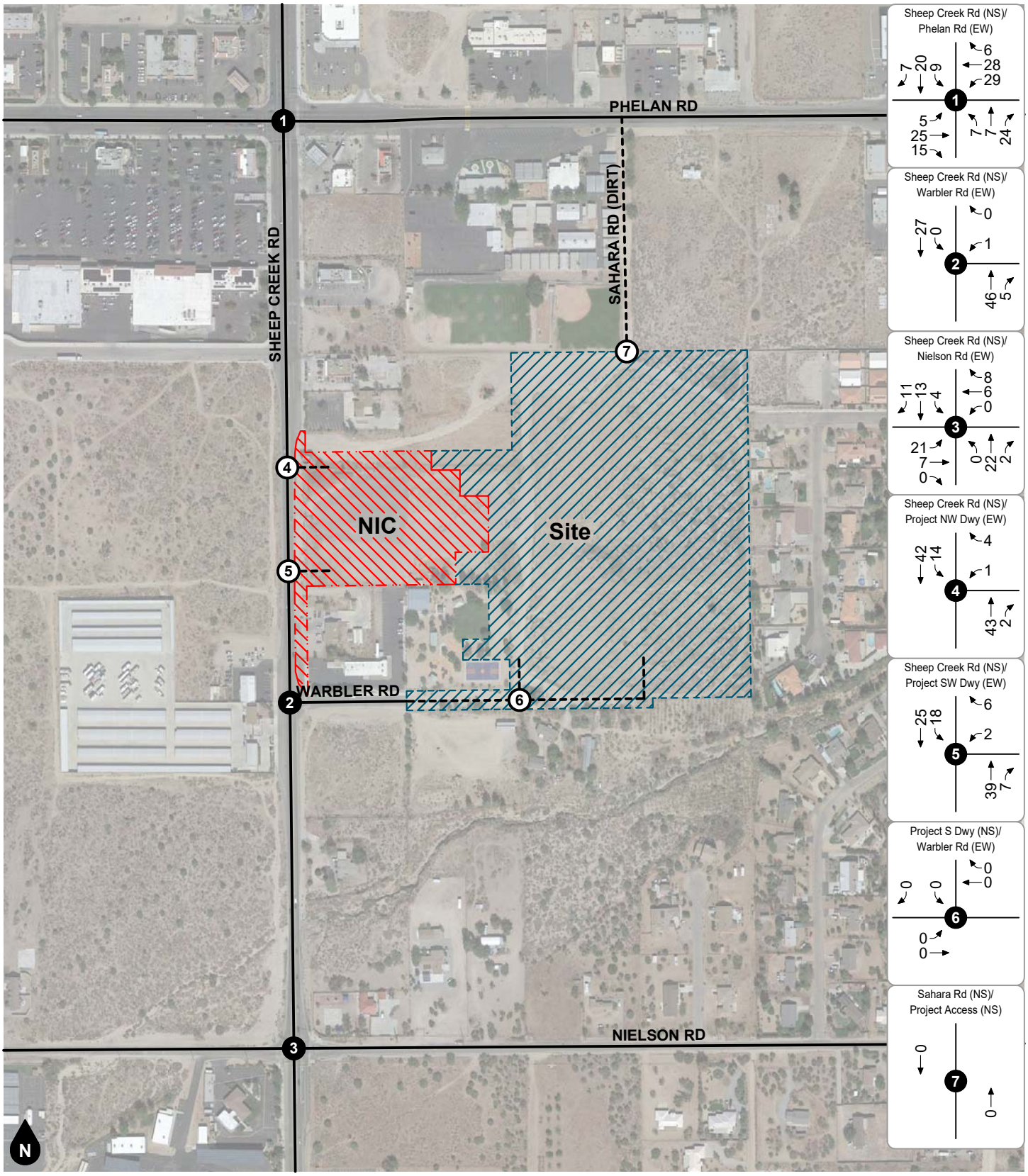
Figure 18
Other Development Location Map



Legend

●## Vehicles Per Day (1,000's)

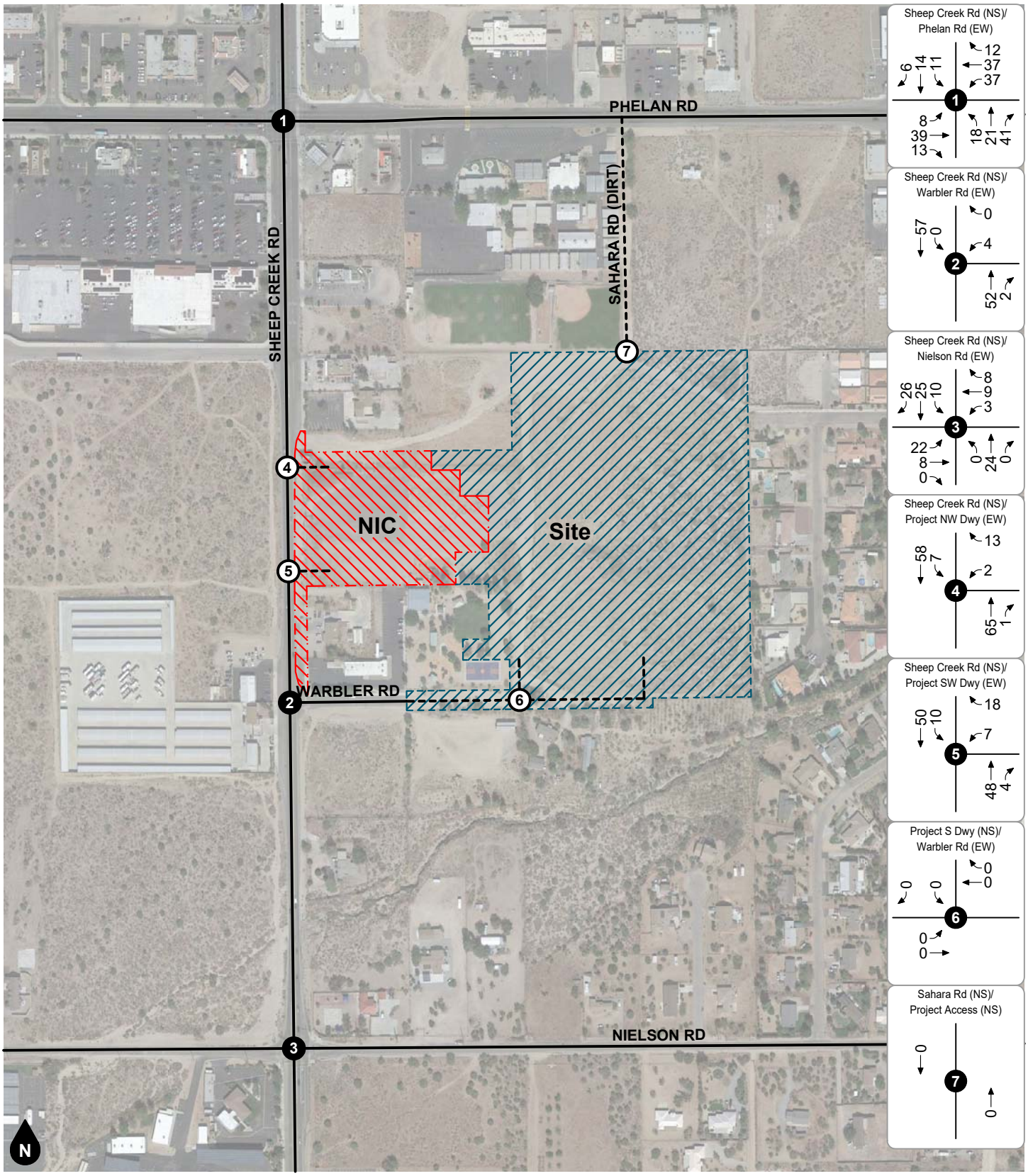
Figure 19
Other Development Average Daily Traffic Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

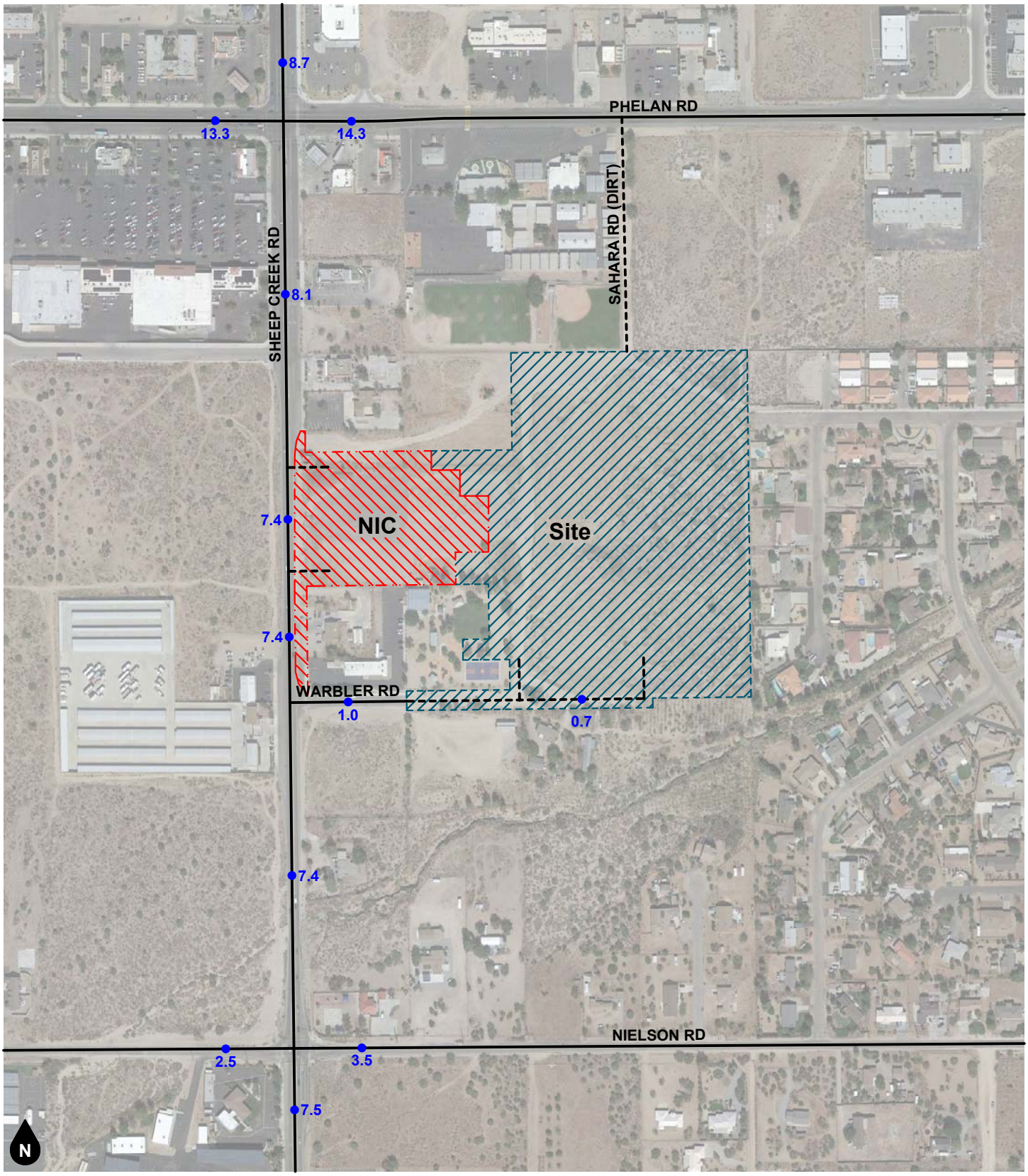
Figure 20
Other Development
AM Peak Hour Intersection Turning Movement Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

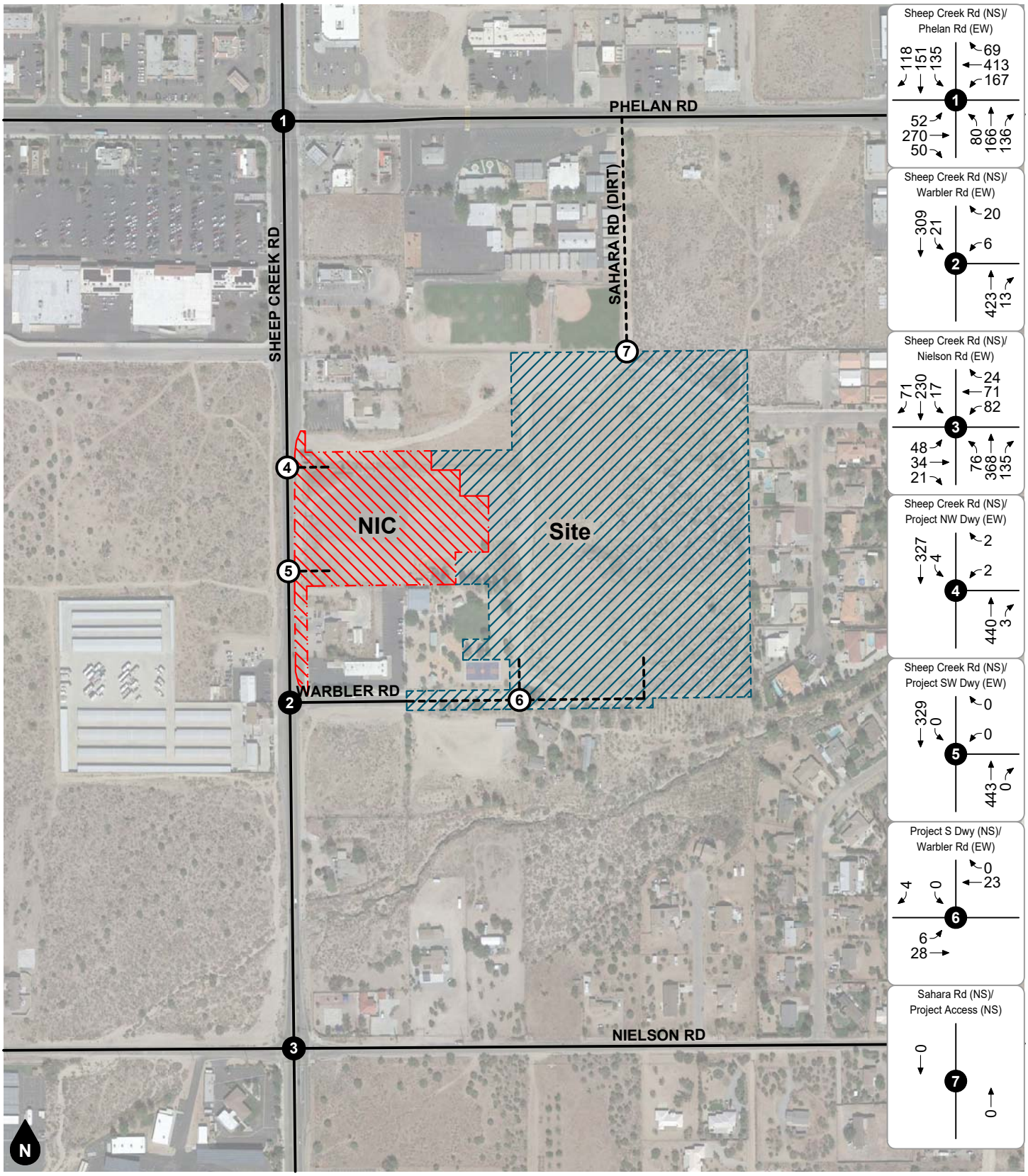
Figure 21
Other Development
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

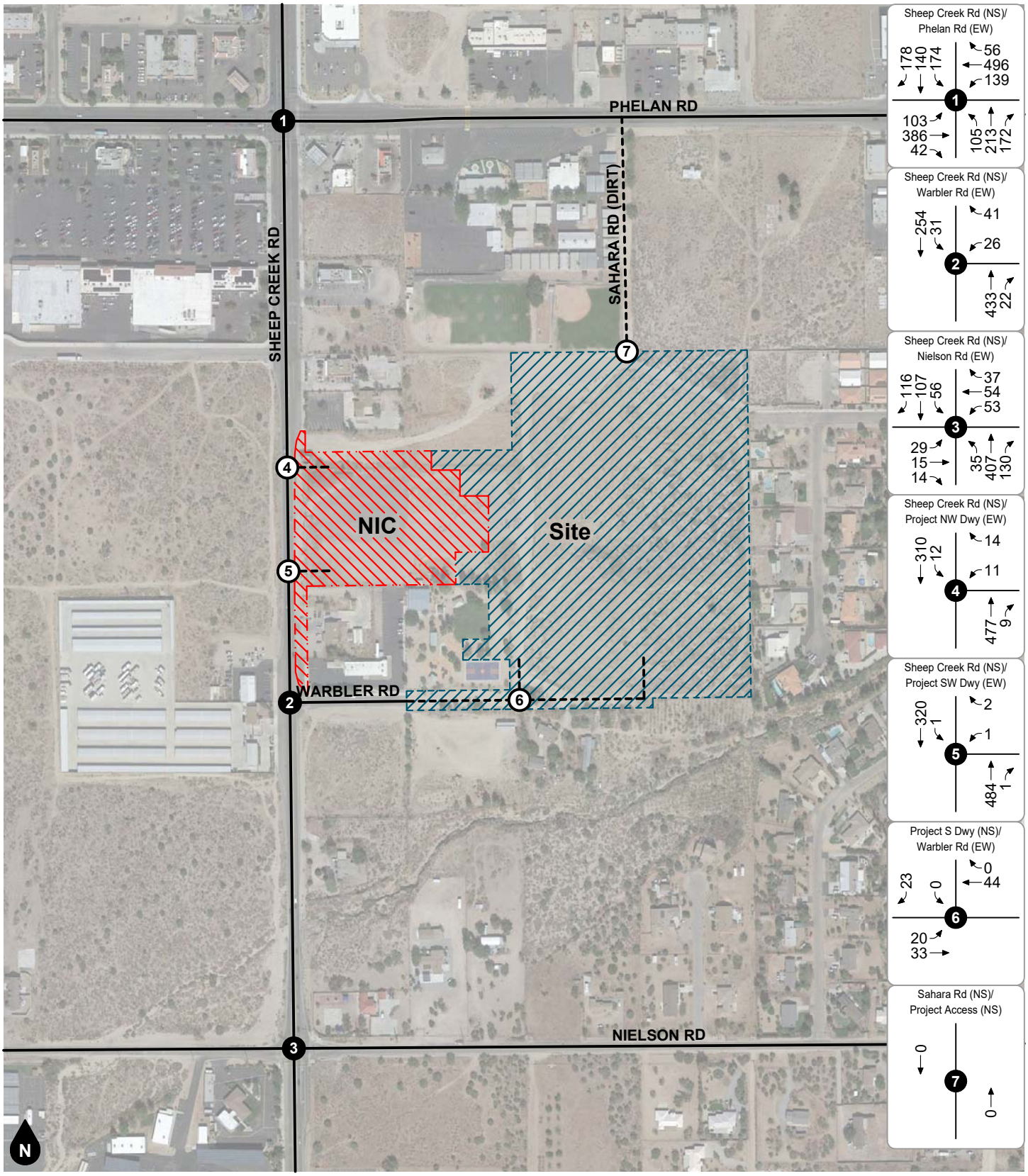
Figure 22
Existing Plus Project Average Daily Traffic Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

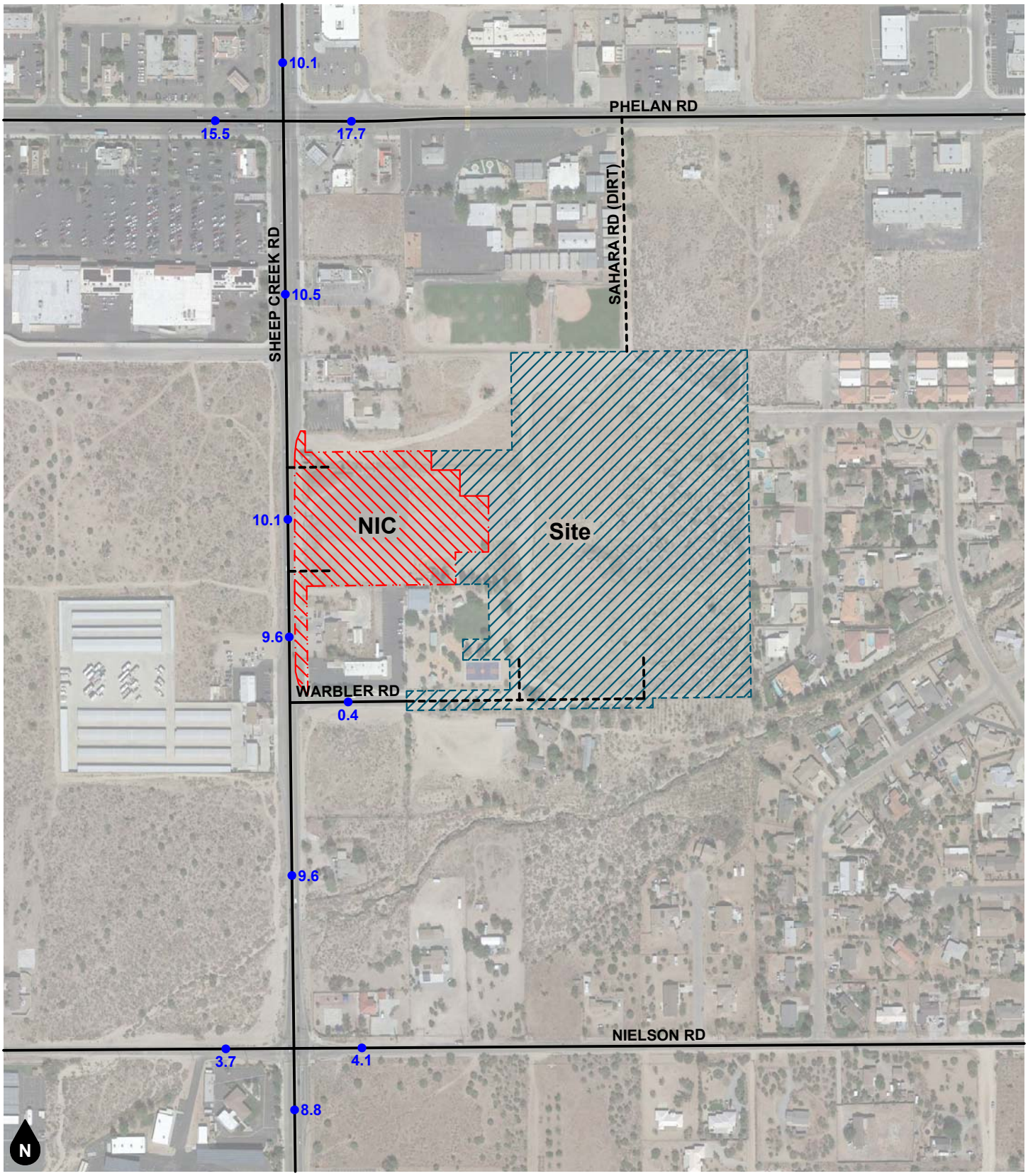
Figure 23
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

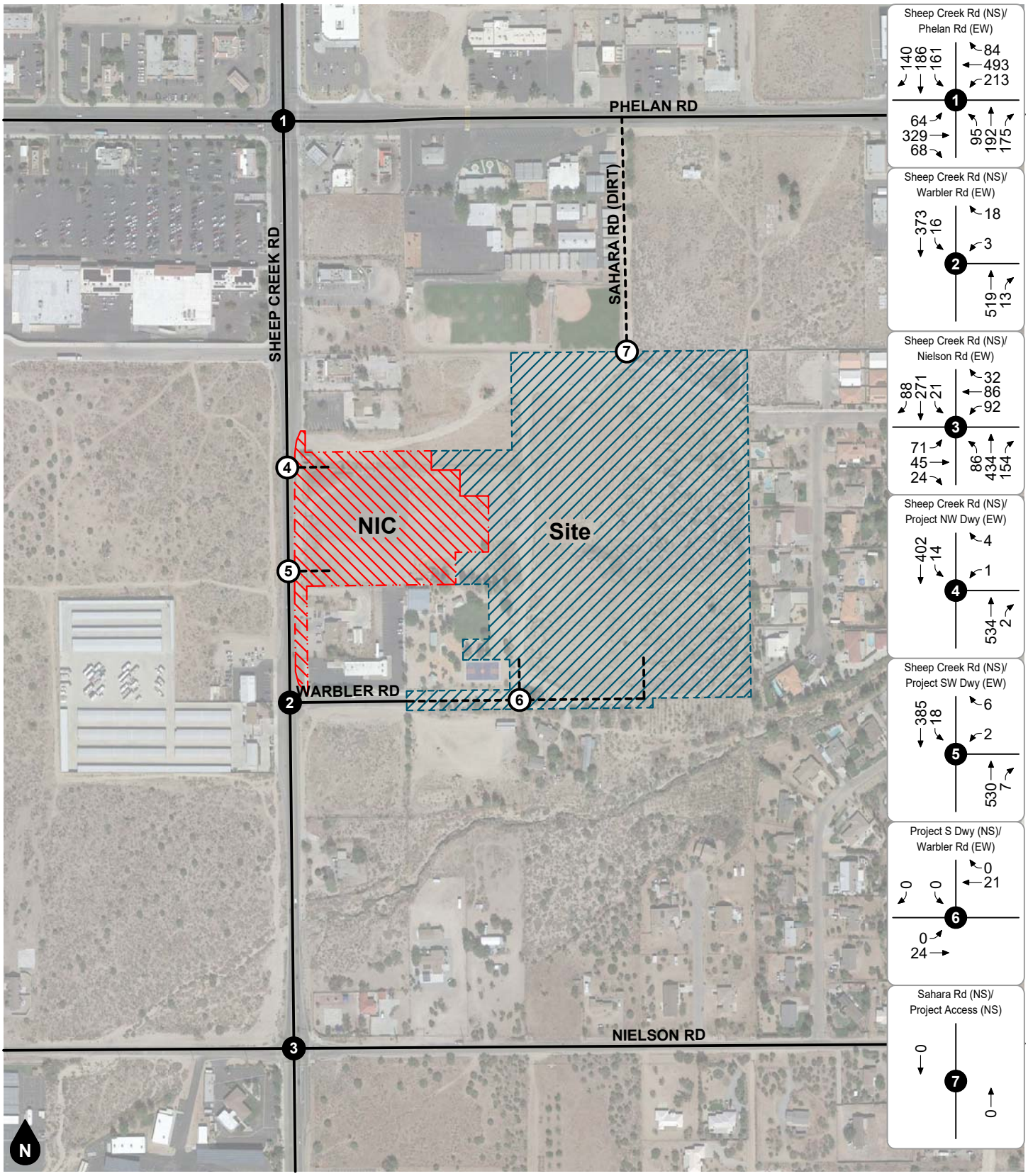
Figure 24
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

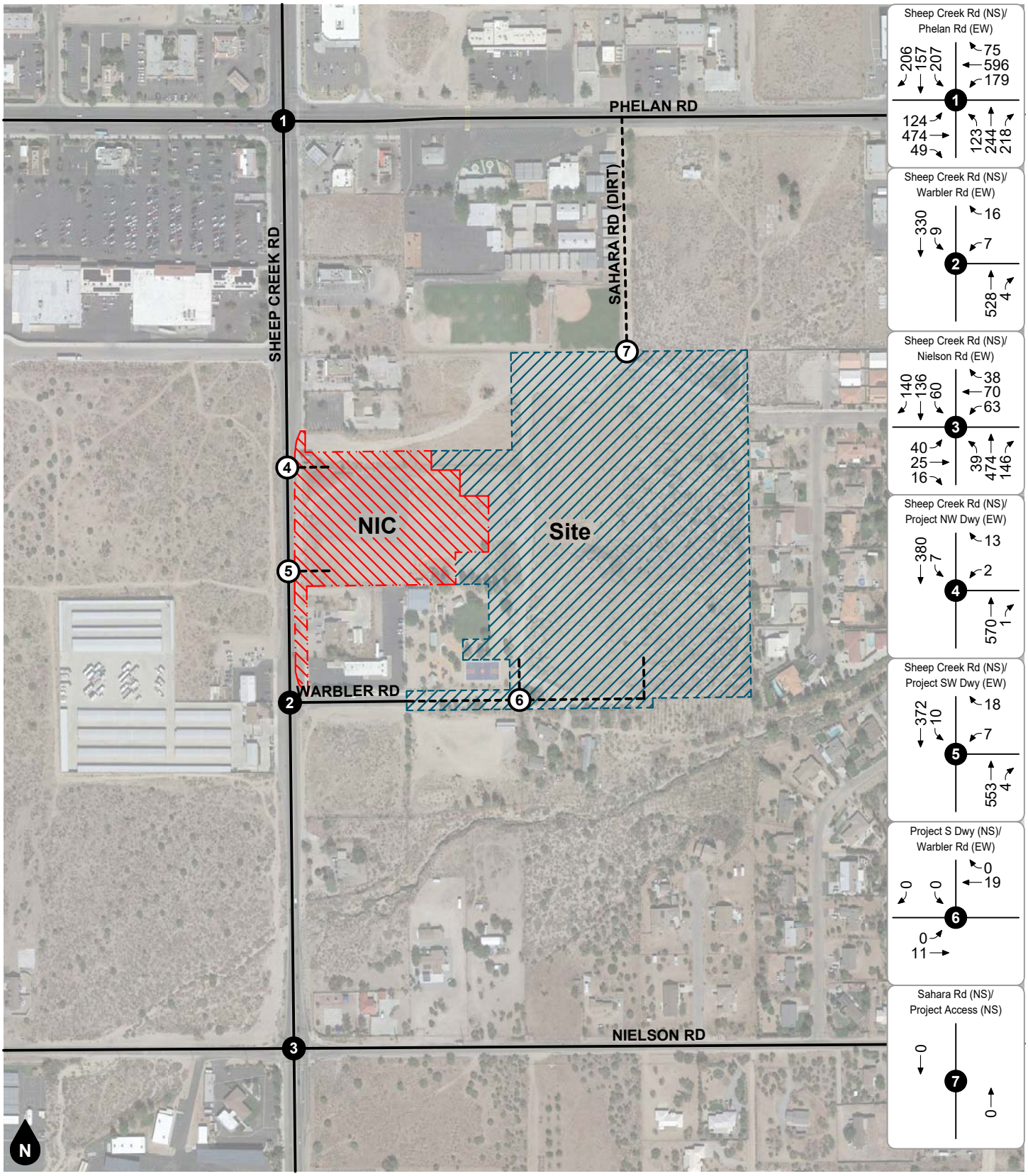
Figure 25
Opening Year (2027) Without Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

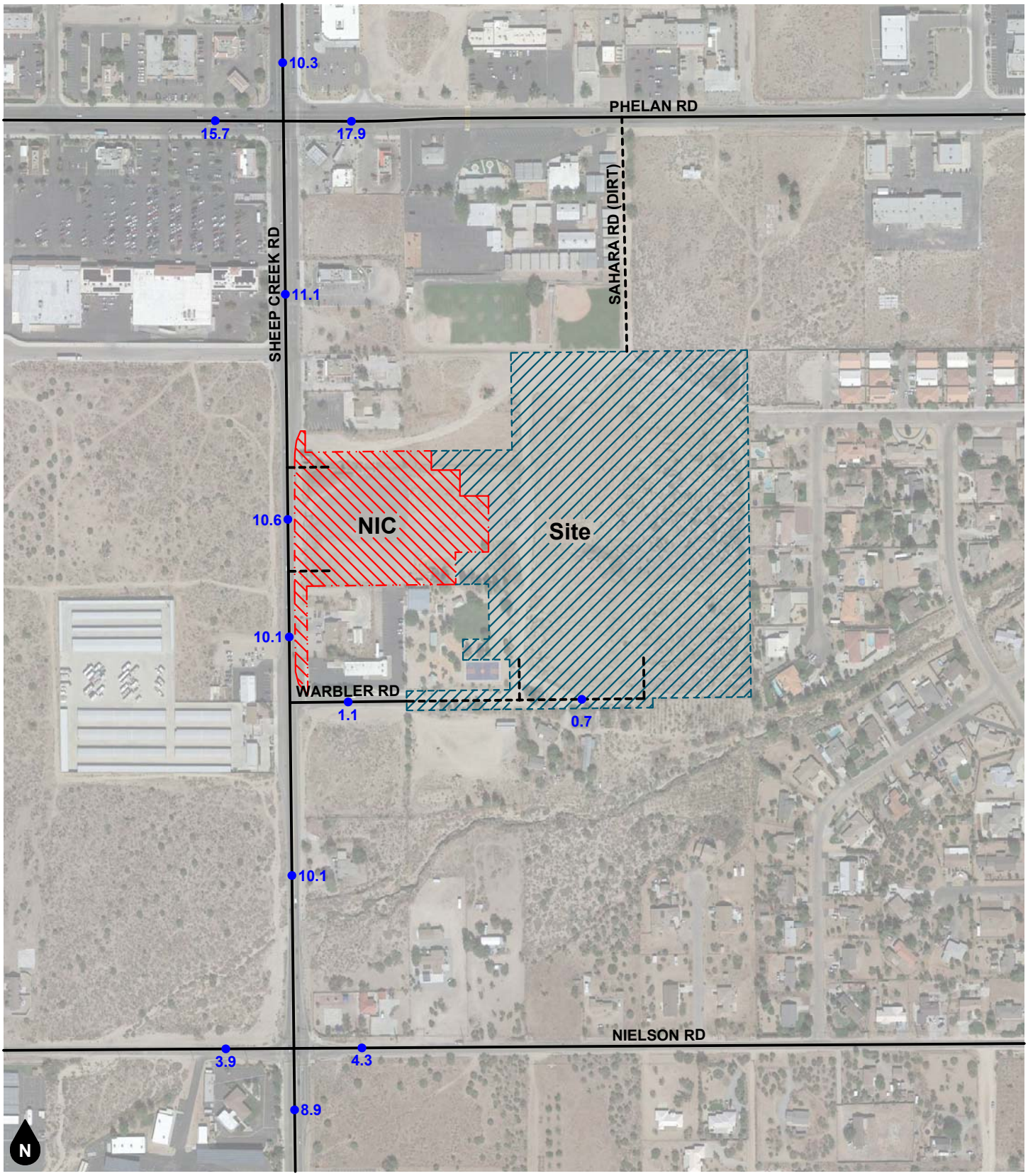
Figure 26
Opening Year (2027) Without Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

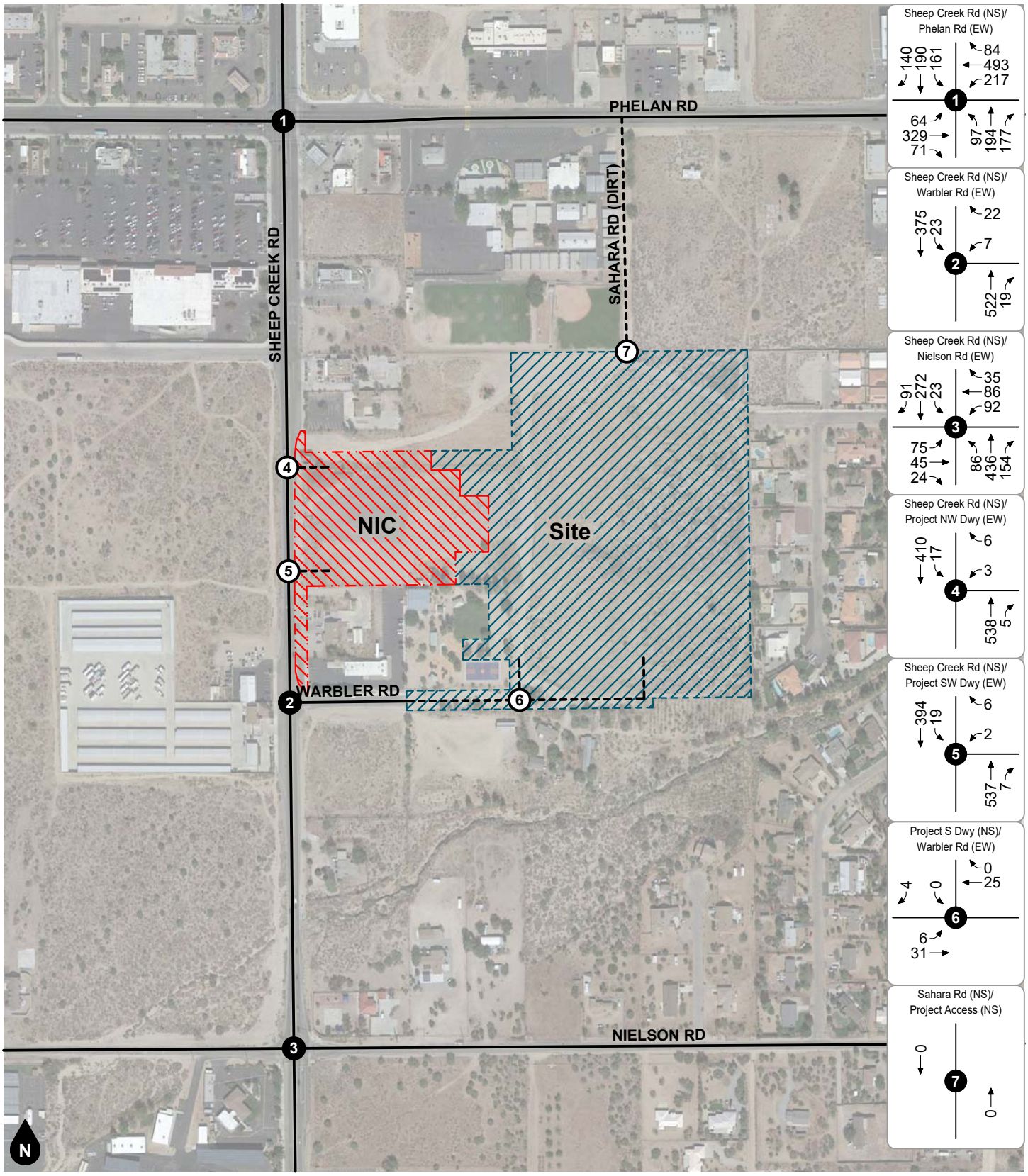
Figure 27
Opening Year (2027) Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

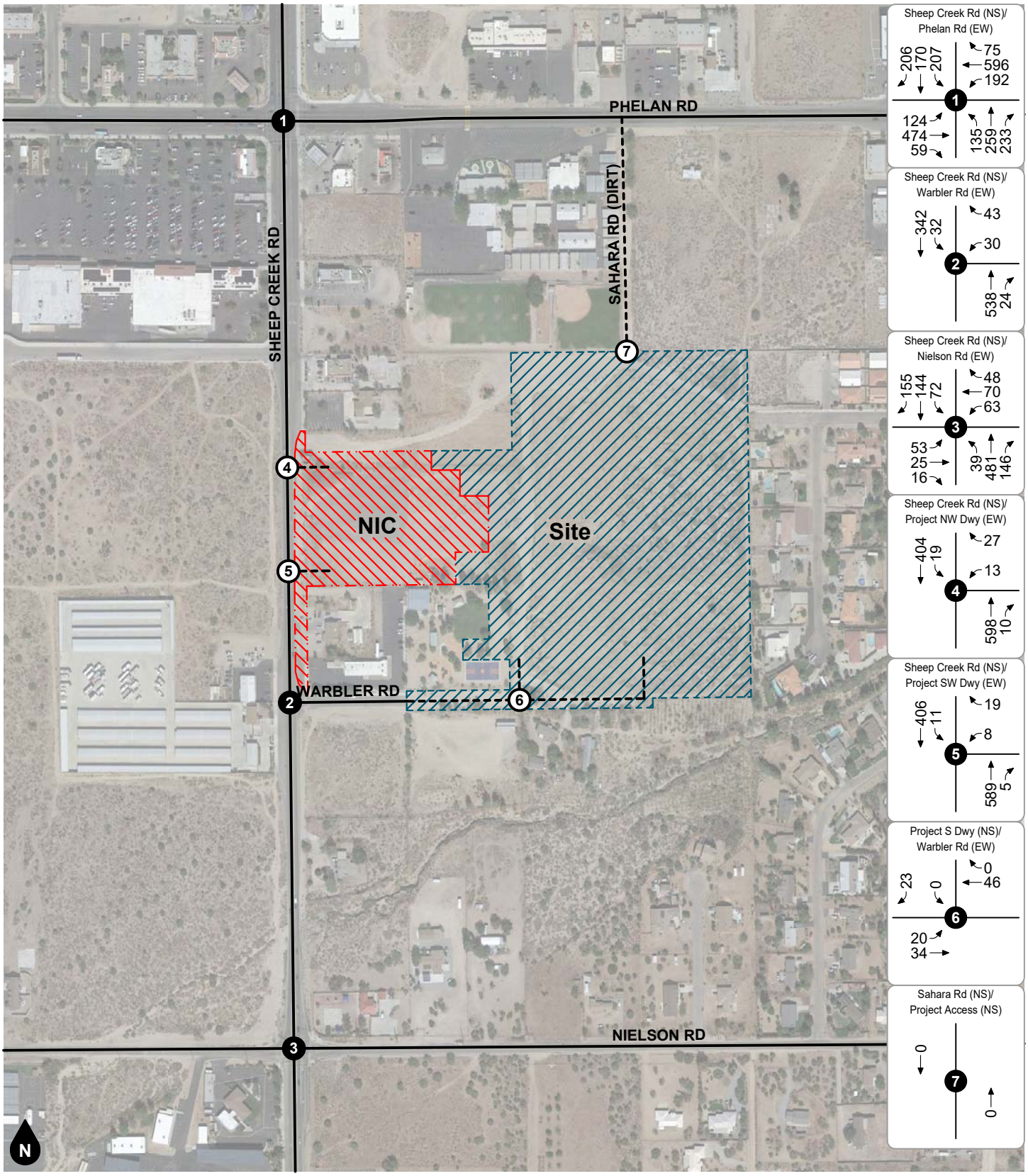
Figure 28
Opening Year (2027) With Project Average Daily Traffic Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

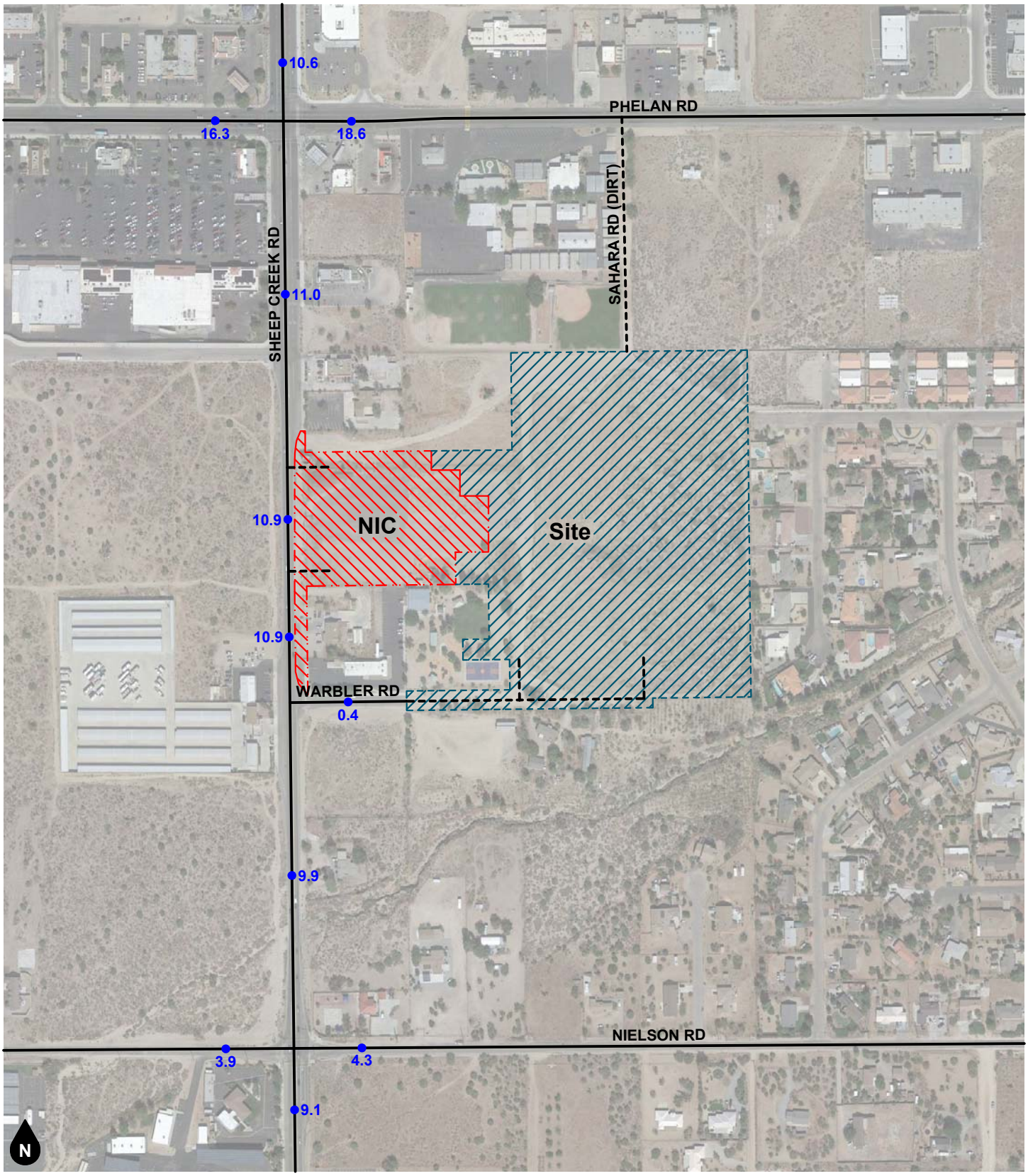
Figure 29
Opening Year (2027) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

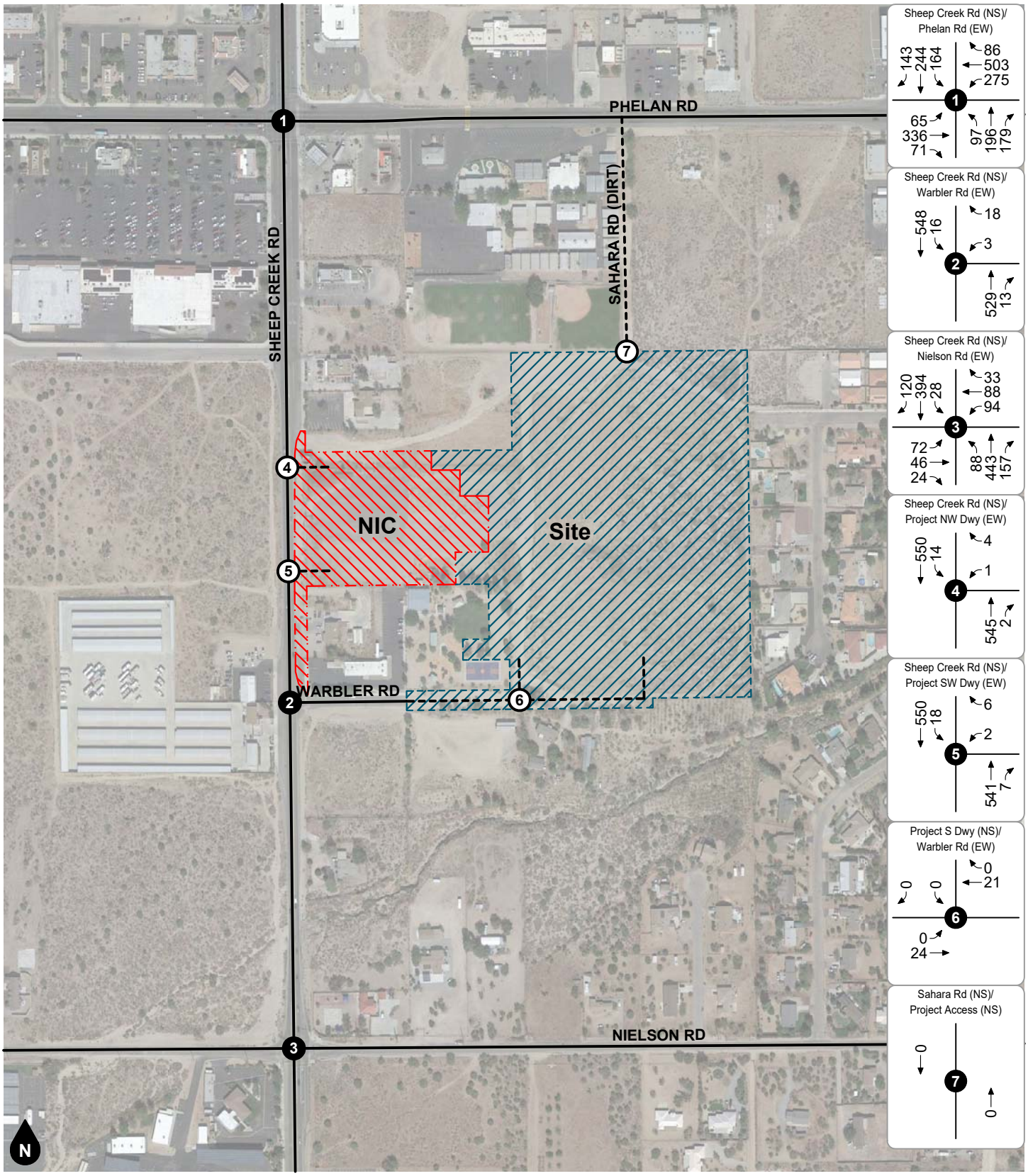
Figure 30
Opening Year (2027) With Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

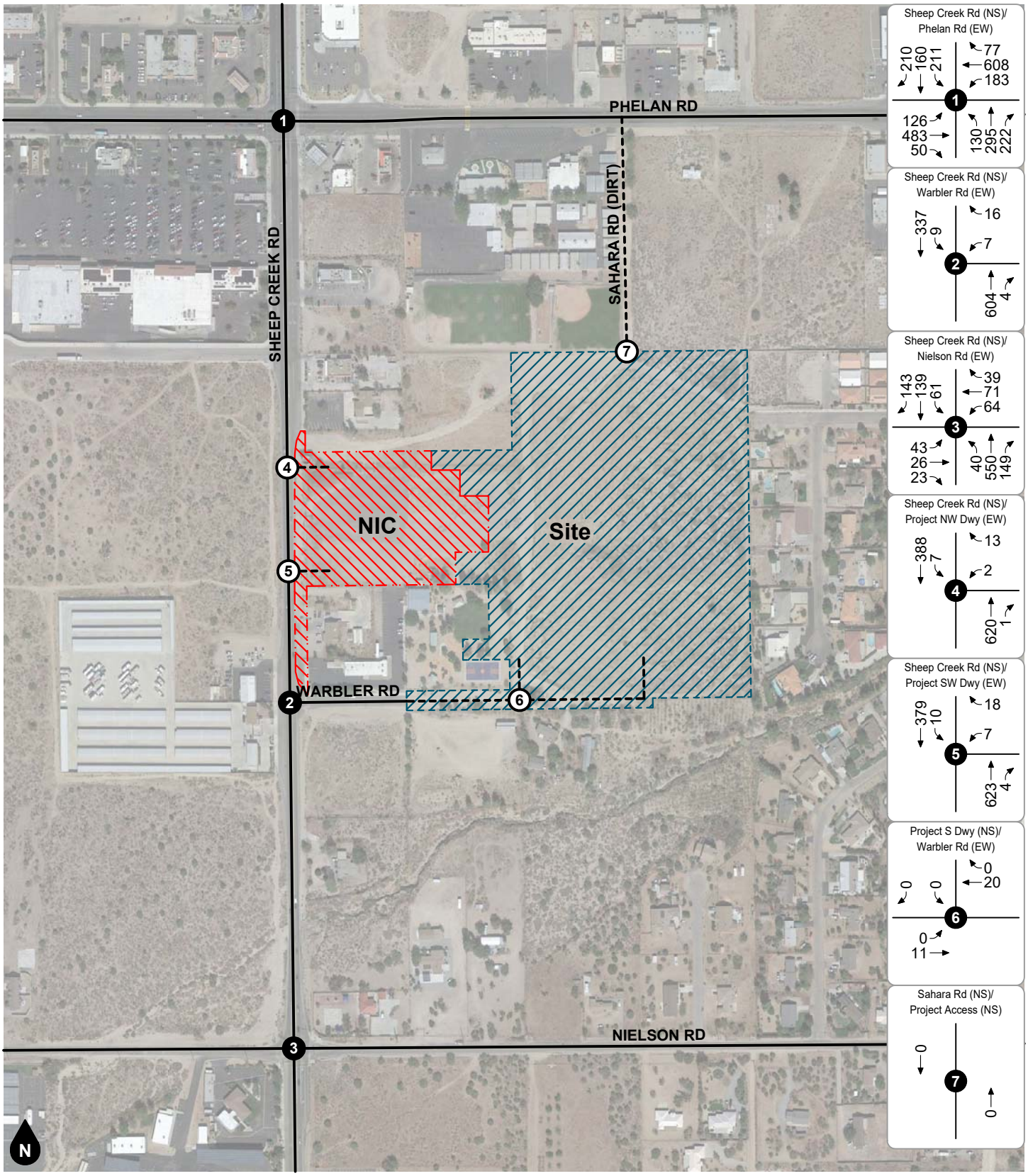
Figure 31
Year 2045 Without Project Average Daily Traffic Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

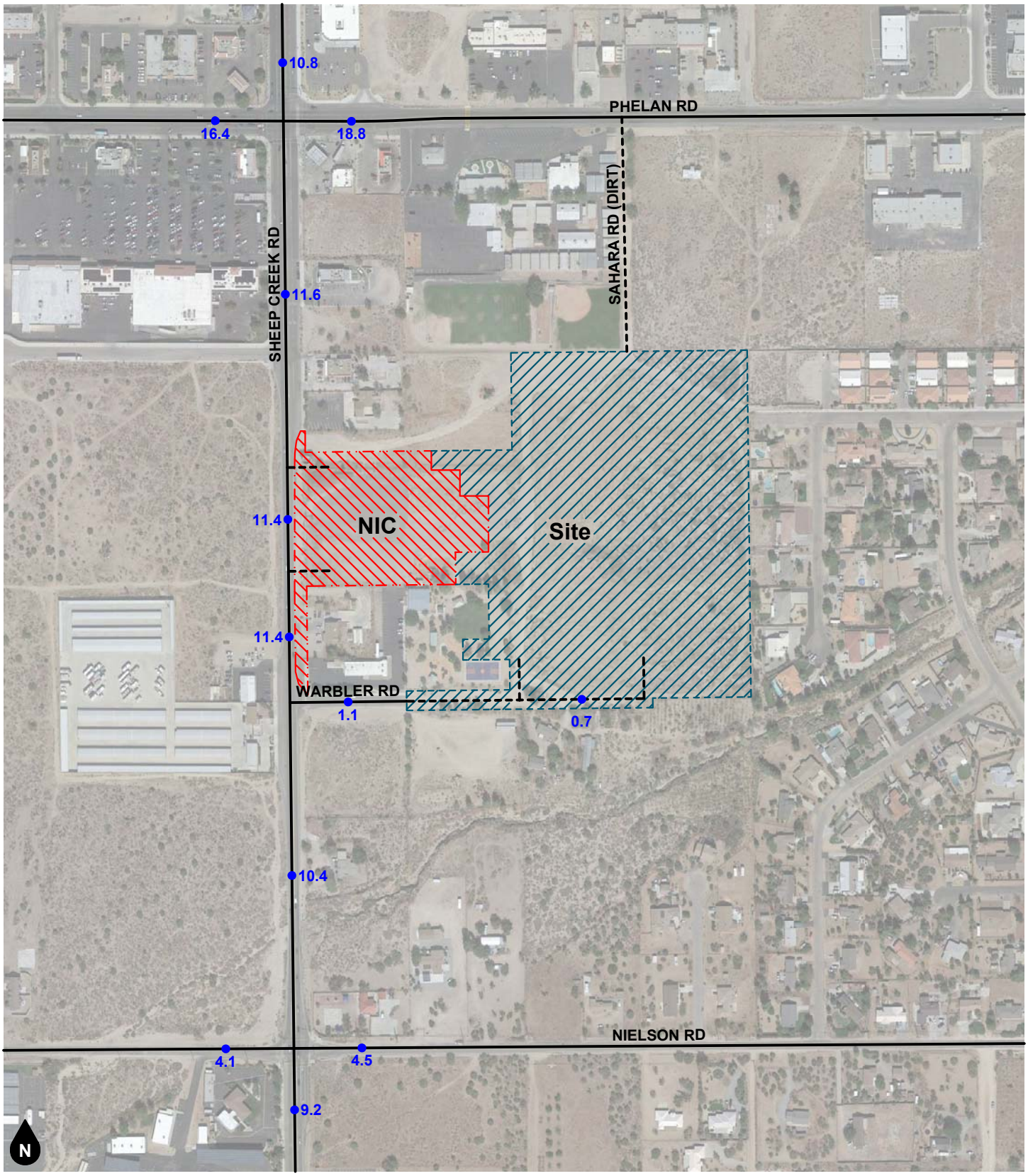
Figure 32
Year 2045 Without Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

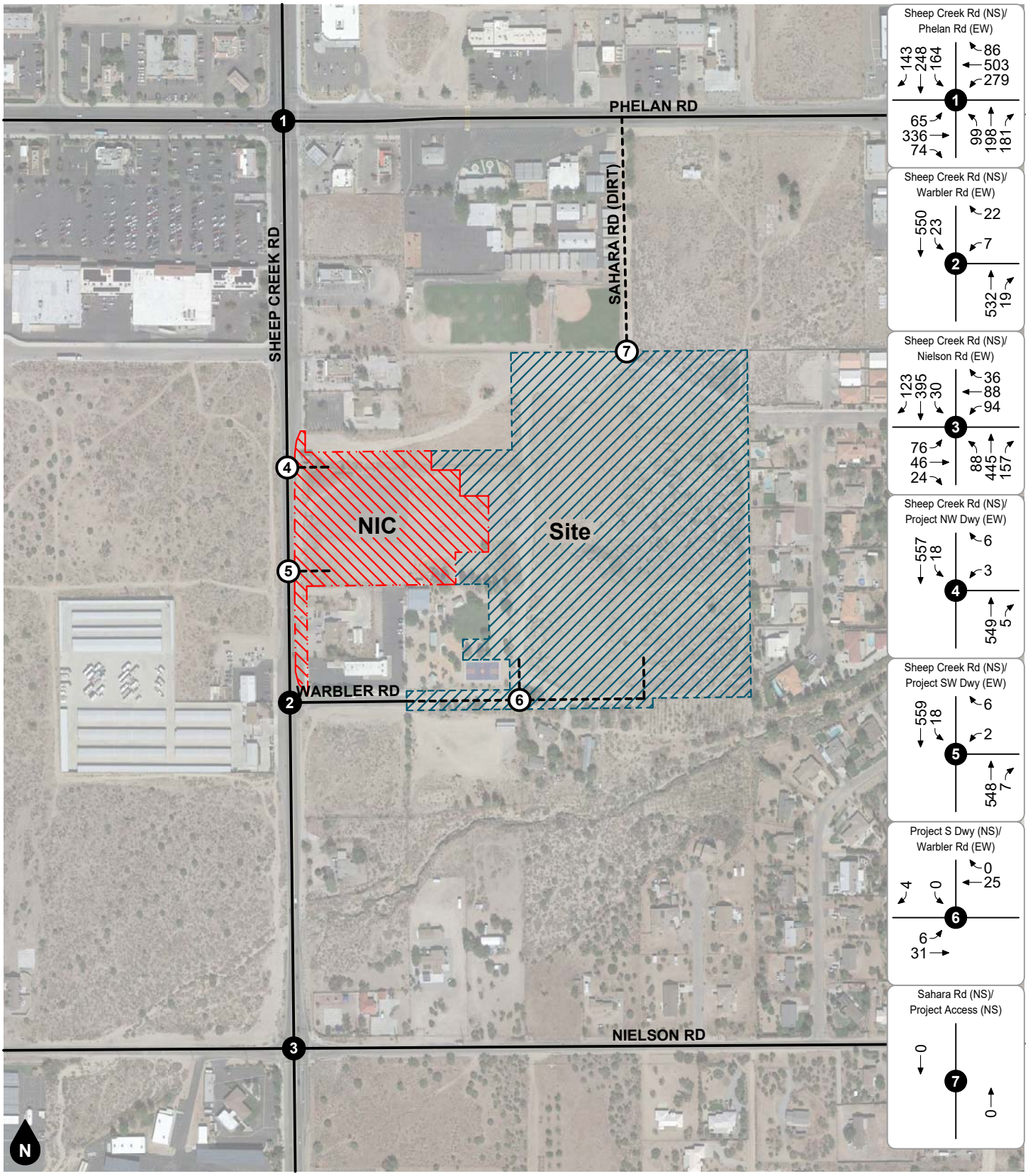
Figure 33
Year 2045 Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day (1,000's)

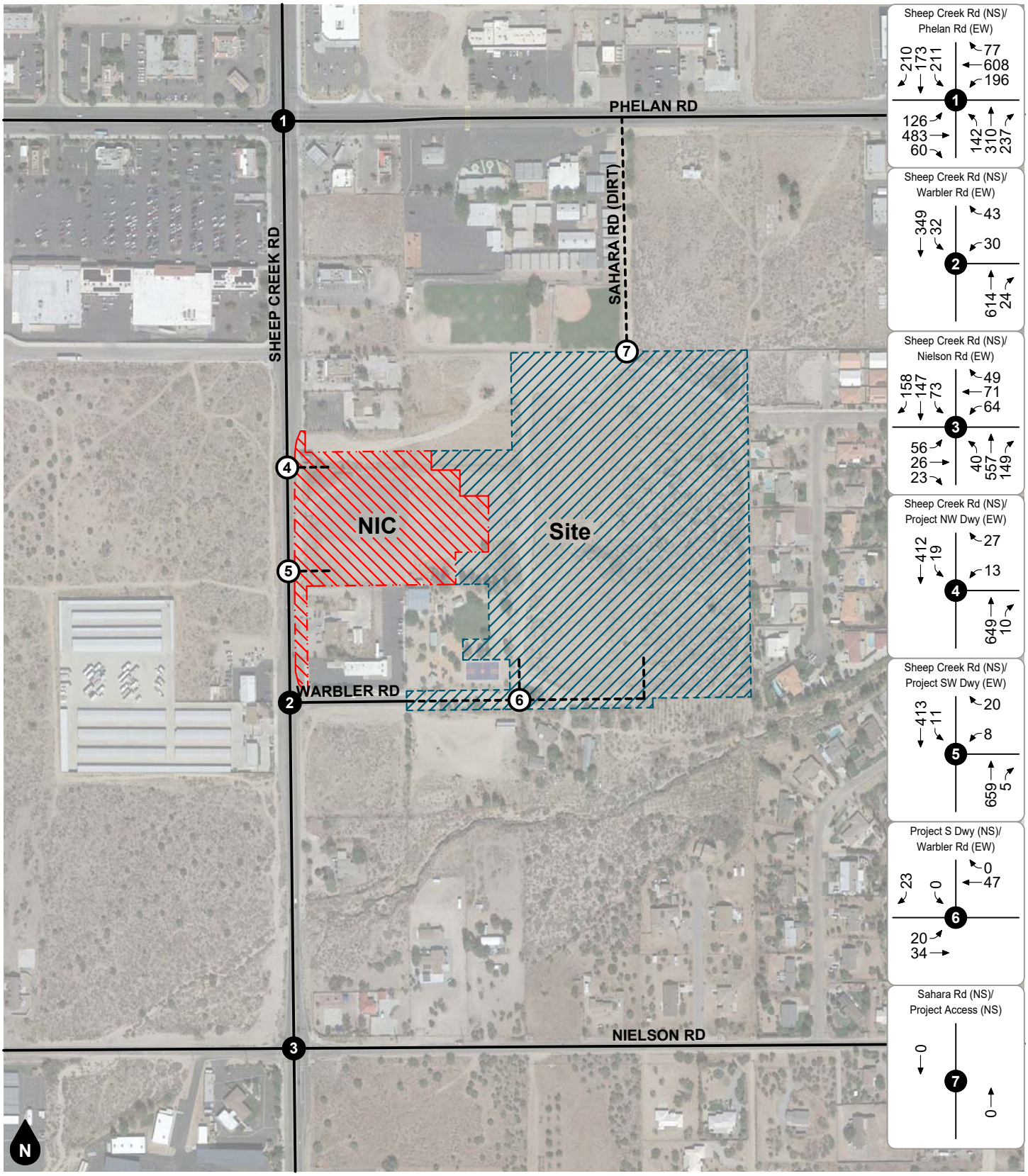
Figure 34
Year 2045 With Project Average Daily Traffic Volumes



Legend

- (#) Study Intersection
- (#) Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 35
Year 2045 With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project (NIC = Not Included)

Figure 36
Year 2045 With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE LEVELS OF SERVICE ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix G.

Project design features, such as improvements necessary to provide project site access, are assumed to be constructed by the proposed project and are described in further detail in the Site Access & Circulation section presented later in this report.

EXISTING PLUS PROJECT

The study intersection Levels of Service for Existing Plus Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing Plus Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for the Existing Plus Project scenario.

OPENING YEAR (2027) WITHOUT PROJECT

The study intersection Levels of Service for Opening Year (2027) Without Project conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2027) Without Project conditions.

OPENING YEAR (2027) WITH PROJECT

The study intersection Levels of Service for Opening Year (2027) With Project conditions are shown in Table 6. As shown in Table 6, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Opening Year (2027) With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for the Opening Year (2027) With Project scenario.

YEAR 2040 WITHOUT PROJECT

The study intersection Levels of Service for Year 2040 Without Project conditions are shown in Table 7. As shown in Table 7, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Year 2040 Without Project conditions.

YEAR 2040 WITH PROJECT

The study intersection Levels of Service for Year 2040 With Project conditions are shown in Table 8. As shown in Table 8, the study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Year 2040 With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for the Opening Year (2027) With Project scenario.

Traffic Signal Warrant Analysis

The potential need for installation of a traffic signal at crossroad stop control study intersections was evaluated based on the California Manual on Uniform Traffic Control Devices ("California MUTCD", November 2014), Section 4C-101, peak hour volume analysis (Traffic Signal Warrant 3). The California MUTCD states that a traffic control signal should not be installed unless one or more warrants are satisfied. Application of the traffic

signal warrants should be based on engineering judgement and satisfaction of one or more traffic signal warrants shall not in itself require the installation of a traffic signal.

A traffic signal is not projected to be warranted at the study area intersections based on the peak hour volume warrant. Traffic signal warrant worksheets are provided in Appendix H.

Table 4
Existing Plus Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS
1.	Sheep Creek Road at Phelan Road	TS	17.0	B	18.5	B
2.	Sheep Creek Road at Warbler Road	CSS	14.1	B	14.7	B
3.	Sheep Creek Road at Nelson Road	TS	10.5	B	7.7	A
4.	Sheep Creek Road at Civic Center North Driveway	CSS	13.5	B	14.3	B
5.	Sheep Creek Road at Civic Center South Driveway	CSS	13.4	B	13.1	B
6.	Project South Driveway at Warbler Road	CSS	8.4	A	8.6	A

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

Table 5
Opening Year (2027) Without Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS
1.	Sheep Creek Road at Phelan Road	TS	19.4	B	22.0	C
2.	Sheep Creek Road at Warbler Road	CSS	15.1	C	14.4	B
3.	Sheep Creek Road at Nelson Road	TS	12.7	B	8.8	A
4.	Sheep Creek Road at Civic Center North Driveway	CSS	13.5	B	13.5	B
5.	Sheep Creek Road at Civic Center South Driveway	CSS	13.7	B	14.8	B

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

Table 6
Opening Year (2027) With Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour		PM Peak Hour	
			Delay[2]	LOS[3]	Delay[2]	LOS
1.	Sheep Creek Road at Phelan Road	TS	28.6	C	30.3	C
2.	Sheep Creek Road at Warbler Road	CSS	16.9	C	18.6	C
3.	Sheep Creek Road at Nelson Road	TS	12.9	B	9.2	A
4.	Sheep Creek Road at Civic Center North Driveway	CSS	14.6	B	16.9	C
5.	Sheep Creek Road at Civic Center South Driveway	CSS	13.9	B	15.8	C
6.	Project South Driveway at Warbler Road	CSS	8.4	A	8.6	A

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

Table 7
Year (2040) Without Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS
1.	Sheep Creek Road at Phelan Road	TS	32.8	C	34.4	C
2.	Sheep Creek Road at Warbler Road	CSS	13.7	B	14.9	B
3.	Sheep Creek Road at Nelson Road	TS	15.5	B	11.3	B
4.	Sheep Creek Road at Civic Center North Driveway	CSS	14.1	B	13.9	B
5.	Sheep Creek Road at Civic Center South Driveway	CSS	14.7	B	15.3	C

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

Table 8
Year (2040) With Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour Delay[2]	AM Peak Hour LOS[3]	PM Peak Hour Delay[2]	PM Peak Hour LOS
1.	Sheep Creek Road at Phelan Road	TS	32.9	C	34.5	C
2.	Sheep Creek Road at Warbler Road	CSS	15.3	C	19.5	C
3.	Sheep Creek Road at Nelson Road	TS	15.5	B	11.6	B
4.	Sheep Creek Road at Civic Center North Driveway	CSS	15.9	C	17.5	C
5.	Sheep Creek Road at Civic Center South Driveway	CSS	14.9	B	16.4	C
6.	Project South Driveway at Warbler Road	CSS	8.4	A	8.6	A

Notes:

(1) TS = Traffic Signal; CSS = Cross Street Stop

(2) Delay is shown in seconds per vehicle. For intersections with traffic signal or all way stop control, overall average intersection delay and LOS are shown. For intersections with cross street stop control, LOS is based on average delay of the worst minor street approach or major street left turn movement.

(3) LOS = Level of Service

7. SITE ACCESS & ON-SITE CIRCULATION

This section describes the project site access and on-site circulation. Vehicular access would be provided via project access intersections with Sheep Creek Road via the adjacent Community Center parking lot and Warbler Street.

PROJECT DESIGN FEATURES

This analysis assumes the following improvements will be constructed by the project to provide project site access:

6. Project South Driveway (NS) at Warbler Street (EW)
- Install southbound stop control.
- Construct the southbound approach to consist of one shared left/right turn lane.

7. Project North Access[3] (NS) at: Sahara Road (EW)
- Install northbound stop control.
- Construct the northbound approach to consist of one through lane.

Civic Center North Access Roadway
- Construct full-width roadway extension from existing termination to park.

Warbler Road
- Construct full-width roadway extension from existing termination to park drop-off location.

This analysis also assumes the project shall comply with the following conditions as part of the County of San Bernardino standard development review process to ensure adequate geometric design and emergency access:

- Site-adjacent roadways shall be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the County of San Bernardino.

- All on-site and off-site roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project shall be constructed in accordance with applicable State/Federal engineering standards and to the satisfaction of the County of San Bernardino.

- The final grading, landscaping, and street improvement plans shall demonstrate that sight distance requirements are met in accordance with applicable County of San Bernardino/California Department of Transportation sight distance standards.

- A construction work site traffic control plan shall comply with State standards set forth in the California *Manual of Uniform Traffic Control Devices* and shall be submitted to the County for review and approval prior to the issuance of a grading permit or start of construction. The plan shall identify any roadway, sidewalk, bike route, or bus stop closures and detours as well as haul routes and hours of operation. All construction related trips shall be restricted to off-peak hours to the extent possible.

- The project shall comply with the County of San Bernardino municipal parking requirements which will be reviewed as a part of the standard development review process.

[3] The project north access to the unpaved Sahara Road is an auxiliary access not intended for primary vehicular use.

SITE ACCESS QUEUING ANALYSIS

Table 9 summarizes the results of a queue analysis for key turn movements providing project site access. The forecasted queue lengths shown in Table 9 are based on the Highway Capacity Manual 95th-percentile back-of-queue methodology as reported in the delay/Level of Service worksheets (see Appendix G). As shown in Table 9, the traffic volumes for project site access locations is forecast to operate within the available storage length during the peak hours for the evaluated scenarios conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for evaluated scenarios.

Table 9
Project Queuing Storage Analysis

ID	Intersection	Approach	Lane	Storage Length (Feet)[2]	Peak Hour 95th-Percentile Queue Length (Feet)[1] Year (2040) With Project AM	Peak Hour 95th-Percentile Queue Length (Feet)[1] Year (2040) With Project PM	Adequate Storage Provided Year (2040) With Project
2.	Sheep Creek Road at Warbler Road	Northbound	Thru-Right	75	<5	<5	YES
		Southbound	Left-Thru	75	<5	<5	YES
		Westbound	Shared	250	10	25	YES
4.	Sheep Creek Road at Civic Center North Driveway	Northbound	Thru	510	<5	<5	YES
		Northbound	Right	450	<5	<5	YES
		Southbound	Thru	250	<5	<5	YES
		Southbound	Left	98	<5	<5	YES
		Westbound	Shared	150	<5	15	YES
5.	Sheep Creek Road at Civic Center South Driveway	Northbound	Right	50	<5	<5	YES
		Northbound	Thru	285	<5	<5	YES
		Southbound	Thru	510	<5	<5	YES
		Southbound	Left	120	<5	<5	YES
		Westbound	Shared	45	<5	10	YES
6.	Project South Driveway at Warbler Road	Southbound	Shared	45	<5	<5	YES
		Eastbound	Left-Thru	250	<5	<5	YES
		Westbound	Thru-Right	350	<5	<5	YES

Notes:

(1) The forecast 95th-percentile queue lengths shown in the delay calculation worksheets have been rounded up to nearest 5-foot increment.

(2) Length of turning lane storage or distance to the adjacent driveway (existing or proposed future development).

8. CONCLUSIONS

This section summarizes the findings, operational improvements (if any), and recommendations identified and described in previous sections of this study. Figure 37 summarizes the recommended improvements.

PROJECT DESCRIPTION

The Phelan Pinon Hills Community Services District (CSD) has approximately 14-acres for development to expand community services provided to the local area. The currently undeveloped project site is located northeast of the intersection of Sheep Creek Road and Warbler Road in the Phelan community of unincorporated County of San Bernardino, California. While the development may be phased to meet the needs and budget of the community, the proposed project involves the construction of 14.27 acres of local Park with passive open space and 3-Multi-Purpose Fields, 1-Tennis Court, 26,000 SF of Skate Park, 30-Picnic Tables, and 15,730 SF of Aquatic Center [optional] & Splash-Pad [Project]. The Project includes additional parking provided for new services accessible from Sheep Creek Road and Warbler Road.

Access to the proposed Project includes connection to the adjacent Phelan Civic and Community Center north access roadway, Warbler Road extension to the east, as well as, a trail access to the north for hiking/horse access. Vehicular access to the site is provided by two (2) driveways on Sheep Creek Road, and one (1) driveway on Warbler Road in addition to the extension to the east which terminates in with additional parking adjacent to the roadway. Hiking, horse riding and/or horse trailer access is provided by an access on the north side of the property connecting to the unpaved Sahara Road.

PROJECT TRIP GENERATION

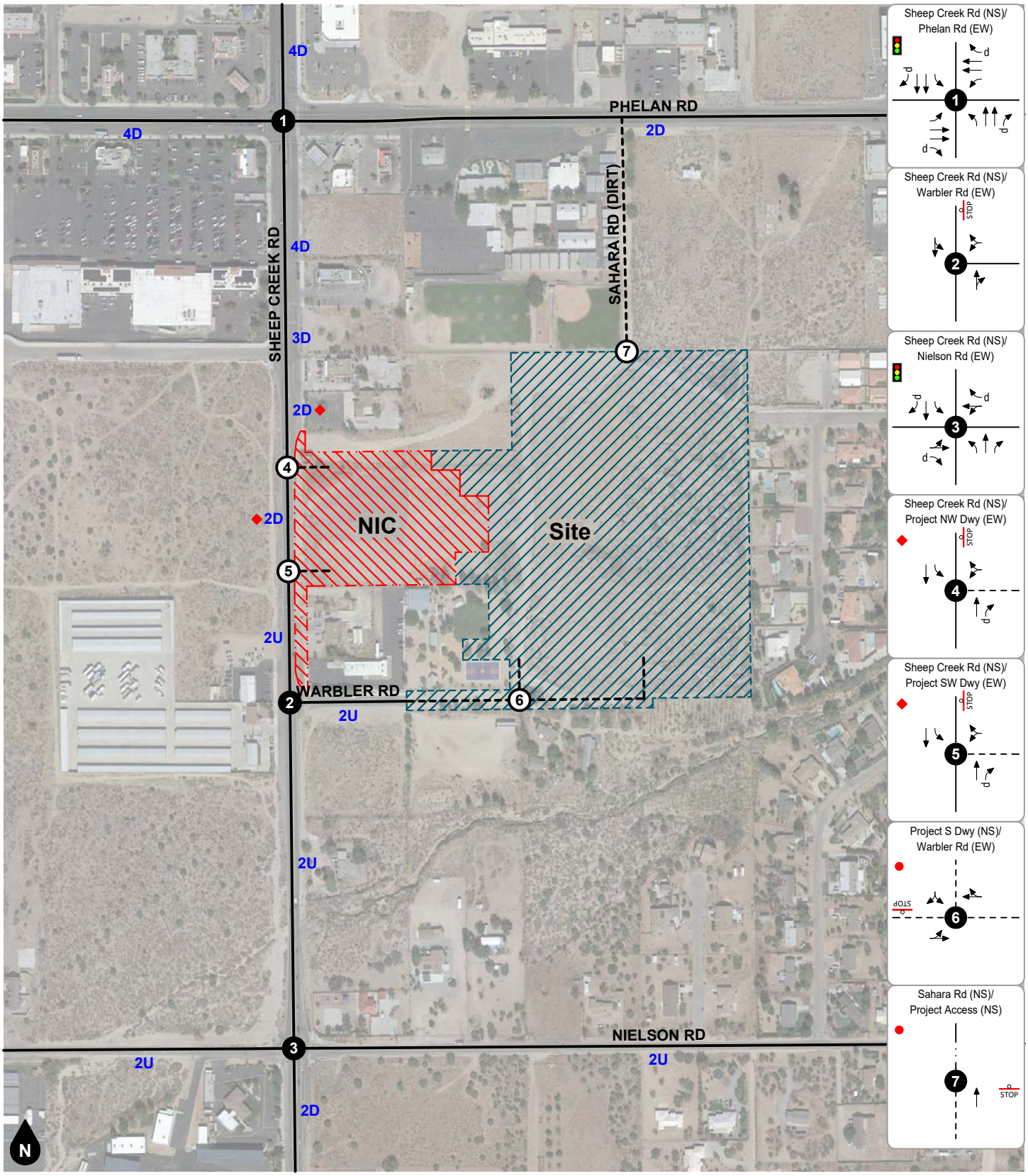
The proposed project is forecast to generate approximately 994 daily trips, including 31 trips during the AM peak hour and 144 trips during the PM peak hour.

LEVEL OF SERVICE ANALYSIS

The study intersections are forecast to operate within acceptable Levels of Service (C or better) during the peak hours for Existing, Existing Plus Project, Opening Year (2027) Without Project, Opening Year (2027) With Project, Year 2040 Without Project, and Year 2040 With Project conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for the evaluated scenarios.

SITE ACCESS QUEUING ANALYSIS

The traffic volumes for project site access locations are forecast to operate within the available storage length during the peak hours for the evaluated scenarios conditions. Therefore, the proposed project is forecast to result in no project-related Level of Service deficiencies at the study intersections for evaluated scenarios.



Legend

- Traffic Signal
- Stop Sign
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane
- d De Facto Right Turn Lane
- Project Driveway
- Improvement by Others
- Project Improvement

Figure 37
Recommended Lane Geometry and Intersection Traffic Controls

APPENDICES

Appendix A Glossary
Appendix B Scoping Agreement
Appendix C Intersection Count Data
Appendix D Existing Volume Adjustment Factor Calculations
Appendix E Travel Demand Model Plots
Appendix F Post Processing Worksheets
Appendix G Intersection Level of Service Worksheets
Appendix H Traffic Signal Warrant Worksheets

APPENDIX A

GLOSSARY

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
GFA	Gross Floor Area
LOS	Level of Service
PCE	Passenger Car Equivalent
SP	Service Population
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

ACTUATED SIGNAL CONTROL: A type of traffic signal control in which display of each phase depends on whether the corresponding phase detector has registered a service call or the phase is on recall.

ACTUATION: Detection of a roadway user that is forwarded to the signal controller.

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CALL: An indication within a signal controller that a particular phase is waiting for service, either through actuation from a roadway user or phase recall.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass through a roadway facility during a specified period.

CHANNELIZATION: The separation of conflicting traffic movements by use of pavement markings, raised curbs, or other suitable means to facilitate free flow movement.

CLEARANCE INTERVAL: Equal to the yellow plus all-red time, if any, when a traffic signal changes between phases (i.e., the amount of time between the end of a green light from one movement to the beginning of a green light for the next).

COORDINATED SIGNAL CONTROL: A type of traffic signal control in which non-coordinated phases associated with minor movements are constrained such that the coordinated phases are served at a specific time during the signal cycle, thus maintaining the efficient progression of traffic flow along the major roadway.

CONTROL DELAY: The portion of delay attributed to the intersection traffic control (such as a traffic signal or stop sign). It includes initial deceleration, queue move-up time, stopped delay, and final acceleration delay.

CORDON: An imaginary boundary line around or across a study area across which vehicles, persons, or other information can be collected for survey and analytical purposes.

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic traveling at a given speed to radically alter their speed or trajectory.

CYCLE: A complete sequence of signal indications for all phases.

CYCLE LENGTH: The total time for a traffic signal to complete one full cycle.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The total additional travel time experienced by a roadway user (driver, passenger, bicyclist, or pedestrian) beyond that required to travel at a desired speed.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device used to count or determine the presence of a roadway user.

DESIGN SPEED: A speed used for purposes of designing horizontal and vertical alignments of a highway.

DIRECTIONAL SPLIT: The percent of two-way traffic traveling in a specified direction.

DIVERSION: The rerouting of traffic from a normal path of travel between two points, such as to avoid congestion or perform a secondary trip.

FREE FLOW: Traffic flow that is unaffected by a traffic control and/or or upstream or downstream conditions.

GAP: Time or distance between two vehicles measured from rear bumper of the front vehicle to front bumper of the second vehicle.

GAP ACCEPTANCE: The method by which a driver accepts an available gap in traffic to enter or cross the road.

HEADWAY: Time or distance between two successive vehicles measured from same point on both vehicles (i.e., front bumper to front bumper).

LEVEL OF SERVICE: A grading scale of quantitative performance measures representing the quality of service of a transportation facility or service from an average traveler's perspective.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MULTI-MODAL: More than one mode, such as automobile, transit, bicycle, and pedestrian.

OFFSET: The time interval between the beginning of a traffic signal cycle at one intersection and the beginning of signal cycle an adjacent intersection.

PLATOON: A set of vehicles traveling at similar speed and moving as a general group with clear separation between other vehicles ahead and behind.

PASSENGER CAR EQUIVALENT: A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEDESTRIAN CLEARANCE INTERVAL: Also known as the "Flashing Don't Walk" interval, it signals the end of pedestrian entry into the crosswalk following the "Walk" indication and provides time for pedestrians who have already entered the crosswalk to finishing crossing.

PEAK HOUR: The hour within a day in which the maximum volume occurs.

PEAK HOUR FACTOR: The peak hour volume divided by the four times the peak 15-minute flow rate. This

PHASE: In traffic signals, the green, yellow, and red clearance intervals assigned to a specified traffic movement.

PRETIMED SIGNAL: A traffic signal operation in which the cycle length, phasing sequence, and phasing times are predetermined and fixed, regardless of actual demand for any given traffic movement. Also known as a fixed time signal.

PROGRESSION: The coordinated movement of vehicles through signalized intersections along a corridor.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

RECALL: A signal phasing operation in which a specified phase places a call to the signal controller each time a conflicting phase is served, thus ensuring the specified phase will be serviced again.

SEMI-ACTUATED CONTROL: A type of traffic signal control in which only the minor movements are provided detection.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queuing to occur.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle traveling at a given speed to bring the vehicle to a stop after an object on the road becomes visible, including reaction and response time.

TRIP OR TRIP END: The one-directional movement of a person or vehicle. Every trip has an origin and a destination at its respective ends (i.e., trip ends). In terms of site trip generation, the same vehicle entering and exiting a site generates two trips: one inbound trip and one outbound trip.

TRIP GENERATION RATE: The rate at which a land use generates trips per the specified land use variable, such per dwelling unit or per thousand square feet.

TRUCK: A heavy motor vehicle generally used for transporting goods.

VEHICLE MILES TRAVELED: A measure of the amount and distance of automobile travel essentially calculated as the sum of each trip times the trip length.

APPENDIX B

SCOPING AGREEMENT

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Community Park Project TRSTY-2021-00016

This Scope for Traffic Study acknowledges San Bernardino County Department of Public Works, Traffic Division requirements of traffic impact analysis for the project and is subject to change:

Project Address:	northeast of Sheep Creek Road and Warbler Road		
Project Description:	Phelan Community Park on 14-acre site		
City:	Phelan community of unincorporated County of San Bernardino		
Project Buildout Year:	2027	Ambient Growth Rate per Year:	2% / SBTAM
Closest Intersection (Xtn) to the Project			
Xtn N/S Street Name:	East side of Sheep Creek Road		
Xtn E/W Street Name:	Between Brawley Road and Warbler Road		
Thomas Guide Pg+Grid:		County Supervisorial District:	1

	Engineer	**Developer**
Company:	GANDDINI GROUP, INC.	Phelan Pinon Hills Community Services District (CSD)
Name:	Ms. Perrie Ilercil, P.E., (AZ)	c/o. Ms. Cheryl Tubbs, Lilburn Corporation
Address:	550 Parkcenter Drive, Suite 202	4176 Warbler Rd,
City, State, Zip Code:	Santa Ana, CA 92705	Phelan, CA 92371
Phone #:	714-795-3100 EXT 103	909-890-1818
CELL:	949-257-3126 cell	
Email:	perrie@ganddini.com	cheryl@lilburncorp.com

11/22/2021
O7/23/2021

By:	12/14/2021	**Reviewed By:**	
Print Name: Perrie Ilercil		**Print Name:**	
Consultant/Developer's Representative	**Date**	**Traffic Division Representative**	**Date**

JN: 19395

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Community Park Project TRSTY-2021-00016

1. **Traffic Distribution**: Please insert or attach Figure(s) illustrating project trip distribution in percentages and volumes at the study intersections analyzed.
   See Figures:

• Figure 1 Regional Map,	• Figure 3 Site Plan
• Figure 2 Project Location Map	• Figure 4&5 Project Trip Distribution,

2. Trip Credit: Exact amount of credit subject to approval by Traffic Division.

Transportation Demand Management (TDM)	Yes/**no**	NO
Existing Active Land Use	Yes/**no**	NA
Previous Land Use	Yes/**no**	Vacant
Internal Trip Reduction	Yes/**no**	NO
Pass-by Trip Reduction	Yes/**no**	NO

3. Related Projects: Consultant should check with Planning in the San Bernardino County Department of Land Use Services and planning departments of adjoining Cities. Documentation of the consultation from these agencies shall be included in the traffic study. Related projects list shall be submitted to Traffic Division for our review and approval before being incorporated in the study.

4. Freeway Analysis: The potential traffic impact on the following Freeway(s) must be considered.

NA - Will not generate the number of trips which would require further analysis on State facilities.

The applicant shall consult with the State of California Department of Transportation (Caltrans) to determine the California Environmental Quality Act levels of significance with regard to traffic impacts on Caltrans' freeway facilities. This consultation shall also include a determination of Caltrans requirements for the study of traffic impacts to its facilities and the mitigation of any such impacts. This analysis must follow the most current Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) and can be obtained from http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tiguide.pdf. If Caltrans finds that the project has a significant impact on the freeway, Caltrans shall be requested to include the basis for this finding in their response. If fees are proposed to mitigate the freeway impact, Caltrans shall be requested to identify the specific project to which the fees will apply. These written comments from Caltrans shall be included with the traffic study and submitted to Public Works for review and approval. If a documented good faith effort is made to consult with Caltrans and written comments cannot be obtained from within a reasonable amount of time, an analysis of the freeway impact shall be made using HCM procedures. Appendix A of the SANBAG CMP outlines allowable modifications to these procedures. The SANBAG CMP can be viewed online at: http://www.sanbag.ca.gov/planning/subr_congestion.html

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Community Park Project TRSTY-2021-00016

5. Trip Generation

Trip Generation Rate(s) Source: ITE Trip Generation	**I – Institute of Transportation Engineers; S – San Diego Traffic Generators; C – County; O – Other:**	**Edition:**	11th 2021

Land Use Code	Land Use	Rate Based on	Qty	Average Vehicle Trip Ends vs	ADT	Weekday a.m. peak		Weekday p.m. peak		Weekend peak hour	
						In	Out	In	Out	In	Out
ITE 411	Public Park	AC	14.27		11	0	0	1	1	2	2
ITE 488	Soccer Field (Multi-purpose Fields)	FLD	3		214	2	1	33	16	54	58
ITE 491[a]	Tennis Court	CRT	1		30	1	1	2	2	8	8
ITE 411[b]	Picnic Table at Park	PT	30		176	4	3	7	7	35	28
TIA[c]	Skate Park	TSF	26.000		255	4	4	16	19	24	22
ITE 483[d]	Water Park [Optional]	TSF	15.730		440	8	3	8	32	33	23

Source: ITE = Institute of Transportation Engineers, *Trip Generation Manual (11th Edition, 2021)*; ### = Land Use Code(s).

[a] = AM peak hourly rate derived from San Diego Association of Government (SANDAG) Brief Guide of Vehicular Traffic Generation Rates AM/Daily percentage (5%) using ITE daily total.

[b] = AM and PM peak hourly rate derived from SANDAG Brief Guide of Vehicular Traffic Generation Rates AM/Daily percentage (5%) and PM/Daily percentage (11%) using ITE daily total. The park daily total rate per picnic table is from ITE Trip Generation Manual, 9th Edition due to absence of picnic table data in the 10th Edition. Saturday midday and Saturday weekend rate derived from trip generation ratio of PM rate per TSF to PM rate per acre. *Saturday midday rate derived from trip generation ratio of PM rate per TSF to PM rate per acre.*

[c] = Center Avenue Skate Park Traffic Study, Austin-Foust Associates, Inc., 2011

[d] = AM peak hour and Daily rate derived from ITE "Specialized Land Use Data" shown on the land use description page 482 of ITE Trip Generation Manual using trip generation PM hourly rate per thousand square feet and trip generation rates based on parking spaces.

For ITE Land Uses provide number and name of Land Use. e.g. LU 814 - Variety Store

SCOPE FOR TRAFFIC STUDY

Project Name:	Phelan Community Park Project TRSTY-2021-00016

6. Study Intersections: At minimum, the study shall include the following intersections. The list is subject to change after related projects, trip generation and distribution are determined. Consultant should check with adjoining Cities regarding their requirements in addition to the following County/City intersections. Documentation of the consultation from these agencies shall be included in the traffic study.

Xtn #	% County	Thomas Guide Page+Grid	N/S/E/W Street Name	City	Signalized	CMP
1	100		Sheep Creek Road (NS) at: Phelan Road (EW)	County	YES	no
2	100		Sheep Creek Road (NS) at: Warbler Road (EW)	County	no	no
3	100		Sheep Creek Road (NS) at: Nelson Road (EW)	County	YES	no
4	100		Sheep Creek Road (NS) at: Project NW Access (EW)	County	no	no
5	100		Sheep Creek Road (NS) at: Project SW Access (EW)	County	no	no
6	100		Project South Access (NS) at: Warbler Road (EW)	County	no	no

Cites to be consulted: _____

NS = north-south; EW = east-west; NW = northwest; SW = southwest.

Project Name:	Phelan Community Park Project TRSTY-2021-00016

7. Other:

Traffic counts may be conducted immediately per the following:
• Must be taken on Tuesdays, Wednesdays or Thursdays.
• Must exclude holidays, and the first weekdays before and after the holiday.
• Must be taken on days when local schools or colleges are in session.
• Must be taken on days of good weather, and avoid atypical conditions (e.g., road construction, detours, or major traffic incidents).
• Traffic counts used for other traffic studies in the area shall **NOT** be reused again, unless 25% of the counts conducted for that particular traffic study are validated with new counts. The difference in volumes between the old and new counts at each corresponding movement should not be more than 10%.
• New traffic counts shall be checked to ensure the difference in volumes at corresponding approaches, if applicable, between two adjacent intersections is no more than 10% unless the difference can be justified.
• For all proposed mitigation measures, a conceptual plan for the improvements shall be submitted to our Traffic Studies section for review and approval prior to the approval of the Traffic Impact Analysis. All proposed improvements shall be within the right-of-way.
• For all cumulative mitigation measures, a cost estimate for the improvement shall be submitted.

This analysis must follow the most current Traffic Impact Study Guidelines for the County as stated in the County's Road Planning and Design Standards.

8. Fees

The County charges on an actual cost basis for review of traffic studies. An initial deposit of $3400 is required at the time that a land use application is filed with the Department of Land Use Services If the review costs exceed the initial deposit, the applicant will be expected to provide additional funds and the review will be suspended until the additional funds are deposited.

9. Contact Information:

Please submit a signed copy of this scope for approval by the Traffic Division. Draft scopes may be sent electronically. Final scope with signature should be submitted in person or by US Mail to:

County of San Bernardino
Dept. of Public Works, Traffic Division
825 E. 3rd Street, Rm 115
San Bernardino, CA 92415-0835

909-387-8239

Jeremy Johnson
Jeremy.Johnson@lus.sbcounty.gov

Project Description

The Phelan Pinon Hills Community Services District (CSD) has approximately 14-acres for development to expand community services provided to the local area. The currently undeveloped project site is located northeast of the intersection of Sheep Creek Road and Warbler Road in the Phelan community of unincorporated County of San Bernardino, California. While the development may be phased to meet the needs and budget of the community, the proposed project involves the construction of 14.27 acres of local Park with passive open space and 3-Multi-Purpose Fields, 1-Tennis Court, 26,000 SF of Skate Park, 30-Picnic Tables 15,730 SF of Aquatic Center [optional] & Splash-Pad. The Proposed includes connection to the future Civic Center and Community Center parking lot with additional parking provided for new services. Vehicular access for the Project Site is proposed Sheep Creek Road and Warbler Road. The proposed future site plan is shown in Attachment A.

Project Trips

Table 1 shows the proposed project trips generation based on trip generation rates obtained from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, 2017). To provide a conservative assessment of the proposed park trip generation, public park rates were used for the passive open space of the park, in combination with rates for recreational components included in the park. The forecast trip generation of the park is representative of May to October with the combined usage of the water park and all multi-purpose fields. Based on the ITE land use descriptions, trip generation rates for Land Use Codes ITE 411 – Public Park, ITE 150 – Warehouse, ITE 488 – Soccer Field, ITE 491 Tennis Court, ITE 482 – Water Park were determined to adequately describe the proposed land uses and were selected for this analysis. In addition to the ITE land use rates, the skate park trip generation rates were obtained from the *Center Avenue Skate Park Traffic Study* (Austin-Foust Associates, Inc., 2011) for the skate park that is currently under construction in the park. The passive open space of the park was quantified by ITE 411 per acre (9th Edition) while the Central Plaza picnic tables were quantified by ITE 411 per picnic table (9th Edition) due to absence of picnic table data in the 11th Edition.

Traffic Counts

New intersection turning movement counts will be collected at the study intersections during the typical weekday AM and PM peak hour (7:00 AM – 9:00 AM and 4:00 - 6:00 PM). A historical 2013 count at the intersection of Sheep Creek Road and Warbler Road will be increased by the County growth rate of two percent (2%) per year to estimate non-pandemic year 2021 volumes and compared to the new count at this intersection to determine a count calibration factor. If necessary, new counts shall be adjusted as appropriate based on the local calibration factor derived from the difference between the adjusted historical count and new count volume.

Table 1
Project Trip Generation

Trip Generation Rates										
Land Use	Source[1]	Land Use Variable[2]	AM Peak Hour			PM Peak Hour			Daily Rate
			% In	% Out	Rate	% In	% Out	Rate	
Public Park	ITE 411	AC	59%	41%	0.02	55%	45%	0.11	0.78
Soccer Complex	ITE 488	FLD	61%	39%	0.99	66%	34%	16.43	71.33
Tennis Courts	ITE 490 [a]	CRT	50%	50%	1.52	50%	50%	4.21	30.32
Picnic Table at Park	ITE 411 [b]	PT	50%	50%	0.23	50%	50%	0.47	5.87
Skate Park	TIA [c]	TSF	53%	47%	0.30	46%	54%	1.36	9.10
Water Park	ITE 482 [d]	TSF	70%	30%	0.73	21%	79%	2.56	20.75

Trips Generated										
Land Use	Source	Quantity		AM Peak Hour			PM Peak Hour			Daily
				In	Out	Total	In	Out	Total	
Public Park	ITE 411	14.27	AC	0	0	0	1	1	2	11
Soccer Complex	ITE 488	3	FLD	2	1	3	33	16	49	214
Tennis Courts	ITE 490	1	CRT	1	1	2	2	2	4	30
Picnic Table at Park	ITE 411	30	PT	4	3	7	7	7	14	176
Skate Park	TIA	26.000	TSF	4	4	8	16	19	35	237
Aquatic Center [optional] & Splash Pad	ITE 482	15.730	TSF	8	3	11	8	32	40	326
NET NEW TRIPS GENERATED				**+ 19**	**+ 12**	**+ 31**	**+ 67**	**+ 77**	**+ 144**	**+ 994**

Notes:

(1) ITE = Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021); ### = Land Use Code. All rates based on General Urban / Suburban rates, unless otherwise noted.

[a] = San Diego Association of Governments (SANDAG) *Vehicular Traffic Generation Rates* (April 2002). Where the daily or peak hour rate is not provided by ITE, the SANDAG percentage of peak hour to daily rate is used to calculate the missing data. Where the peak hour distribution is not provided by ITE, the SANDAG peak hour distribution is used. AM/Daily rate 5%.

[b] = AM and PM peak hourly rate derived from SANDAG *Brief Guide of Vehicular Traffic Generation Rate*s AM/Daily percentage (4%) and PM/Daily percentage (8%) using ITE daily total. The park daily total rate per picnic table is from ITE *Trip Generation Manual*, 9th Edition due to absence of picnic table data in the 11th Edition. Saturday midday and Saturday weekend rate derived from trip generation ratio of PM rate per picnic site to PM rate per acre.

[d] = AM peak hour and Daily rate derived from ITE "Specialized Land Use Data" shown on the land use description page 482 of ITE *Trip Generation Manual* using trip generation PM hourly rate per thousand square feet and trip generation rates based on parking spaces.

(2) AC = Acre; TSF = Thousand Square Feet; FLD = Sport Field; CRT = Tennis Court; PT = Picnic Table.

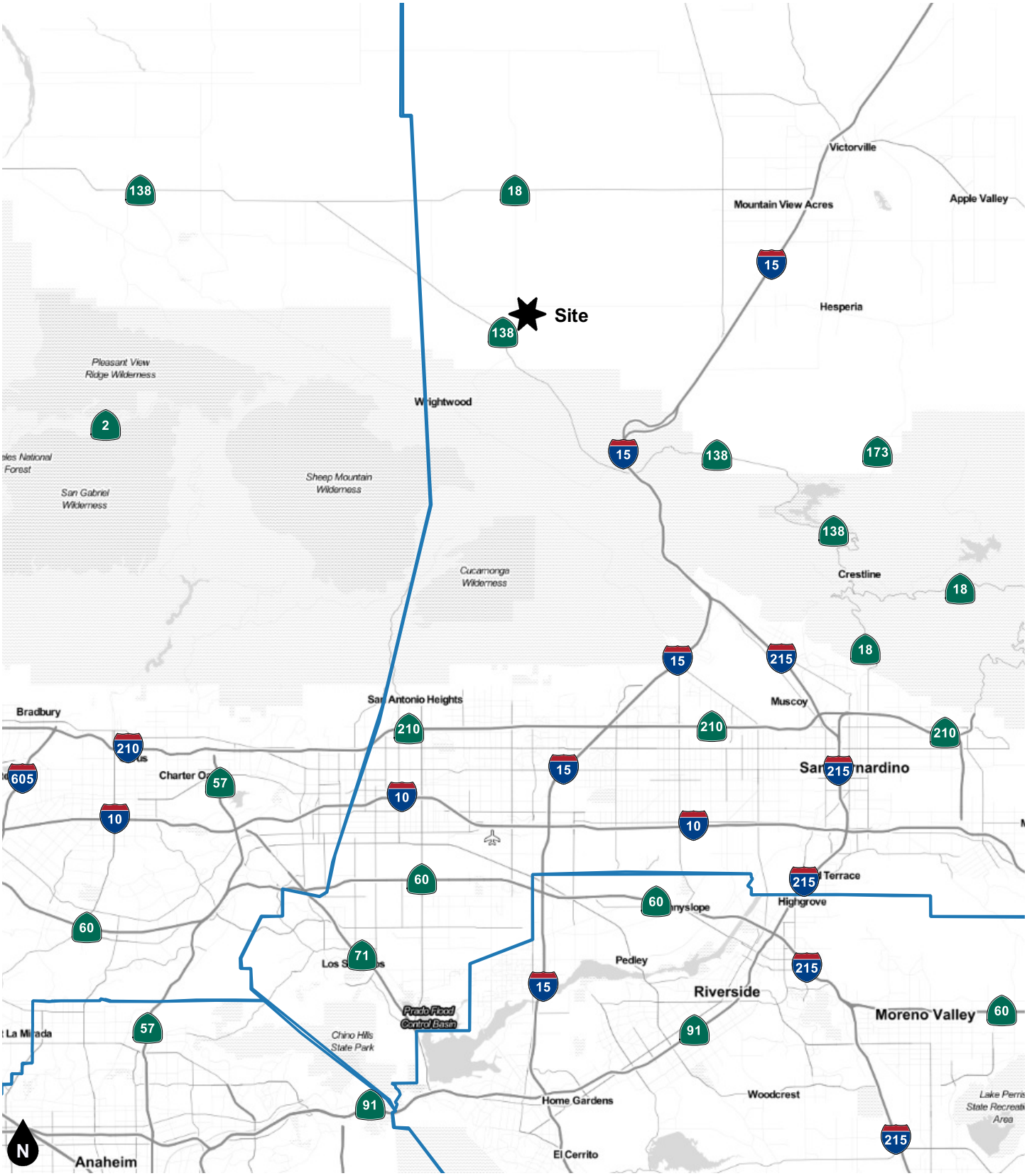
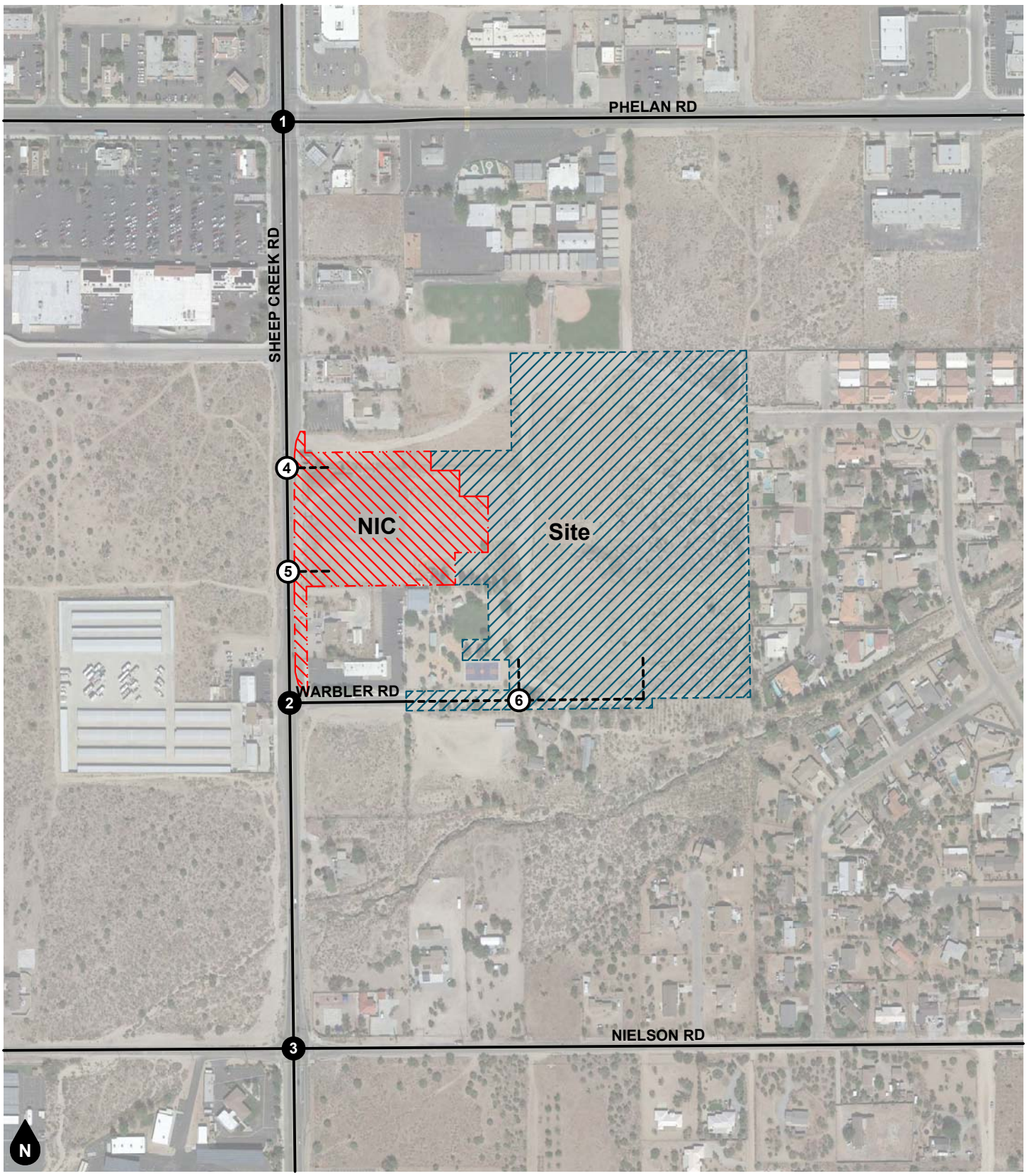


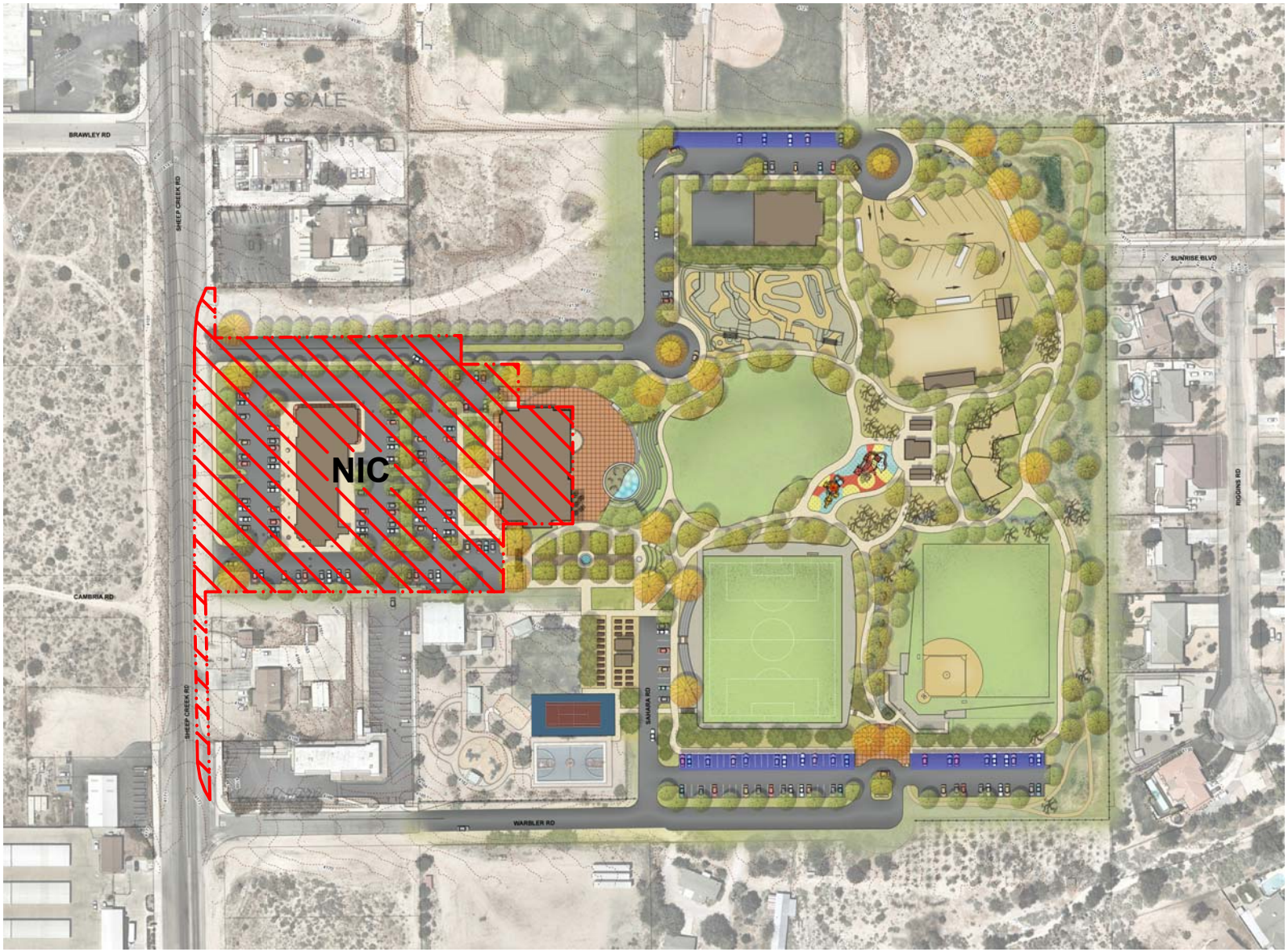
Figure 1
Regional Location Map



Legend

- # Study Intersection
- # Project Driveway
- Adjacent Project NIC

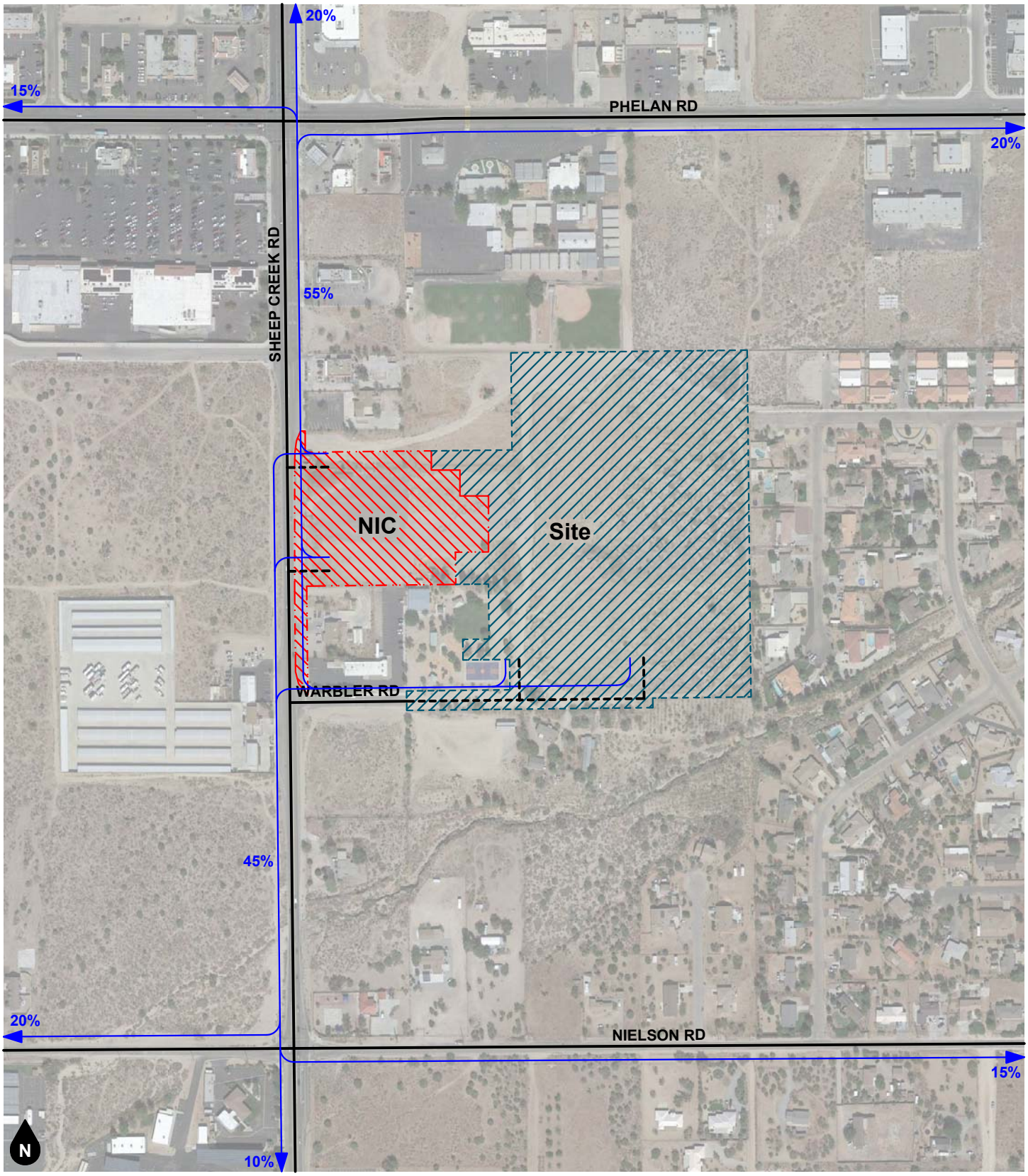
Figure 2
Project Location Map



Legend

Adjacent Project NIC

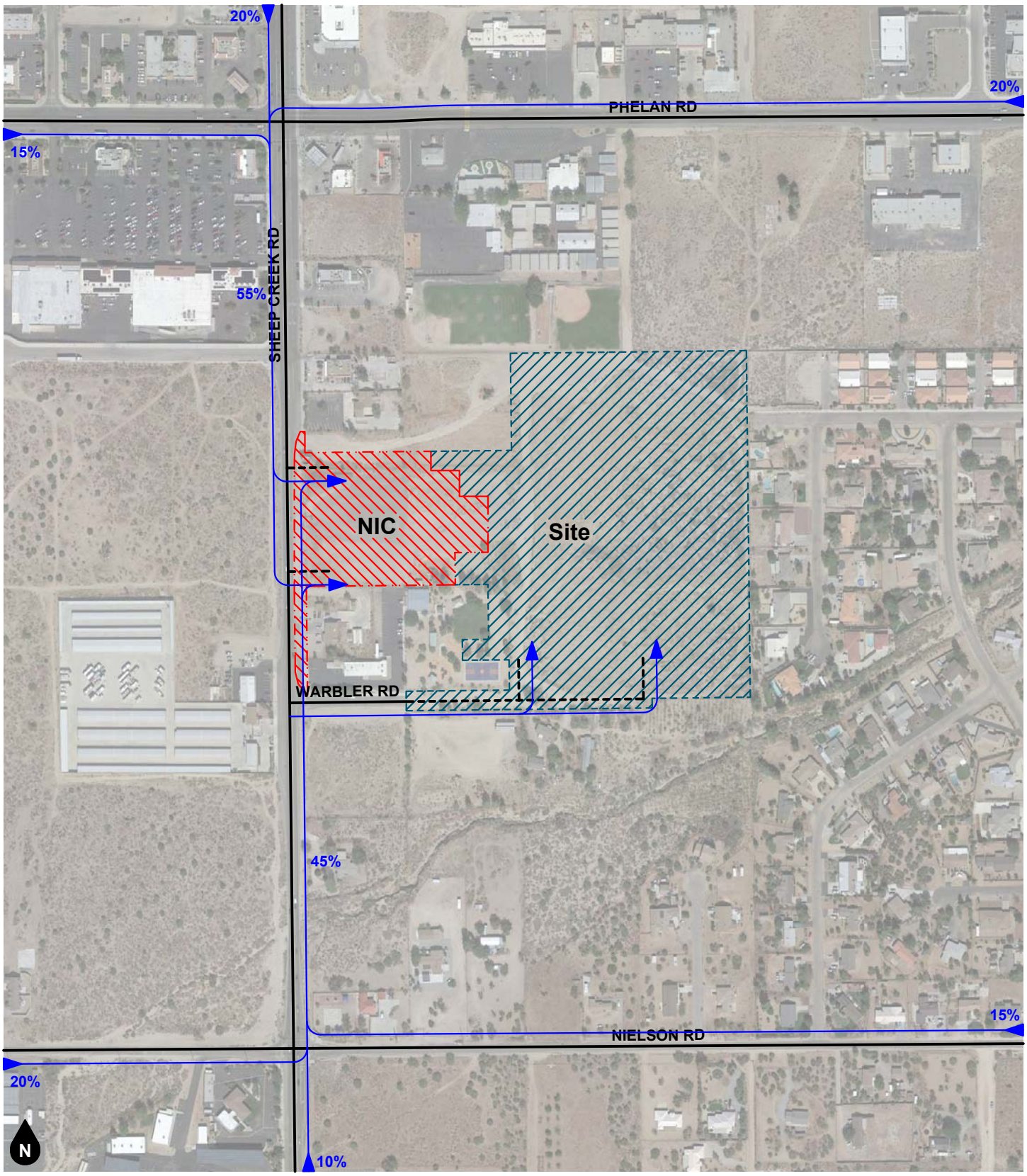
Figure 3
Site Plan



Legend

10% Percent From Project

Figure 4
Project Outbound Trip Distribution



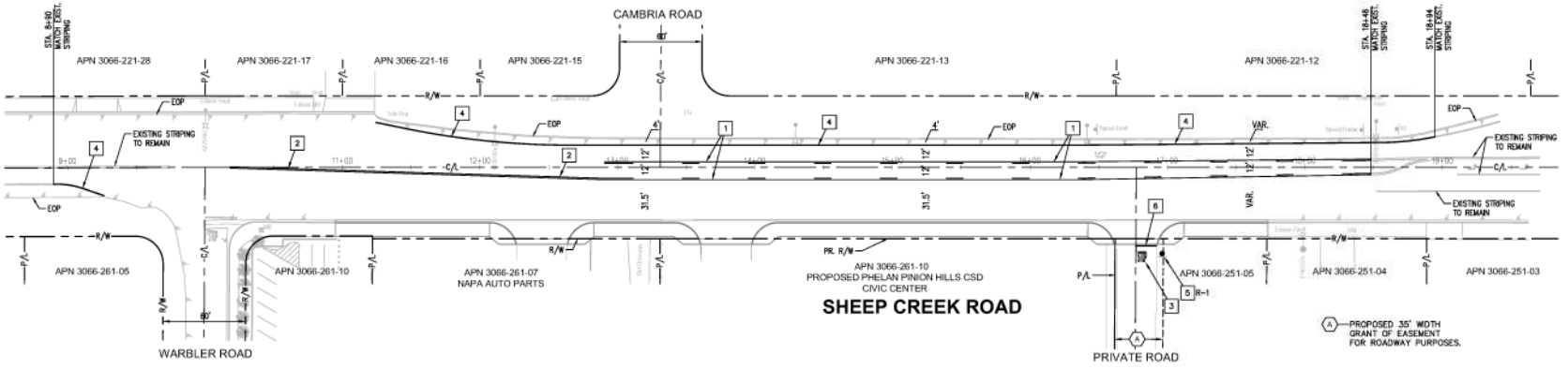
Legend

10% Percent To Project

Figure 5
Project Inbound Trip Distribution

ATTACHMENT A

ADJACENT PROJECT INFORMATION



SIGN LEGEND

STOP
R1-1

SIGNING AND STRIPING NOTES

1. INSTALL 4" YELLOW TWO-WAY LEFT TURN LANE LINE PER CALTRANS STD. PLAN A20A, DETAIL 23
2. INSTALL 4" THICK DOUBLE YELLOW CENTER LINE STRIPING PER CALTRANS STD. PLAN A20A, DETAIL 22
3. PAINT LEGEND AS NOTED PER CALTRANS STD. PLAN A24A THROUGH A24D
4. INSTALL 4" WHITE EDGE LINE STRIPING PER CALTRANS DETAIL 27B
5. INSTALL SIGN AS NOTED
6. PAINT 12" WHITE STOP BAR

NOTE

SEE SHEET No.2 DEMOLITION PLAN FOR EXISTING STRIPING REMOVALS.

PRELIMINARY 90% DESIGN - FOR REVIEW PURPOSES ONLY

Underground Service Alert
Call: TOLL FREE
1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

BENCHMARK

U.S.G.S. BENCHMARK H 35, LOCATED 3.0 MI NORTH ALONG JOHNSON RD. FROM THE INTERSECTION OF PHELAN RD, 49 FT NORTHEAST OF THE CENTER OF THE INTERSECTION OF DUNCAN RD, 34 FT EAST OF THE CENTER LINE OF JOHNSON RD, 32.5 FT NORTH OF THE CENTER LINE DUNCAN RD, 6.6 FT WEST OF A FENCE, 6.3 FT NORTH OF A SECTION MARKER PIPE, 0.6 FT EAST OF A WITNESS POST, ABOUT 1 FT HIGHER THAN THE ROAD AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.4 FT ABOVE THE GROUND.
ELEV= 3616.50

PREPARED BY:
DAVID EVANS AND ASSOCIATES INC.
18484 Outer Highway 18 North, Suite 225
Apple Valley California 92307
Phone: 760.524.9100
RKilpatrick@deainc.com

PREPARED UNDER THE SUPERVISION OF:
ROBERT A. KILPATRICK R.C.E. 42386 DATE:

REGISTERED PROFESSIONAL ENGINEER ROBERT A. KILPATRICK No.42386 CIVIL STATE OF CALIFORNIA

MARK	REVISIONS	APPR	DATE

COUNTY OF SAN BERNARDINO
DEPARTMENT OF PUBLIC WORKS

JEREMY JOHNSON ENGINEER, TRAFFIC DIVISION — DATE
RECOMMENDED BY:
APPROVED BY:
GRANT MANN TRAFFIC DIVISION CHIEF — DATE
SAMER BASTA LAND DEVELOPMENT MANAGER — DATE

SIGNING AND STRIPING PLAN

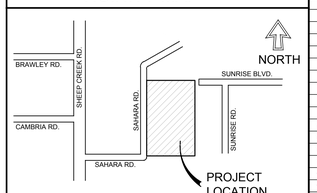
SHEEP CREEK ROAD
STA. 8+90 TO 18+94

ROAD NO.
FILE NO.
SHEET 4 OF 5

Plot Date: 11/15/2021 10:02 AM
Last Date Saved: 08/30/2021 5:03 PM
By: Shane Schubert
By: Shane File: P:\PW\PHELAN\C00000\00000\00000\A2\SHEET\SHEET04.PHELAN00000002 - Civic Center Plaza.dwg

PROPOSED DEVELOPMENT FOR:
PHELAN PINION HILLS COMMUNITY SERVICES DISTRICT

VICINITY MAP



KEYED NOTES

#	DESCRIPTION	SYMBOL
1	VAN ACCESSIBLE PARKING SPACE W/ ACCESSIBILITY STALL EMBLEM PAINTED AS SHOWN	
2	DISABLED ACCESSIBLE PARKING ONLY SIGN.	
3	48" WIDE ACCESSIBILITY ACCESS W/ BLUE STRIPES	
4	LANDSCAPED AREA	
5	TRUNCATED DOMES 36" DEEP X WIDTH OF RAMP OR LANDING	
6	6" WIDE CONCRETE CURB.	
7	6" WIDE CONCRETE CURB. W/ 2' PARKING NOSE OVER	
8	ACCESSIBLE RAMP NOT TO EXCEED 8% SL. IN DIRECTION OF RUN & 2% MAX CROSS SL.	
9	WARNING SIGNAGE REGARDING UNAUTHORIZED USE OF DISABLED PARKING SPACES	
10	STRIPED LOADING ZONE	
11	TRAFFIC FLOW DIRECTIONAL ARROWS PAINTED ON PAVING AS SHOWN ON PLAN	
12	DOUBLE STRIPED PAINTED PARKING STALL STRIPE	
13	4" NOMINAL THICK CONCRETE WALKWAY W/ 5% MAX. SLOPE & 2% CROSS SLOPE	
14	PROPOSED CONC. SIDEWALK	
15	PROPOSED CONCRETE OR A.C. PAVING PER GEO-TECH REPORT	
16	20' HIGH SITE LIGHT STANDARD	
17	PROPOSED MONUMENT SIGN,4' HIGH & 36SQ.FT., MAX UNDER SEPARATE PERMIT	
18	TERRACE SEATING W/ RETAINING WALL, HEIGHT VARIES. SEE GRADING PLANS	
19	CONC. WHEEL STOP AT A.D.A. PARKING SPACE	
20	6 FT. WIDE BIKE TRAILS	
21	EXISTING JOSHUA TREE TO REMAIN	
22	EXISTING JOSHUA TREE TO BE REMOVED (DASHED CIRCLE)	
23	EXISTING FENCE TO REMAIN	
24	PROPOSED 5' HIGH CHAINLINK FENCE	
25	OVERLOOK AREA AND GARDENS	
26	LINE OF PROJECT PHASING	
27	CONCESSION STAND W/ PICNIC TABLES	
28	CONCRETE GUTTER OR SWALE, SEE GRADING PLAN	
29	DECORATIVE CANOPY	
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		

PROJECT DATA

ZONE: PER COUNTY MAP FH04A (PH/CG) GENERAL COMMERCIAL

OVERLAYS: FLOOD PLAIN 1 (FP1) / FIRE SAFETY 2 (FS2)

OCCUPANCY: (A-5) ASSEMBLY A (s) STORAGE

CONSTRUCTION TYPE: V-B

STORIES: 1-STORY

FIRE SPRINKLERS: YES

A.P.N. 3066-261-08 & 10/ 3066-251-14

PTN. N.W. 1/4, SEC. 24 T.4N., R.7W.

SITE ADDRESS:
NW CNR. OF SAHARA RD.
AND WARBLER RD.
PHELAN,CA 92329

ZONING SETBACKS:
F.E.M.A. FLOOD ZONE

APPLICANT/OWNER:
PHELAN/PINION HILLS C.S.D.
PO BOX 294049
4176 WARBLER RD.
PHELAN, CA 92329-4049
PH:760-868-1212 FAX:760-868-2323

ARCHITECT/REPRESENTATIVE:
STEENO DESIGN STUDIO, INC.
ARCHITECT: TOM STEENO
11774 HESPERIA ROAD, SUITE B-1
PH: 760.244-5001 FAX: 760-244-1948

SITE INFORMATION:

A.P.N. 3066-251-14 GROSS AREA (10.05 AC.) A.P.N. 3066-261-08 GROSS AREA (4.22 AC.)	=	437,963 SQ. FT.	70.4%
	=	183,823 SQ. FT.	29.6%
GROSS AREA TOTAL (14.27 AC.)	=	621,786 SQ. FT.	100%

PROPOSED:

MAINTENANCE BUILDING	=	14,524 SQ. FT.	2.32 %
FUTURE PUMP TRACK & SKATE PARK AREA	=	26,000 SQ. FT.	4.18 %
EQUESTRIAN ARENA	=	16,145 SQ. FT.	2.60 %
RESTROOMS	=	860 SQ. FT.	0.14 %
DOG PARK	=	5,788 SQ. FT.	0.93 %
MULTI-PURPOSE FIELD	=	39,600 SQ. FT.	6.37 %
MULTI-PURPOSE/ SOFTBALL FIELD	=	39,600 SQ. FT.	6.37 %
LANDSCAPED AREA	=	276,318 SQ. FT.	44.45 %
PROP. PAVING & CONC. (TOTAL)	=	182,076 SQ. FT.	29.28 %
RETENTION AREA	=	20,875 SQ. FT.	3.36 %

PARKING INFORMATION: SYMBOL INDICATING QTY OF STALLS:

REQUIRED PARKING STALLS:

PHASE 3:
MULTI-PURPOSE FIELD - 39,600 SQ. FT.
705 SQ. FT. OF SEATING AREA @ 1/25 SQ. FT. = 28 SPACES

FUTURE AQUATIC CENTER - 14, 524 SQ. FT.
SWIMMING POOL APPROX. SIZE - 4,000 SQ. FT.
4,000 / 1 SPACE PER 100 SQ. FT. = 40 SPACES
REMAINING - 50% OF 10,524 SQ. FT./ 250 = 21 SPACES

PHASE 4:
MULTI-PURPOSE/ SOFTBALL FIELD - 39,600 SQ. FT.
412 SQ. FT. OF SEATING AREA @ 1/25 SQ. FT. = 17 SPACES

EQUESTRIAN ARENA - 16,145 SQ. FT.
690 SQ. FT. OF SEATING AREA @ 1/25 SQ. FT. = 28 SPACES

FUTURE SKATE PARK - 26,000 SQ. FT.
1/1,000 SQ.FT. = 26 SPACES

TENNIS COURT - 2,808 SQ. FT.
3 PER COURT = 3 SPACES

TOTAL REQUIRED PARKING STALLS (9'x19') = 163 SPACES

PROPOSED PARKING STALLS @ MIN. 9'x19' = 155 SPACES

PROPOSED "ACCESSIBLE" PARKING STALL @ 9'x19' W/ 6' UNLOADING ZONE = 8 SPACES

PROPOSED BUS STALLS @ MIN. 18'x45' = (10 SPACES)

TOTAL PROVIDED PARKING STALLS = 163 SPACES

SCOPE OF WORK

TO DEVELOP AN APPROX. 14.27 ACRES OF VACANT PARCEL INTO A COMMUNITY PARK. PROPOSED PARK WILL CONSIST OF A MULTI-USE FIELD, INFORMAL MULTI-PURPOSE EVENT AREA, A PUMP TRACK/ SKATE PARK AREA, TENNIS COURT, COMMUNITY GARDEN, EQUESTRIAN ARENA, MAINTENANCE BLDG. W/ YARD, RESTROOMS, SPLASH PAD, EVENT PLAZA W/ STAGE, CHILDRENS TOT-LOT AND PLAYGROUND, PICNIC AREA AND BIKE TRAILS. THE REMAINDER OF THE PARK WOULD CONSIST XERISCAPED DROUGHT RESISTANT, AND LOW MAINTENANCE LANDSCAPING.

UTILITIES

ELECTRIC:
SOUTHERN CALIFORNIA EDISON CO.
12353 HESPERIA RD.VICTORVILLE CA. 92392
(760) 951-3237

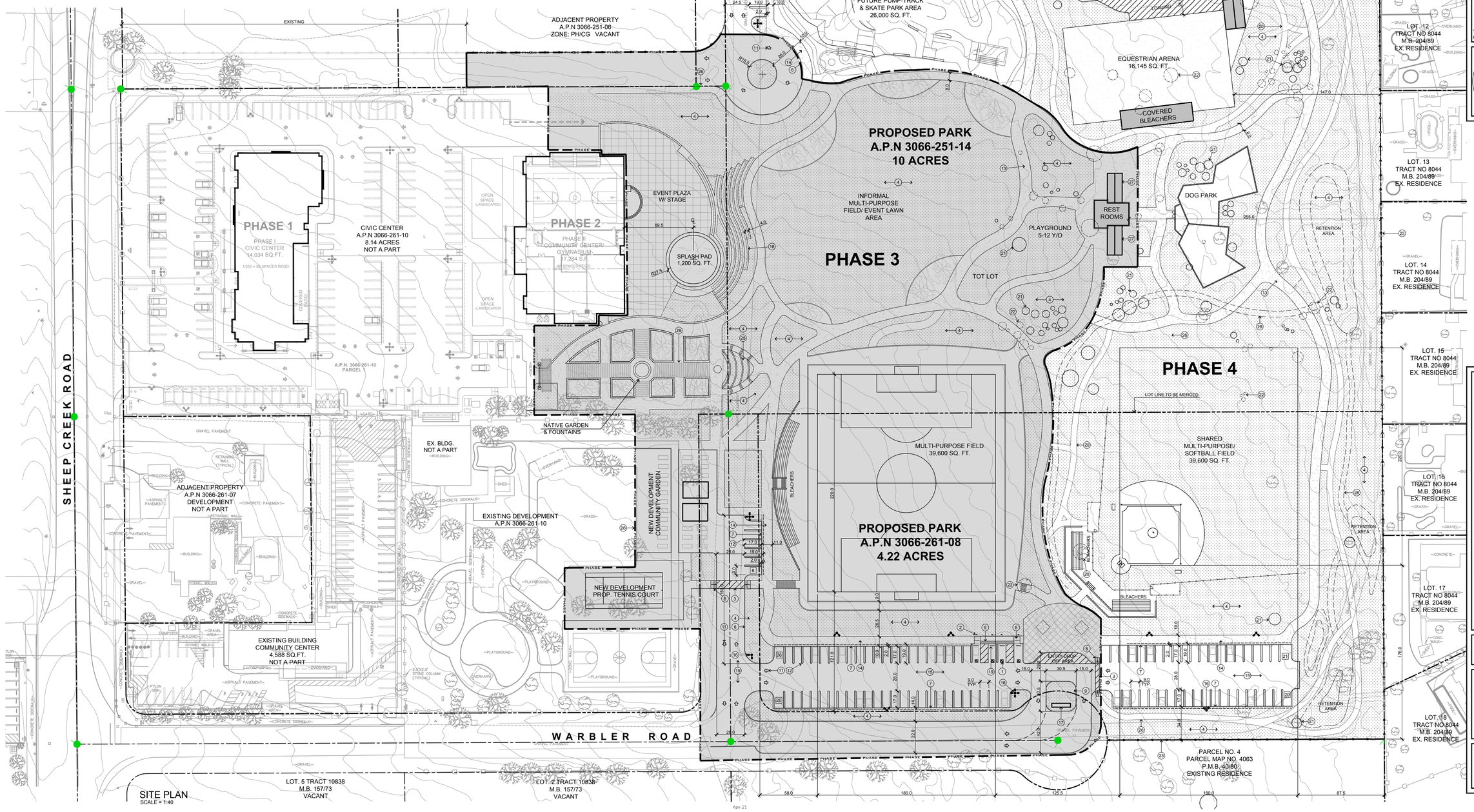
WATER:
PHELAN PINON HILLS CSD
4176 WARBLER RD. PHELAN, CA 92371
PH:760-868-3755

GAS
PROPANE (LP) SERVICE PROVIDER
TO BE SPECIFIED

DISPOSAL
CR & R
PHELAN, CA 92371
PH: (760) 868-6353

TELEPHONE:
VERIZON
15168 LA PAZ ROAD VICTORVILLE, CA. 92392
(800) 772-5153

SEWER:
PRIVATE ON SITE SYSTEM



SITE PLAN
SCALE = 1:40

STEENO DESIGN STUDIO INC.
ARCHITECTURE ◆ DESIGN ◆ PLANNING
11774 HESPERIA ROAD, SUITE B-1 ◆ HESPERIA, CA 92345
PHONE (760) 244-5001 ◆ FAX (760) 244-1948
www.steenodesign.com

DATE FINISHED
DEC 2021

REVISIONS

THESE PLANS SHALL COMPLY WITH THE 2019 CALIFORNIA BUILDING CODE (CBC) WHICH ADOPTS THE 2019 CMC, 2019 CPC, 2019 CEC, 2019 CGC, 2019 CRC AND THE 2019 ENERGY STANDARDS.

THESE DOCUMENTS AND THE DESIGN AND IDEAS INCORPORATED HEREIN, AS AN INSTRUMENT OF A PROFESSIONAL SERVICE, ARE THE SOLE PROPERTY OF STEENO DESIGN STUDIO INC. ANY USE, IN WHOLE OR IN PART FOR WHICH THEY WERE NOT PROVIDED SHALL BE UNLAWFUL

LICENSED ARCHITECT
THOMAS R. STEENO
No. C-26448
REN. 2/29/24
STATE OF CALIFORNIA

PROJECT: **PARKS & RECREATION**

PHELAN / PINION HILLS C.S.D.

SITE ADDRESS:
A.P.N. 3066-251-14 / 3066-261-08 & 10
SHEEP CREED ROAD
PHELAN, CA 92329

CONTACT:
DON BARTZ

JOB NO.
C20-L29

SHEET NAME:
SITE PLAN

PAGE
A-0

Perrie Ilercil

From: Miranda, Maria - DPW <Maria.Miranda@dpw.sbcounty.gov>
Sent: Tuesday, January 18, 2022 4:23 PM
To: Perrie Ilercil; Cheryl Tubbs (cheryl@lilburncorp.com)
Cc: Sophie; Romero, Irene; Shelleh, Ghassan - DPW; Shanabo, Eanas - DPW
Subject: RE: 14 Acres PPHCSD PREA-2021-00371 - Pre-Application Development Review

Hello Perrie,

Traffic Division has completed review of the last scoping document and is it acceptable as submitted.

Please proceed to preparing the traffic study.

Keep in mind that Traffic Division may have additional comments based on the conditions prepared for the planning application PRAA-2021-00040.

Lett us know if you have any questions.

SAN BERNARDINO COUNTY

Maria Miranda
Engineer II
TRAFFIC DIVISION
Department of Public Works

Phone: 909.387.8186
www.SBCounty.gov/dpw
Our job is to create a county in which those who reside and invest can prosper and achieve well-being.

From: Perrie Ilercil <perrie@ganddini.com>
Sent: Thursday, January 13, 2022 11:54 AM
To: Miranda, Maria - DPW <Maria.Miranda@dpw.sbcounty.gov>; Cheryl Tubbs (cheryl@lilburncorp.com) <cheryl@lilburncorp.com>
Cc: Sophie <sophie@steenodesign.com>
Subject: FW: 14 Acres PPHCSD PREA-2021-00371 - Pre-Application Development Review

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you can confirm the sender and know the content is safe.

Hi Maria,
RE: Phelan Community Park Project - TRSTY-2021-00016

Maria, those conditions you were referring to this morning will probably be available next week. County Planner, Irene Romero is scheduled to provide comments for PREA-2021-00371 are scheduled to be provided on 01/19/22. At your earliest convenience, please review the revised scoping agreement submitted December 14, 2021.

FYI
New traffic counts were collected for the three intersections on Sheep Creek Road.

Team email discussion regarding Sheep Creek Road Street Improvement Plans (90% dated 2021-1110) Fri 12/10/2021 4:40 PM. These are for the adjacent Civic & Activity Center.
The latest site plan was received January 10, 2022.

Sincerely,

Perrie Ilercil, **PE (AZ)**
Senior Engineer

GANDDINI GROUP, INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
c. 949 257-3126
e: perrie@ganddini.com

From: Sophie <sophie@steenodesign.com>
Sent: Thursday, January 06, 2022 2:10 PM
To: George Cardenas <GCardenas@pphcsd.org>; Tom <tom@steenodesign.com>; TRagen@trlsengineeringinc.com; Matthew Wilkins <mattw@ktua.com>; Cheryl Tubbs <cheryl@lilburncorp.com>
Cc: Perrie Ilercil <perrie@ganddini.com>; Angie <angie@steenodesign.com>; Jackie <jackie@steenodesign.com>
Subject: FW: 14 Acres PPHCSD PREA-2021-00371 - Pre-Application Development Review

County Planner, Irene Romero is scheduled to provide comments on our Pre-DRC Submittal for 14 acres PPHCSD site on January 19, 2022. Happy New Year, Sophie Steeno

---

From: Romero, Irene <Irene.Romero@lus.sbcounty.gov>
Sent: Thursday, January 6, 2022 1:54 PM
To: Sophie <sophie@steenodesign.com>
Cc: George Cardenas <GCardenas@pphcsd.org>; Tom <tom@steenodesign.com>; Angie <angie@steenodesign.com>; Jackie <jackie@steenodesign.com>; John <john@steenodesign.com>; TRagen@trlsengineeringinc.com; Matthew Wilkins <mattw@ktua.com>; Romero, Irene <Irene.Romero@lus.sbcounty.gov>
Subject: RE: 14 Acres PPHCSD PREA-2021-00371 - Pre-Application Development Review

Hello Sophie,

Comments for PREA-2021-00371 are scheduled to be provided on 01/19/22. I will contact you if there are any questions.

Thank you,

Irene Romero
Planner II
Land Use Services Department
Phone: 760-995-8172
Cell: 909-601-4726
385 N. Arrowhead Ave. 1st floor
San Bernardino, CA, 92415

Our job is to create a county in which those who reside and invest can prosper and achieve well-being.
www.SBCounty.gov

County of San Bernardino Confidentiality Notice: This communication contains confidential information sent solely for the use of the intended recipient. If you are not the intended recipient of this communication, you are not authorized to use it in any manner, except to immediately destroy it and notify the sender.

APPENDIX C

INTERSECTION COUNT DATA

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

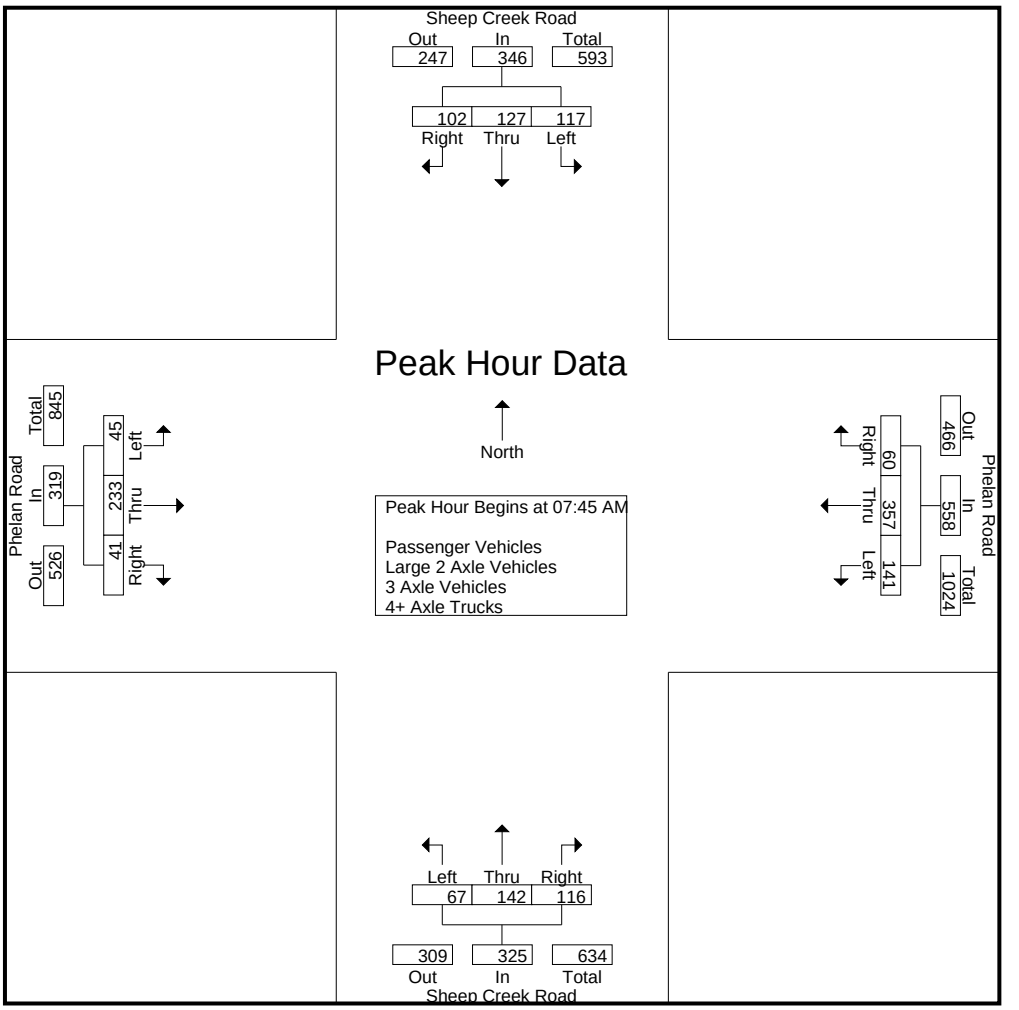
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	14	28	59	21	63	3	87	23	44	45	112	13	51	4	68	326
07:15 AM	24	19	21	64	23	51	8	82	14	22	25	61	6	30	5	41	248
07:30 AM	37	27	26	90	14	80	10	104	18	23	29	70	4	48	10	62	326
07:45 AM	42	38	34	114	35	106	15	156	10	38	42	90	11	59	7	77	437
Total	120	98	109	327	93	300	36	429	65	127	141	333	34	188	26	248	1337
08:00 AM	33	19	24	76	36	100	18	154	22	39	22	83	8	62	12	82	395
08:15 AM	21	30	19	70	35	89	14	138	19	32	23	74	12	45	10	67	349
08:30 AM	21	40	25	86	35	62	13	110	16	33	29	78	14	67	12	93	367
08:45 AM	25	41	27	93	27	63	8	98	22	53	34	109	12	45	10	67	367
Total	100	130	95	325	133	314	53	500	79	157	108	344	46	219	44	309	1478
Grand Total	220	228	204	652	226	614	89	929	144	284	249	677	80	407	70	557	2815
Apprch %	33.7	35	31.3		24.3	66.1	9.6		21.3	41.9	36.8		14.4	73.1	12.6		
Total %	7.8	8.1	7.2	23.2	8	21.8	3.2	33	5.1	10.1	8.8	24	2.8	14.5	2.5	19.8	
Passenger Vehicles	216	225	193	634	222	566	85	873	137	267	226	630	77	381	68	526	2663
% Passenger Vehicles	98.2	98.7	94.6	97.2	98.2	92.2	95.5	94	95.1	94	90.8	93.1	96.2	93.6	97.1	94.4	94.6
Large 2 Axle Vehicles	4	3	2	9	4	33	3	40	5	4	20	29	3	13	1	17	95
% Large 2 Axle Vehicles	1.8	1.3	1	1.4	1.8	5.4	3.4	4.3	3.5	1.4	8	4.3	3.8	3.2	1.4	3.1	3.4
3 Axle Vehicles	0	0	1	1	0	6	1	7	0	0	2	2	0	5	1	6	16
% 3 Axle Vehicles	0	0	0.5	0.2	0	1	1.1	0.8	0	0	0.8	0.3	0	1.2	1.4	1.1	0.6
4+ Axle Trucks	0	0	8	8	0	9	0	9	2	13	1	16	0	8	0	8	41
% 4+ Axle Trucks	0	0	3.9	1.2	0	1.5	0	1	1.4	4.6	0.4	2.4	0	2	0	1.4	1.5

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**42**	38	**34**	**114**	35	**106**	15	**156**	10	38	**42**	**90**	11	59	7	77	**437**
08:00 AM	33	19	24	76	**36**	100	**18**	154	**22**	**39**	22	83	8	62	**12**	82	395
08:15 AM	21	30	19	70	35	89	14	138	19	32	23	74	12	45	10	67	349
08:30 AM	21	**40**	25	86	35	62	13	110	16	33	29	78	**14**	**67**	12	**93**	367
Total Volume	117	127	102	346	141	357	60	558	67	142	116	325	45	233	41	319	1548
% App. Total	33.8	36.7	29.5		25.3	64	10.8		20.6	43.7	35.7		14.1	73	12.9		
PHF	.696	.794	.750	.759	.979	.842	.833	.894	.761	.910	.690	.903	.804	.869	.854	.858	.886

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				08:00 AM				07:45 AM			
+0 mins.	37	27	26	90	35	**106**	15	**156**	**22**	39	22	83	11	59	7	77
+15 mins.	**42**	**38**	**34**	**114**	**36**	100	**18**	154	19	32	23	74	8	62	**12**	82
+30 mins.	33	19	24	76	35	89	14	138	16	33	29	78	12	45	10	67
+45 mins.	21	30	19	70	35	62	13	110	22	**53**	**34**	**109**	**14**	**67**	12	**93**
Total Volume	133	114	103	350	141	357	60	558	79	157	108	344	45	233	41	319
% App. Total	38	32.6	29.4		25.3	64	10.8		23	45.6	31.4		14.1	73	12.9	
PHF	.792	.750	.757	.768	.979	.842	.833	.894	.898	.741	.794	.789	.804	.869	.854	.858

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

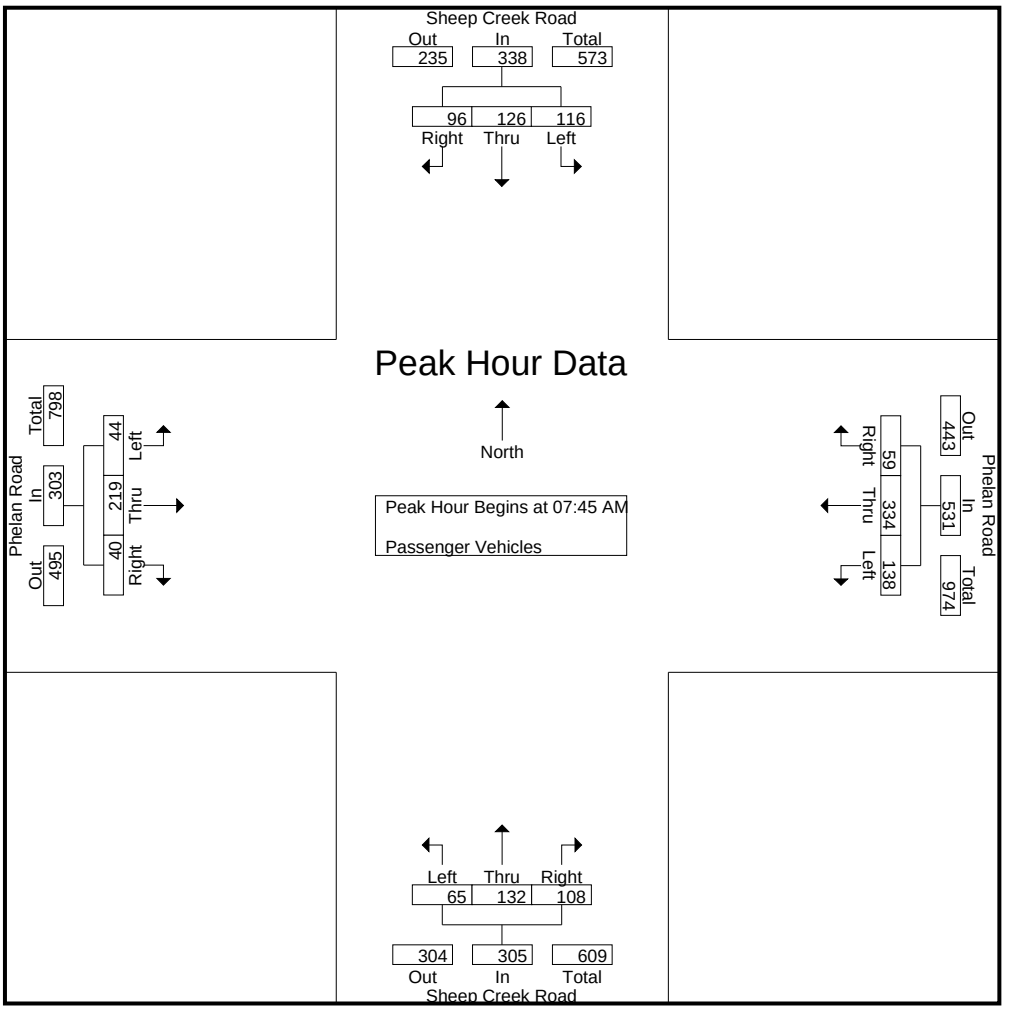
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	14	28	59	20	57	1	78	22	41	40	103	13	45	4	62	302
07:15 AM	22	19	21	62	23	43	8	74	11	22	19	52	4	29	5	38	226
07:30 AM	37	25	24	86	14	74	9	97	18	21	26	65	4	45	9	58	306
07:45 AM	41	38	33	112	32	101	15	148	10	35	38	83	11	52	7	70	413
Total	117	96	106	319	89	275	33	397	61	119	123	303	32	171	25	228	1247
08:00 AM	33	19	23	75	36	90	17	143	21	33	21	75	8	60	12	80	373
08:15 AM	21	30	16	67	35	84	14	133	18	31	23	72	12	43	10	65	337
08:30 AM	21	39	24	84	35	59	13	107	16	33	26	75	13	64	11	88	354
08:45 AM	24	41	24	89	27	58	8	93	21	51	33	105	12	43	10	65	352
Total	99	129	87	315	133	291	52	476	76	148	103	327	45	210	43	298	1416
Grand Total	216	225	193	634	222	566	85	873	137	267	226	630	77	381	68	526	2663
Apprch %	34.1	35.5	30.4		25.4	64.8	9.7		21.7	42.4	35.9		14.6	72.4	12.9		
Total %	8.1	8.4	7.2	23.8	8.3	21.3	3.2	32.8	5.1	10	8.5	23.7	2.9	14.3	2.6	19.8	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**41**	38	**33**	**112**	32	**101**	15	**148**	10	**35**	**38**	**83**	11	52	7	70	**413**
08:00 AM	33	19	23	75	**36**	90	**17**	143	**21**	33	21	75	8	60	**12**	80	373
08:15 AM	21	30	16	67	35	84	14	133	18	31	23	72	12	43	10	65	337
08:30 AM	21	**39**	24	84	35	59	13	107	16	33	26	75	**13**	**64**	11	**88**	354
Total Volume	116	126	96	338	138	334	59	531	65	132	108	305	44	219	40	303	1477
% App. Total	34.3	37.3	28.4		26	62.9	11.1		21.3	43.3	35.4		14.5	72.3	13.2		
PHF	.707	.808	.727	.754	.958	.827	.868	.897	.774	.943	.711	.919	.846	.855	.833	.861	.894

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	**41**	38	**33**	**112**	32	**101**	15	**148**	10	**35**	**38**	**83**	11	52	7	70
+15 mins.	33	19	23	75	**36**	90	**17**	143	**21**	33	21	75	8	60	**12**	80
+30 mins.	21	30	16	67	35	84	14	133	18	31	23	72	12	43	10	65
+45 mins.	21	**39**	24	84	35	59	13	107	16	33	26	75	**13**	**64**	11	**88**
Total Volume	116	126	96	338	138	334	59	531	65	132	108	305	44	219	40	303
% App. Total	34.3	37.3	28.4		26	62.9	11.1		21.3	43.3	35.4		14.5	72.3	13.2	
PHF	.707	.808	.727	.754	.958	.827	.868	.897	.774	.943	.711	.919	.846	.855	.833	.861

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

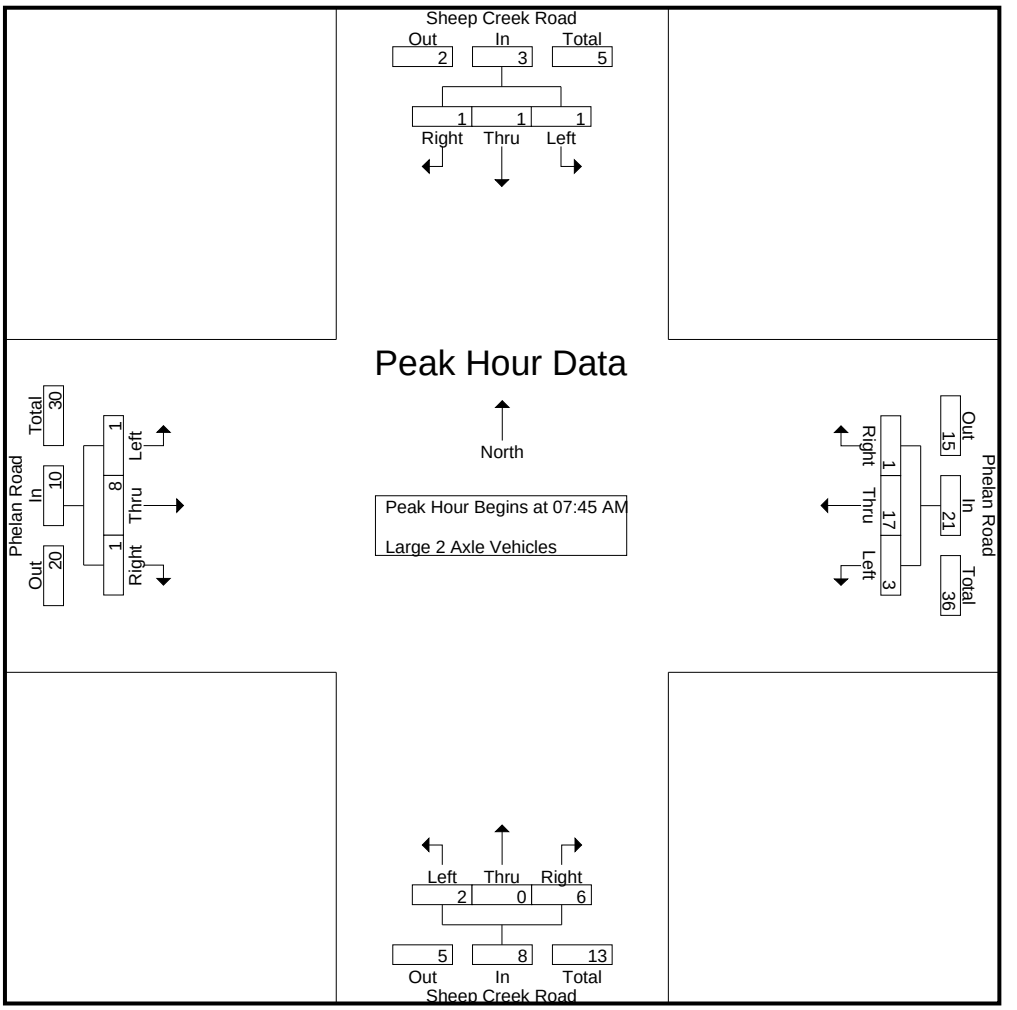
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	1	5	1	7	0	2	5	7	0	2	0	2	16
07:15 AM	2	0	0	2	0	4	0	4	2	0	5	7	2	0	0	2	15
07:30 AM	0	2	1	3	0	4	1	5	0	1	3	4	0	2	0	2	14
07:45 AM	1	0	0	1	3	3	0	6	0	0	3	3	0	4	0	4	14
Total	3	2	1	6	4	16	2	22	2	3	16	21	2	8	0	10	59
08:00 AM	0	0	1	1	0	7	1	8	1	0	0	1	0	1	0	1	11
08:15 AM	0	0	0	0	0	4	0	4	1	0	0	1	0	2	0	2	7
08:30 AM	0	1	0	1	0	3	0	3	0	0	3	3	1	1	1	3	10
08:45 AM	1	0	0	1	0	3	0	3	1	1	1	3	0	1	0	1	8
Total	1	1	1	3	0	17	1	18	3	1	4	8	1	5	1	7	36
Grand Total	4	3	2	9	4	33	3	40	5	4	20	29	3	13	1	17	95
Apprch %	44.4	33.3	22.2		10	82.5	7.5		17.2	13.8	69		17.6	76.5	5.9		
Total %	4.2	3.2	2.1	9.5	4.2	34.7	3.2	42.1	5.3	4.2	21.1	30.5	3.2	13.7	1.1	17.9	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**1**	0	0	**1**	**3**	3	0	6	0	0	**3**	**3**	0	**4**	0	**4**	**14**
08:00 AM	0	0	**1**	1	0	**7**	**1**	**8**	**1**	0	0	1	0	1	0	1	11
08:15 AM	0	0	0	0	0	4	0	4	1	0	0	1	0	2	0	2	7
08:30 AM	0	**1**	0	1	0	3	0	3	0	0	3	3	**1**	1	**1**	3	10
Total Volume	1	1	1	3	3	17	1	21	2	0	6	8	1	8	1	10	42
% App. Total	33.3	33.3	33.3		14.3	81	4.8		25	0	75		10	80	10		
PHF	.250	.250	.250	.750	.250	.607	.250	.656	.500	.000	.500	.667	.250	.500	.250	.625	.750

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	**1**	0	0	**1**	**3**	3	0	6	0	0	**3**	**3**	0	**4**	0	**4**
+15 mins.	0	0	**1**	1	0	**7**	**1**	**8**	**1**	0	0	1	0	1	0	1
+30 mins.	0	0	0	0	0	4	0	4	1	0	0	1	0	2	0	2
+45 mins.	0	**1**	0	1	0	3	0	3	0	0	3	3	**1**	1	**1**	3
Total Volume	1	1	1	3	3	17	1	21	2	0	6	8	1	8	1	10
% App. Total	33.3	33.3	33.3		14.3	81	4.8		25	0	75		10	80	10	
PHF	.250	.250	.250	.750	.250	.607	.250	.656	.500	.000	.500	.667	.250	.500	.250	.625

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

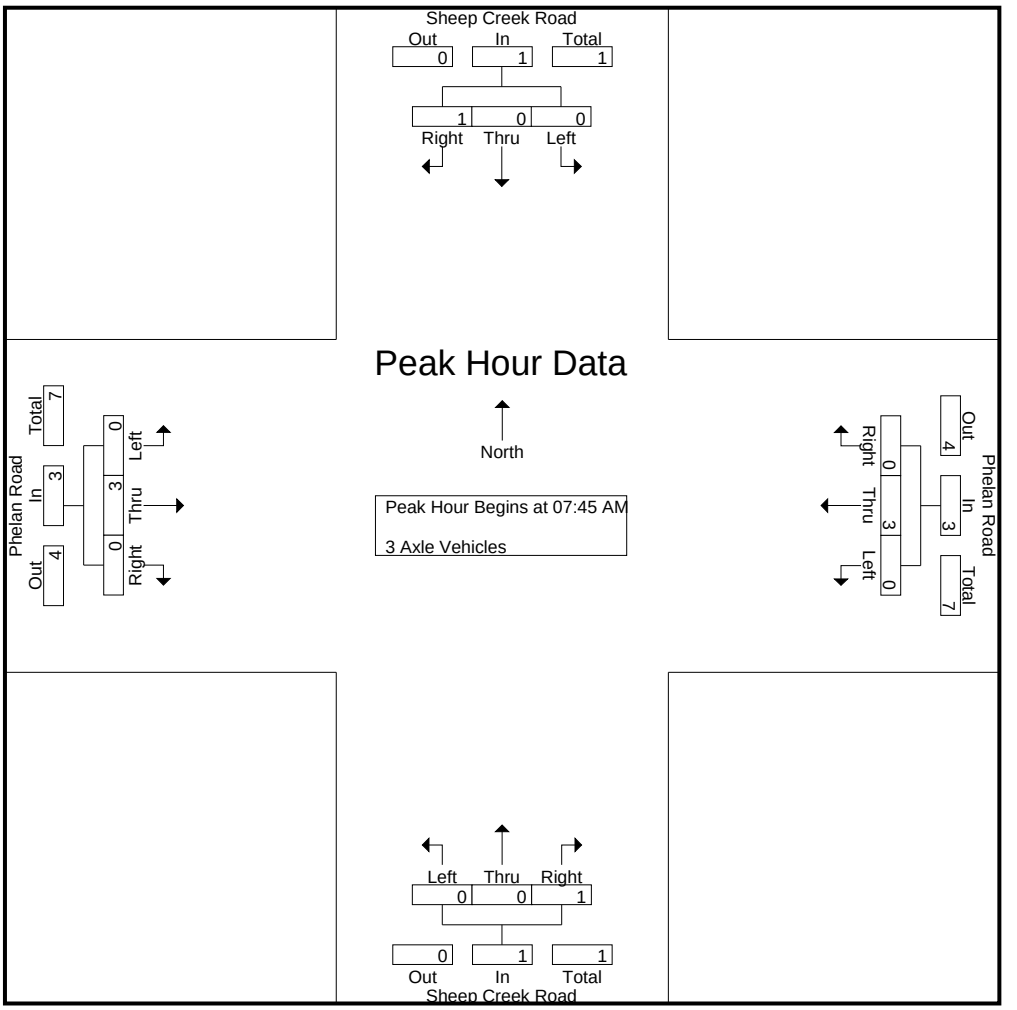
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2	3
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	2	1	3	0	0	1	1	0	3	1	4	8
08:00 AM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
08:15 AM	0	0	1	1	0	1	0	1	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total	0	0	1	1	0	4	0	4	0	0	1	1	0	2	0	2	8
Grand Total	0	0	1	1	0	6	1	7	0	0	2	2	0	5	1	6	16
Apprch %	0	0	100		0	85.7	14.3		0	0	100		0	83.3	16.7		
Total %	0	0	6.2	6.2	0	37.5	6.2	43.8	0	0	12.5	12.5	0	31.2	6.2	37.5	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**	2
08:00 AM	0	0	0	0	0	1	0	1	0	0	**1**	**1**	0	1	0	1	**3**
08:15 AM	0	0	**1**	**1**	0	1	0	1	0	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	1	1	0	3	0	3	0	0	1	1	0	3	0	3	8
% App. Total	0	0	100		0	100	0		0	0	100		0	100	0		
PHF	.000	.000	.250	.250	.000	.750	.000	.750	.000	.000	.250	.250	.000	.750	.000	.750	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	1	0	1	0	0	**1**	**1**	0	1	0	1
+30 mins.	0	0	**1**	**1**	0	1	0	1	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	0	1	1	0	3	0	3	0	0	1	1	0	3	0	3
% App. Total	0	0	100		0	100	0		0	0	100		0	100	0	
PHF	.000	.000	.250	.250	.000	.750	.000	.750	.000	.000	.250	.250	.000	.750	.000	.750

APPENDIX C

COUNT DATA

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

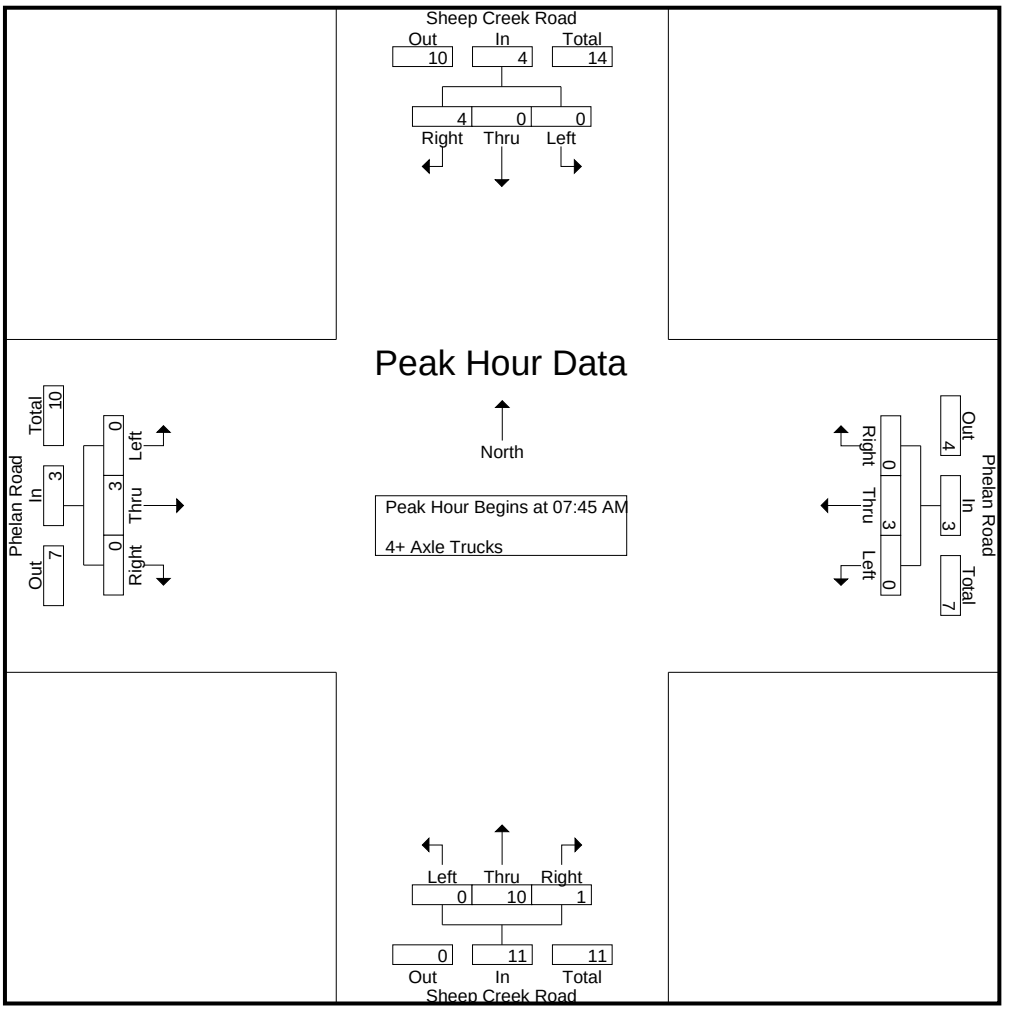
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	1	1	1	0	2	0	3	0	3	6
07:15 AM	0	0	0	0	0	4	0	4	1	0	0	1	0	1	0	1	6
07:30 AM	0	0	1	1	0	1	0	1	0	1	0	1	0	0	0	0	3
07:45 AM	0	0	1	1	0	1	0	1	0	3	1	4	0	2	0	2	8
Total	0	0	2	2	0	7	0	7	2	5	1	8	0	6	0	6	23
08:00 AM	0	0	0	0	0	2	0	2	0	6	0	6	0	0	0	0	8
08:15 AM	0	0	2	2	0	0	0	0	0	1	0	1	0	0	0	0	3
08:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
08:45 AM	0	0	3	3	0	0	0	0	0	1	0	1	0	1	0	1	5
Total	0	0	6	6	0	2	0	2	0	8	0	8	0	2	0	2	18
Grand Total	0	0	8	8	0	9	0	9	2	13	1	16	0	8	0	8	41
Apprch %	0	0	100		0	100	0		12.5	81.2	6.2		0	100	0		
Total %	0	0	19.5	19.5	0	22	0	22	4.9	31.7	2.4	39	0	19.5	0	19.5	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	1	1	0	1	0	1	0	3	**1**	4	0	**2**	0	**2**	**8**
08:00 AM	0	0	0	0	0	**2**	0	**2**	0	**6**	0	**6**	0	0	0	0	8
08:15 AM	0	0	**2**	**2**	0	0	0	0	0	1	0	1	0	0	0	0	3
08:30 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	2
Total Volume	0	0	4	4	0	3	0	3	0	10	1	11	0	3	0	3	21
% App. Total	0	0	100		0	100	0		0	90.9	9.1		0	100	0		
PHF	.000	.000	.500	.500	.000	.375	.000	.375	.000	.417	.250	.458	.000	.375	.000	.375	.656

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 07:45 AM to 08:30 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:45 AM				07:45 AM			
+0 mins.	0	0	1	1	0	1	0	1	0	3	**1**	4	0	**2**	0	**2**
+15 mins.	0	0	0	0	0	**2**	0	**2**	0	**6**	0	**6**	0	0	0	0
+30 mins.	0	0	**2**	**2**	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	0	4	4	0	3	0	3	0	10	1	11	0	3	0	3
% App. Total	0	0	100		0	100	0		0	90.9	9.1		0	100	0	
PHF	.000	.000	.500	.500	.000	.375	.000	.375	.000	.417	.250	.458	.000	.375	.000	.375

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

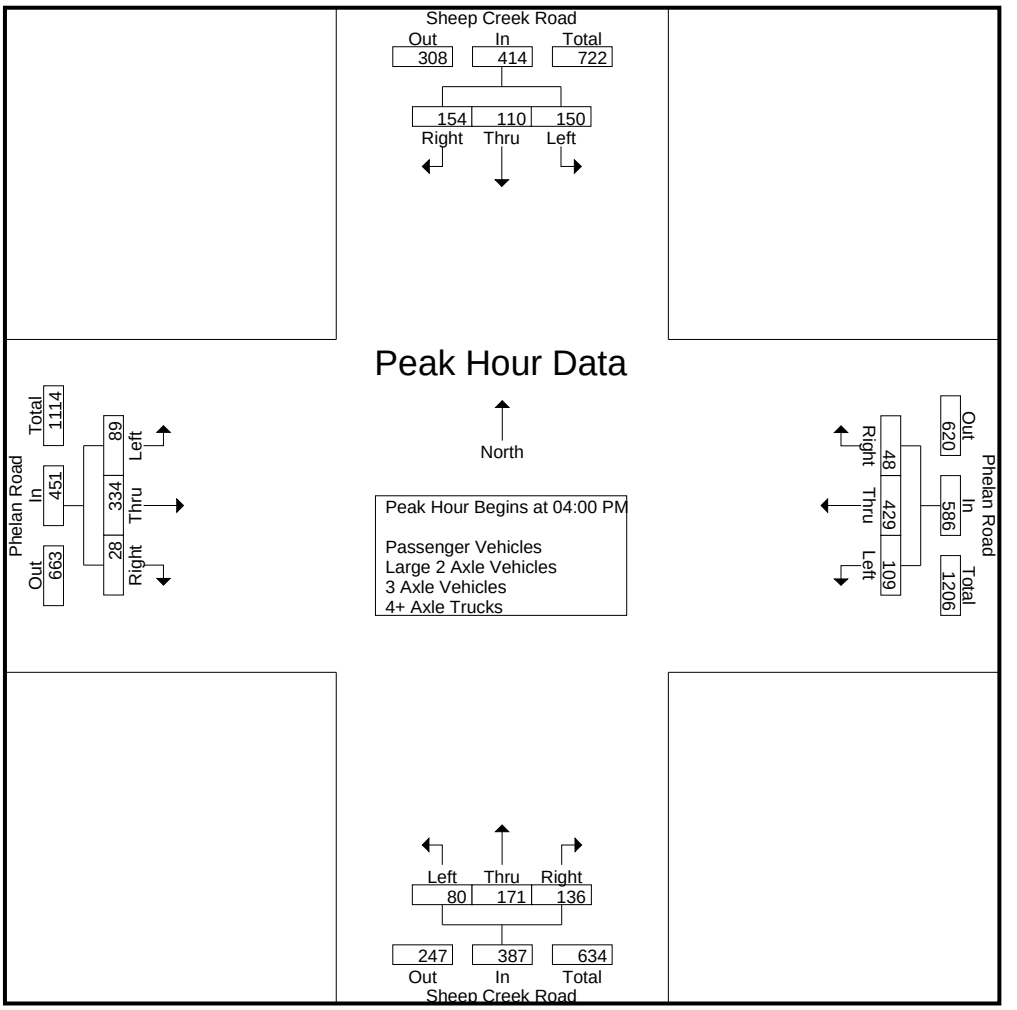
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	35	19	38	92	27	123	8	158	16	43	35	94	28	99	6	133	477
04:15 PM	37	25	44	106	24	97	17	138	23	44	42	109	21	74	7	102	455
04:30 PM	37	25	40	102	27	109	14	150	22	44	40	106	21	82	8	111	469
04:45 PM	41	41	32	114	31	100	9	140	19	40	19	78	19	79	7	105	437
Total	150	110	154	414	109	429	48	586	80	171	136	387	89	334	28	451	1838
05:00 PM	30	23	25	78	21	80	14	115	12	48	47	107	16	71	3	90	390
05:15 PM	29	24	32	85	20	75	11	106	19	46	38	103	16	59	7	82	376
05:30 PM	30	29	27	86	31	96	13	140	17	41	25	83	16	68	12	96	405
05:45 PM	24	21	23	68	26	83	9	118	9	37	27	73	18	58	6	82	341
Total	113	97	107	317	98	334	47	479	57	172	137	366	66	256	28	350	1512
Grand Total	263	207	261	731	207	763	95	1065	137	343	273	753	155	590	56	801	3350
Apprch %	36	28.3	35.7		19.4	71.6	8.9		18.2	45.6	36.3		19.4	73.7	7		
Total %	7.9	6.2	7.8	21.8	6.2	22.8	2.8	31.8	4.1	10.2	8.1	22.5	4.6	17.6	1.7	23.9	
Passenger Vehicles	260	207	254	721	202	746	94	1042	133	335	271	739	153	563	56	772	3274
% Passenger Vehicles	98.9	100	97.3	98.6	97.6	97.8	98.9	97.8	97.1	97.7	99.3	98.1	98.7	95.4	100	96.4	97.7
Large 2 Axle Vehicles	2	0	5	7	4	10	1	15	1	3	2	6	2	20	0	22	50
% Large 2 Axle Vehicles	0.8	0	1.9	1	1.9	1.3	1.1	1.4	0.7	0.9	0.7	0.8	1.3	3.4	0	2.7	1.5
3 Axle Vehicles	0	0	2	2	1	2	0	3	1	1	0	2	0	2	0	2	9
% 3 Axle Vehicles	0	0	0.8	0.3	0.5	0.3	0	0.3	0.7	0.3	0	0.3	0	0.3	0	0.2	0.3
4+ Axle Trucks	1	0	0	1	0	5	0	5	2	4	0	6	0	5	0	5	17
% 4+ Axle Trucks	0.4	0	0	0.1	0	0.7	0	0.5	1.5	1.2	0	0.8	0	0.8	0	0.6	0.5

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	35	19	38	92	27	**123**	8	**158**	16	43	35	94	**28**	**99**	6	**133**	**477**
04:15 PM	37	25	**44**	106	24	97	**17**	138	**23**	**44**	**42**	**109**	21	74	7	102	455
04:30 PM	37	25	40	102	27	109	14	150	22	44	40	106	21	82	**8**	111	469
04:45 PM	**41**	**41**	32	**114**	**31**	100	9	140	19	40	19	78	19	79	7	105	437
Total Volume	150	110	154	414	109	429	48	586	80	171	136	387	89	334	28	451	1838
% App. Total	36.2	26.6	37.2		18.6	73.2	8.2		20.7	44.2	35.1		19.7	74.1	6.2		
PHF	.915	.671	.875	.908	.879	.872	.706	.927	.870	.972	.810	.888	.795	.843	.875	.848	.963

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:15 PM				04:00 PM			
+0 mins.	35	19	38	92	27	**123**	8	**158**	**23**	44	42	**109**	**28**	**99**	6	**133**
+15 mins.	37	25	**44**	106	24	97	**17**	138	22	44	40	106	21	74	7	102
+30 mins.	37	25	40	102	27	109	14	150	19	40	19	78	21	82	**8**	111
+45 mins.	**41**	**41**	32	**114**	**31**	100	9	140	12	**48**	**47**	107	19	79	7	105
Total Volume	150	110	154	414	109	429	48	586	76	176	148	400	89	334	28	451
% App. Total	36.2	26.6	37.2		18.6	73.2	8.2		19	44	37		19.7	74.1	6.2	
PHF	.915	.671	.875	.908	.879	.872	.706	.927	.826	.917	.787	.917	.795	.843	.875	.848

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

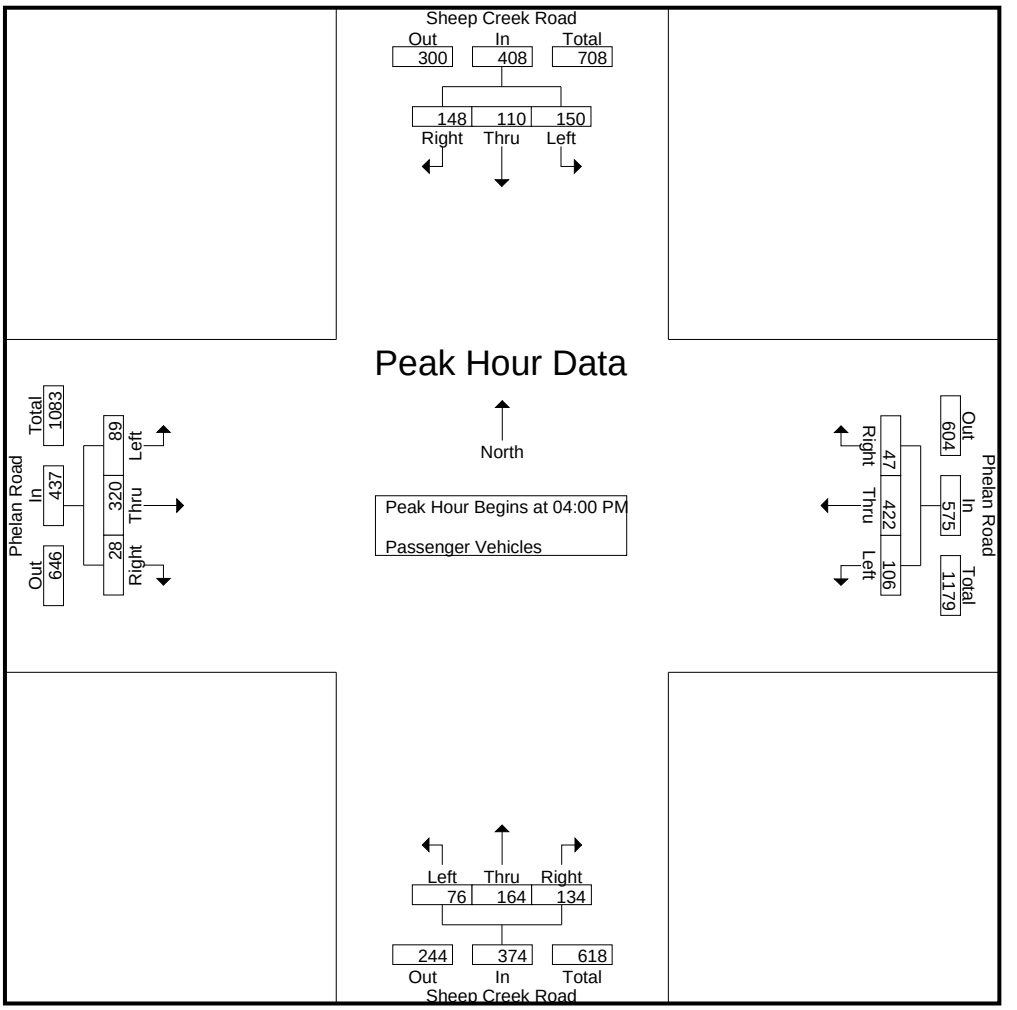
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	35	19	38	92	27	123	8	158	15	41	35	91	28	95	6	129	470
04:15 PM	37	25	43	105	23	95	17	135	21	41	40	102	21	72	7	100	442
04:30 PM	37	25	36	98	26	106	14	146	21	42	40	103	21	78	8	107	454
04:45 PM	41	41	31	113	30	98	8	136	19	40	19	78	19	75	7	101	428
Total	150	110	148	408	106	422	47	575	76	164	134	374	89	320	28	437	1794
05:00 PM	28	23	24	75	19	78	14	111	12	47	47	106	15	67	3	85	377
05:15 PM	29	24	32	85	20	72	11	103	19	46	38	103	16	56	7	79	370
05:30 PM	29	29	27	85	31	94	13	138	17	41	25	83	16	64	12	92	398
05:45 PM	24	21	23	68	26	80	9	115	9	37	27	73	17	56	6	79	335
Total	110	97	106	313	96	324	47	467	57	171	137	365	64	243	28	335	1480
Grand Total	260	207	254	721	202	746	94	1042	133	335	271	739	153	563	56	772	3274
Apprch %	36.1	28.7	35.2		19.4	71.6	9		18	45.3	36.7		19.8	72.9	7.3		
Total %	7.9	6.3	7.8	22	6.2	22.8	2.9	31.8	4.1	10.2	8.3	22.6	4.7	17.2	1.7	23.6	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	35	19	38	92	27	**123**	8	**158**	15	41	35	91	**28**	**95**	6	**129**	**470**
04:15 PM	37	25	**43**	105	23	95	**17**	135	**21**	41	**40**	102	21	72	7	100	442
04:30 PM	37	25	36	98	26	106	14	146	21	**42**	40	**103**	21	78	**8**	107	454
04:45 PM	**41**	**41**	31	**113**	**30**	98	8	136	19	40	19	78	19	75	7	101	428
Total Volume	150	110	148	408	106	422	47	575	76	164	134	374	89	320	28	437	1794
% App. Total	36.8	27	36.3		18.4	73.4	8.2		20.3	43.9	35.8		20.4	73.2	6.4		
PHF	.915	.671	.860	.903	.883	.858	.691	.910	.905	.976	.838	.908	.795	.842	.875	.847	.954

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	35	19	38	92	27	**123**	8	**158**	15	41	35	91	**28**	**95**	6	**129**
+15 mins.	37	25	**43**	105	23	95	**17**	135	**21**	41	**40**	102	21	72	7	100
+30 mins.	37	25	36	98	26	106	14	146	21	**42**	40	**103**	21	78	**8**	107
+45 mins.	**41**	**41**	31	**113**	**30**	98	8	136	19	40	19	78	19	75	7	101
Total Volume	150	110	148	408	106	422	47	575	76	164	134	374	89	320	28	437
% App. Total	36.8	27	36.3		18.4	73.4	8.2		20.3	43.9	35.8		20.4	73.2	6.4	
PHF	.915	.671	.860	.903	.883	.858	.691	.910	.905	.976	.838	.908	.795	.842	.875	.847

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

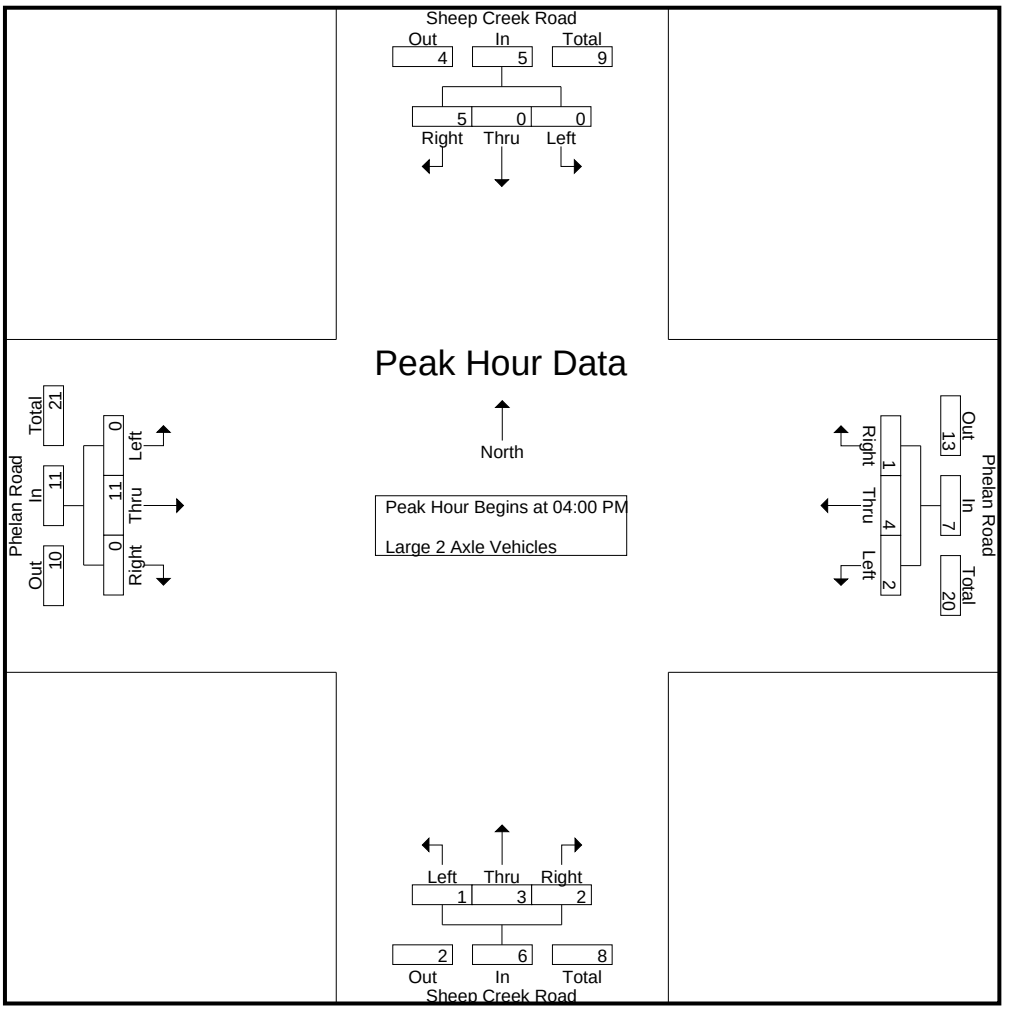
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	3	4
04:15 PM	0	0	1	1	0	1	0	1	1	1	2	4	0	2	0	2	8
04:30 PM	0	0	3	3	1	3	0	4	0	1	0	1	0	4	0	4	12
04:45 PM	0	0	1	1	1	0	1	2	0	0	0	0	0	2	0	2	5
Total	0	0	5	5	2	4	1	7	1	3	2	6	0	11	0	11	29
05:00 PM	1	0	0	1	2	1	0	3	0	0	0	0	1	3	0	4	8
05:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:30 PM	1	0	0	1	0	2	0	2	0	0	0	0	0	2	0	2	5
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	2	0	3	4
Total	2	0	0	2	2	6	0	8	0	0	0	0	2	9	0	11	21
Grand Total	2	0	5	7	4	10	1	15	1	3	2	6	2	20	0	22	50
Apprch %	28.6	0	71.4		26.7	66.7	6.7		16.7	50	33.3		9.1	90.9	0		
Total %	4	0	10	14	8	20	2	30	2	6	4	12	4	40	0	44	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	1	0	3	0	3	4
04:15 PM	0	0	1	1	0	1	0	1	**1**	1	**2**	**4**	0	2	0	2	8
04:30 PM	0	0	**3**	**3**	**1**	**3**	0	**4**	0	1	0	1	0	**4**	0	**4**	**12**
04:45 PM	0	0	1	1	1	0	**1**	2	0	0	0	0	0	2	0	2	5
Total Volume	0	0	5	5	2	4	1	7	1	3	2	6	0	11	0	11	29
% App. Total	0	0	100		28.6	57.1	14.3		16.7	50	33.3		0	100	0		
PHF	.000	.000	.417	.417	.500	.333	.250	.438	.250	.750	.250	.375	.000	.688	.000	.688	.604

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	1	0	3	0	3
+15 mins.	0	0	1	1	0	1	0	1	**1**	1	**2**	**4**	0	2	0	2
+30 mins.	0	0	**3**	**3**	**1**	**3**	0	**4**	0	1	0	1	0	**4**	0	**4**
+45 mins.	0	0	1	1	1	0	**1**	2	0	0	0	0	0	2	0	2
Total Volume	0	0	5	5	2	4	1	7	1	3	2	6	0	11	0	11
% App. Total	0	0	100		28.6	57.1	14.3		16.7	50	33.3		0	100	0	
PHF	.000	.000	.417	.417	.500	.333	.250	.438	.250	.750	.250	.375	.000	.688	.000	.688

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

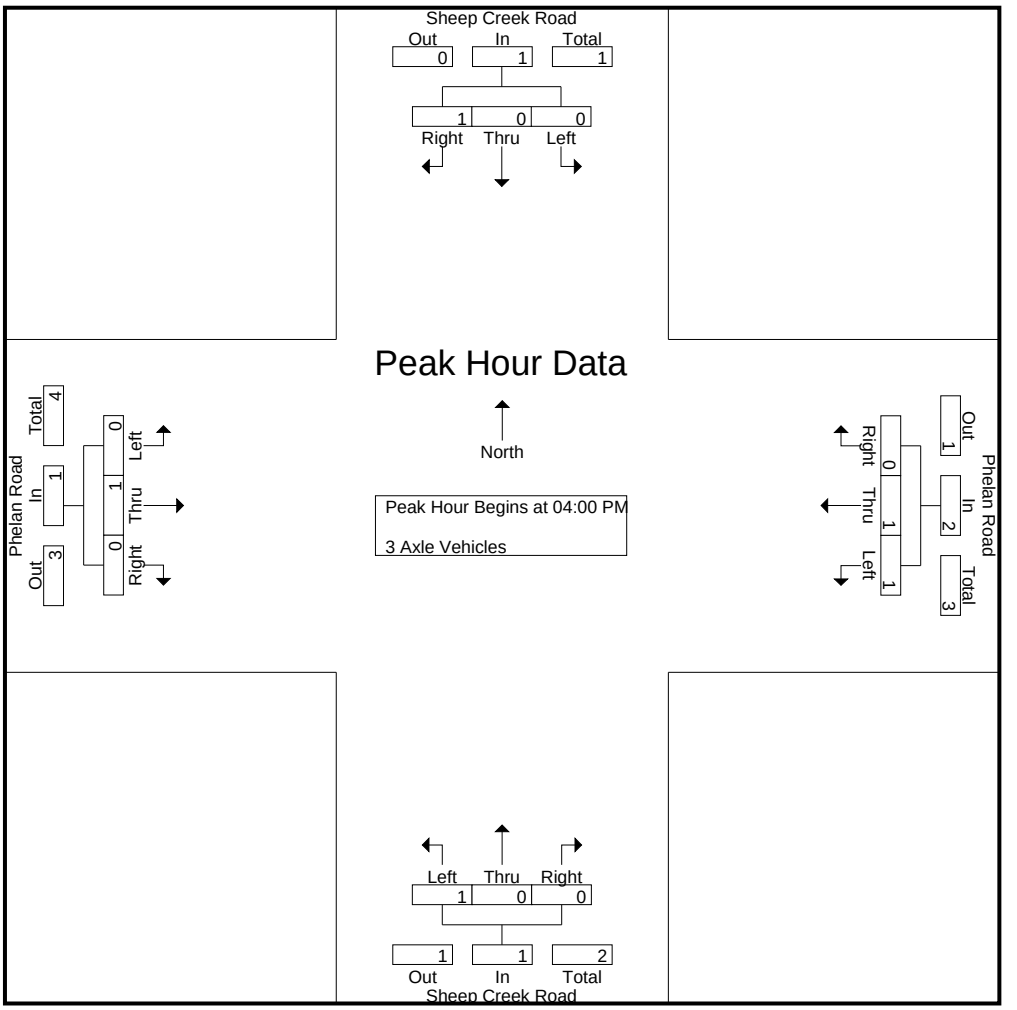
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	1	1	0	2	1	0	0	1	0	0	0	0	3
04:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	1	1	1	1	0	2	1	0	0	1	0	1	0	1	5
05:00 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	1	1	0	1	0	1	0	1	0	1	0	1	0	1	4
Grand Total	0	0	2	2	1	2	0	3	1	1	0	2	0	2	0	2	9
Apprch %	0	0	100		33.3	66.7	0		50	50	0		0	100	0		
Total %	0	0	22.2	22.2	11.1	22.2	0	33.3	11.1	11.1	0	22.2	0	22.2	0	22.2	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	**1**	**1**	0	**2**	**1**	0	0	**1**	0	0	0	0	**3**
04:30 PM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
Total Volume	0	0	1	1	1	1	0	2	1	0	0	1	0	1	0	1	5
% App. Total	0	0	100		50	50	0		100	0	0		0	100	0		
PHF	.000	.000	.250	.250	.250	.250	.000	.250	.250	.000	.000	.250	.000	.250	.000	.250	.417

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	**1**	**1**	0	**2**	**1**	0	0	**1**	0	0	0	0
+30 mins.	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
Total Volume	0	0	1	1	1	1	0	2	1	0	0	1	0	1	0	1
% App. Total	0	0	100		50	50	0		100	0	0		0	100	0	
PHF	.000	.000	.250	.250	.250	.250	.000	.250	.250	.000	.000	.250	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

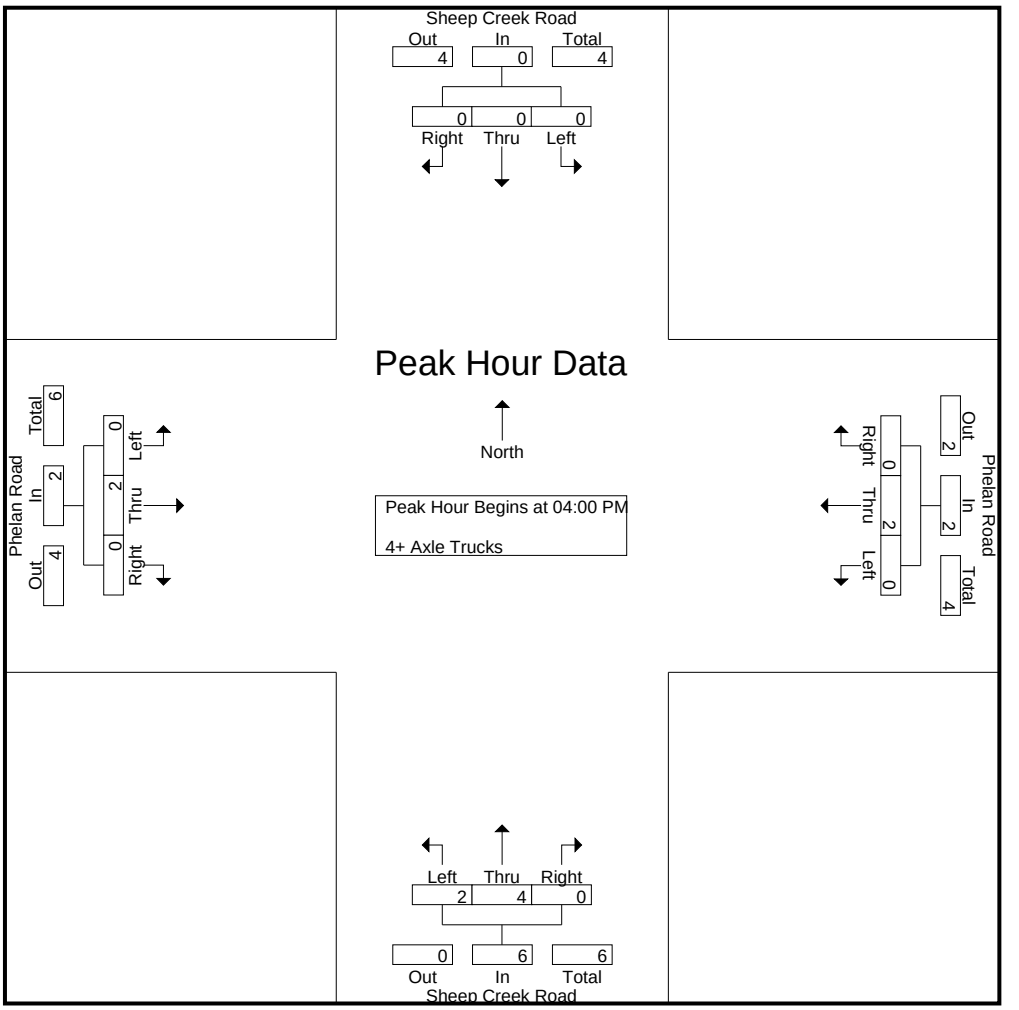
	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	1	0	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total	0	0	0	0	0	2	0	2	2	4	0	6	0	2	0	2	10
05:00 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	3	0	3	0	0	0	0	0	3	0	3	7
Grand Total	1	0	0	1	0	5	0	5	2	4	0	6	0	5	0	5	17
Apprch %	100	0	0		0	100	0		33.3	66.7	0		0	100	0		
Total %	5.9	0	0	5.9	0	29.4	0	29.4	11.8	23.5	0	35.3	0	29.4	0	29.4	

	Sheep Creek Road Southbound				Phelan Road Westbound				Sheep Creek Road Northbound				Phelan Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	**1**	1	0	**2**	0	**1**	0	**1**	**3**
04:15 PM	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
04:45 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	2	0	2	2	4	0	6	0	2	0	2	10
% App. Total	0	0	0		0	100	0		33.3	66.7	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.500	.500	.000	.750	.000	.500	.000	.500	.833

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Phelan Road
Weather: Clear

File Name : 01_CSB_Sheep_Phelan PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	**1**	1	0	**2**	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	0	0	0	**2**	0	2	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0
+45 mins.	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	2	0	2	2	4	0	6	0	2	0	2
% App. Total	0	0	0		0	100	0		33.3	66.7	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.500	.500	.000	.750	.000	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

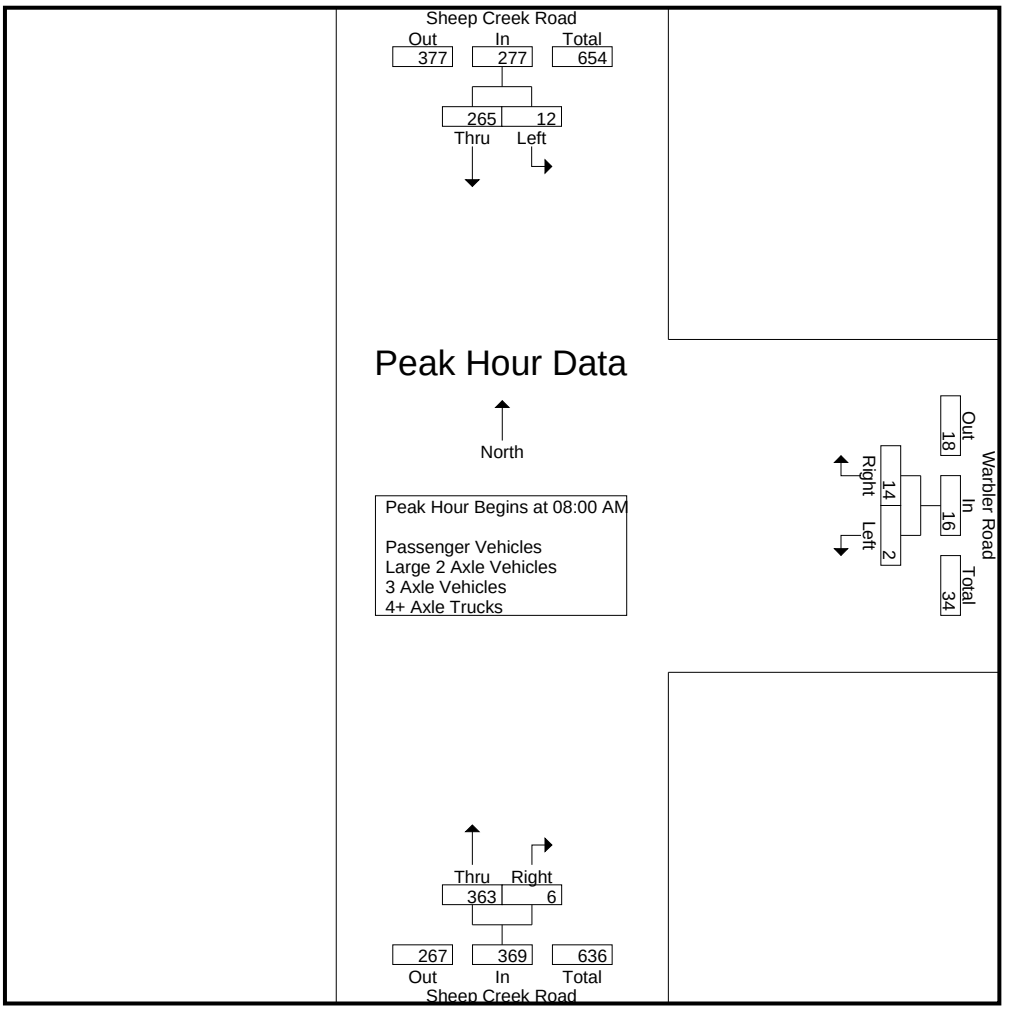
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	2	40	42	0	1	1	112	0	112	155
07:15 AM	5	37	42	0	0	0	58	1	59	101
07:30 AM	5	35	40	2	1	3	56	5	61	104
07:45 AM	3	48	51	9	0	9	82	3	85	145
Total	15	160	175	11	2	13	308	9	317	505
08:00 AM	3	50	53	1	4	5	64	1	65	123
08:15 AM	3	51	54	1	2	3	80	2	82	139
08:30 AM	5	87	92	0	3	3	91	1	92	187
08:45 AM	1	77	78	0	5	5	128	2	130	213
Total	12	265	277	2	14	16	363	6	369	662
Grand Total	27	425	452	13	16	29	671	15	686	1167
Apprch %	6	94		44.8	55.2		97.8	2.2		
Total %	2.3	36.4	38.7	1.1	1.4	2.5	57.5	1.3	58.8	
Passenger Vehicles	27	416	443	13	16	29	632	15	647	1119
% Passenger Vehicles	100	97.9	98	100	100	100	94.2	100	94.3	95.9
Large 2 Axle Vehicles	0	8	8	0	0	0	22	0	22	30
% Large 2 Axle Vehicles	0	1.9	1.8	0	0	0	3.3	0	3.2	2.6
3 Axle Vehicles	0	1	1	0	0	0	1	0	1	2
% 3 Axle Vehicles	0	0.2	0.2	0	0	0	0.1	0	0.1	0.2
4+ Axle Trucks	0	0	0	0	0	0	16	0	16	16
% 4+ Axle Trucks	0	0	0	0	0	0	2.4	0	2.3	1.4

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	3	50	53	**1**	4	**5**	64	1	65	123
08:15 AM	3	51	54	1	2	3	80	**2**	82	139
08:30 AM	**5**	**87**	**92**	0	3	3	91	1	92	187
08:45 AM	1	77	78	0	**5**	5	**128**	2	**130**	**213**
Total Volume	12	265	277	2	14	16	363	6	369	662
% App. Total	4.3	95.7		12.5	87.5		98.4	1.6		
PHF	.600	.761	.753	.500	.700	.800	.709	.750	.710	.777

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:30 AM			08:00 AM		
+0 mins.	3	50	53	2	1	3	64	1	65
+15 mins.	3	51	54	**9**	0	**9**	80	**2**	82
+30 mins.	**5**	**87**	**92**	1	**4**	5	91	1	92
+45 mins.	1	77	78	1	2	3	**128**	2	**130**
Total Volume	12	265	277	13	7	20	363	6	369
% App. Total	4.3	95.7		65	35		98.4	1.6	
PHF	.600	.761	.753	.361	.438	.556	.709	.750	.710

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

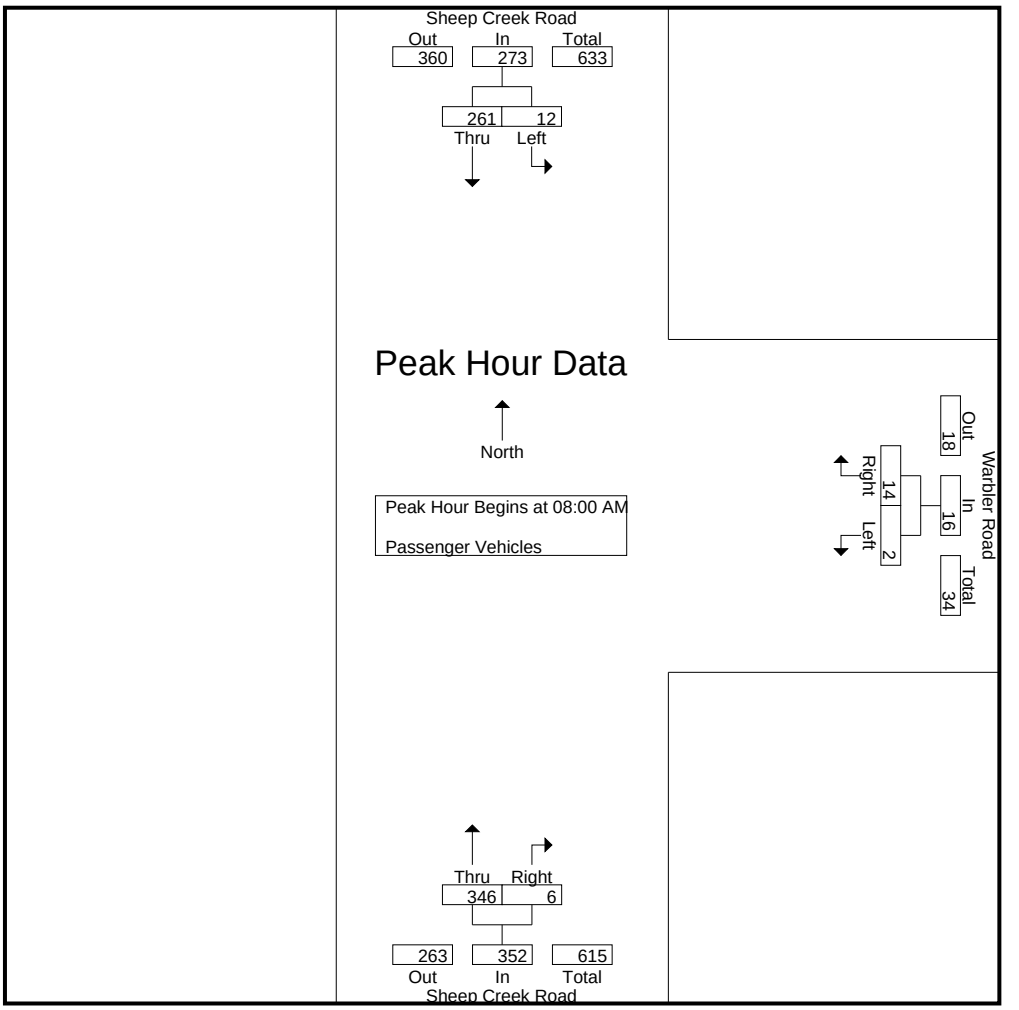
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	2	39	41	0	1	1	104	0	104	146
07:15 AM	5	36	41	0	0	0	54	1	55	96
07:30 AM	5	33	38	2	1	3	52	5	57	98
07:45 AM	3	47	50	9	0	9	76	3	79	138
Total	15	155	170	11	2	13	286	9	295	478
08:00 AM	3	50	53	1	4	5	57	1	58	116
08:15 AM	3	50	53	1	2	3	78	2	80	136
08:30 AM	5	84	89	0	3	3	87	1	88	180
08:45 AM	1	77	78	0	5	5	124	2	126	209
Total	12	261	273	2	14	16	346	6	352	641
Grand Total	27	416	443	13	16	29	632	15	647	1119
Apprch %	6.1	93.9		44.8	55.2		97.7	2.3		
Total %	2.4	37.2	39.6	1.2	1.4	2.6	56.5	1.3	57.8	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	3	50	53	**1**	4	**5**	57	1	58	116
08:15 AM	3	50	53	1	2	3	78	**2**	80	136
08:30 AM	**5**	**84**	**89**	0	3	3	87	1	88	180
08:45 AM	1	77	78	0	**5**	5	**124**	2	**126**	**209**
Total Volume	12	261	273	2	14	16	346	6	352	641
% App. Total	4.4	95.6		12.5	87.5		98.3	1.7		
PHF	.600	.777	.767	.500	.700	.800	.698	.750	.698	.767

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	3	50	53	**1**	4	**5**	57	1	58
+15 mins.	3	50	53	1	2	3	78	**2**	80
+30 mins.	**5**	**84**	**89**	0	3	3	87	1	88
+45 mins.	1	77	78	0	**5**	5	**124**	2	**126**
Total Volume	12	261	273	2	14	16	346	6	352
% App. Total	4.4	95.6		12.5	87.5		98.3	1.7	
PHF	.600	.777	.767	.500	.700	.800	.698	.750	.698

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

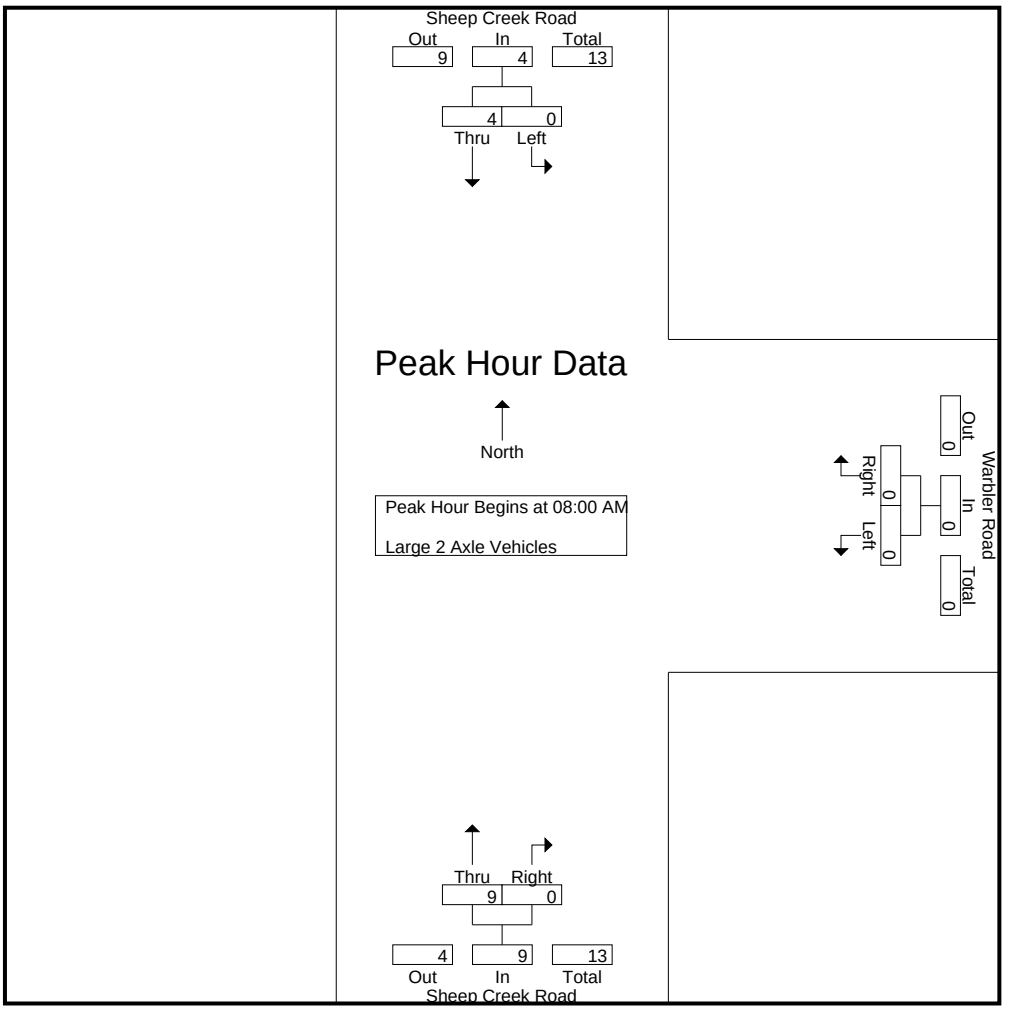
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	1	0	0	0	7	0	7	8
07:15 AM	0	1	1	0	0	0	3	0	3	4
07:30 AM	0	1	1	0	0	0	2	0	2	3
07:45 AM	0	1	1	0	0	0	1	0	1	2
Total	0	4	4	0	0	0	13	0	13	17
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	3	3	0	0	0	3	0	3	6
08:45 AM	0	0	0	0	0	0	4	0	4	4
Total	0	4	4	0	0	0	9	0	9	13
Grand Total	0	8	8	0	0	0	22	0	22	30
Apprch %	0	100		0	0		100	0		
Total %	0	26.7	26.7	0	0	0	73.3	0	73.3	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	1	1	0	0	0	1	0	1	2
08:30 AM	0	**3**	**3**	0	0	0	3	0	3	**6**
08:45 AM	0	0	0	0	0	0	**4**	0	**4**	4
Total Volume	0	4	4	0	0	0	9	0	9	13
% App. Total	0	100		0	0		100	0		
PHF	.000	.333	.333	.000	.000	.000	.563	.000	.563	.542

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	1	1	0	0	0	1	0	1
+30 mins.	0	**3**	**3**	0	0	0	3	0	3
+45 mins.	0	0	0	0	0	0	**4**	0	**4**
Total Volume	0	4	4	0	0	0	9	0	9
% App. Total	0	100		0	0		100	0	
PHF	.000	.333	.333	.000	.000	.000	.563	.000	.563

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

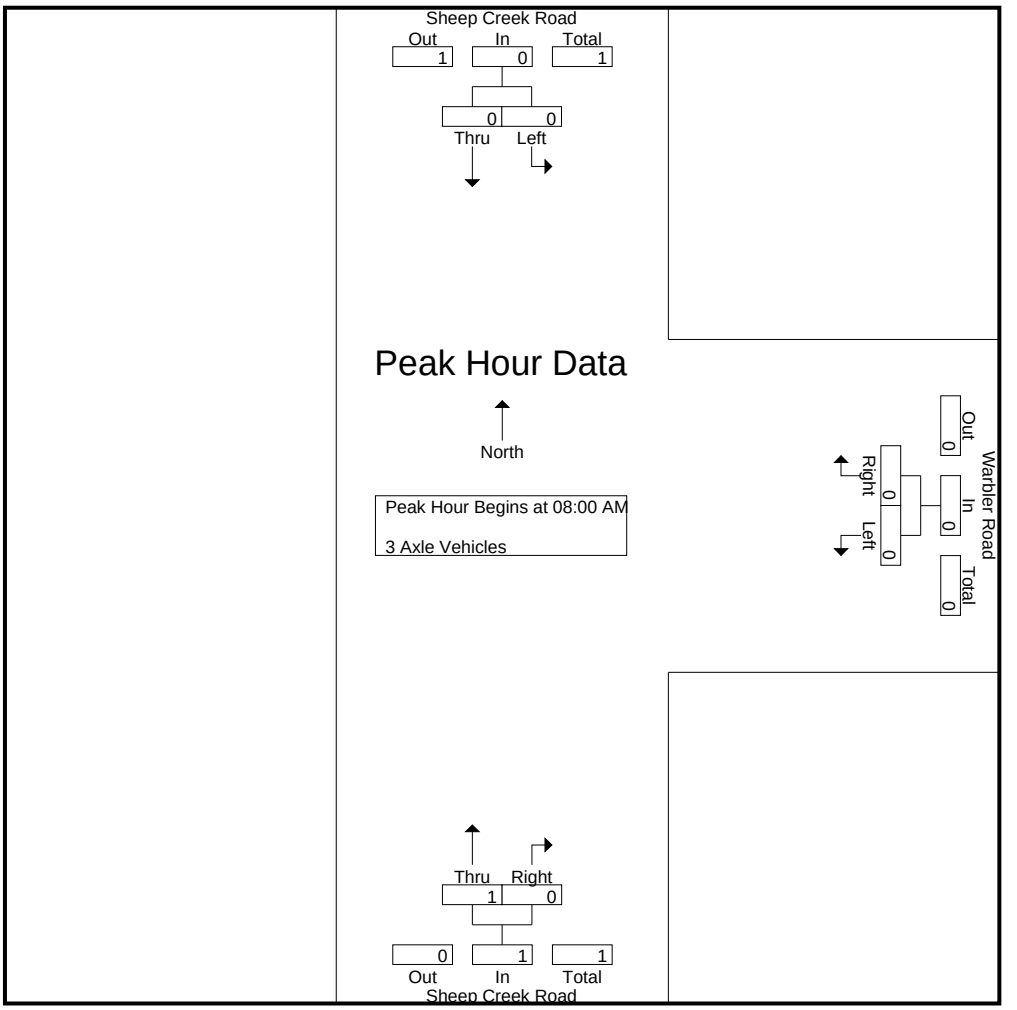
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	1	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	1	1	0	0	0	1	0	1	2
Apprch %	0	100		0	0		100	0		
Total %	0	50	50	0	0	0	50	0	50	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	**1**	0	**1**	**1**
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	**1**	0	**1**
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

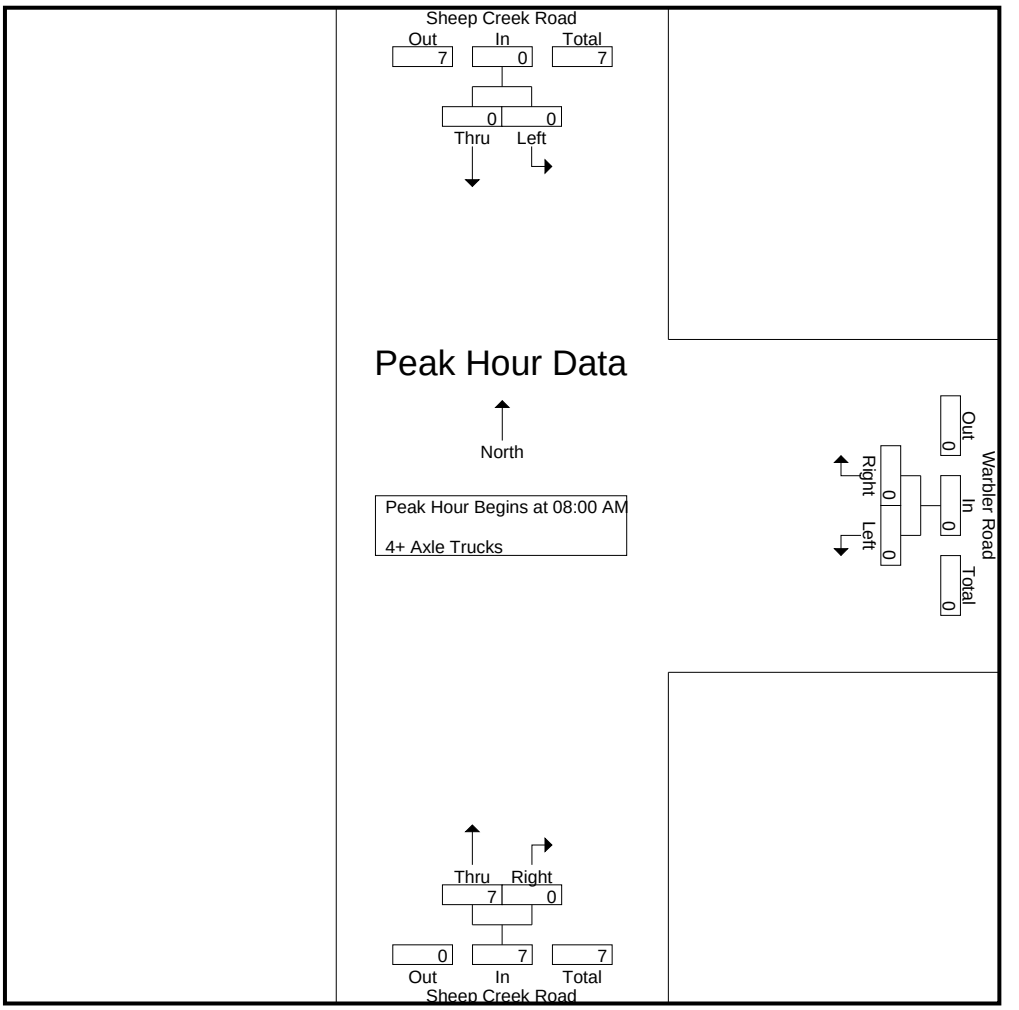
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	0	0	2	0	2	2
07:45 AM	0	0	0	0	0	0	5	0	5	5
Total	0	0	0	0	0	0	9	0	9	9
08:00 AM	0	0	0	0	0	0	5	0	5	5
08:15 AM	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	7	0	7	7
Grand Total	0	0	0	0	0	0	16	0	16	16
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	0	0	**5**	0	**5**	**5**
08:15 AM	0	0	0	0	0	0	1	0	1	1
08:30 AM	0	0	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	7	0	7	7
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.350	.000	.350	.350

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	**5**	0	**5**
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	1	0	1
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	7	0	7
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.350	.000	.350

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

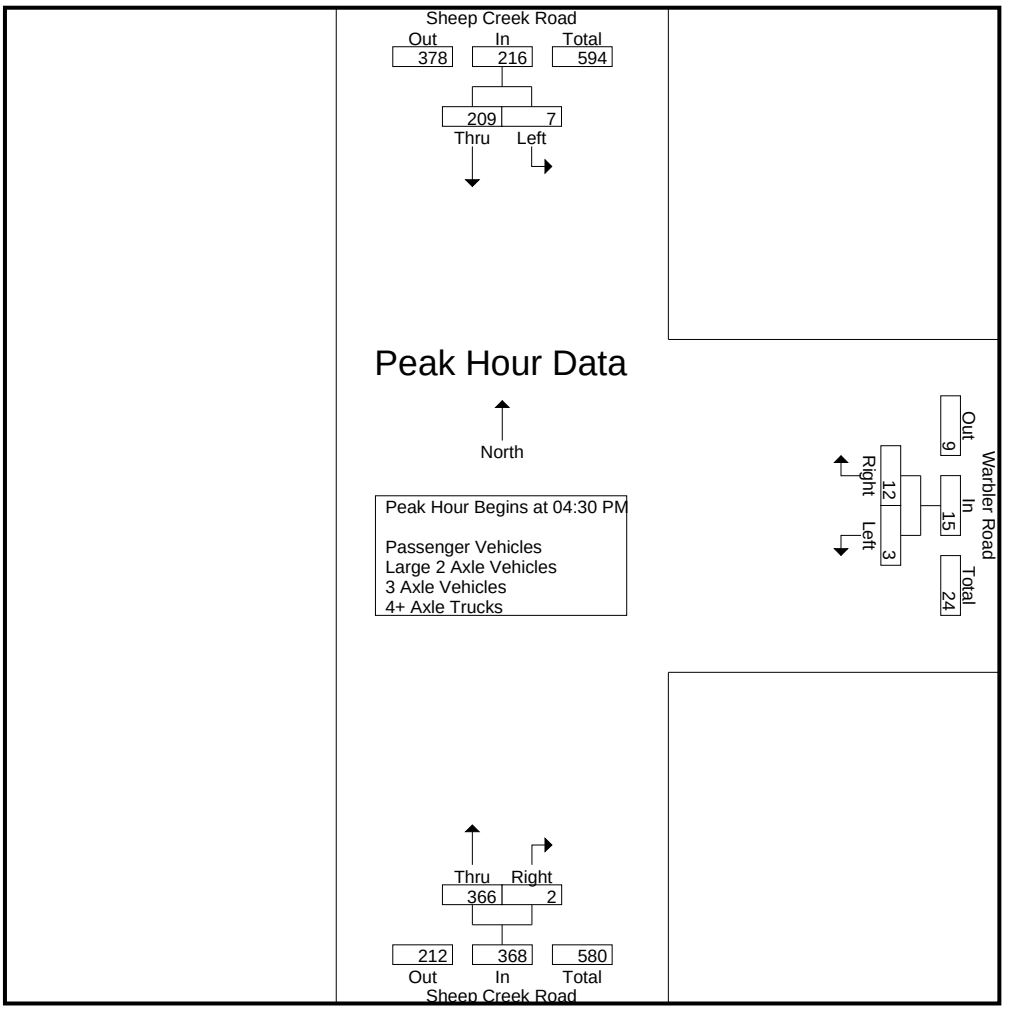
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	45	48	1	4	5	97	1	98	151
04:15 PM	2	35	37	0	3	3	91	0	91	131
04:30 PM	4	51	55	0	3	3	85	1	86	144
04:45 PM	1	45	46	0	3	3	78	0	78	127
Total	10	176	186	1	13	14	351	2	353	553
05:00 PM	2	53	55	3	4	7	103	1	104	166
05:15 PM	0	60	60	0	2	2	100	0	100	162
05:30 PM	3	47	50	1	1	2	74	0	74	126
05:45 PM	4	44	48	0	0	0	64	3	67	115
Total	9	204	213	4	7	11	341	4	345	569
Grand Total	19	380	399	5	20	25	692	6	698	1122
Apprch %	4.8	95.2		20	80		99.1	0.9		
Total %	1.7	33.9	35.6	0.4	1.8	2.2	61.7	0.5	62.2	
Passenger Vehicles	18	380	398	5	19	24	675	5	680	1102
% Passenger Vehicles	94.7	100	99.7	100	95	96	97.5	83.3	97.4	98.2
Large 2 Axle Vehicles	0	0	0	0	0	0	11	1	12	12
% Large 2 Axle Vehicles	0	0	0	0	0	0	1.6	16.7	1.7	1.1
3 Axle Vehicles	1	0	1	0	1	1	1	0	1	3
% 3 Axle Vehicles	5.3	0	0.3	0	5	4	0.1	0	0.1	0.3
4+ Axle Trucks	0	0	0	0	0	0	5	0	5	5
% 4+ Axle Trucks	0	0	0	0	0	0	0.7	0	0.7	0.4

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	**4**	51	55	0	3	3	85	**1**	86	144
04:45 PM	1	45	46	0	3	3	78	0	78	127
05:00 PM	2	53	55	**3**	**4**	**7**	**103**	1	**104**	**166**
05:15 PM	0	**60**	**60**	0	2	2	100	0	100	162
Total Volume	7	209	216	3	12	15	366	2	368	599
% App. Total	3.2	96.8		20	80		99.5	0.5		
PHF	.438	.871	.900	.250	.750	.536	.888	.500	.885	.902

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:15 PM			04:30 PM		
+0 mins.	**4**	51	55	0	3	3	85	**1**	86
+15 mins.	1	45	46	0	3	3	78	0	78
+30 mins.	2	53	55	0	3	3	**103**	1	**104**
+45 mins.	0	**60**	**60**	**3**	**4**	**7**	100	0	100
Total Volume	7	209	216	3	13	16	366	2	368
% App. Total	3.2	96.8		18.8	81.2		99.5	0.5	
PHF	.438	.871	.900	.250	.813	.571	.888	.500	.885

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

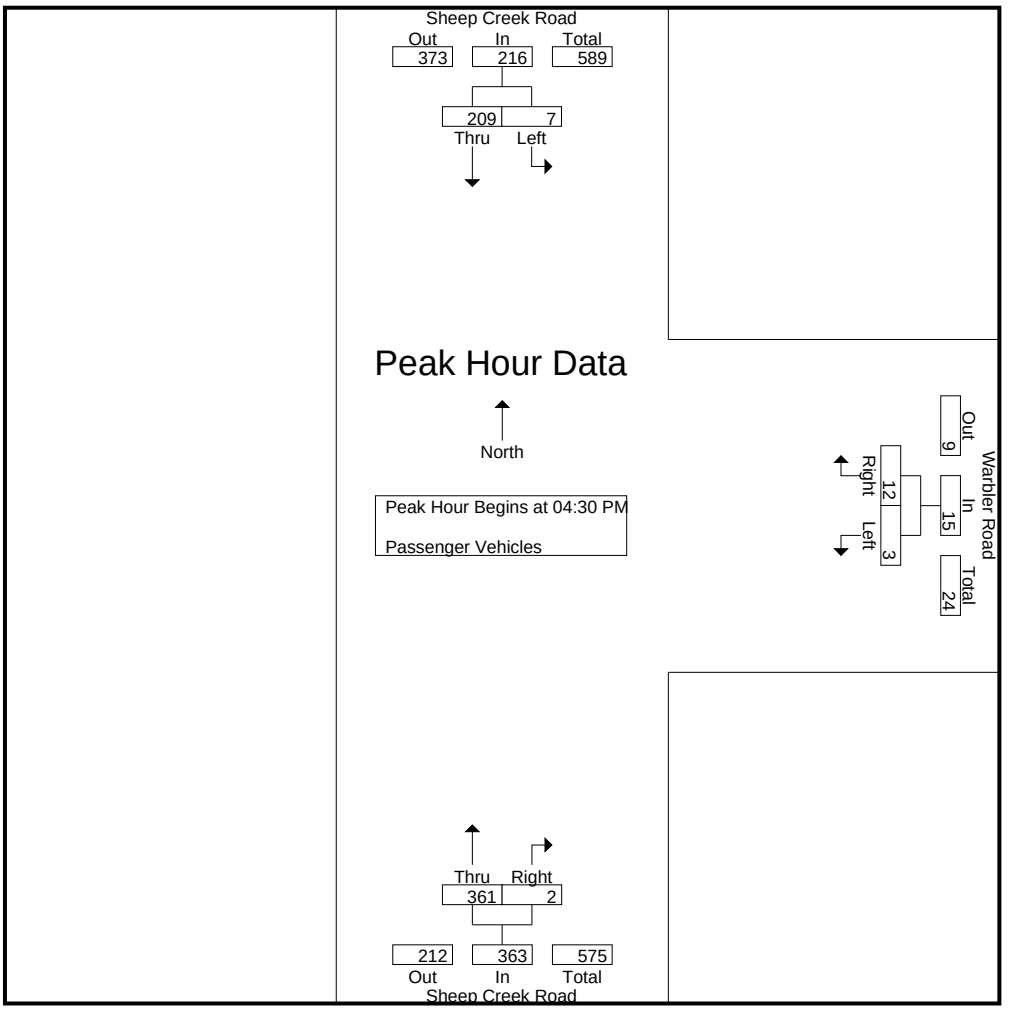
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	3	45	48	1	4	5	94	1	95	148
04:15 PM	1	35	36	0	2	2	87	0	87	125
04:30 PM	4	51	55	0	3	3	84	1	85	143
04:45 PM	1	45	46	0	3	3	77	0	77	126
Total	9	176	185	1	12	13	342	2	344	542
05:00 PM	2	53	55	3	4	7	102	1	103	165
05:15 PM	0	60	60	0	2	2	98	0	98	160
05:30 PM	3	47	50	1	1	2	73	0	73	125
05:45 PM	4	44	48	0	0	0	60	2	62	110
Total	9	204	213	4	7	11	333	3	336	560
Grand Total	18	380	398	5	19	24	675	5	680	1102
Apprch %	4.5	95.5		20.8	79.2		99.3	0.7		
Total %	1.6	34.5	36.1	0.5	1.7	2.2	61.3	0.5	61.7	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	**4**	51	55	0	3	3	84	**1**	85	143
04:45 PM	1	45	46	0	3	3	77	0	77	126
05:00 PM	2	53	55	**3**	**4**	**7**	**102**	1	**103**	**165**
05:15 PM	0	**60**	**60**	0	2	2	98	0	98	160
Total Volume	7	209	216	3	12	15	361	2	363	594
% App. Total	3.2	96.8		20	80		99.4	0.6		
PHF	.438	.871	.900	.250	.750	.536	.885	.500	.881	.900

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	**4**	51	55	0	3	3	84	**1**	85
+15 mins.	1	45	46	0	3	3	77	0	77
+30 mins.	2	53	55	**3**	**4**	**7**	**102**	1	**103**
+45 mins.	0	**60**	**60**	0	2	2	98	0	98
Total Volume	7	209	216	3	12	15	361	2	363
% App. Total	3.2	96.8		20	80		99.4	0.6	
PHF	.438	.871	.900	.250	.750	.536	.885	.500	.881

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

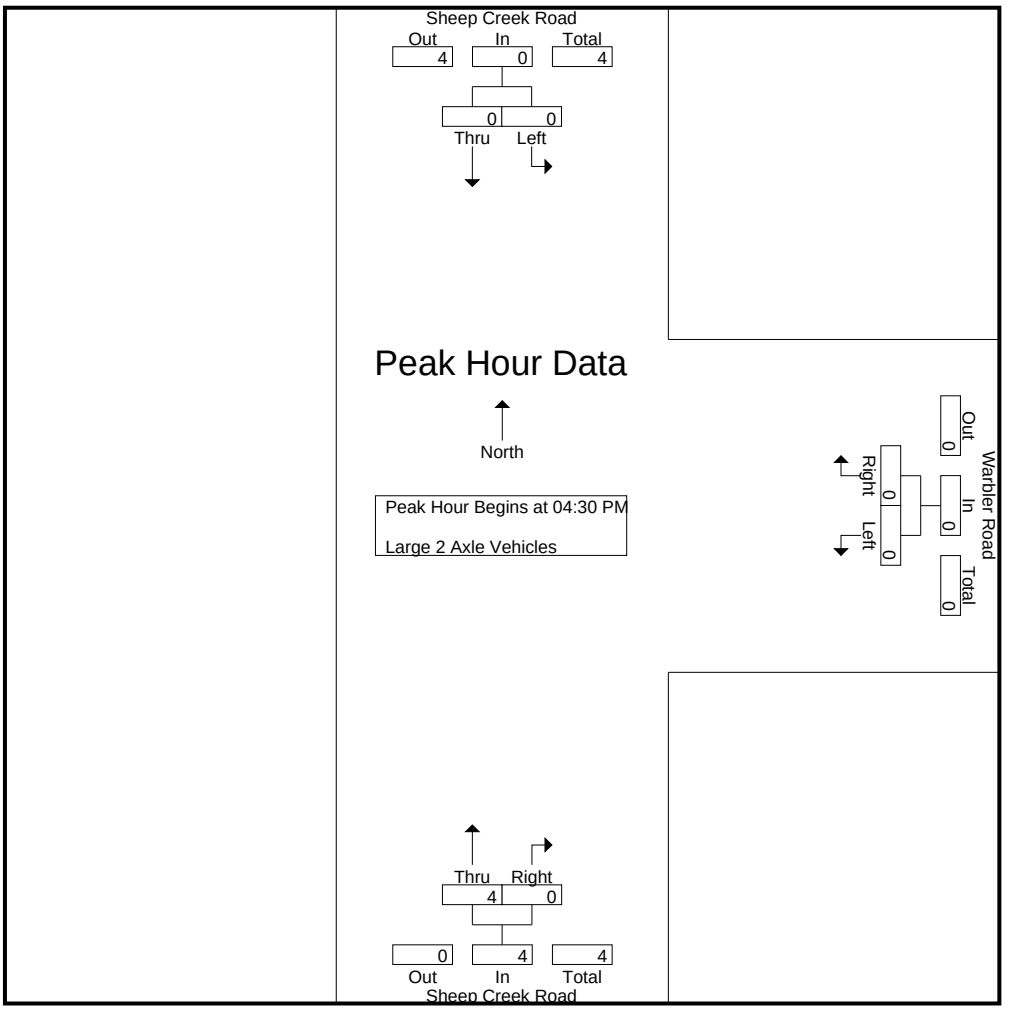
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	5	0	5	5
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	0	2	2
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	4	1	5	5
Total	0	0	0	0	0	0	6	1	7	7
Grand Total	0	0	0	0	0	0	11	1	12	12
Apprch %	0	0		0	0		91.7	8.3		
Total %	0	0	0	0	0	0	91.7	8.3	100	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	1	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	**2**	0	**2**	**2**
Total Volume	0	0	0	0	0	0	4	0	4	4
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	**2**	0	**2**
Total Volume	0	0	0	0	0	0	4	0	4
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.500	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

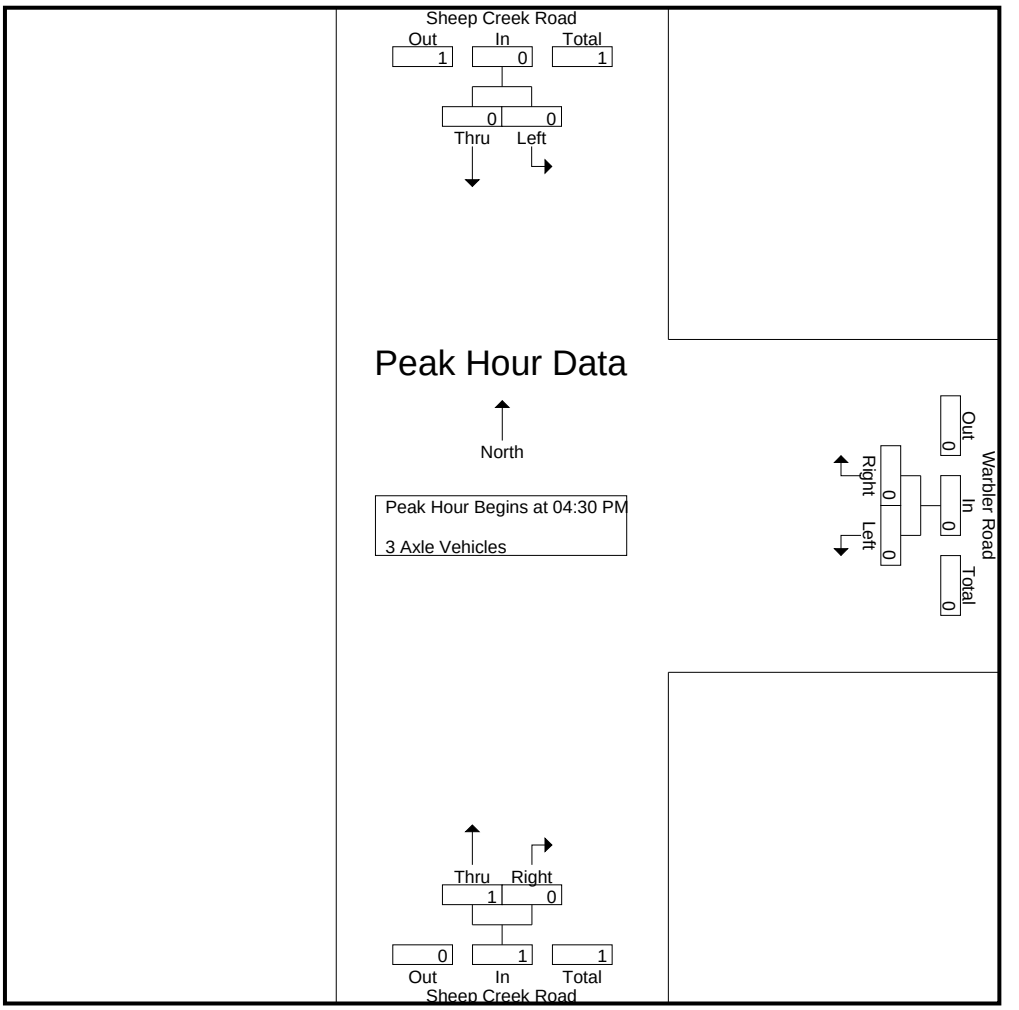
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	1	0	1	1	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	1	1	0	0	0	2
05:00 PM	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	1	0	1	0	1	1	1	0	1	3
Apprch %	100	0		0	100		100	0		
Total %	33.3	0	33.3	0	33.3	33.3	33.3	0	33.3	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	**1**	0	**1**	**1**
05:15 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0		0	0		100	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	**1**	0	**1**
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	0	1
% App. Total	0	0		0	0		100	0	
PHF	.000	.000	.000	.000	.000	.000	.250	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

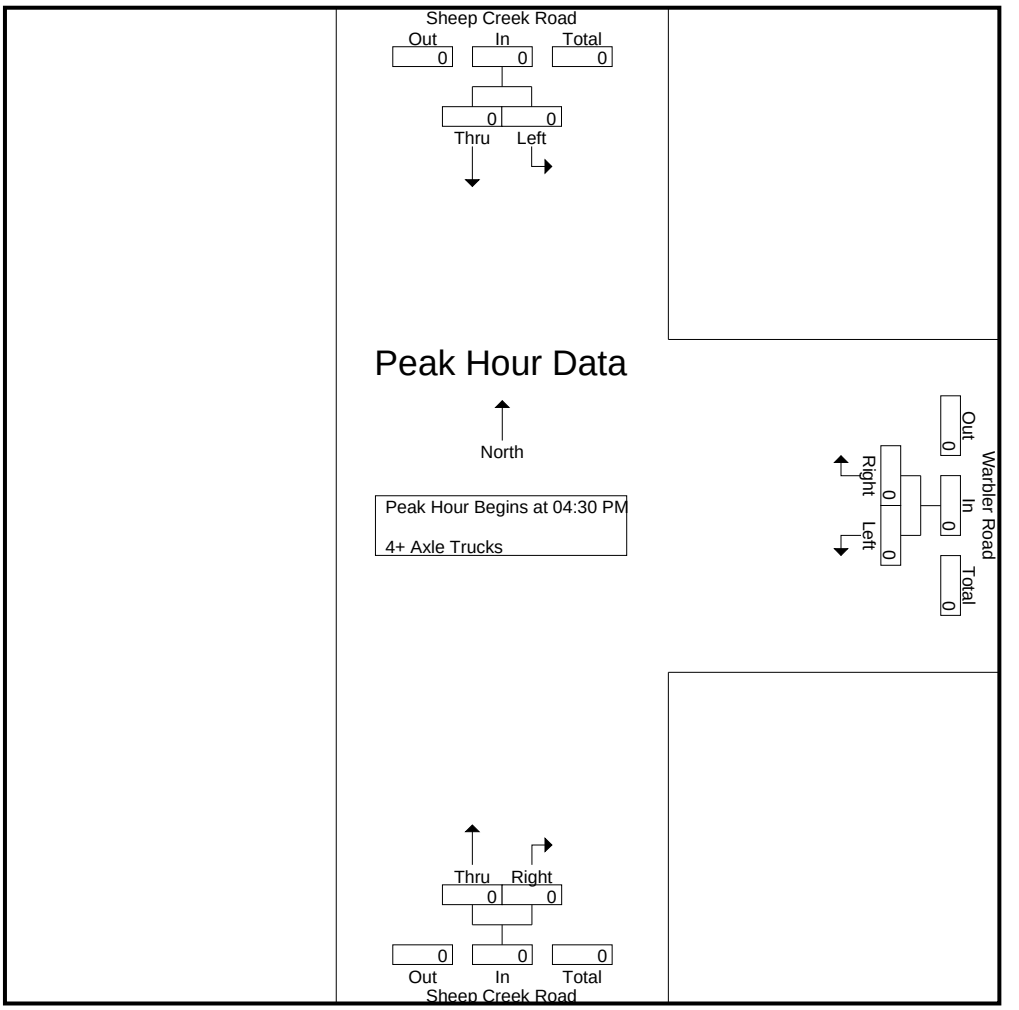
	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	2	2
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	4	0	4	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	5	0	5	5
Apprch %	0	0		0	0		100	0		
Total %	0	0	0	0	0	0	100	0	100	

	Sheep Creek Road Southbound			Warbler Road Westbound			Sheep Creek Road Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Warbler Road
Weather: Clear

File Name : 02_CSB_Sheep_Warbler PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

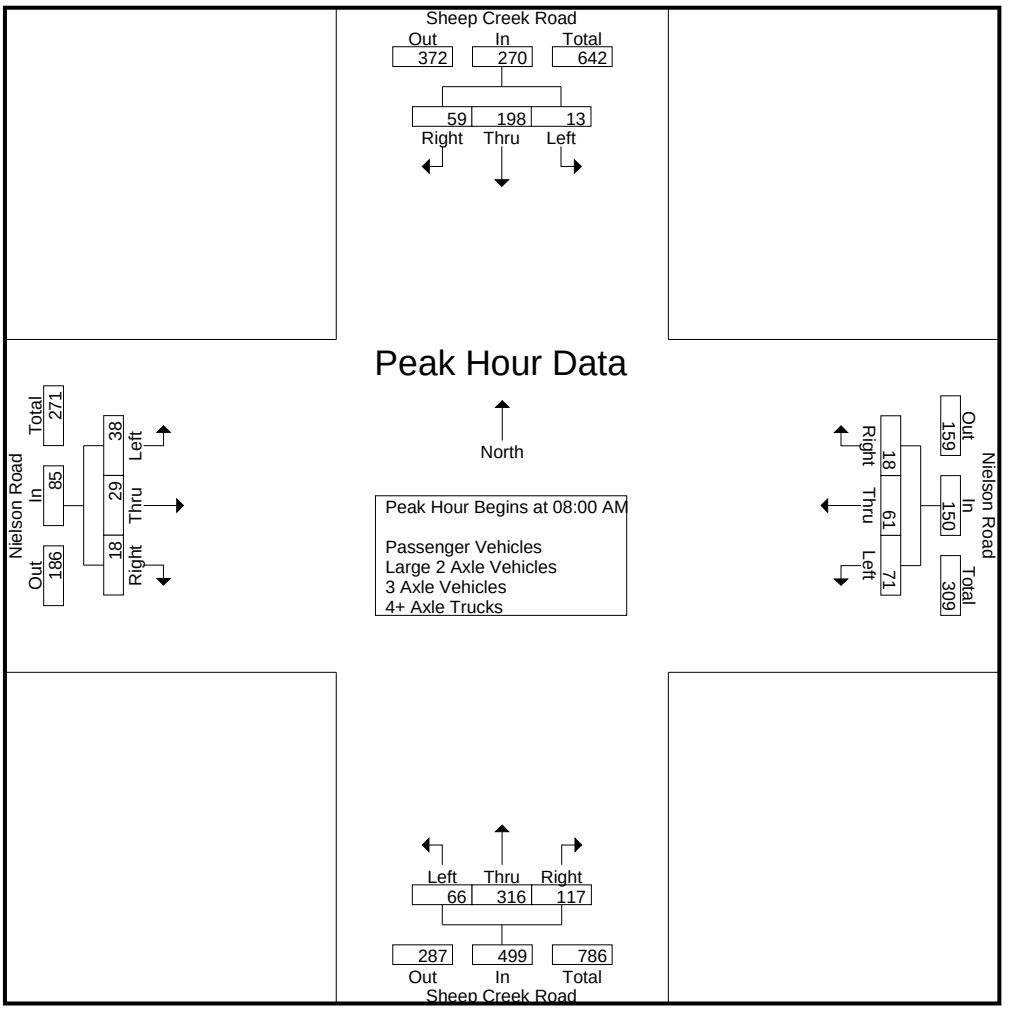
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	33	11	45	14	7	2	23	25	114	79	218	2	4	13	19	305
07:15 AM	0	23	14	37	8	16	4	28	20	54	20	94	2	4	4	10	169
07:30 AM	2	19	16	37	12	26	11	49	20	46	31	97	2	10	6	18	201
07:45 AM	3	21	36	60	14	32	8	54	8	67	24	99	10	14	3	27	240
Total	6	96	77	179	48	81	25	154	73	281	154	508	16	32	26	74	915
08:00 AM	3	39	12	54	8	23	4	35	8	56	25	89	9	13	4	26	204
08:15 AM	1	39	11	51	9	14	3	26	12	70	21	103	9	3	2	14	194
08:30 AM	6	63	14	83	26	14	2	42	20	87	35	142	4	6	5	15	282
08:45 AM	3	57	22	82	28	10	9	47	26	103	36	165	16	7	7	30	324
Total	13	198	59	270	71	61	18	150	66	316	117	499	38	29	18	85	1004
Grand Total	19	294	136	449	119	142	43	304	139	597	271	1007	54	61	44	159	1919
Apprch %	4.2	65.5	30.3		39.1	46.7	14.1		13.8	59.3	26.9		34	38.4	27.7		
Total %	1	15.3	7.1	23.4	6.2	7.4	2.2	15.8	7.2	31.1	14.1	52.5	2.8	3.2	2.3	8.3	
Passenger Vehicles	19	289	133	441	114	138	42	294	139	566	258	963	54	58	39	151	1849
% Passenger Vehicles	100	98.3	97.8	98.2	95.8	97.2	97.7	96.7	100	94.8	95.2	95.6	100	95.1	88.6	95	96.4
Large 2 Axle Vehicles	0	4	3	7	4	2	1	7	0	18	12	30	0	3	5	8	52
% Large 2 Axle Vehicles	0	1.4	2.2	1.6	3.4	1.4	2.3	2.3	0	3	4.4	3	0	4.9	11.4	5	2.7
3 Axle Vehicles	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
% 3 Axle Vehicles	0	0.3	0	0.2	0.8	0	0	0.3	0	0.2	0	0.1	0	0	0	0	0.2
4+ Axle Trucks	0	0	0	0	0	2	0	2	0	12	1	13	0	0	0	0	15
% 4+ Axle Trucks	0	0	0	0	0	1.4	0	0.7	0	2	0.4	1.3	0	0	0	0	0.8

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	39	12	54	8	**23**	4	35	8	56	25	89	9	**13**	4	26	204
08:15 AM	1	39	11	51	9	14	3	26	12	70	21	103	9	3	2	14	194
08:30 AM	**6**	**63**	14	**83**	26	14	2	42	20	87	35	142	4	6	5	15	282
08:45 AM	3	57	**22**	82	**28**	10	**9**	**47**	**26**	**103**	**36**	**165**	**16**	7	**7**	**30**	**324**
Total Volume	13	198	59	270	71	61	18	150	66	316	117	499	38	29	18	85	1004
% App. Total	4.8	73.3	21.9		47.3	40.7	12		13.2	63.3	23.4		44.7	34.1	21.2		
PHF	.542	.786	.670	.813	.634	.663	.500	.798	.635	.767	.813	.756	.594	.558	.643	.708	.775

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:15 AM				07:00 AM				07:30 AM			
+0 mins.	3	39	12	54	8	16	4	28	**25**	**114**	**79**	**218**	2	10	**6**	18
+15 mins.	1	39	11	51	12	26	**11**	49	20	54	20	94	**10**	**14**	3	**27**
+30 mins.	**6**	**63**	14	**83**	**14**	**32**	8	**54**	20	46	31	97	9	13	4	26
+45 mins.	3	57	**22**	82	8	23	4	35	8	67	24	99	9	3	2	14
Total Volume	13	198	59	270	42	97	27	166	73	281	154	508	30	40	15	85
% App. Total	4.8	73.3	21.9		25.3	58.4	16.3		14.4	55.3	30.3		35.3	47.1	17.6	
PHF	.542	.786	.670	.813	.750	.758	.614	.769	.730	.616	.487	.583	.750	.714	.625	.787

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

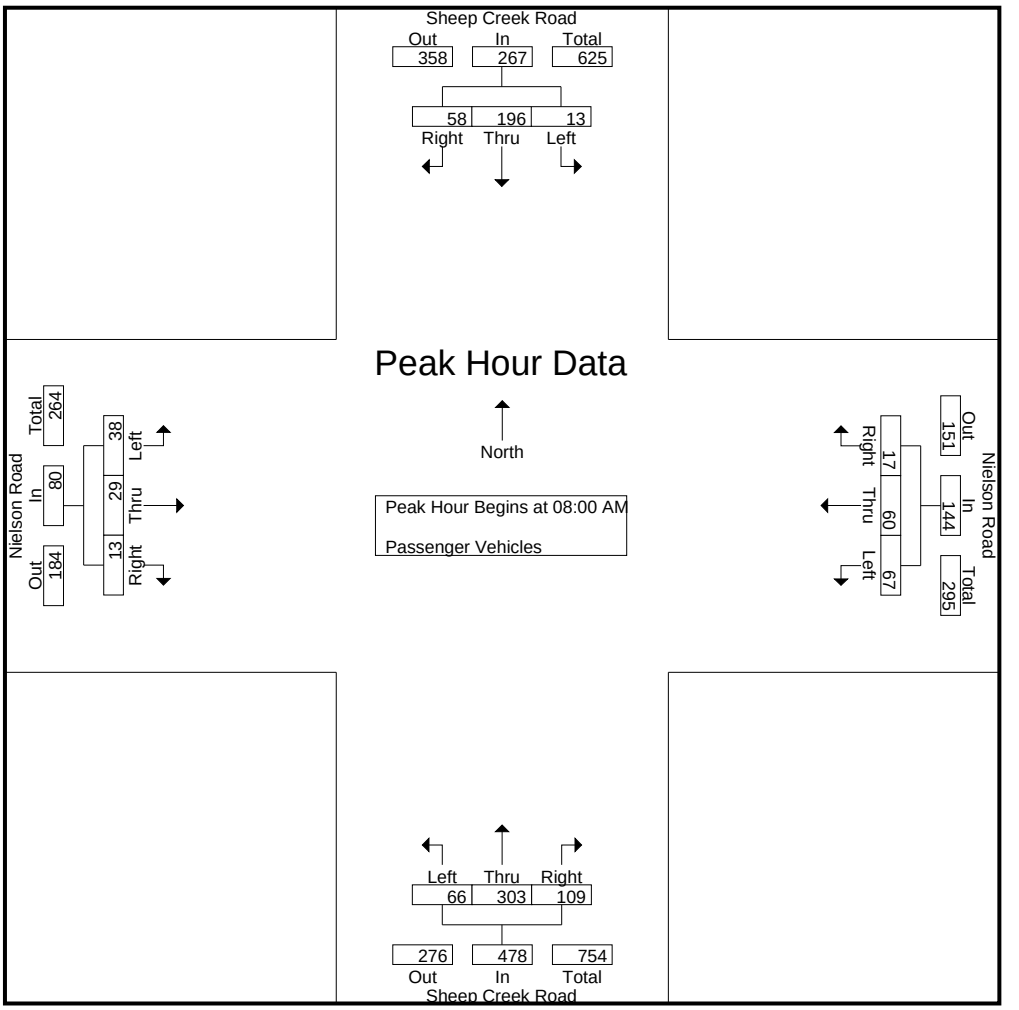
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	32	11	44	14	7	2	23	25	106	77	208	2	4	13	19	294
07:15 AM	0	23	13	36	8	16	4	28	20	51	19	90	2	4	4	10	164
07:30 AM	2	17	16	35	12	23	11	46	20	44	31	95	2	9	6	17	193
07:45 AM	3	21	35	59	13	32	8	53	8	62	22	92	10	12	3	25	229
Total	6	93	75	174	47	78	25	150	73	263	149	485	16	29	26	71	880
08:00 AM	3	39	12	54	8	22	4	34	8	49	24	81	9	13	3	25	194
08:15 AM	1	39	10	50	8	14	3	25	12	69	21	102	9	3	1	13	190
08:30 AM	6	61	14	81	23	14	2	39	20	83	33	136	4	6	2	12	268
08:45 AM	3	57	22	82	28	10	8	46	26	102	31	159	16	7	7	30	317
Total	13	196	58	267	67	60	17	144	66	303	109	478	38	29	13	80	969
Grand Total	19	289	133	441	114	138	42	294	139	566	258	963	54	58	39	151	1849
Apprch %	4.3	65.5	30.2		38.8	46.9	14.3		14.4	58.8	26.8		35.8	38.4	25.8		
Total %	1	15.6	7.2	23.9	6.2	7.5	2.3	15.9	7.5	30.6	14	52.1	2.9	3.1	2.1	8.2	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	39	12	54	8	**22**	4	34	8	49	24	81	9	**13**	3	25	194
08:15 AM	1	39	10	50	8	14	3	25	12	69	21	102	9	3	1	13	190
08:30 AM	**6**	**61**	14	81	23	14	2	39	20	83	**33**	136	4	6	2	12	268
08:45 AM	3	57	**22**	**82**	**28**	10	**8**	**46**	**26**	**102**	31	**159**	**16**	7	**7**	**30**	**317**
Total Volume	13	196	58	267	67	60	17	144	66	303	109	478	38	29	13	80	969
% App. Total	4.9	73.4	21.7		46.5	41.7	11.8		13.8	63.4	22.8		47.5	36.2	16.2		
PHF	.542	.803	.659	.814	.598	.682	.531	.783	.635	.743	.826	.752	.594	.558	.464	.667	.764

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	3	39	12	54	8	**22**	4	34	8	49	24	81	9	**13**	3	25
+15 mins.	1	39	10	50	8	14	3	25	12	69	21	102	9	3	1	13
+30 mins.	**6**	**61**	14	81	23	14	2	39	20	83	**33**	136	4	6	2	12
+45 mins.	3	57	**22**	**82**	**28**	10	**8**	**46**	**26**	**102**	31	**159**	**16**	7	**7**	**30**
Total Volume	13	196	58	267	67	60	17	144	66	303	109	478	38	29	13	80
% App. Total	4.9	73.4	21.7		46.5	41.7	11.8		13.8	63.4	22.8		47.5	36.2	16.2	
PHF	.542	.803	.659	.814	.598	.682	.531	.783	.635	.743	.826	.752	.594	.558	.464	.667

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

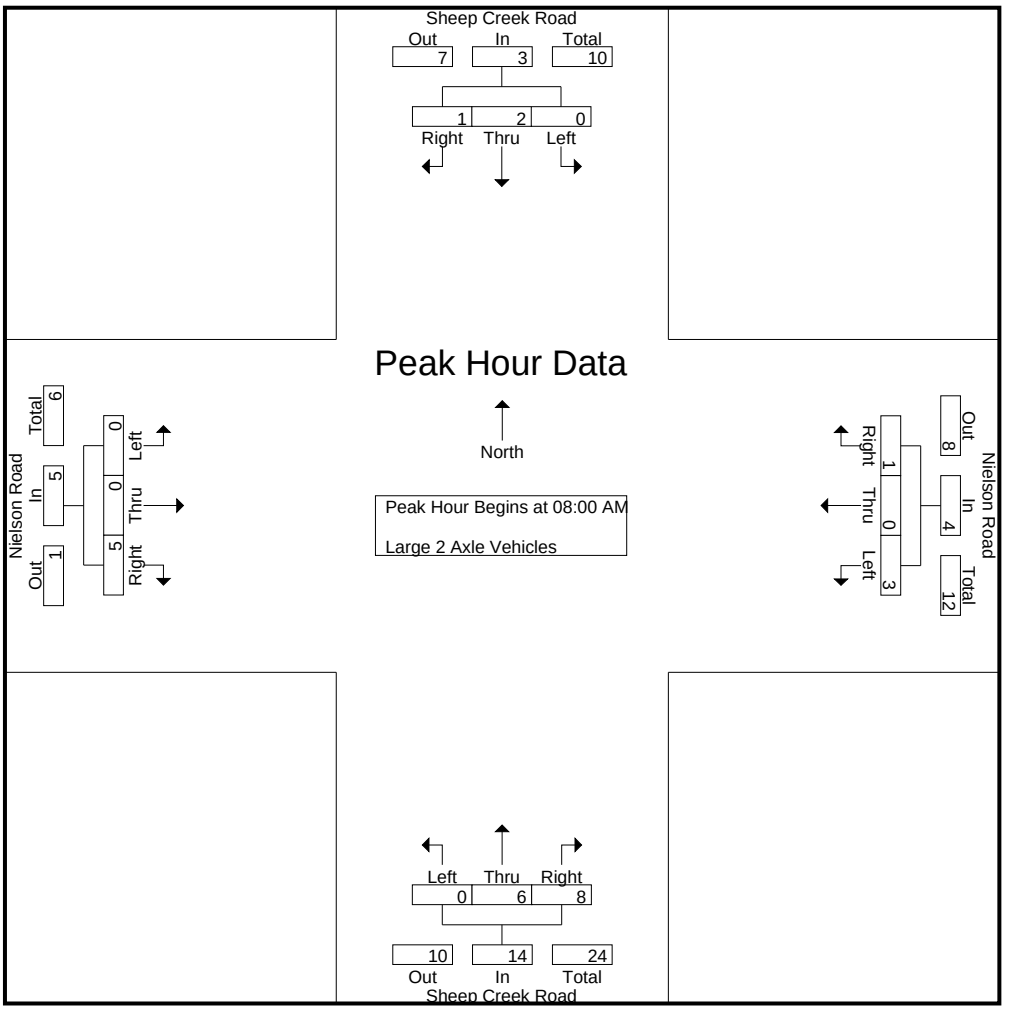
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	1	0	1	0	0	0	0	0	7	2	9	0	0	0	0	10
07:15 AM	0	0	1	1	0	0	0	0	0	3	0	3	0	0	0	0	4
07:30 AM	0	1	0	1	0	2	0	2	0	1	0	1	0	1	0	1	5
07:45 AM	0	0	1	1	1	0	0	1	0	1	2	3	0	2	0	2	7
Total	0	2	2	4	1	2	0	3	0	12	4	16	0	3	0	3	26
08:00 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1	3
08:15 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	1	1	3
08:30 AM	0	2	0	2	3	0	0	3	0	3	2	5	0	0	3	3	13
08:45 AM	0	0	0	0	0	0	1	1	0	1	5	6	0	0	0	0	7
Total	0	2	1	3	3	0	1	4	0	6	8	14	0	0	5	5	26
Grand Total	0	4	3	7	4	2	1	7	0	18	12	30	0	3	5	8	52
Apprch %	0	57.1	42.9		57.1	28.6	14.3		0	60	40		0	37.5	62.5		
Total %	0	7.7	5.8	13.5	7.7	3.8	1.9	13.5	0	34.6	23.1	57.7	0	5.8	9.6	15.4	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1	3
08:15 AM	0	0	**1**	1	0	0	0	0	0	1	0	1	0	0	1	1	3
08:30 AM	0	**2**	0	**2**	**3**	0	0	**3**	0	**3**	2	5	0	0	**3**	**3**	**13**
08:45 AM	0	0	0	0	0	0	**1**	1	0	1	**5**	**6**	0	0	0	0	7
Total Volume	0	2	1	3	3	0	1	4	0	6	8	14	0	0	5	5	26
% App. Total	0	66.7	33.3		75	0	25		0	42.9	57.1		0	0	100		
PHF	.000	.250	.250	.375	.250	.000	.250	.333	.000	.500	.400	.583	.000	.000	.417	.417	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	1	1	2	0	0	1	1
+15 mins.	0	0	**1**	1	0	0	0	0	0	1	0	1	0	0	1	1
+30 mins.	0	**2**	0	**2**	**3**	0	0	**3**	0	**3**	2	5	0	0	**3**	**3**
+45 mins.	0	0	0	0	0	0	**1**	1	0	1	**5**	**6**	0	0	0	0
Total Volume	0	2	1	3	3	0	1	4	0	6	8	14	0	0	5	5
% App. Total	0	66.7	33.3		75	0	25		0	42.9	57.1		0	0	100	
PHF	.000	.250	.250	.375	.250	.000	.250	.333	.000	.500	.400	.583	.000	.000	.417	.417

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

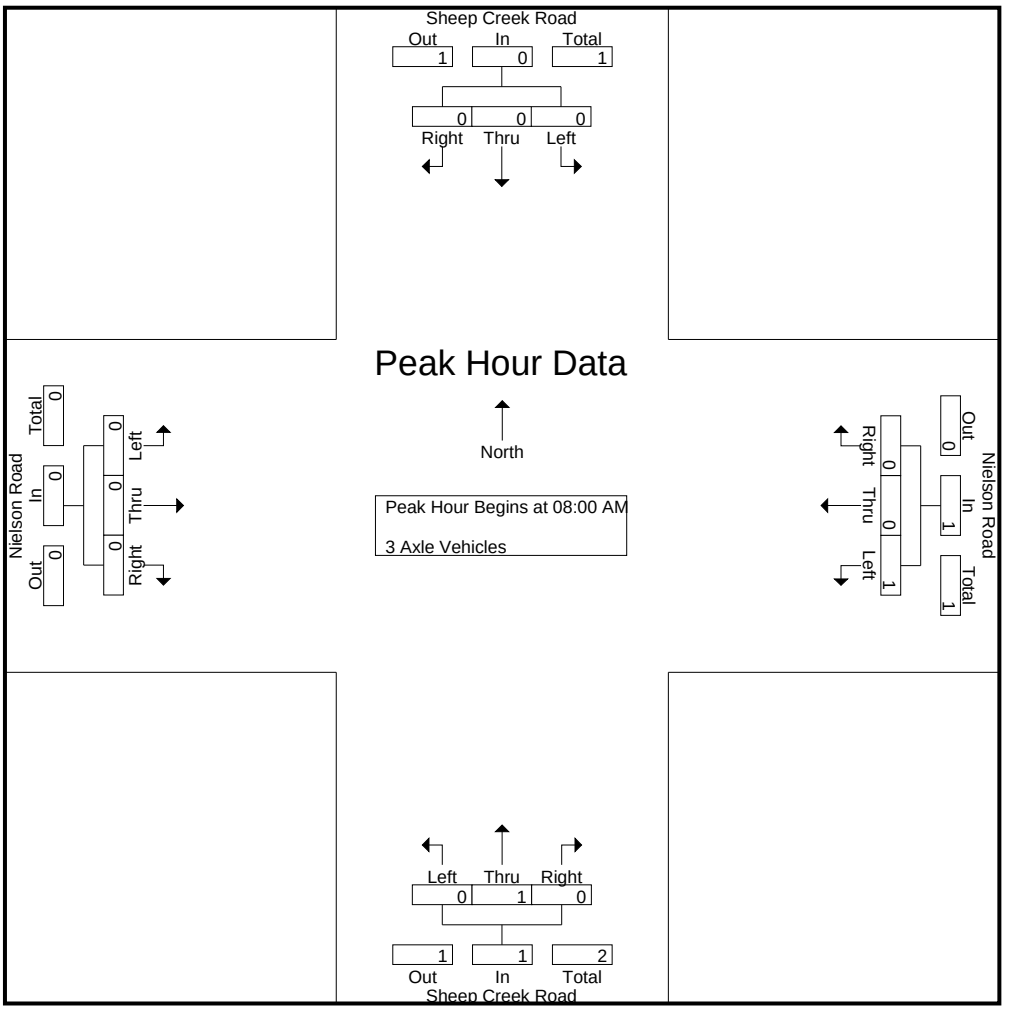
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
Grand Total	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
Apprch %	0	100	0		100	0	0		0	100	0		0	0	0		
Total %	0	33.3	0	33.3	33.3	0	0	33.3	0	33.3	0	33.3	0	0	0	0	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	**1**
08:15 AM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0
+15 mins.	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

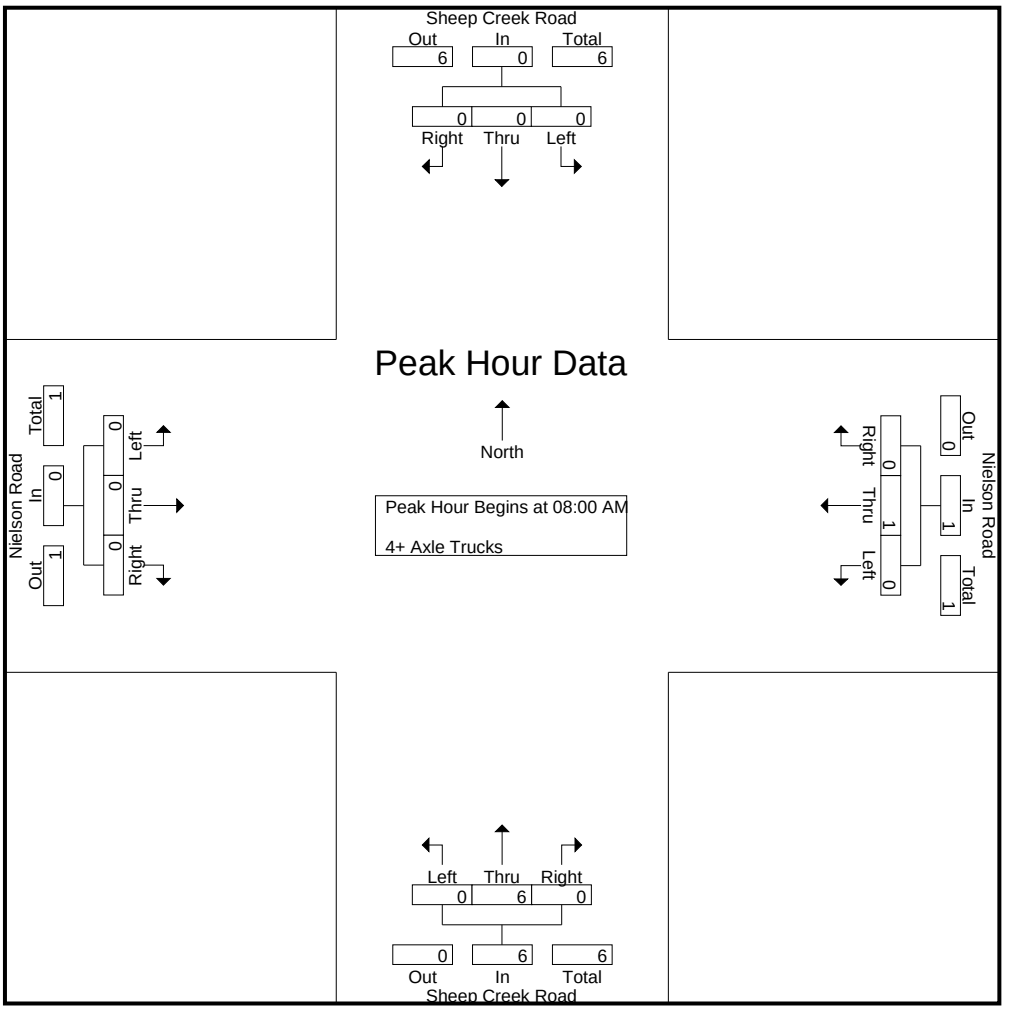
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	4
Total	0	0	0	0	0	1	0	1	0	6	1	7	0	0	0	0	8
08:00 AM	0	0	0	0	0	1	0	1	0	5	0	5	0	0	0	0	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	6	0	6	0	0	0	0	7
Grand Total	0	0	0	0	0	2	0	2	0	12	1	13	0	0	0	0	15
Apprch %	0	0	0		0	100	0		0	92.3	7.7		0	0	0		
Total %	0	0	0	0	0	13.3	0	13.3	0	80	6.7	86.7	0	0	0	0	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	**1**	0	**1**	0	**5**	0	**5**	0	0	0	0	**6**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	6	0	6	0	0	0	0	7
% App. Total	0	0	0		0	100	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.300	.000	.300	.000	.000	.000	.000	.292

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson AM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 08:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	0	0	0	0	0	**1**	0	**1**	0	**5**	0	**5**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	6	0	6	0	0	0	0
% App. Total	0	0	0		0	100	0		0	100	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.300	.000	.300	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

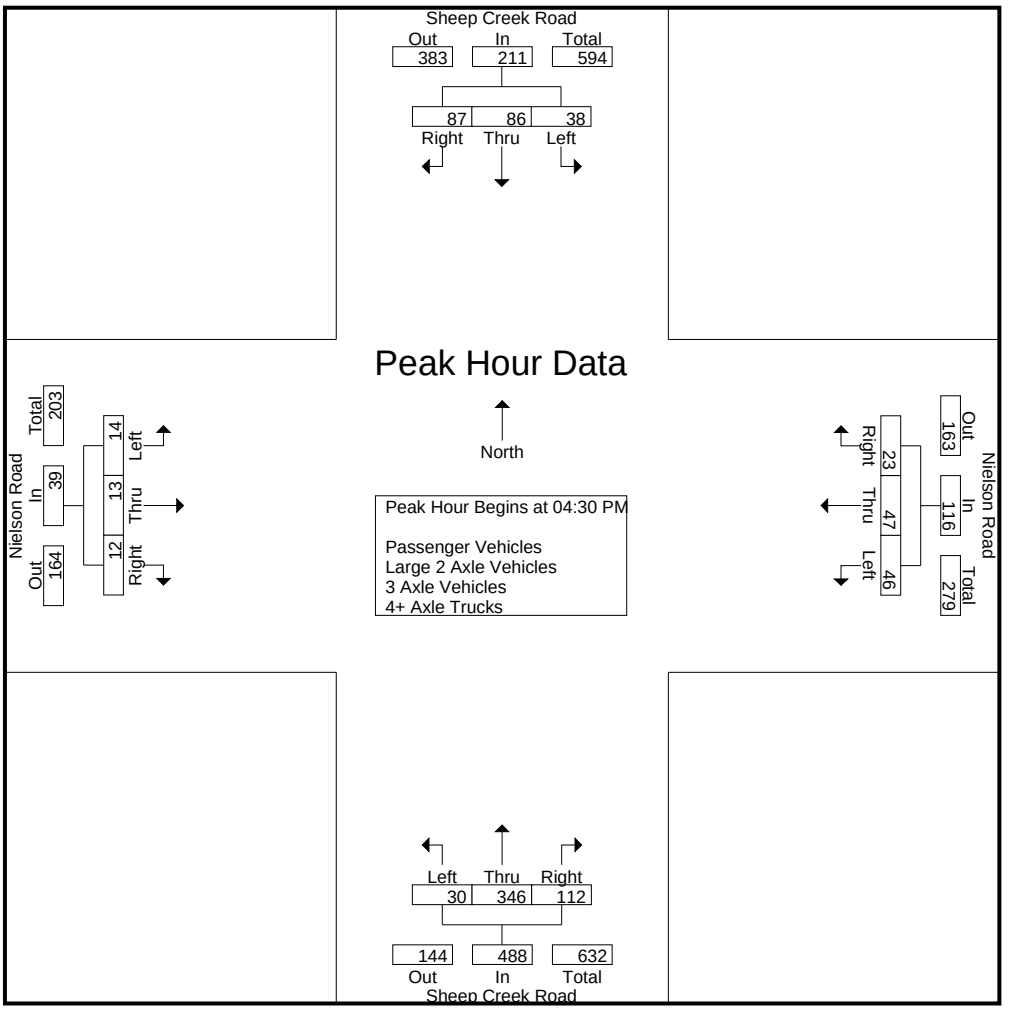
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	8	16	26	50	3	8	8	19	6	83	34	123	6	18	4	28	220
04:15 PM	9	13	11	33	2	9	8	19	5	78	37	120	7	5	2	14	186
04:30 PM	6	12	32	50	2	12	10	24	5	79	35	119	1	3	0	4	197
04:45 PM	12	22	15	49	14	11	3	28	4	69	22	95	6	4	3	13	185
Total	35	63	84	182	21	40	29	90	20	309	128	457	20	30	9	59	788
05:00 PM	12	22	21	55	9	15	7	31	6	103	34	143	3	4	7	14	243
05:15 PM	8	30	19	57	21	9	3	33	15	95	21	131	4	2	2	8	229
05:30 PM	7	28	14	49	16	7	8	31	5	67	21	93	1	3	1	5	178
05:45 PM	2	30	13	45	10	14	3	27	1	57	24	82	6	3	2	11	165
Total	29	110	67	206	56	45	21	122	27	322	100	449	14	12	12	38	815
Grand Total	64	173	151	388	77	85	50	212	47	631	228	906	34	42	21	97	1603
Apprch %	16.5	44.6	38.9		36.3	40.1	23.6		5.2	69.6	25.2		35.1	43.3	21.6		
Total %	4	10.8	9.4	24.2	4.8	5.3	3.1	13.2	2.9	39.4	14.2	56.5	2.1	2.6	1.3	6.1	
Passenger Vehicles	64	173	150	387	75	84	50	209	45	615	219	879	33	41	20	94	1569
% Passenger Vehicles	100	100	99.3	99.7	97.4	98.8	100	98.6	95.7	97.5	96.1	97	97.1	97.6	95.2	96.9	97.9
Large 2 Axle Vehicles	0	0	1	1	2	1	0	3	2	9	6	17	1	1	1	3	24
% Large 2 Axle Vehicles	0	0	0.7	0.3	2.6	1.2	0	1.4	4.3	1.4	2.6	1.9	2.9	2.4	4.8	3.1	1.5
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	4
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0.3	0.9	0.4	0	0	0	0	0.2
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	5	1	6	0	0	0	0	6
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0.8	0.4	0.7	0	0	0	0	0.4

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	6	12	**32**	50	2	12	**10**	24	5	79	**35**	119	1	3	0	4	197
04:45 PM	**12**	22	15	49	14	11	3	28	4	69	22	95	**6**	**4**	3	13	185
05:00 PM	12	22	21	55	9	**15**	7	31	6	**103**	34	**143**	3	4	**7**	**14**	**243**
05:15 PM	8	**30**	19	**57**	**21**	9	3	**33**	**15**	95	21	131	4	2	2	8	229
Total Volume	38	86	87	211	46	47	23	116	30	346	112	488	14	13	12	39	854
% App. Total	18	40.8	41.2		39.7	40.5	19.8		6.1	70.9	23		35.9	33.3	30.8		
PHF	.792	.717	.680	.925	.548	.783	.575	.879	.500	.840	.800	.853	.583	.813	.429	.696	.879

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:30 PM				04:00 PM			
+0 mins.	6	12	**32**	50	14	11	3	28	5	79	**35**	119	6	**18**	**4**	**28**
+15 mins.	**12**	22	15	49	9	**15**	7	31	4	69	22	95	**7**	5	2	14
+30 mins.	12	22	21	55	**21**	9	3	**33**	6	**103**	34	**143**	1	3	0	4
+45 mins.	8	**30**	19	**57**	16	7	**8**	31	**15**	95	21	131	6	4	3	13
Total Volume	38	86	87	211	60	42	21	123	30	346	112	488	20	30	9	59
% App. Total	18	40.8	41.2		48.8	34.1	17.1		6.1	70.9	23		33.9	50.8	15.3	
PHF	.792	.717	.680	.925	.714	.700	.656	.932	.500	.840	.800	.853	.714	.417	.563	.527

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Passenger Vehicles

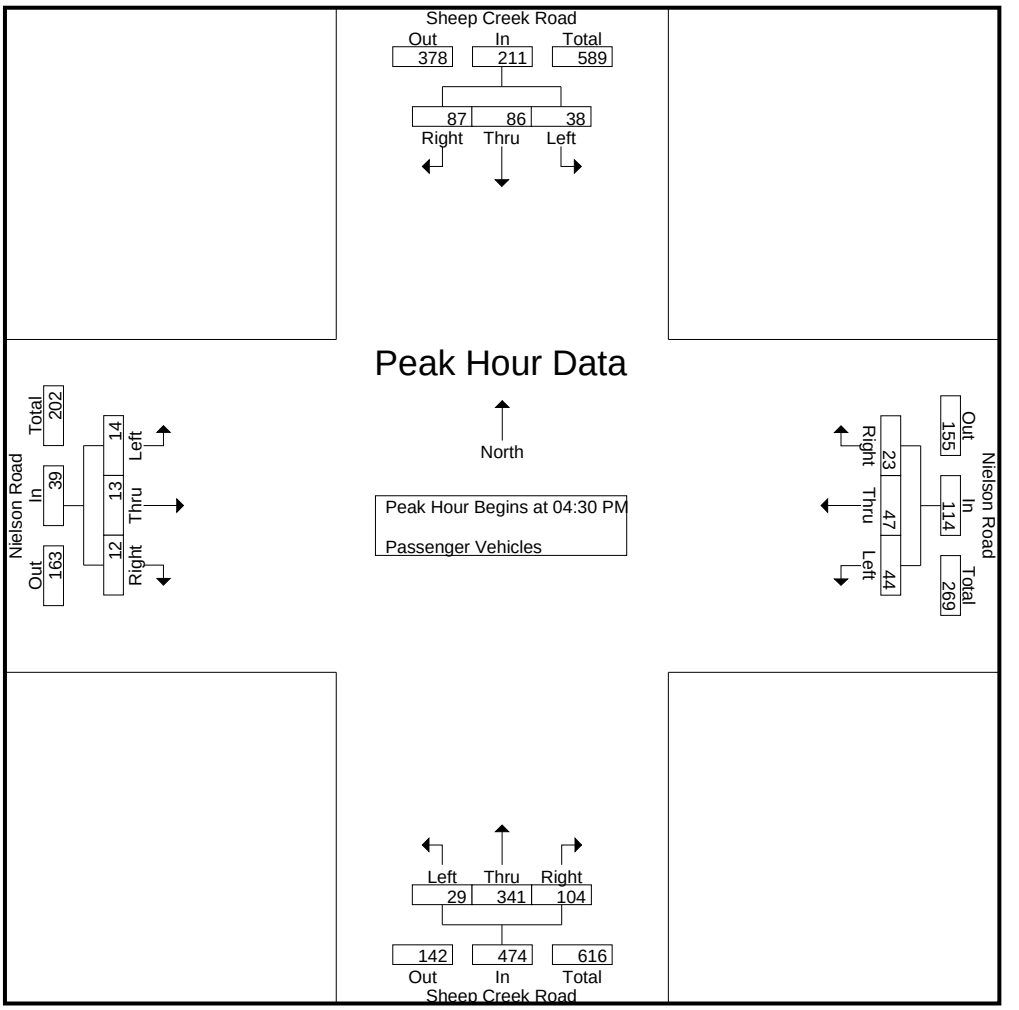
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	8	16	25	49	3	8	8	19	5	80	34	119	6	17	3	26	213
04:15 PM	9	13	11	33	2	8	8	18	5	73	36	114	7	5	2	14	179
04:30 PM	6	12	32	50	2	12	10	24	5	78	29	112	1	3	0	4	190
04:45 PM	12	22	15	49	14	11	3	28	4	68	21	93	6	4	3	13	183
Total	35	63	83	181	21	39	29	89	19	299	120	438	20	29	8	57	765
05:00 PM	12	22	21	55	8	15	7	30	6	100	34	140	3	4	7	14	239
05:15 PM	8	30	19	57	20	9	3	32	14	95	20	129	4	2	2	8	226
05:30 PM	7	28	14	49	16	7	8	31	5	65	21	91	1	3	1	5	176
05:45 PM	2	30	13	45	10	14	3	27	1	56	24	81	5	3	2	10	163
Total	29	110	67	206	54	45	21	120	26	316	99	441	13	12	12	37	804
Grand Total	64	173	150	387	75	84	50	209	45	615	219	879	33	41	20	94	1569
Apprch %	16.5	44.7	38.8		35.9	40.2	23.9		5.1	70	24.9		35.1	43.6	21.3		
Total %	4.1	11	9.6	24.7	4.8	5.4	3.2	13.3	2.9	39.2	14	56	2.1	2.6	1.3	6	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	6	12	**32**	50	2	12	**10**	24	5	78	29	112	1	3	0	4	190
04:45 PM	**12**	22	15	49	14	11	3	28	4	68	21	93	**6**	**4**	3	13	183
05:00 PM	12	22	21	55	8	**15**	7	30	6	**100**	**34**	**140**	3	4	**7**	**14**	**239**
05:15 PM	8	**30**	19	**57**	**20**	9	3	**32**	**14**	95	20	129	4	2	2	8	226
Total Volume	38	86	87	211	44	47	23	114	29	341	104	474	14	13	12	39	838
% App. Total	18	40.8	41.2		38.6	41.2	20.2		6.1	71.9	21.9		35.9	33.3	30.8		
PHF	.792	.717	.680	.925	.550	.783	.575	.891	.518	.853	.765	.846	.583	.813	.429	.696	.877

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	6	12	**32**	50	2	12	**10**	24	5	78	29	112	1	3	0	4
+15 mins.	**12**	22	15	49	14	11	3	28	4	68	21	93	**6**	**4**	3	13
+30 mins.	12	22	21	55	8	**15**	7	30	6	**100**	**34**	**140**	3	4	**7**	**14**
+45 mins.	8	**30**	19	**57**	**20**	9	3	**32**	**14**	95	20	129	4	2	2	8
Total Volume	38	86	87	211	44	47	23	114	29	341	104	474	14	13	12	39
% App. Total	18	40.8	41.2		38.6	41.2	20.2		6.1	71.9	21.9		35.9	33.3	30.8	
PHF	.792	.717	.680	.925	.550	.783	.575	.891	.518	.853	.765	.846	.583	.813	.429	.696

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- Large 2 Axle Vehicles

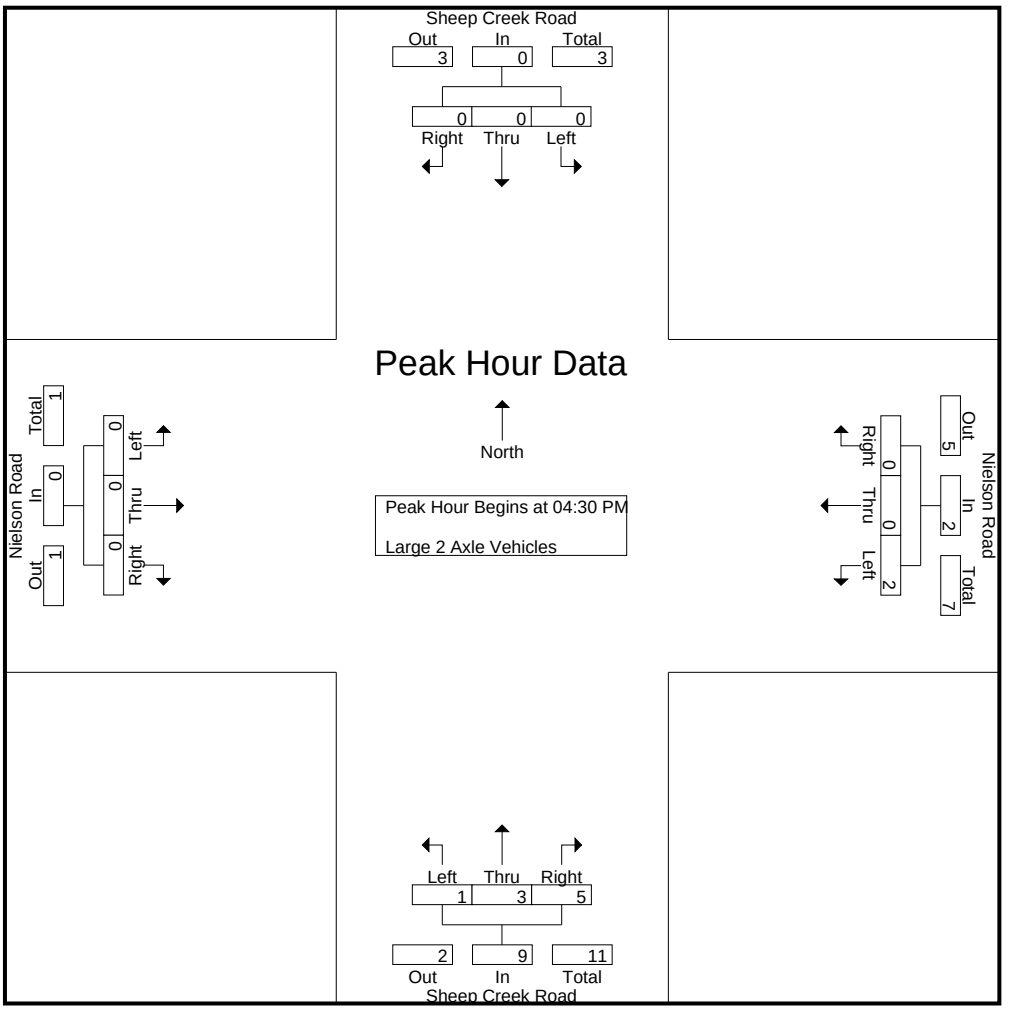
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	0	0	0	0	1	1	0	2	0	1	1	2	5
04:15 PM	0	0	0	0	0	1	0	1	0	3	1	4	0	0	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
Total	0	0	1	1	0	1	0	1	1	6	6	13	0	1	1	2	17
05:00 PM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	1	1	0	0	1	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
Total	0	0	0	0	2	0	0	2	1	3	0	4	1	0	0	1	7
Grand Total	0	0	1	1	2	1	0	3	2	9	6	17	1	1	1	3	24
Apprch %	0	0	100		66.7	33.3	0		11.8	52.9	35.3		33.3	33.3	33.3		
Total %	0	0	4.2	4.2	8.3	4.2	0	12.5	8.3	37.5	25	70.8	4.2	4.2	4.2	12.5	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	**1**	**4**	**5**	0	0	0	0	**5**
04:45 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	2
05:00 PM	0	0	0	0	**1**	0	0	**1**	0	1	0	1	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	1	**1**	0	0	1	0	0	0	0	2
Total Volume	0	0	0	0	2	0	0	2	1	3	5	9	0	0	0	0	11
% App. Total	0	0	0		100	0	0		11.1	33.3	55.6		0	0	0		
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.250	.750	.313	.450	.000	.000	.000	.000	.550

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	**1**	**4**	**5**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0
+30 mins.	0	0	0	0	**1**	0	0	**1**	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	**1**	0	0	1	0	0	0	0
Total Volume	0	0	0	0	2	0	0	2	1	3	5	9	0	0	0	0
% App. Total	0	0	0		100	0	0		11.1	33.3	55.6		0	0	0	
PHF	.000	.000	.000	.000	.500	.000	.000	.500	.250	.750	.313	.450	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 3 Axle Vehicles

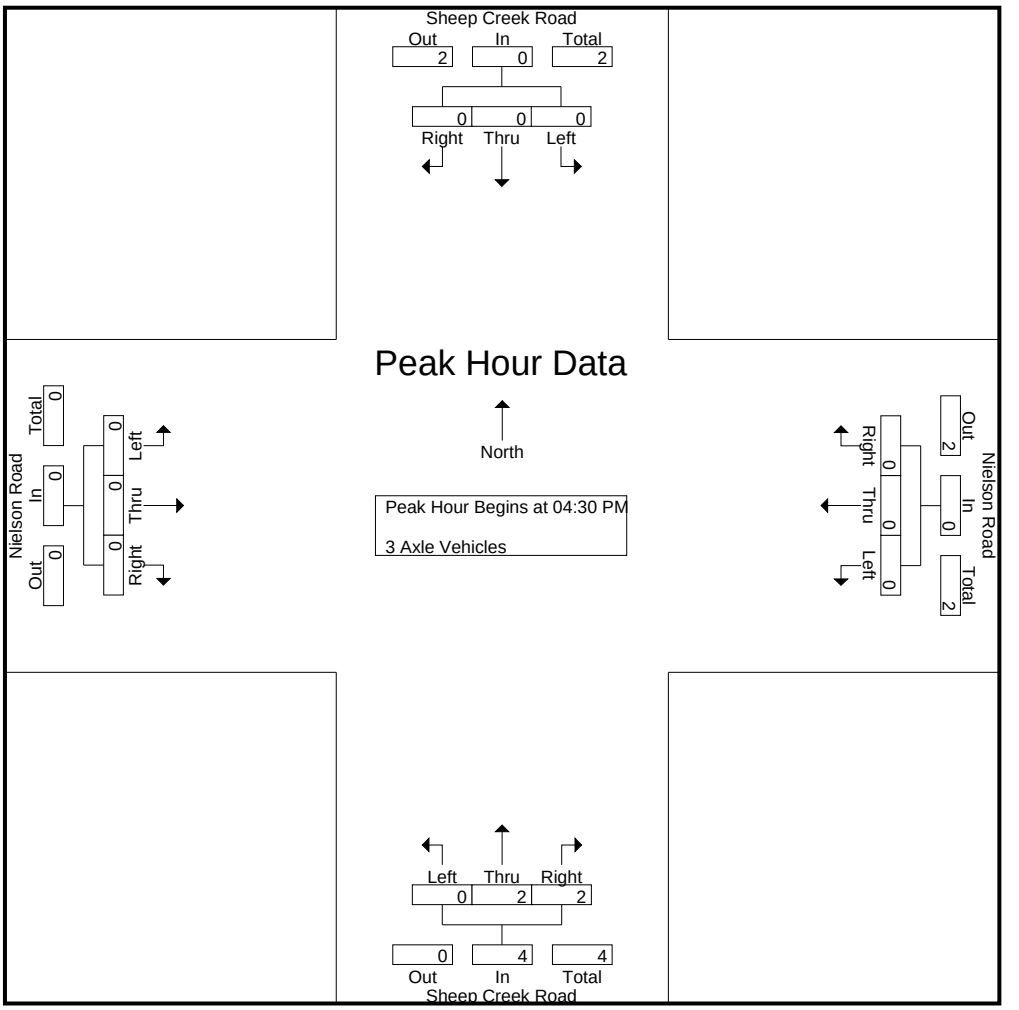
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	3
Grand Total	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	4
Apprch %	0	0	0		0	0	0		0	50	50		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	50	50	100	0	0	0	0	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**2**
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	4
% App. Total	0	0	0		0	0	0		0	50	50		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.500	.500	.000	.000	.000	.000	.500

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	**1**	1	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0
% App. Total	0	0	0		0	0	0		0	50	50		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.500	.500	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 1

Groups Printed- 4+ Axle Trucks

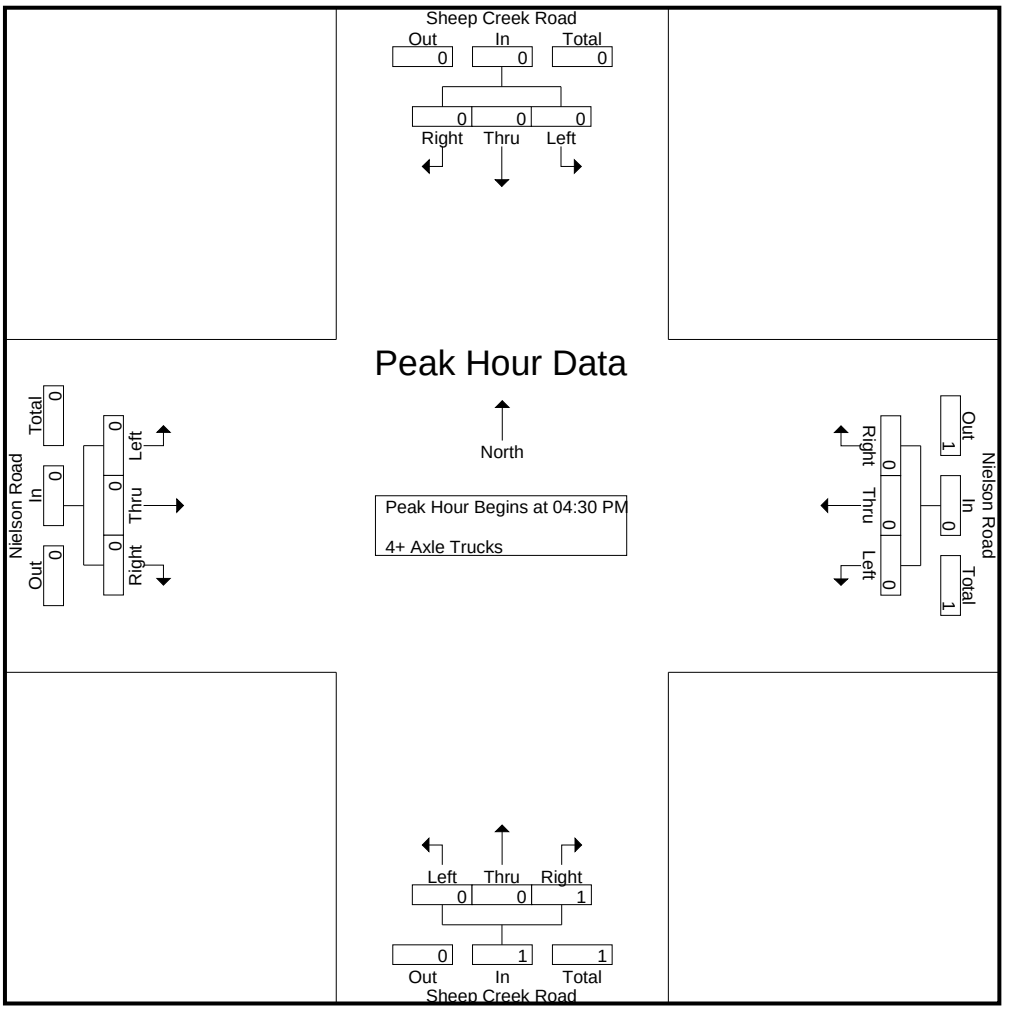
	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	5	1	6	0	0	0	0	6
Apprch %	0	0	0		0	0	0		0	83.3	16.7		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	83.3	16.7	100	0	0	0	0	

	Sheep Creek Road Southbound				Nielson Road Westbound				Sheep Creek Road Northbound				Nielson Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951)268-6268

County of San Bernardino
N/S: Sheep Creek Road
E/W: Nielson Road
Weather: Clear

File Name : 03_CSB_Sheep_Nielson PM
Site Code : 22521711
Start Date : 12/8/2021
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000

APPENDIX D

EXISTING VOLUME ADJUSTMENT FACTOR CALCULATIONS

Adjusted Growth Factor Calculations

id.	Intersection Description		Peak Hour	Traffic Volumes NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	Count 2013	1/9/2013		Historical Count 2013												
2	Sheep Creek Road	Warbler Road	AM		330	4	10	238					4		5	591
2	Sheep Creek Road	Warbler Road	PM		425	5	4	186					3		8	631
	Forecast 2021	2% annual growth													Total:	1222
2	Sheep Creek Road	Warbler Road	AM	0	394	5	12	284	0	0	0	0	5	0	6	706
2	Sheep Creek Road	Warbler Road	PM	0	507	6	5	222	0	0	0	0	4	0	10	754
	Count 2021	12/8/2021													Total:	1460
2	Sheep Creek Road	Warbler Road	AM	0	363	6	12	265	0	0	0	0	2	0	14	662
2	Sheep Creek Road	Warbler Road	PM	0	366	2	7	209	0	1	0	0	3	0	12	600
															Total:	1262

2018 to Forecast 2021

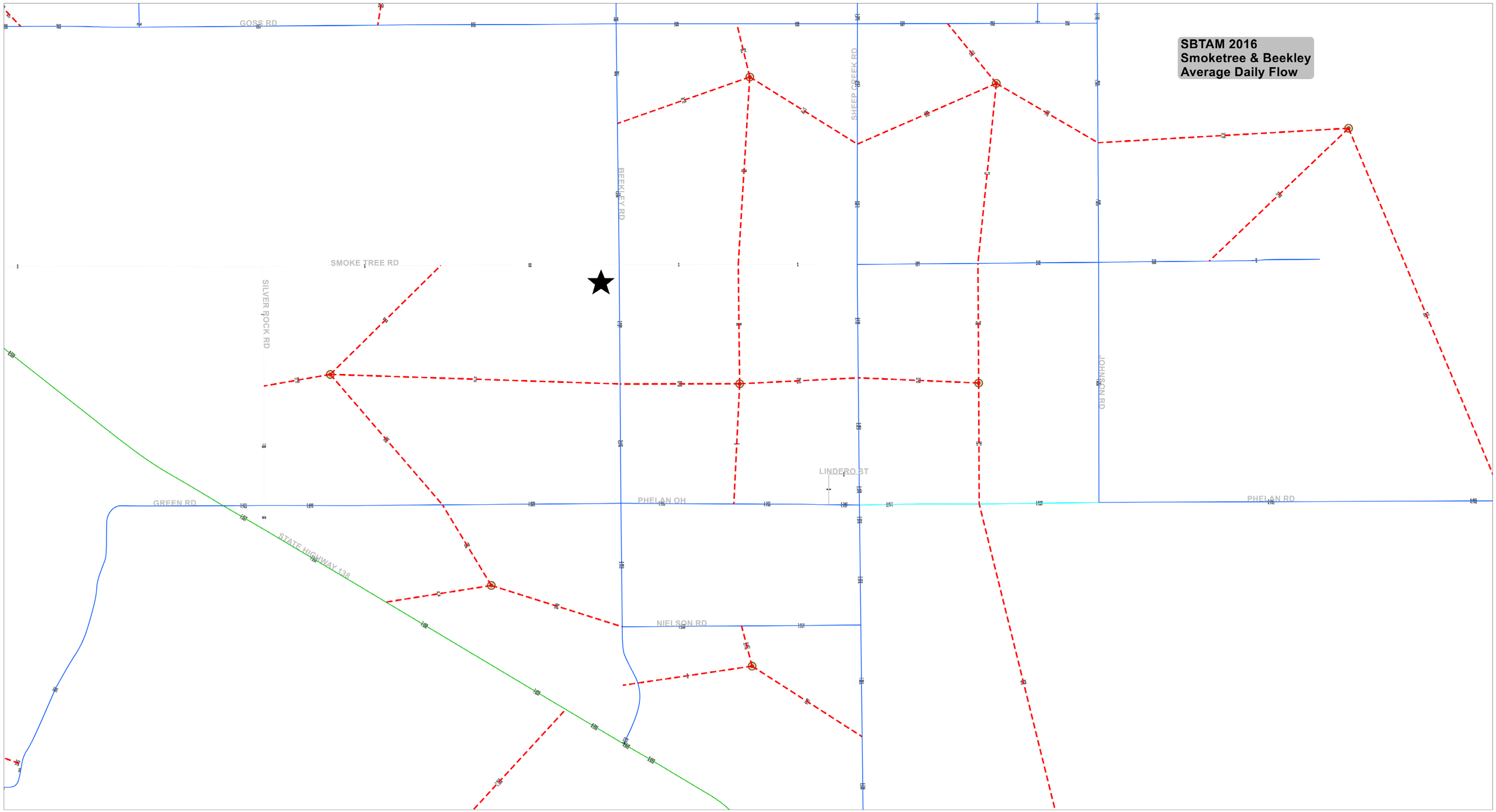
Growth RATE= (1+Growth factor)^(No years)	2%	Months	106.94
Growth = Existing * Growth Rate	1.193	Years	8.9

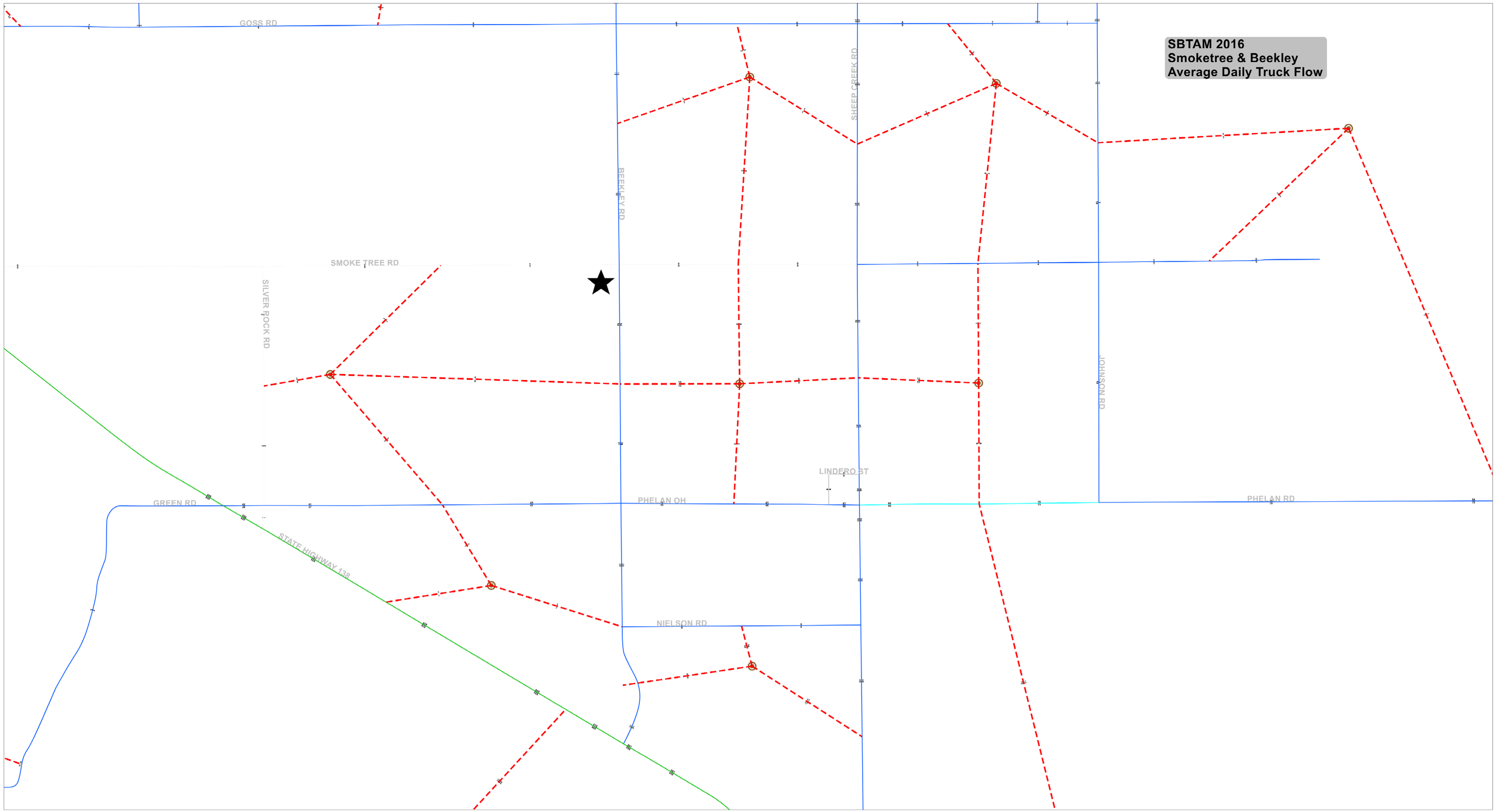
Adjusted 2021 Factor 1.15690

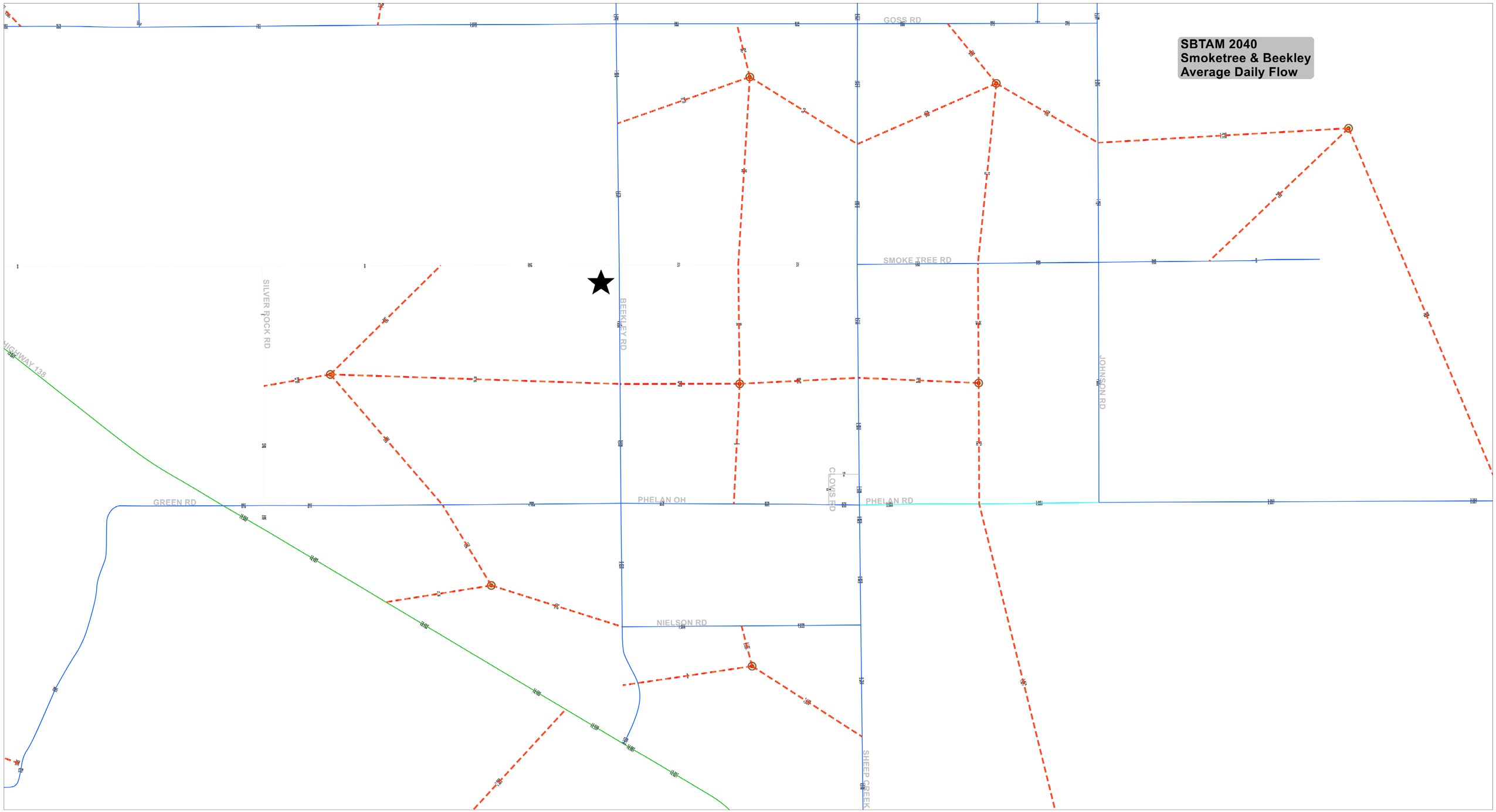
APPENDIX E

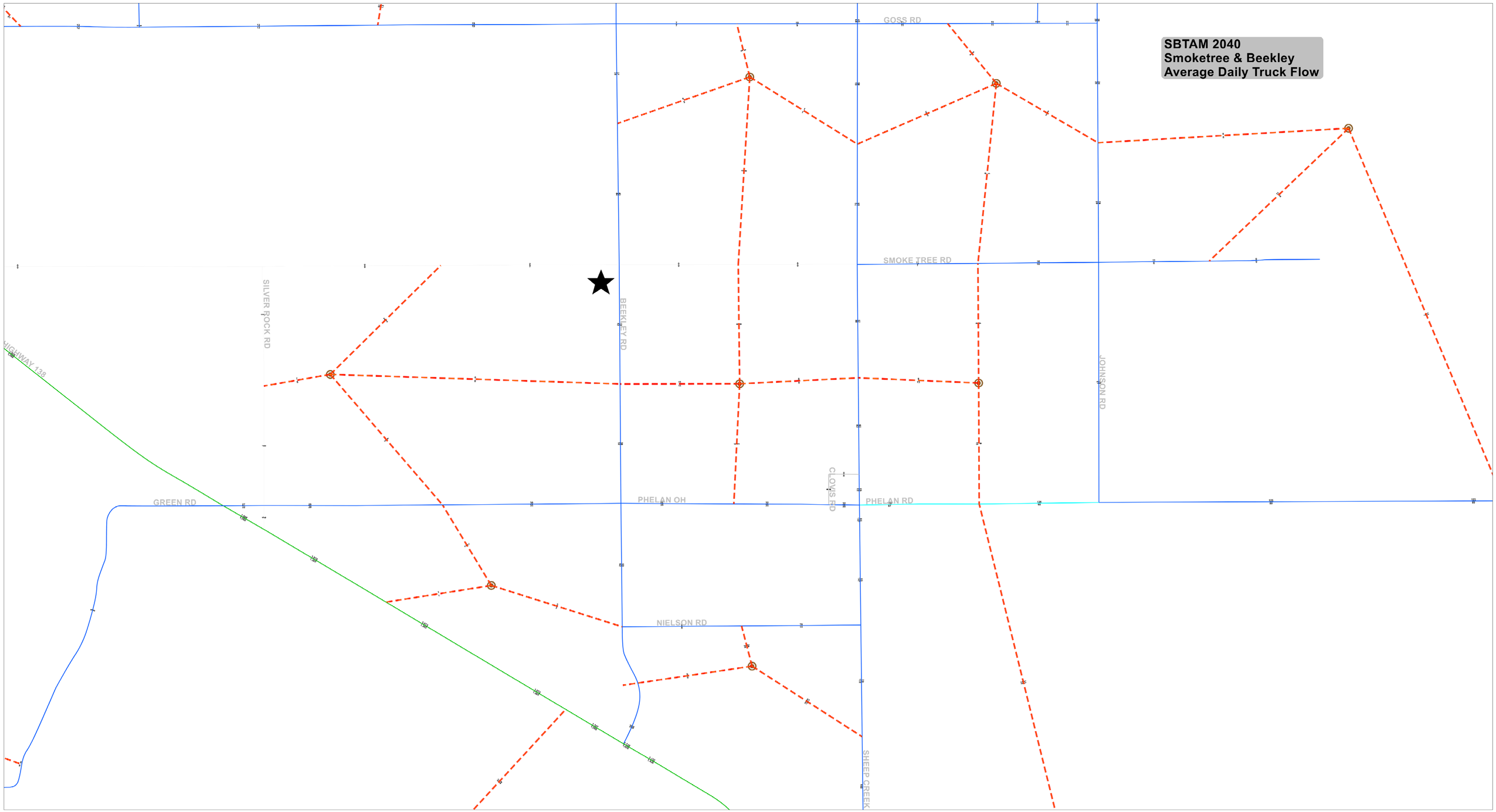
TRAVEL DEMAND MODEL PLOTS

ADT MODEL PLOTS

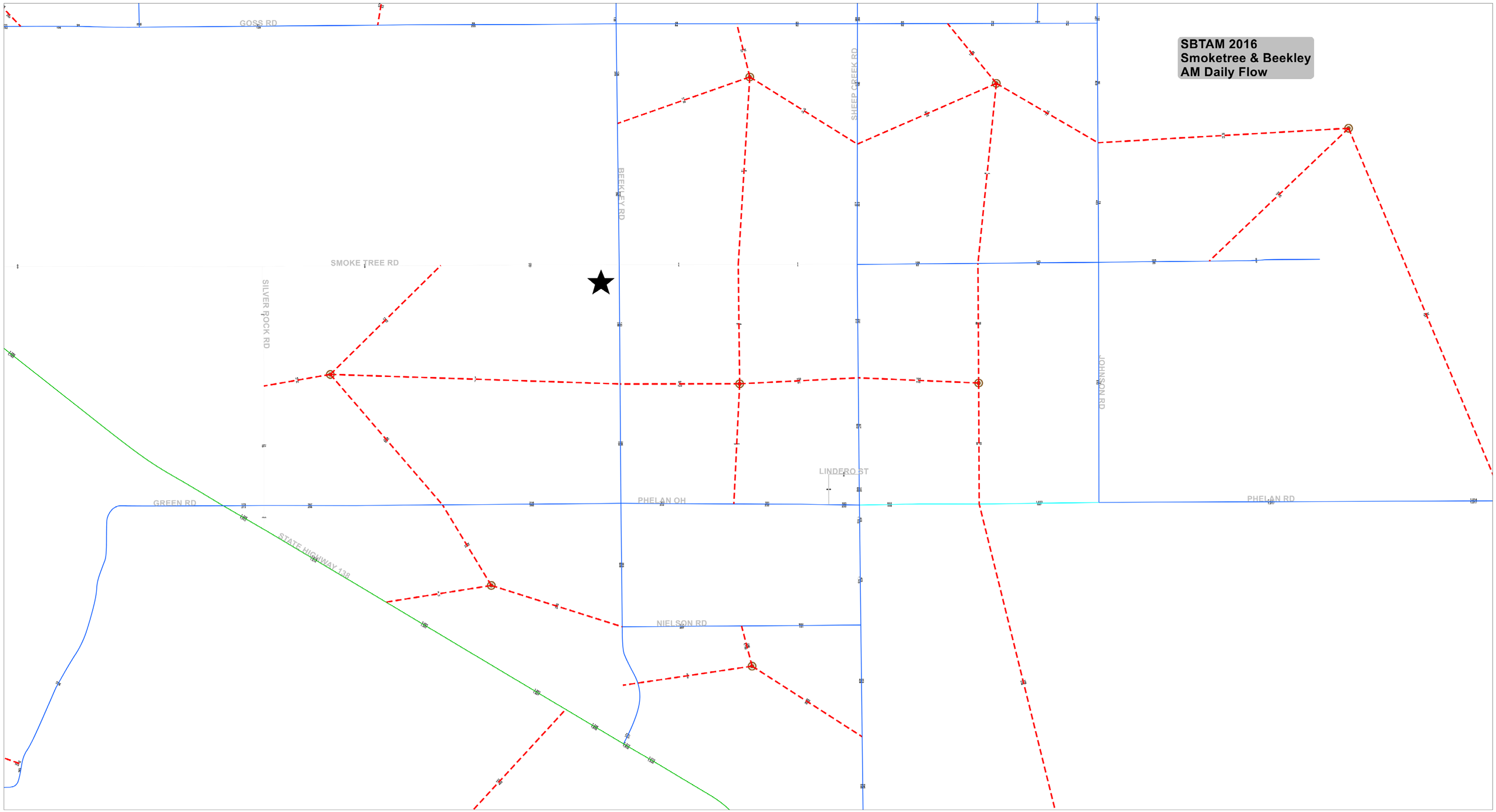

SBTAM 2016
Smoketree & Beekley
Average Daily Flow
GOSS RD
SHEEP CREEK RD
BEEKLEY RD
SMOKE TREE RD
SILVER ROCK RD
JOHNSON RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD

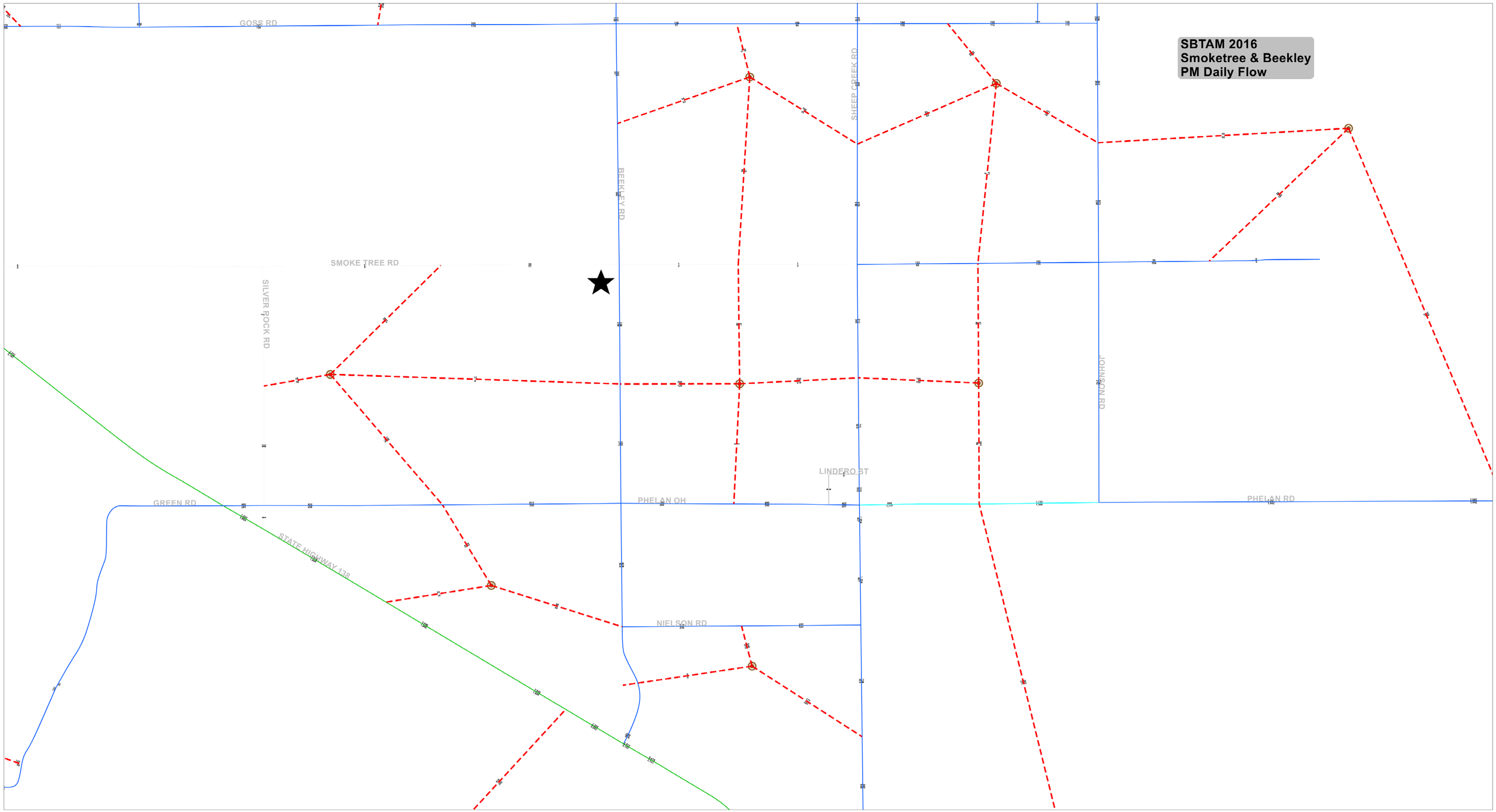

SBTAM 2016
Smoketree & Beekley
Average Daily Truck Flow
GOSS RD
BEEKLEY RD
SHEEP CREEK RD
JOHNSON RD
SMOKE TREE RD
SILVER ROCK RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD

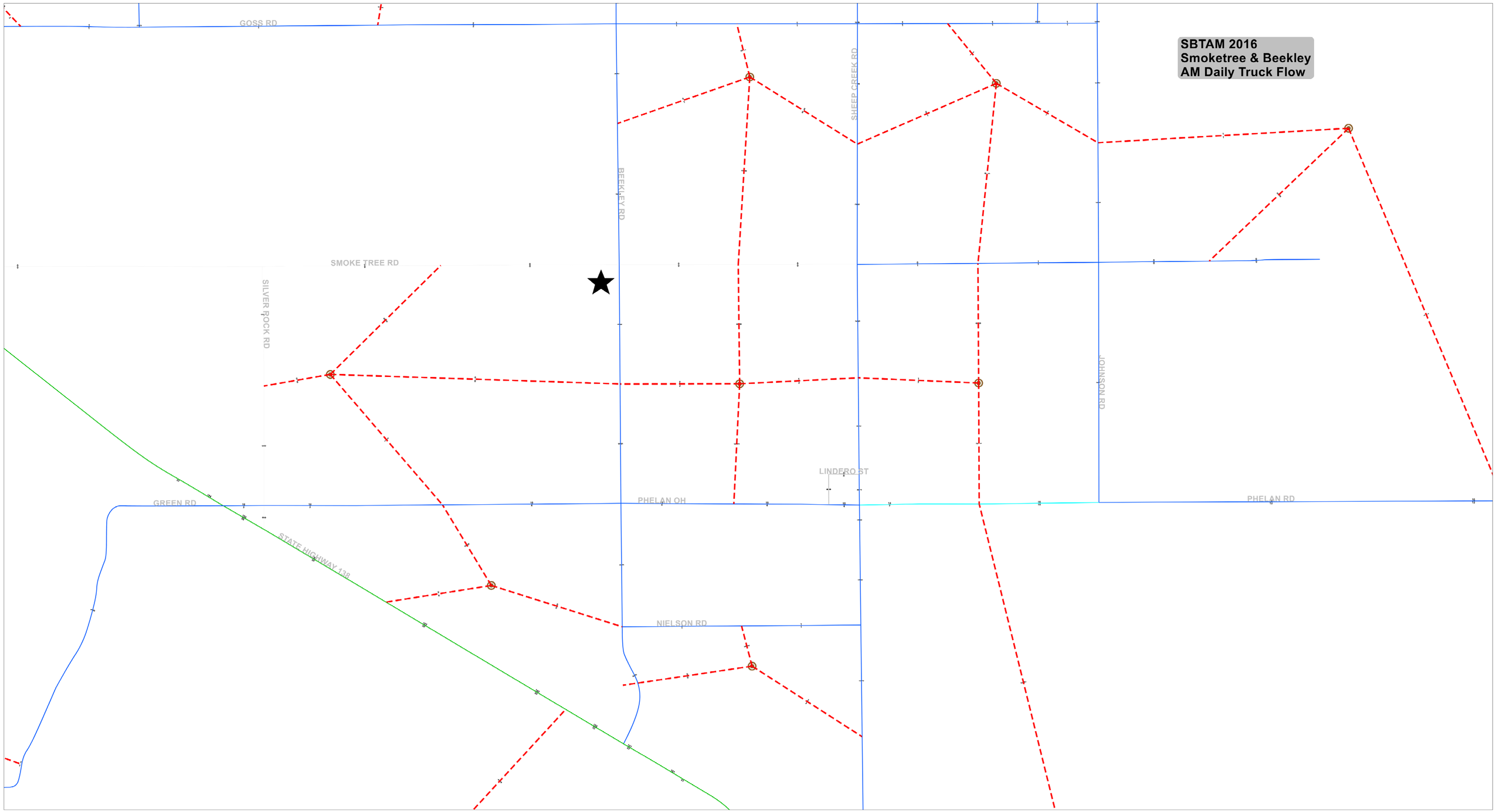

SBTAM 2040
Smoketree & Beekley
Average Daily Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK

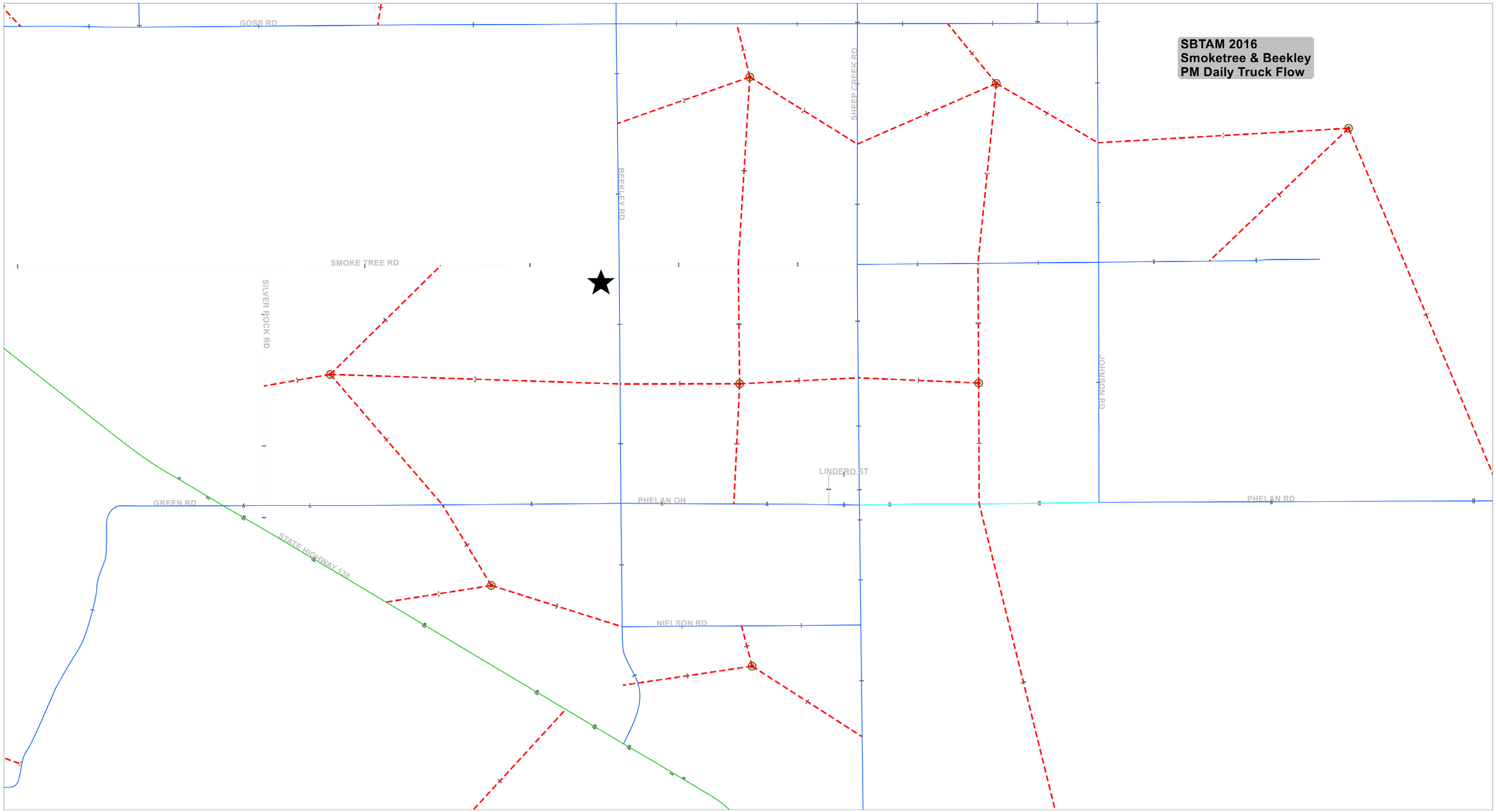

SBTAM 2040
Smoketree & Beekley
Average Daily Truck Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK

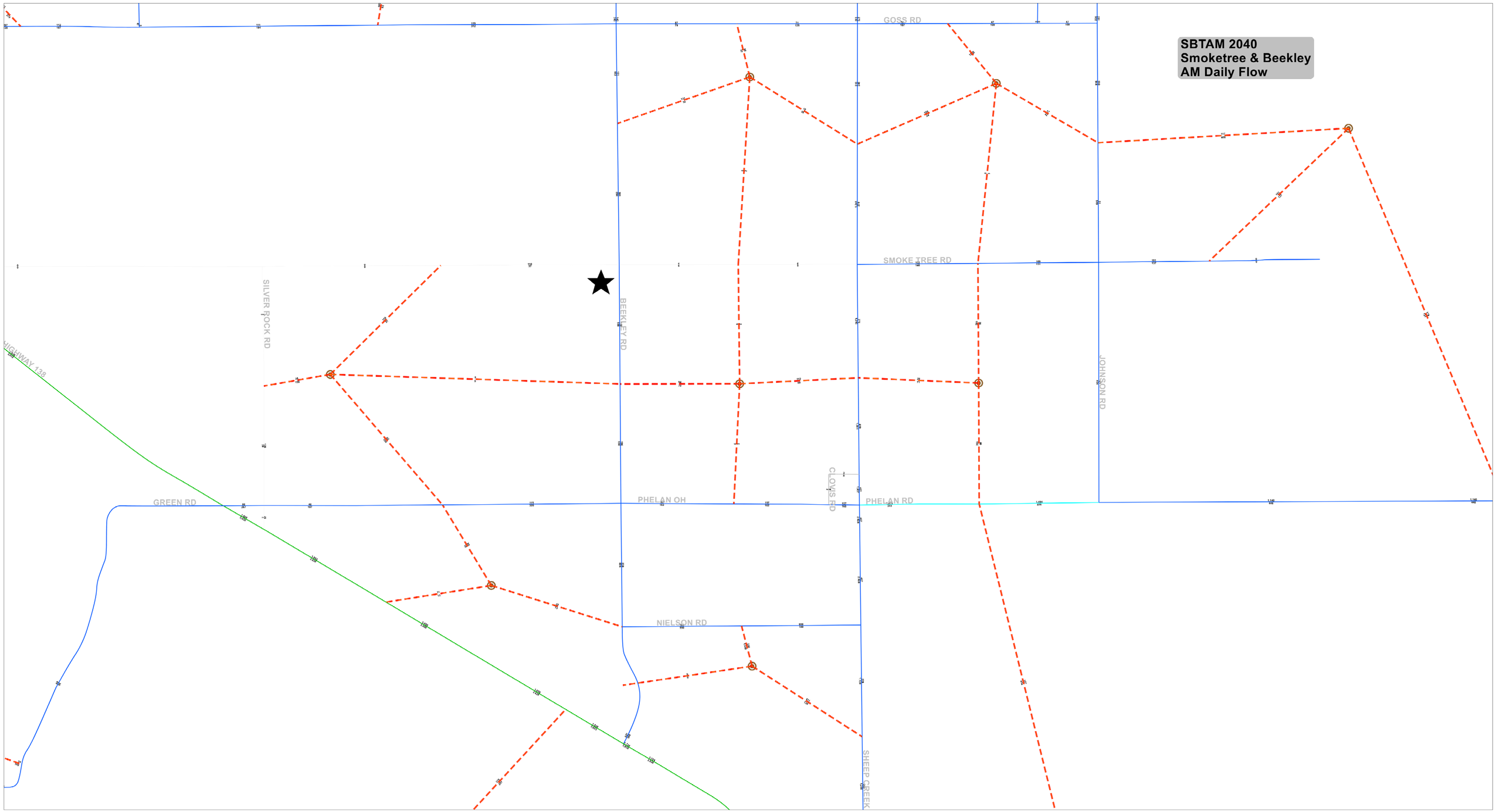
AM / PM PEAK HOUR MODEL PLOTS

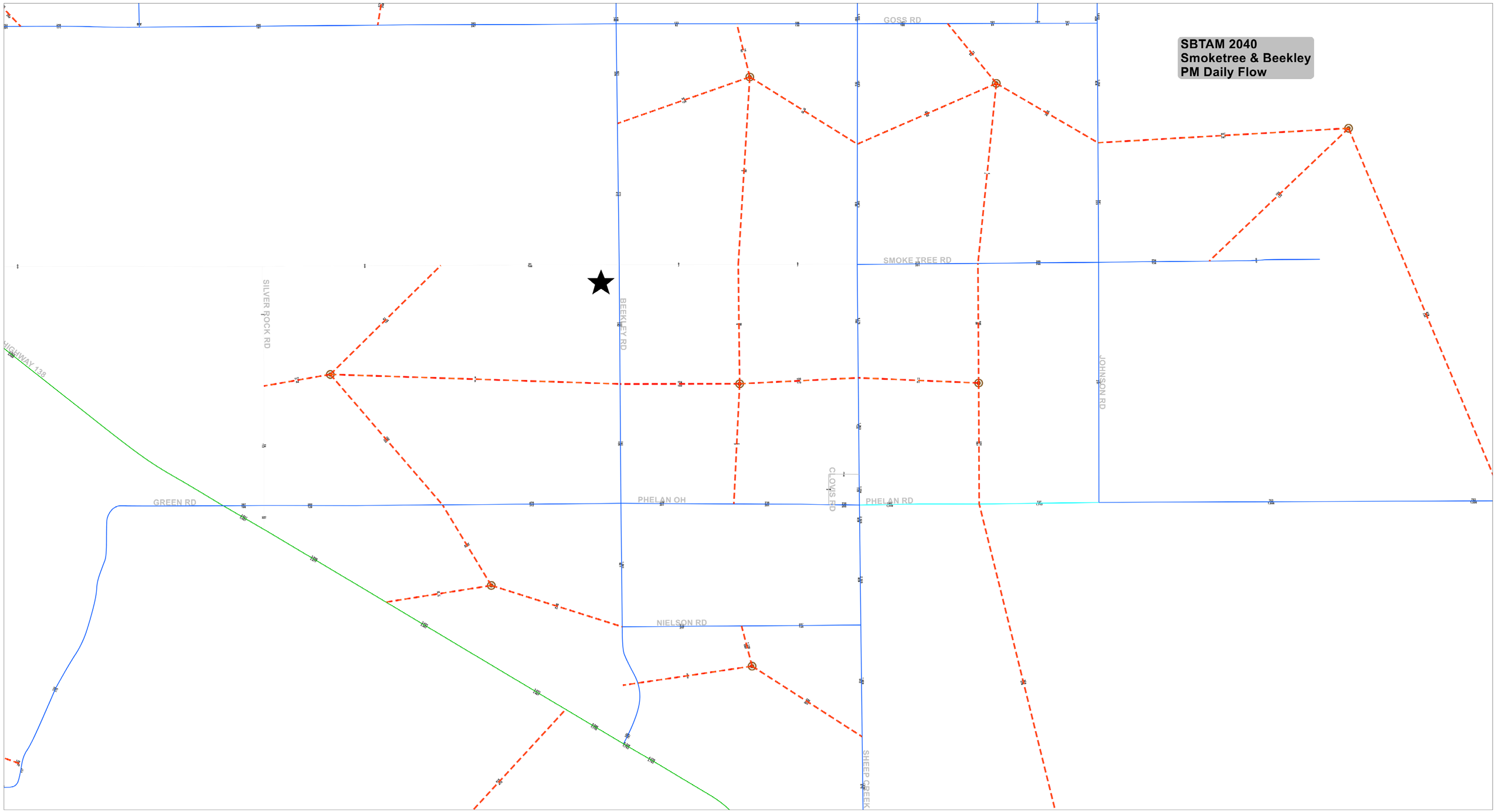

SBTAM 2016
Smoketree & Beekley
AM Daily Flow
GOSS RD
SHEEP CREEK RD
BEEKLEY RD
SMOKE TREE RD
SILVER ROCK RD
JOHNSON RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD

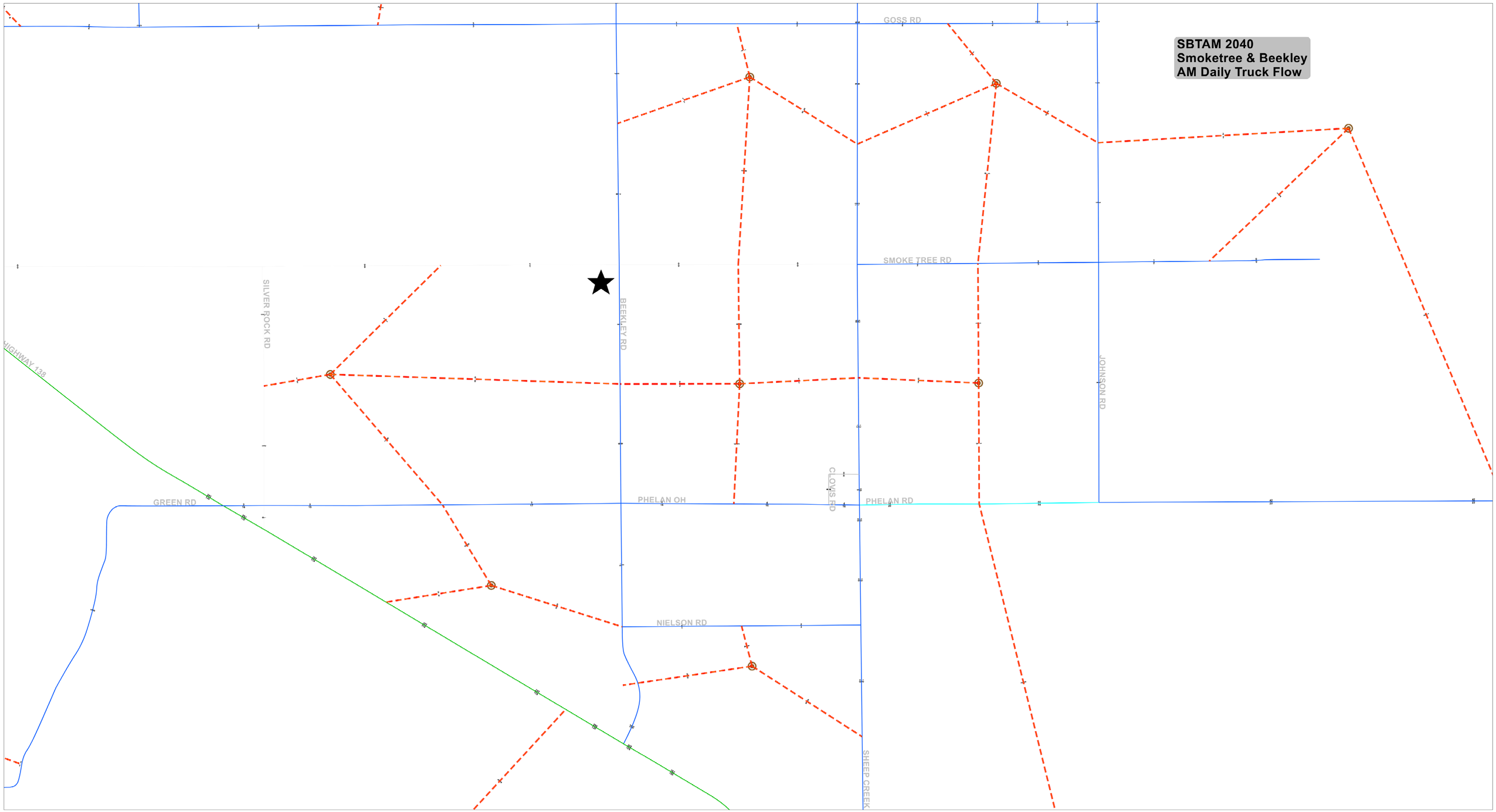

SBTAM 2016
Smoketree & Beekley
PM Daily Flow
GOSS RD
SHEEP CREEK RD
BEEKLEY RD
SMOKE TREE RD
SILVER ROCK RD
JOHNSON RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD

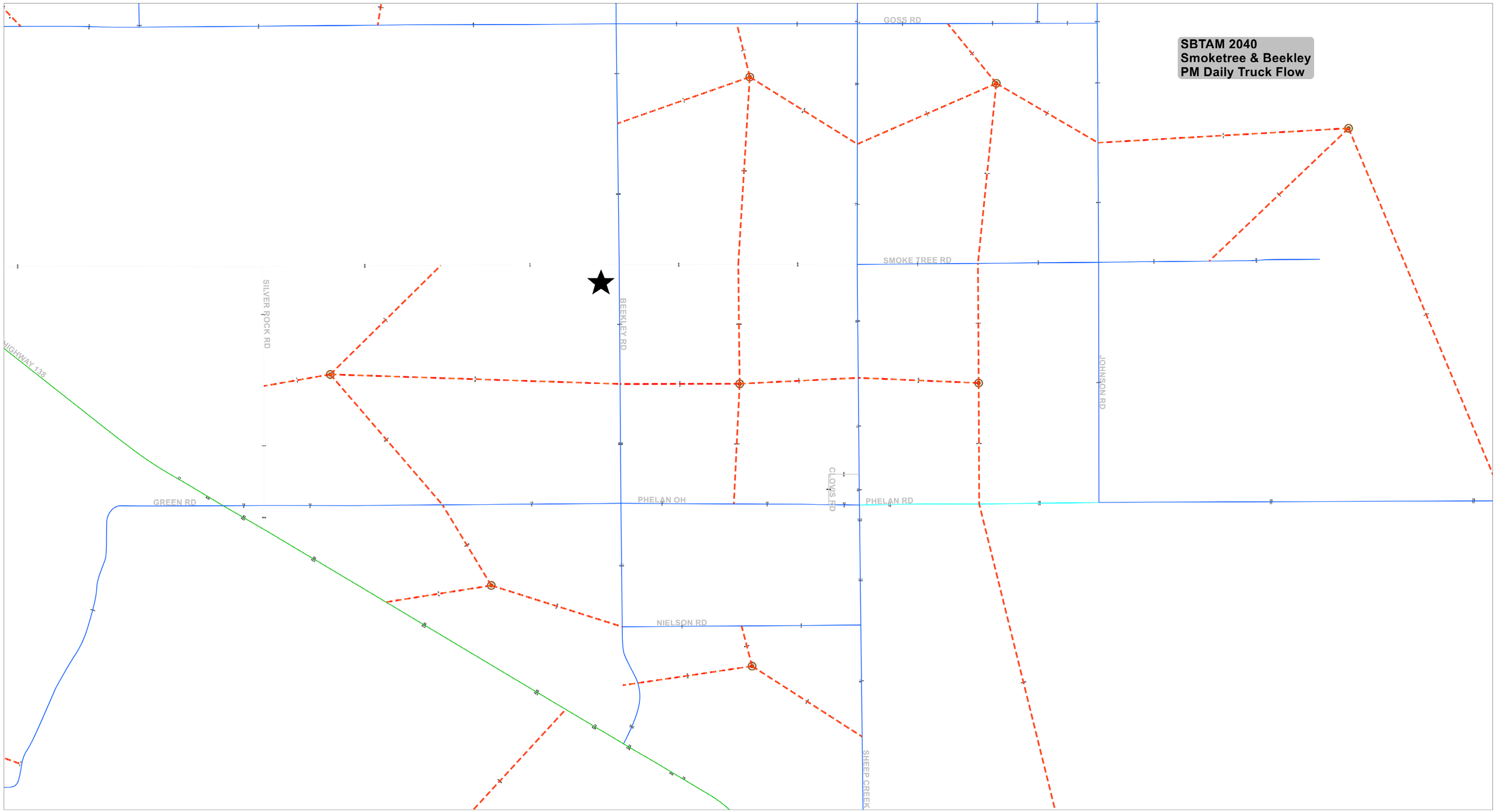

SBTAM 2016
Smoketree & Beekley
AM Daily Truck Flow
GOSS RD
SHEEP CREEK RD
BEEKLEY RD
SMOKE TREE RD
SILVER ROCK RD
JOHNSON RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD


SBTAM 2016
Smoketree & Beekley
PM Daily Truck Flow
GOSS RD
SHEEP CREEK RD
BEEKLEY RD
SMOKE TREE RD
SILVER ROCK RD
JOHNSON RD
LINDERO ST
PHELAN OH
PHELAN RD
GREEN RD
STATE HIGHWAY 138
NIELSON RD


SBTAM 2040
Smoketree & Beekley
AM Daily Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK


SBTAM 2040
Smoketree & Beekley
PM Daily Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK


SBTAM 2040
Smoketree & Beekley
AM Daily Truck Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK


SBTAM 2040
Smoketree & Beekley
PM Daily Truck Flow
GOSS RD
SMOKE TREE RD
SILVER ROCK RD
BEEKLEY RD
JOHNSON RD
HIGHWAY 138
GREEN RD
PHELAN OH
PHELAN RD
CLOVIS RD
NIELSON RD
SHEEP CREEK

APPENDIX F

POST PROCESSING WORKSHEETS

AVERAGE DAILY TRAFFIC

ID	INTERSECTION	LEG	MODEL 2016 ADT	EXISTING 2021 ADT	MODEL 2040 ADT	FUTURE 2040 ADT[1]	OPENING 2027 ADT	ADJUSTED BUILDOUT ADT[2]
1	Sheep Creek Road at:	North	5,032	8,500	6,758	9,870	8,930	10,600
	Phelan Road	South	6,636	7,500	9,909	9,900	8,300	11,000
		East	5,873	14,100	6,248	15,500	14,500	18,600
		West	2,582	13,100	1,776	14,400	13,500	16,300
2	Sheep Creek Road at:	North	6,636	6,900	9,909	9,900	7,700	9,900
	Warbler Road	South	6,636	6,700	9,909	9,900	7,500	9,900
		East	-	300	-	330	310	420
		West	-	0	-	-	-	-
3	Sheep Creek Road at:	North	6,636	6,900	9,909	9,900	7,700	9,900
	Nelson Road	South	3,816	7,400	6,012	9,100	7,900	9,100
		East	-	3,300	-	3,630	3,400	4,310
		West	2,820	2,300	3,897	3,900	2,570	3,900
4	Sheep Creek Road at:	North	6,636	7,500	9,909	10,900	8,300	10,900
	Civic Center North Driveway	South	6,636	7,250	9,909	10,900	8,100	10,900
		East	-		-	-	-	210
		West	-		-	-	-	-
5	Sheep Creek Road at:	North	6,636	7,250	9,909	10,900	8,100	10,900
	Civic Center South Driveway	South	6,636	6,900	9,909	10,900	7,700	10,900
		East	-		-	-	-	420
		West	-		-	-	-	-
6	Project Driveway at:	North	-		-	-	-	-
	Warbler Road	South	-		-	-	-	-
		East		300		360	310	360
		West	-	-	-	-	-	-

Notes -

1 Future Year 2040 ADT has a 10% minimum growth over existing for year 2021.

2 Adjusted Buidlout ADT includes other development and Future Year 2040 ADT.

Sheep Creek Road (NS) / Phelan Road (EW) - #1

MORNING PEAK HOUR	EVENING PEAK HOUR
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2021 96 126 116	2021 148 110 150
< v >	< v >
44 ^ ^ 59	89 ^ ^ 47
219 > < 334	320 > < 422
40 v v 138	28 v v 106
< ^ >	< ^ >
65 132 108	76 164 134
EXISTING PEAK HOUR COUNT YEAR (AUTOS):	EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2021 338 235	2021 408 300
v ^	v ^
495 < IN = 1477 < 531	646 < IN = 1794 < 575
303 > OUT = 1477 > 443	437 > OUT = 1794 > 604
v ^	v ^
304 305	244 374
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):
16 2 2	10 0 0
< v >	< v >
2 ^ ^ 2	0 ^ ^ 2
27 > < 41	25 > < 14
2 v v 5	0 v v 5
PCE FACTORS BY AXLE: < ^ >	PCE FACTORS BY AXLE: < ^ >
2: 1.5 3: 2.0 4+: 3.0 3 30 14	2: 1.5 3: 2 4+: 3.0 10 17 3
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):	TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2021 112 128 118	2021 158 110 150
< v >	< v >
46 ^ ^ 61	89 ^ ^ 49
246 > < 375	345 > < 436
42 v v 143	28 v v 111
< ^ >	< ^ >
68 162 122	86 181 137
EXISTING PEAK PERIOD MODEL YEAR (AUTO):	EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2016 642 337	2016 503 711
v ^	v ^
183 < IN = 2111 < 833	462 < IN = 2896 < 848
233 > OUT = 2111 > 448	291 > OUT = 2897 > 1117
v ^	v ^
1143 403	607 1254
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2016 4 7	2016 5 4
v ^	v ^
10 < IN = 31 < 14	8 < IN = 35 < 13
4 > OUT = 29 > 7	11 > OUT = 34 > 15
v ^	v ^
5 9	7 6
EXISTING PEAK HOUR MODEL YEAR (PCEs):	EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.333	PHF FOR TRUCKS: 0.25
245 130	142 200
v ^	v ^
73 < IN = 813 < 321	131 < IN = 820 < 241
90 > OUT = 812 > 173	84 > OUT = 820 > 317
v ^	v ^
436 156	172 353
FUTURE PEAK PERIOD MODEL YEAR (AUTO):	FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040 1037 421	2040 725 1264
v ^	v ^
157 < IN = 2948 < 1279	238 < IN = 3815 < 560
165 > OUT = 2949 > 343	205 > OUT = 3810 > 1449
v ^	v ^
2028 467	859 2325
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040 9 13	2040 15 8
v ^	v ^
4 < IN = 82 < 42	12 < IN = 47 < 17
16 > OUT = 83 > 20	3 > OUT = 47 > 10
v ^	v ^
46 15	17 12
FUTURE PEAK HOUR MODEL YEAR (PCEs):	FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.333	PHF FOR TRUCKS: 0.25
397 164	207 356
v ^	v ^
61 < IN = 1148 < 500	70 < IN = 1080 < 161
68 > OUT = 1148 > 137	58 > OUT = 1079 > 408
v ^	v ^
786 182	245 654

Sheep Creek Road (NS) / Phelan Road (EW) - #1

MORNING PEAK HOUR										EVENING PEAK HOUR									
RAW GROWTH (PCEs):	2016	TO	2040							RAW GROWTH (PCEs):	2016	TO	2040						
CONVERSION OF TRUCKS TO:		2040				152	34			CONVERSION OF TRUCKS TO:		2040				65	156		
FACTOR =	1.00					v	^			FACTOR =	1.00					v	^		
				-12	<			<	179					-62	<			<	-80
				-22	>			>	-36					-26	>			>	92
						v	^									v	^		
						350	26									73	301		
ADJUSTED GROWTH (PCEs):		2016	TO	2040						ADJUSTED GROWTH (PCEs):		2016	TO	2040					
10.00	MINIMUM GROWTH %					150	30			10	MINIMUM GROWTH %					60	160		
						v	^									v	^		
				60	<	IN =	390	<	180					70	<	IN =	470	<	60
				30	>	OUT =	490	>	50					50	>	OUT =	390	>	90
						v	^									v	^		
						350	30									70	300		
PRORATED GROWTH (PCEs):		2021	TO	2040						PRORATED GROWTH (PCEs):		2021	TO	2040					
19	YEARS					120	20			19	YEARS					50	130		
						v	^									v	^		
				50	<			<	140					60	<			<	50
				20	>			>	40					40	>			>	70
						v	^									v	^		
						280	20									60	240		
NEW PROJECTED VOLUMES (PCEs):		2040								NEW PROJECTED VOLUMES (PCEs):		2040							
						480	290									470	450		
						v	^									v	^		
				610	<			<	720					740	<			<	650
				350	>			>	530					500	>			>	700
						v	^									v	^		
						590	370									310	640		
YEAR 2027 GROWTH:		2021	TO	2027						YEAR 2027 GROWTH:		2021	TO	2027					
6	YEARS					40	10			6	YEARS					20	40		
						v	^									v	^		
				20	<			<	50					20	<			<	20
				10	>			>	10					10	>			>	20
						v	^									v	^		
						90	10									20	80		
INITIAL YEAR 2027 VOLUMES:										INITIAL YEAR 2027 VOLUMES:									
2027						400	280			2027						440	360		
						v	^									v	^		
				580	<	IN =	1730	<	630					700	<	IN =	2010	<	620
				340	>	OUT =	1760	>	500					470	>	OUT =	1980	>	650
						v	^									v	^		
						400	360									270	480		
BALANCED YEAR 2027 VOLUMES:										BALANCED YEAR 2027 VOLUMES:									
2027						410	280			2027						440	370		
						v	^									v	^		
				580	<	IN =	1770	<	640					710	<	IN =	2010	<	620
				350	>	OUT =	1760	>	500					470	>	OUT =	2010	>	660
						v	^									v	^		
						400	370									270	480		
ADT BY LEG:										ADT BY LEG:									
2040						9,870				2040						9,870			
						N										N			
			14,400		W	LEG	E		15,500				14,400		W	LEG	E		15,500
						S										S			
						9,900										9,900			
ADT BY LEG:										ADT BY LEG:									
2027						8,930				2027						8,930			
						N										N			
			13,500		W	LEG	E		14,500				13,500		W	LEG	E		14,500
						S										S			
						8,300										8,300			

Sheep Creek Road (NS) / Warbler Road (EW) - #2

MORNING PEAK HOUR	EVENING PEAK HOUR
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2021	2021
0 261 12	0 209 7
< v >	< v >
0 ^ ^ 14	0 ^ ^ 12
0 > < 0	0 > < 0
0 v v 2	0 v v 3
< ^ >	< ^ >
0 346 6	0 361 2
EXISTING PEAK HOUR COUNT YEAR (AUTOS):	EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2021	2021
273 360	216 373
v ^	v ^
0 < IN = 641 < 16	0 < IN = 594 < 15
0 > OUT = 641 > 18	0 > OUT = 594 > 9
v ^	v ^
263 352	212 363
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):
0 6 0	0 0 0
< v >	< v >
0 ^ ^ 0	0 ^ ^ 0
0 > < 0	0 > < 0
0 v v 0	0 v v 0
PCE FACTORS BY AXLE: < ^ >	PCE FACTORS BY AXLE: < ^ >
2: 1.5 3: 2.0 4+: 3.0 0 37 0	2: 1.5 3: 2 4+: 3.0 0 8 0
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):	TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2021	2021
0 267 12	0 209 7
< v >	< v >
0 ^ ^ 14	0 ^ ^ 12
0 > < 0	0 > < 0
0 v v 2	0 v v 3
< ^ >	< ^ >
0 383 6	0 369 2
EXISTING PEAK PERIOD MODEL YEAR (AUTO):	EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2016	2016
1143 403	607 1254
v ^	v ^
0 < IN = 1546 < 0	0 < IN = 1861 < 0
0 > OUT = 1546 > 0	0 > OUT = 1861 > 0
v ^	v ^
1143 403	607 1254
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2016	2016
5 9	7 6
v ^	v ^
0 < IN = 14 < 0	0 < IN = 13 < 0
0 > OUT = 14 > 0	0 > OUT = 13 > 0
v ^	v ^
5 9	7 6
EXISTING PEAK HOUR MODEL YEAR (PCEs):	EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
436 156	172 353
PHF FOR TRUCKS: 0.333 v ^	PHF FOR TRUCKS: 0.25 v ^
0 < IN = 592 < 0	0 < IN = 524 < 0
0 > OUT = 592 > 0	0 > OUT = 524 > 0
v ^	v ^
436 156	172 353
FUTURE PEAK PERIOD MODEL YEAR (AUTO):	FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040	2040
2028 467	859 2325
v ^	v ^
0 < IN = 2495 < 0	0 < IN = 3184 < 0
0 > OUT = 2495 > 0	0 > OUT = 3184 > 0
v ^	v ^
2028 467	859 2325
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040	2040
46 15	17 12
v ^	v ^
0 < IN = 61 < 0	0 < IN = 29 < 0
0 > OUT = 61 > 0	0 > OUT = 29 > 0
v ^	v ^
46 15	17 12
FUTURE PEAK HOUR MODEL YEAR (PCEs):	FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
786 182	245 654
PHF FOR TRUCKS: 0.333 v ^	PHF FOR TRUCKS: 0.25 v ^
0 < IN = 968 < 0	0 < IN = 899 < 0
0 > OUT = 968 > 0	0 > OUT = 899 > 0
v ^	v ^
786 182	245 654

Sheep Creek Road (NS) / Warbler Road (EW) - #2

MORNING PEAK HOUR	EVENING PEAK HOUR
RAW GROWTH (PCEs): 2016 TO 2040	RAW GROWTH (PCEs): 2016 TO 2040
CONVERSION OF TRUCKS TO: 2040	CONVERSION OF TRUCKS TO: 2040
FACTOR = 1.00	FACTOR = 1.00
350 26	73 301
v ^	v ^
0 < < 0	0 < < 0
0 > > 0	0 > > 0
v ^	v ^
350 26	73 301
ADJUSTED GROWTH (PCEs): 2016 TO 2040	ADJUSTED GROWTH (PCEs): 2016 TO 2040
10.00 MINIMUM GROWTH %	10 MINIMUM GROWTH %
350 40	70 300
v ^	v ^
0 < IN = 380 < 0	0 < IN = 370 < 0
0 > OUT = 390 > 0	0 > OUT = 370 > 0
v ^	v ^
350 30	70 300
PRORATED GROWTH (PCEs): 2021 TO 2040	PRORATED GROWTH (PCEs): 2021 TO 2040
19 YEARS	19 YEARS
280 30	60 240
v ^	v ^
0 < < 0	0 < < 0
0 > > 0	0 > > 0
v ^	v ^
280 20	60 240
NEW PROJECTED VOLUMES (PCEs): 2040	NEW PROJECTED VOLUMES (PCEs): 2040
560 430	280 620
v ^	v ^
0 < < 20	0 < < 20
0 > > 20	0 > > 10
v ^	v ^
550 410	270 610
YEAR 2027 GROWTH: 2021 TO 2027	YEAR 2027 GROWTH: 2021 TO 2027
6 YEARS	6 YEARS
90 10	20 80
v ^	v ^
0 < < 0	0 < < 0
0 > > 0	0 > > 0
v ^	v ^
90 10	20 80
INITIAL YEAR 2027 VOLUMES:	INITIAL YEAR 2027 VOLUMES:
2027	2027
370 410	240 460
v ^	v ^
0 < IN = 790 < 20	0 < IN = 710 < 20
0 > OUT = 790 > 20	0 > OUT = 700 > 10
v ^	v ^
360 400	230 450
BALANCED YEAR 2027 VOLUMES:	BALANCED YEAR 2027 VOLUMES:
2027	2027
370 410	240 470
v ^	v ^
0 < IN = 790 < 20	0 < IN = 710 < 20
0 > OUT = 790 > 20	0 > OUT = 710 > 10
v ^	v ^
360 400	230 450
ADT BY LEG:	ADT BY LEG:
2040	2040
7,700	7,700
N	N
0 W LEG E 300	0 W LEG E 300
S	S
7,500	7,500
ADT BY LEG:	ADT BY LEG:
2027	2027
9,900	9,900
N	N
0 W LEG E 300	0 W LEG E 300
S	S
9,900	9,900

Sheep Creek Road (NS) / Nelson Road (EW) - #3

MORNING PEAK HOUR	EVENING PEAK HOUR
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (AUTOS):
2021 58 196 13	2021 87 86 38
< v >	< v >
38 ^ ^ 17	14 ^ ^ 23
29 > < 60	13 > < 47
13 v v 67	12 v v 44
< ^ >	< ^ >
66 303 109	29 341 104
EXISTING PEAK HOUR COUNT YEAR (AUTOS):	EXISTING PEAK HOUR COUNT YEAR (AUTOS):
2021 267 358	2021 211 378
v ^	v ^
184 < IN = 969 < 144	163 < IN = 838 < 114
80 > OUT = 969 > 151	39 > OUT = 838 > 155
v ^	v ^
276 478	142 474
EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):	EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (TRUCKS IN PCEs):
2 3 0	0 0 0
< v >	< v >
0 ^ ^ 2	0 ^ ^ 0
0 > < 3	0 > < 0
8 v v 7	0 v v 3
PCE FACTORS BY AXLE: < ^ >	PCE FACTORS BY AXLE: < ^ >
2: 1.5 3: 2.0 4+: 3.0 0 29 12	2: 1.5 3: 2 4+: 3.0 2 9 15
TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):	TOTAL EXISTING PEAK HOUR TURNING MOVEMENT VOLUMES (PCEs):
2021 60 199 13	2021 87 86 38
< v >	< v >
38 ^ ^ 19	14 ^ ^ 23
29 > < 63	13 > < 47
21 v v 74	12 v v 47
< ^ >	< ^ >
66 332 121	31 350 119
EXISTING PEAK PERIOD MODEL YEAR (AUTO):	EXISTING PEAK PERIOD MODEL YEAR (AUTO):
2016 1143 403	2016 607 1254
v ^	v ^
683 < IN = 1547 < 0	244 < IN = 1861 < 0
151 > OUT = 1546 > 0	524 > OUT = 1861 > 0
v ^	v ^
460 253	363 730
EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	EXISTING PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2016 5 9	2016 7 6
v ^	v ^
1 < IN = 13 < 0	1 < IN = 12 < 0
1 > OUT = 13 > 0	1 > OUT = 12 > 0
v ^	v ^
3 7	5 4
EXISTING PEAK HOUR MODEL YEAR (PCEs):	EXISTING PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.333	PHF FOR TRUCKS: 0.25
436 156	172 353
v ^	v ^
260 < IN = 592 < 0	69 < IN = 524 < 0
58 > OUT = 592 > 0	147 > OUT = 524 > 0
v ^	v ^
176 98	103 205
FUTURE PEAK PERIOD MODEL YEAR (AUTO):	FUTURE PEAK PERIOD MODEL YEAR (AUTO):
2040 2028 467	2040 859 2325
v ^	v ^
898 < IN = 2495 < 0	347 < IN = 3184 < 0
189 > OUT = 2495 > 0	725 > OUT = 3184 > 0
v ^	v ^
1130 278	512 1600
FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):	FUTURE PEAK PERIOD MODEL YEAR (TRUCKS IN PCEs):
2040 46 15	2040 17 12
v ^	v ^
3 < IN = 61 < 0	3 < IN = 29 < 0
3 > OUT = 61 > 0	3 > OUT = 29 > 0
v ^	v ^
43 12	14 9
FUTURE PEAK HOUR MODEL YEAR (PCEs):	FUTURE PEAK HOUR MODEL YEAR (PCEs):
PHF FOR CARS: 0.38	PHF FOR CARS: 0.28
PHF FOR TRUCKS: 0.333	PHF FOR TRUCKS: 0.25
786 182	245 654
v ^	v ^
342 < IN = 968 < 0	98 < IN = 899 < 0
73 > OUT = 968 > 0	204 > OUT = 899 > 0
v ^	v ^
444 110	147 450

Sheep Creek Road (NS) / Nelson Road (EW) - #3

MORNING PEAK HOUR											EVENING PEAK HOUR										
RAW GROWTH (PCEs):	2016	TO	2040								RAW GROWTH (PCEs):	2016	TO	2040							
CONVERSION OF TRUCKS TO:		2040				350	26				CONVERSION OF TRUCKS TO:		2040				73	301		
FACTOR =	1.00					v	^				FACTOR =	1.00					v	^			
				82	<			<	0						29	<			<	0	
				15	>			>	0						57	>			>	0	
						v	^										v	^			
						268	11										44	245			
ADJUSTED GROWTH (PCEs):		2016	TO	2040							ADJUSTED GROWTH (PCEs):		2016	TO	2040						
10.00	MINIMUM GROWTH %					350	40				10	MINIMUM GROWTH %					70	300			
						v	^										v	^			
				80	<	IN =	400	<	20						30	<	IN =	380	<	10	
				20	>	OUT =	410	>	20						60	>	OUT =	390	>	20	
						v	^										v	^			
						270	10										40	240			
PRORATED GROWTH (PCEs):		2021	TO	2040							PRORATED GROWTH (PCEs):		2021	TO	2040						
19	YEARS					280	30				19	YEARS					60	240			
						v	^										v	^			
				60	<			<	20						20	<			<	10	
				20	>			>	20						50	>			>	20	
						v	^										v	^			
						210	10										30	190			
NEW PROJECTED VOLUMES (PCEs):		2040									NEW PROJECTED VOLUMES (PCEs):		2040								
						550	420										270	630			
						v	^										v	^			
				250	<			<	180						190	<			<	130	
				110	>			>	180						90	>			>	190	
						v	^										v	^			
						500	530										180	690			
YEAR 2027 GROWTH:		2021	TO	2027							YEAR 2027 GROWTH:		2021	TO	2027						
6	YEARS					90	10				6	YEARS					20	80			
						v	^										v	^			
				20	<			<	10						10	<			<	0	
				10	>			>	10						20	>			>	10	
						v	^										v	^			
						70	0										10	60			
INITIAL YEAR 2027 VOLUMES:											INITIAL YEAR 2027 VOLUMES:										
2027						360	400				2027						230	470			
						v	^										v	^			
				210	<	IN =	1150	<	170						180	<	IN =	970	<	120	
				100	>	OUT =	1140	>	170						60	>	OUT =	990	>	180	
						v	^										v	^			
						360	520										160	560			
BALANCED YEAR 2027 VOLUMES:											BALANCED YEAR 2027 VOLUMES:										
2027						360	400				2027						230	470			
						v	^										v	^			
				210	<	IN =	1150	<	170						180	<	IN =	980	<	120	
				100	>	OUT =	1140	>	170						60	>	OUT =	990	>	180	
						v	^										v	^			
						360	520										160	570			
ADT BY LEG:											ADT BY LEG:										
2040						9,900					2040						9,900				
						N											N				
			3,900		W	LEG	E		3,500					3,900		W	LEG	E		3,500	
						S											S				
						9,100											9,100				
ADT BY LEG:											ADT BY LEG:										
2027						7,700					2027						7,700				
						N											N				
			2,600		W	LEG	E		3,400					2,600		W	LEG	E		3,400	
						S											S				
						7,900											7,900				

APPENDIX G

INTERSECTION LEVEL OF SERVICE WORKSHEETS

EXISTING 2021

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.474

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	67	142	116	117	127	102	45	233	41	141	357	60
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	164	134	135	147	118	52	270	47	163	413	69
Peak Hour Factor	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	46	38	38	41	33	15	76	13	46	117	19
Total Analysis Volume [veh/h]	88	185	151	152	166	133	59	305	53	184	466	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	36	0	15	31	0	16	33	0	26	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	42	42	42	42	42	42	42	42	42	42	42	42
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	7	7	6	8	8	4	7	7	6	10	10
g / C, Green / Cycle	0.11	0.16	0.16	0.14	0.20	0.20	0.08	0.16	0.16	0.15	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.10	0.09	0.05	0.09	0.03	0.09	0.03	0.11	0.14	0.05
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	189	565	252	242	671	300	147	565	252	258	786	351
d1, Uniform Delay [s]	17.63	15.57	16.34	17.10	14.35	14.95	18.27	16.16	15.25	17.07	14.51	13.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.79	0.33	2.27	2.69	0.19	1.03	1.75	0.80	0.41	3.66	0.72	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.33	0.60	0.63	0.25	0.44	0.40	0.54	0.21	0.71	0.59	0.22
d, Delay for Lane Group [s/veh]	19.42	15.90	18.61	19.78	14.54	15.98	20.01	16.97	15.66	20.73	15.23	13.53
Lane Group LOS	B	B	B	B	B	B	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.75	0.65	1.23	1.18	0.49	0.87	0.53	1.17	0.39	1.57	1.54	0.48
50th-Percentile Queue Length [ft/ln]	18.71	16.32	30.82	29.57	12.13	21.67	13.35	29.33	9.82	39.32	38.53	11.92
95th-Percentile Queue Length [veh/ln]	1.35	1.18	2.22	2.13	0.87	1.56	0.96	2.11	0.71	2.83	2.77	0.86
95th-Percentile Queue Length [ft/ln]	33.69	29.38	55.48	53.23	21.84	39.00	24.03	52.79	17.67	70.77	69.36	21.45

Movement, Approach, & Intersection Results

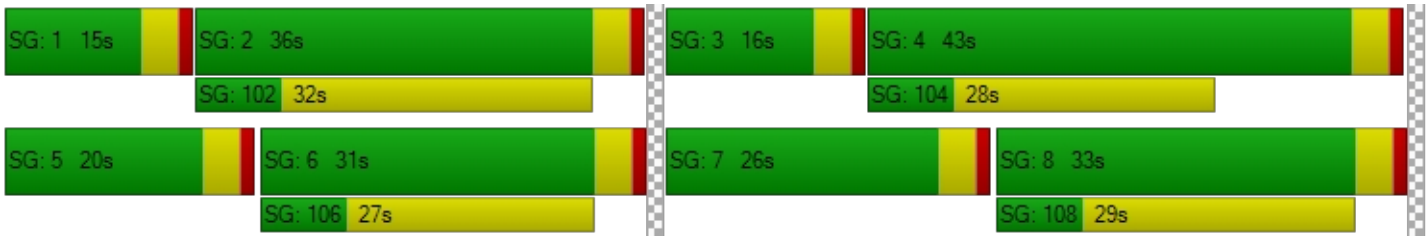
d_M, Delay for Movement [s/veh]	19.42	15.90	18.61	19.78	14.54	15.98	20.01	16.97	15.66	20.73	15.23	13.53
Movement LOS	B	B	B	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	17.60			16.73			17.23			16.44		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	16.91											
Intersection LOS	B											
Intersection V/C	0.474											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.642	2.693	2.672	2.788
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	491	527	709
d_b, Bicycle Delay [s]	27.65	31.31	29.82	22.91
l_b,int, Bicycle LOS Score for Intersection	1.909	1.932	1.904	2.160
Bicycle LOS	A	A	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	363	6	12	265	2	14
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	420	7	14	307	2	16
Peak Hour Factor	0.7770	0.7770	0.7770	0.7770	0.7770	0.7770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	135	2	5	99	1	5
Total Analysis Volume [veh/h]	541	9	18	395	3	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.01	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.56	0.00	18.51	12.03
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.04	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.03	1.03	3.91	3.91
d_A, Approach Delay [s/veh]	0.00		0.37		12.84	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	66	316	117	13	198	59	38	29	18	71	61	18
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	366	135	15	229	68	44	34	21	82	71	21
Peak Hour Factor	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	118	44	5	74	22	14	11	7	26	23	7
Total Analysis Volume [veh/h]	98	472	174	19	296	88	57	44	27	106	92	27
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	36	36	36	36	16	16	16	16
g / C, Green / Cycle	0.60	0.60	0.60	0.60	0.60	0.60	0.26	0.26	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.09	0.26	0.11	0.02	0.16	0.06	0.11	0.02	0.21	0.02
s, saturation flow rate [veh/h]	1100	1800	1530	936	1800	1530	900	1530	946	1530
c, Capacity [veh/h]	673	1082	920	533	1082	920	333	406	343	406
d1, Uniform Delay [s]	8.16	6.47	5.38	9.55	5.71	5.06	18.24	16.48	22.50	16.48
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	1.28	0.46	0.12	0.62	0.21	0.51	0.07	1.53	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.44	0.19	0.04	0.27	0.10	0.30	0.07	0.58	0.07
d, Delay for Lane Group [s/veh]	8.62	7.75	5.84	9.67	6.34	5.27	18.75	16.55	24.03	16.55
Lane Group LOS	A	A	A	A	A	A	B	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.62	2.49	0.76	0.13	1.35	0.36	1.04	0.25	2.51	0.25
50th-Percentile Queue Length [ft/ln]	15.40	62.16	19.03	3.34	33.79	8.99	25.93	6.17	62.84	6.17
95th-Percentile Queue Length [veh/ln]	1.11	4.48	1.37	0.24	2.43	0.65	1.87	0.44	4.52	0.44
95th-Percentile Queue Length [ft/ln]	27.72	111.88	34.26	6.02	60.82	16.18	46.67	11.11	113.12	11.11

Movement, Approach, & Intersection Results

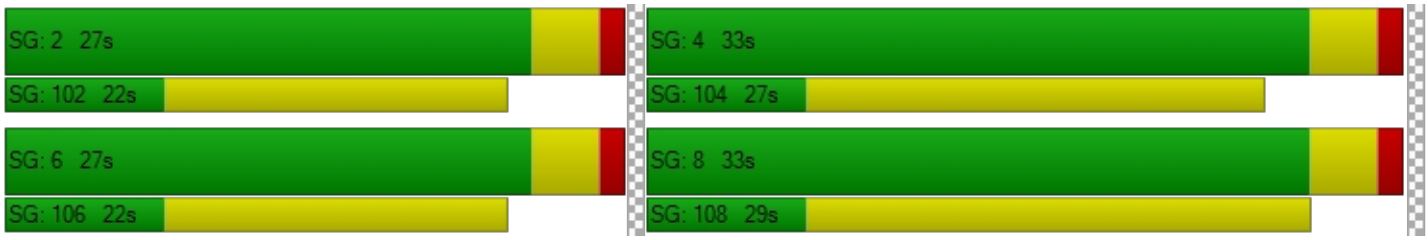
d_M, Delay for Movement [s/veh]	8.62	7.75	5.84	9.67	6.34	5.27	18.75	18.75	16.55	24.03	24.03	16.55
Movement LOS	A	A	A	A	A	A	B	B	B	C	C	B
d_A, Approach Delay [s/veh]	7.42			6.26			18.28			23.13		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	10.39											
Intersection LOS	B											
Intersection V/C	0.505											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.641	2.501	2.255	2.170
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.787	2.225	1.771	1.931
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	80	171	136	150	110	154	89	334	28	109	429	48
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	198	157	174	127	178	103	386	32	126	496	56
Peak Hour Factor	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	51	41	45	33	46	27	100	8	33	129	15
Total Analysis Volume [veh/h]	97	206	163	181	132	185	107	401	33	131	515	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	16	37	0	16	33	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	44	44	44	44	44	44	44	44	44	44	44	44
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	7	7	6	9	9	5	9	9	6	9	9
g / C, Green / Cycle	0.11	0.16	0.16	0.14	0.19	0.19	0.12	0.20	0.20	0.13	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.11	0.11	0.04	0.12	0.06	0.12	0.02	0.08	0.15	0.04
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	192	562	251	245	669	299	201	701	313	219	738	329
d1, Uniform Delay [s]	18.55	16.50	17.35	18.23	14.95	16.35	18.44	15.90	14.35	18.27	16.08	14.20
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.06	0.40	2.82	4.34	0.14	2.10	2.18	0.74	0.15	2.59	1.21	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.37	0.65	0.74	0.20	0.62	0.53	0.57	0.11	0.60	0.70	0.18
d, Delay for Lane Group [s/veh]	20.62	16.90	20.17	22.57	15.09	18.45	20.62	16.63	14.49	20.86	17.29	14.45
Lane Group LOS	C	B	C	C	B	B	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.89	0.79	1.46	1.61	0.42	1.41	1.00	1.58	0.24	1.17	1.96	0.39
50th-Percentile Queue Length [ft/ln]	22.17	19.74	36.48	40.23	10.38	35.16	25.06	39.56	5.93	29.23	49.05	9.72
95th-Percentile Queue Length [veh/ln]	1.60	1.42	2.63	2.90	0.75	2.53	1.80	2.85	0.43	2.10	3.53	0.70
95th-Percentile Queue Length [ft/ln]	39.91	35.53	65.66	72.42	18.69	63.28	45.11	71.22	10.67	52.62	88.29	17.50

Movement, Approach, & Intersection Results

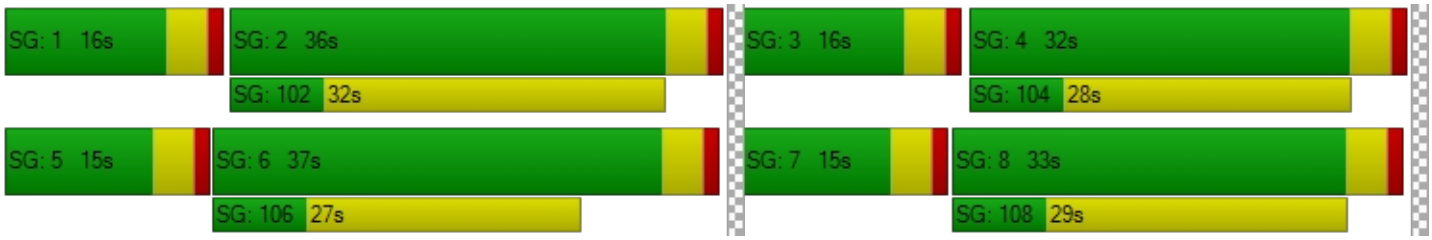
d_M, Delay for Movement [s/veh]	20.62	16.90	20.17	22.57	15.09	18.45	20.62	16.63	14.49	20.86	17.29	14.45
Movement LOS	C	B	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	18.82			19.05			17.29			17.72		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	18.15											
Intersection LOS	B											
Intersection V/C	0.519											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	39.61	39.61
l_p,int, Pedestrian LOS Score for Intersection	2.623	2.717	2.711	2.811
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	660	580	560
d_b, Bicycle Delay [s]	23.12	22.45	25.21	25.92
l_b,int, Bicycle LOS Score for Intersection	1.944	1.970	2.006	2.140
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	366	2	7	209	3	12
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	423	2	8	242	3	14
Peak Hour Factor	0.9021	0.9021	0.9021	0.9021	0.9021	0.9021
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	117	1	2	67	1	4
Total Analysis Volume [veh/h]	469	2	9	268	3	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.01	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.30	0.00	14.83	11.26
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.11	0.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.55	0.55	2.70	2.70
d_A, Approach Delay [s/veh]	0.00		0.27		11.82	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.387

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	30	346	112	38	86	87	14	13	12	46	47	23
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	400	130	44	99	101	16	15	14	53	54	27
Peak Hour Factor	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	114	37	13	28	29	5	4	4	15	15	8
Total Analysis Volume [veh/h]	40	455	148	50	113	115	18	17	16	60	61	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	44	44	44	44	9	9	9	9
g / C, Green / Cycle	0.72	0.72	0.72	0.72	0.72	0.72	0.14	0.14	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.25	0.10	0.05	0.06	0.08	0.04	0.01	0.11	0.02
s, saturation flow rate [veh/h]	1300	1800	1530	951	1800	1530	900	1530	1117	1530
c, Capacity [veh/h]	1002	1307	1111	696	1307	1111	218	215	247	215
d1, Uniform Delay [s]	3.20	3.02	2.50	4.93	2.40	2.44	23.05	22.39	25.35	22.61
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.07	0.73	0.25	0.20	0.13	0.19	0.34	0.14	1.50	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.35	0.13	0.07	0.09	0.10	0.16	0.07	0.49	0.14
d, Delay for Lane Group [s/veh]	3.28	3.75	2.74	5.13	2.54	2.62	23.39	22.53	26.86	22.92
Lane Group LOS	A	A	A	A	A	A	C	C	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.11	1.03	0.28	0.21	0.20	0.21	0.41	0.18	1.60	0.36
50th-Percentile Queue Length [ft/ln]	2.63	25.65	7.03	5.26	4.94	5.32	10.30	4.56	40.03	8.95
95th-Percentile Queue Length [veh/ln]	0.19	1.85	0.51	0.38	0.36	0.38	0.74	0.33	2.88	0.64
95th-Percentile Queue Length [ft/ln]	4.73	46.18	12.66	9.47	8.90	9.58	18.53	8.21	72.05	16.11

Movement, Approach, & Intersection Results

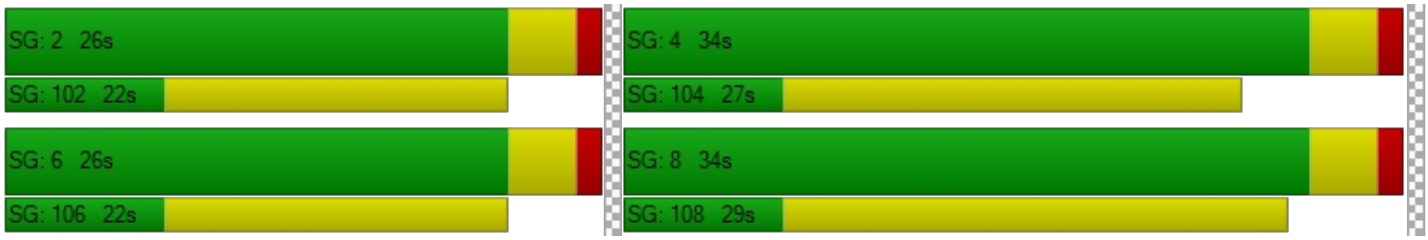
d_M, Delay for Movement [s/veh]	3.28	3.75	2.74	5.13	2.54	2.62	23.39	23.39	22.53	26.86	26.86	22.92
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	3.49			3.04			23.12			26.05		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	7.32											
Intersection LOS	A											
Intersection V/C	0.387											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.464	2.388	2.105	2.168
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
l_b,int, Bicycle LOS Score for Intersection	2.621	2.018	1.644	1.810
Bicycle LOS	B	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



EXISTING (2021) PLUS PROJECT

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.480

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	67	142	116	117	127	102	45	233	41	141	357	60
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	2	2	0	4	0	0	0	3	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	166	136	135	151	118	52	270	50	167	413	69
Peak Hour Factor	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	47	38	38	43	33	15	76	14	47	117	19
Total Analysis Volume [veh/h]	90	187	154	152	171	133	59	305	56	189	466	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	36	0	15	31	0	16	33	0	26	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	42	42	42	42	42	42	42	42	42	42	42	42
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	7	7	6	8	8	4	7	7	6	10	10
g / C, Green / Cycle	0.11	0.16	0.16	0.14	0.19	0.19	0.08	0.16	0.16	0.15	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.10	0.09	0.05	0.09	0.03	0.09	0.04	0.11	0.14	0.05
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	191	565	252	241	666	297	148	564	252	260	789	352
d1, Uniform Delay [s]	17.65	15.62	16.42	17.15	14.46	15.05	18.32	16.22	15.34	17.12	14.52	13.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.80	0.34	2.38	2.70	0.20	1.05	1.74	0.81	0.44	3.84	0.71	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.33	0.61	0.63	0.26	0.45	0.40	0.54	0.22	0.73	0.59	0.22
d, Delay for Lane Group [s/veh]	19.45	15.96	18.80	19.85	14.66	16.10	20.06	17.03	15.78	20.96	15.23	13.53
Lane Group LOS	B	B	B	B	B	B	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.77	0.66	1.27	1.19	0.50	0.87	0.54	1.18	0.42	1.63	1.54	0.48
50th-Percentile Queue Length [ft/ln]	19.17	16.57	31.70	29.69	12.62	21.84	13.38	29.44	10.45	40.76	38.58	11.94
95th-Percentile Queue Length [veh/ln]	1.38	1.19	2.28	2.14	0.91	1.57	0.96	2.12	0.75	2.93	2.78	0.86
95th-Percentile Queue Length [ft/ln]	34.51	29.82	57.06	53.44	22.71	39.31	24.09	53.00	18.80	73.36	69.45	21.48

Movement, Approach, & Intersection Results

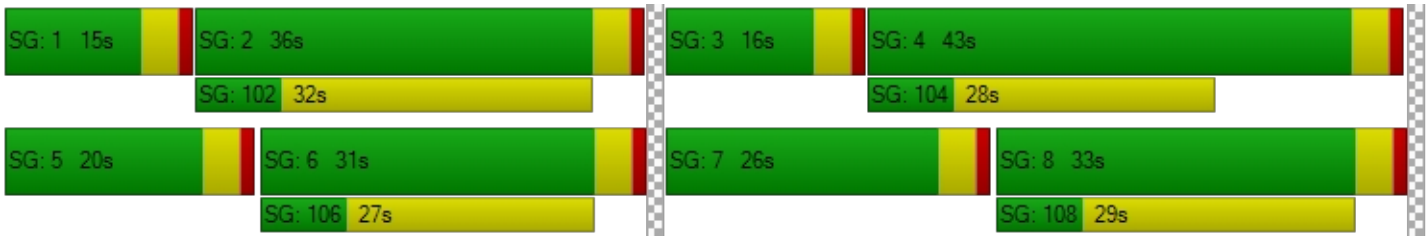
d_M, Delay for Movement [s/veh]	19.45	15.96	18.80	19.85	14.66	16.10	20.06	17.03	15.78	20.96	15.23	13.53
Movement LOS	B	B	B	B	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	17.70			16.81			17.29			16.52		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	17.00											
Intersection LOS	B											
Intersection V/C	0.480											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.646	2.695	2.673	2.790
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	491	527	709
d_b, Bicycle Delay [s]	27.65	31.31	29.82	22.91
l_b,int, Bicycle LOS Score for Intersection	1.915	1.936	1.906	2.164
Bicycle LOS	A	A	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	363	6	12	265	2	14
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	6	7	2	4	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	423	13	21	309	6	20
Peak Hour Factor	0.7770	0.7770	0.7770	0.7770	0.7770	0.7770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	4	7	99	2	6
Total Analysis Volume [veh/h]	544	17	27	398	8	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.00	0.03	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	8.62	0.00	19.51	12.42
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.26	0.26
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.58	1.58	6.41	6.41
d_A, Approach Delay [s/veh]	0.00		0.55		14.09	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.70					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	66	316	117	13	198	59	38	29	18	71	61	18
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	2	1	3	4	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	76	368	135	17	230	71	48	34	21	82	71	24
Peak Hour Factor	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	119	44	5	74	23	15	11	7	26	23	8
Total Analysis Volume [veh/h]	98	475	174	22	297	92	62	44	27	106	92	31
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	36	36	36	36	16	16	16	16
g / C, Green / Cycle	0.60	0.60	0.60	0.60	0.60	0.60	0.27	0.27	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.09	0.26	0.11	0.02	0.17	0.06	0.12	0.02	0.21	0.02
s, saturation flow rate [veh/h]	1099	1800	1530	934	1800	1530	900	1530	928	1530
c, Capacity [veh/h]	665	1072	911	525	1072	911	339	415	344	415
d1, Uniform Delay [s]	8.37	6.67	5.54	9.85	5.88	5.23	18.06	16.22	22.39	16.27
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	1.33	0.47	0.15	0.64	0.22	0.52	0.07	1.53	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.44	0.19	0.04	0.28	0.10	0.31	0.07	0.58	0.07
d, Delay for Lane Group [s/veh]	8.84	8.00	6.01	10.00	6.52	5.45	18.58	16.29	23.91	16.34
Lane Group LOS	A	A	A	B	A	A	B	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.63	2.58	0.78	0.16	1.39	0.39	1.08	0.24	2.51	0.28
50th-Percentile Queue Length [ft/ln]	15.72	64.45	19.55	3.97	34.85	9.68	27.08	6.10	62.79	7.03
95th-Percentile Queue Length [veh/ln]	1.13	4.64	1.41	0.29	2.51	0.70	1.95	0.44	4.52	0.51
95th-Percentile Queue Length [ft/ln]	28.29	116.02	35.18	7.14	62.74	17.42	48.74	10.98	113.02	12.65

Movement, Approach, & Intersection Results

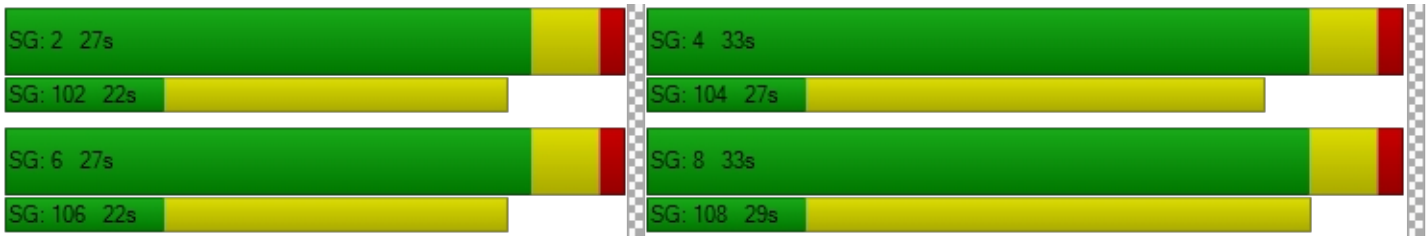
d_M, Delay for Movement [s/veh]	8.84	8.00	6.01	10.00	6.52	5.45	18.58	18.58	16.29	23.91	23.91	16.34
Movement LOS	A	A	A	B	A	A	B	B	B	C	C	B
d_A, Approach Delay [s/veh]	7.65			6.47			18.12			22.89		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	10.54											
Intersection LOS	B											
Intersection V/C	0.511											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.642	2.515	2.259	2.178
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.792	2.238	1.779	1.937
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	4	7	2	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	440	3	4	327	2	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	1	1	89	1	1
Total Analysis Volume [veh/h]	478	3	4	355	2	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.31	0.00	15.81	11.18
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.03	0.03
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.28	0.28	0.71	0.71
d_A, Approach Delay [s/veh]	0.00		0.09		13.50	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	443	0	0	329	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	0	0	89	0	0
Total Analysis Volume [veh/h]	482	0	0	358	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.30	0.00	15.65	11.12
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.38	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	18	16	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	6	7	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	4	6	28	23	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	8	6	0
Total Analysis Volume [veh/h]	0	4	7	30	25	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.86	8.42	7.26	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.28	0.28	0.28	0.28	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		1.37		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.28					
Intersection LOS	A					

PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.529

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	80	171	136	150	110	154	89	334	28	109	429	48
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	15	15	0	13	0	0	0	10	13	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	213	172	174	140	178	103	386	42	139	496	56
Peak Hour Factor	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	55	45	45	36	46	27	100	11	36	129	15
Total Analysis Volume [veh/h]	109	221	179	181	145	185	107	401	44	144	515	58
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	16	37	0	16	33	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	45	45	45	45	45	45	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	8	8	6	9	9	5	9	9	6	10	10
g / C, Green / Cycle	0.12	0.17	0.17	0.14	0.20	0.20	0.12	0.20	0.20	0.13	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.12	0.11	0.04	0.12	0.06	0.12	0.03	0.08	0.15	0.04
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	201	600	268	242	683	305	199	683	305	224	734	328
d1, Uniform Delay [s]	18.85	16.47	17.45	18.66	15.15	16.51	18.87	16.44	14.94	18.67	16.45	14.53
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.28	0.38	2.87	4.54	0.15	1.94	2.25	0.80	0.21	3.05	1.23	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.37	0.67	0.75	0.21	0.61	0.54	0.59	0.14	0.64	0.70	0.18
d, Delay for Lane Group [s/veh]	21.13	16.85	20.33	23.20	15.31	18.45	21.12	17.24	15.16	21.73	17.69	14.79
Lane Group LOS	C	B	C	C	B	B	C	B	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.02	0.86	1.63	1.67	0.47	1.43	1.03	1.65	0.33	1.34	2.03	0.40
50th-Percentile Queue Length [ft/ln]	25.61	21.42	40.76	41.66	11.73	35.70	25.78	41.15	8.28	33.46	50.66	10.03
95th-Percentile Queue Length [veh/ln]	1.84	1.54	2.93	3.00	0.84	2.57	1.86	2.96	0.60	2.41	3.65	0.72
95th-Percentile Queue Length [ft/ln]	46.09	38.56	73.36	75.00	21.11	64.27	46.41	74.07	14.91	60.24	91.18	18.06

Movement, Approach, & Intersection Results

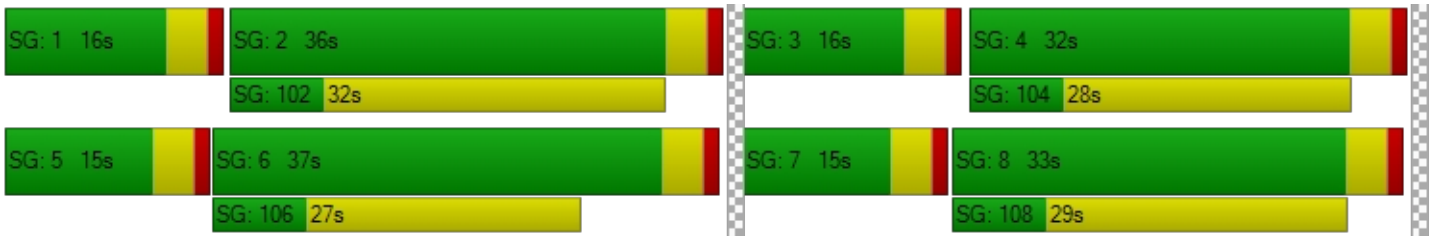
d_M, Delay for Movement [s/veh]	21.13	16.85	20.33	23.20	15.31	18.45	21.12	17.24	15.16	21.73	17.69	14.79
Movement LOS	C	B	C	C	B	B	C	B	B	C	B	B
d_A, Approach Delay [s/veh]	18.99			19.24			17.83			18.26		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	18.54											
Intersection LOS	B											
Intersection V/C	0.529											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	39.61	39.61
l_p,int, Pedestrian LOS Score for Intersection	2.640	2.725	2.716	2.818
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	660	580	560
d_b, Bicycle Delay [s]	23.12	22.45	25.21	25.92
l_b,int, Bicycle LOS Score for Intersection	1.980	1.981	2.015	2.151
Bicycle LOS	A	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	366	2	7	209	3	12
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	20	23	12	23	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	433	22	31	254	26	41
Peak Hour Factor	0.9021	0.9021	0.9021	0.9021	0.9021	0.9021
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	120	6	9	70	7	11
Total Analysis Volume [veh/h]	480	24	34	282	29	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.09	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	8.47	0.00	17.71	12.82
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.09	0.59	0.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.23	2.23	14.83	14.83
d_A, Approach Delay [s/veh]	0.00		0.91		14.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.398

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	30	346	112	38	86	87	14	13	12	46	47	23
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	12	8	15	13	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	407	130	56	107	116	29	15	14	53	54	37
Peak Hour Factor	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	116	37	16	30	33	8	4	4	15	15	11
Total Analysis Volume [veh/h]	40	463	148	64	122	132	33	17	16	60	61	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	43	43	43	43	43	43	9	9	9	9
g / C, Green / Cycle	0.71	0.71	0.71	0.71	0.71	0.71	0.15	0.15	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.03	0.26	0.10	0.07	0.07	0.09	0.06	0.01	0.11	0.03
s, saturation flow rate [veh/h]	1289	1800	1530	944	1800	1530	900	1530	1058	1530
c, Capacity [veh/h]	976	1283	1091	674	1283	1091	238	235	252	235
d1, Uniform Delay [s]	3.50	3.33	2.74	5.49	2.65	2.71	22.75	21.72	24.65	22.10
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.79	0.26	0.28	0.15	0.23	0.43	0.12	1.41	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.04	0.36	0.14	0.09	0.10	0.12	0.21	0.07	0.48	0.18
d, Delay for Lane Group [s/veh]	3.58	4.12	3.00	5.77	2.80	2.93	23.19	21.84	26.06	22.45
Lane Group LOS	A	A	A	A	A	A	C	C	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.12	1.19	0.32	0.30	0.24	0.28	0.59	0.18	1.59	0.48
50th-Percentile Queue Length [ft/ln]	2.88	29.64	7.90	7.40	6.06	6.96	14.66	4.46	39.78	11.96
95th-Percentile Queue Length [veh/ln]	0.21	2.13	0.57	0.53	0.44	0.50	1.06	0.32	2.86	0.86
95th-Percentile Queue Length [ft/ln]	5.18	53.36	14.23	13.33	10.91	12.53	26.40	8.02	71.60	21.53

Movement, Approach, & Intersection Results

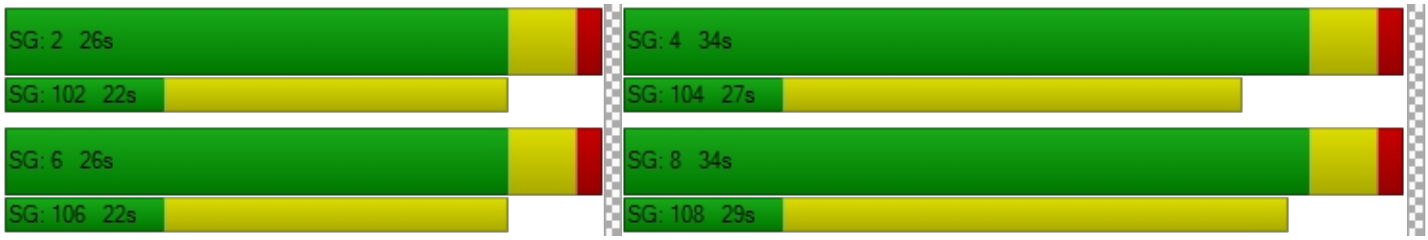
d_M, Delay for Movement [s/veh]	3.58	4.12	3.00	5.77	2.80	2.93	23.19	23.19	21.84	26.06	26.06	22.45
Movement LOS	A	A	A	A	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	3.83			3.45			22.86			25.13		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	7.68											
Intersection LOS	A											
Intersection V/C	0.398											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.470	2.434	2.120	2.200
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
l_b,int, Bicycle LOS Score for Intersection	2.634	2.084	1.669	1.829
Bicycle LOS	B	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	9	12	24	11	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	477	9	12	310	11	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	2	3	84	3	4
Total Analysis Volume [veh/h]	518	10	13	337	12	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.47	0.00	17.12	12.06
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.21	0.21
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.87	0.87	5.21	5.21
d_A, Approach Delay [s/veh]	0.00		0.31		14.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	1	1	34	1	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	484	1	1	320	1	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	132	0	0	87	0	1
Total Analysis Volume [veh/h]	526	1	1	348	1	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.43	0.00	16.26	11.54
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.07	0.07	0.51	0.51
d_A, Approach Delay [s/veh]	0.00		0.02		13.11	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	9	15	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	20	23	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	23	20	33	44	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	5	9	12	0
Total Analysis Volume [veh/h]	0	25	22	36	48	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.28	8.59	7.32	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.04	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.87	1.87	0.97	0.97	0.00	0.00
d_A, Approach Delay [s/veh]	8.59		2.78		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.87					
Intersection LOS	A					

OPENING YEAR (2027) WITHOUT PROJECT

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	67	142	116	117	127	102	45	233	41	141	357	60
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	7	24	9	20	7	5	25	15	29	28	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	192	175	161	186	140	64	329	68	213	493	84
Peak Hour Factor	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	54	49	45	53	40	18	93	19	60	139	24
Total Analysis Volume [veh/h]	107	217	198	182	210	158	72	371	77	241	557	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	36	0	15	31	0	16	33	0	26	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	48	48	48	48	48	48	48	48	48	48	48	48
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	9	9	7	10	10	4	8	8	9	12	12
g / C, Green / Cycle	0.11	0.18	0.18	0.14	0.21	0.21	0.09	0.16	0.16	0.18	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.13	0.11	0.06	0.10	0.04	0.11	0.05	0.14	0.16	0.06
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	191	629	281	240	728	325	156	563	251	311	872	389
d1, Uniform Delay [s]	20.36	17.21	18.52	19.99	15.98	16.73	20.86	18.94	17.79	18.86	16.04	14.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.56	0.33	3.24	4.82	0.22	1.13	2.13	1.33	0.68	4.15	0.78	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.35	0.71	0.76	0.29	0.49	0.46	0.66	0.31	0.78	0.64	0.24
d, Delay for Lane Group [s/veh]	22.93	17.54	21.75	24.82	16.20	17.86	22.99	20.27	18.47	23.01	16.83	14.65
Lane Group LOS	C	B	C	C	B	B	C	C	B	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.11	0.91	1.98	1.85	0.75	1.25	0.77	1.78	0.70	2.43	2.23	0.68
50th-Percentile Queue Length [ft/ln]	27.77	22.67	49.42	46.13	18.78	31.26	19.30	44.54	17.54	60.75	55.65	17.10
95th-Percentile Queue Length [veh/ln]	2.00	1.63	3.56	3.32	1.35	2.25	1.39	3.21	1.26	4.37	4.01	1.23
95th-Percentile Queue Length [ft/ln]	49.98	40.80	88.96	83.03	33.80	56.28	34.73	80.18	31.58	109.35	100.17	30.78

Movement, Approach, & Intersection Results

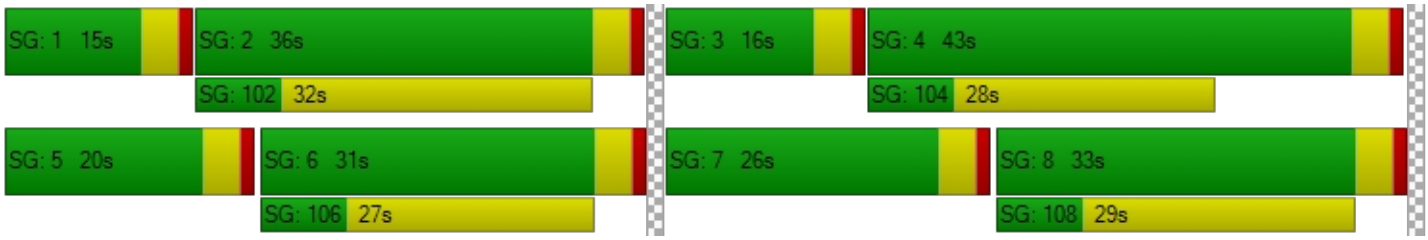
d_M, Delay for Movement [s/veh]	22.93	17.54	21.75	24.82	16.20	17.86	22.99	20.27	18.47	23.01	16.83	14.65
Movement LOS	C	B	C	C	B	B	C	C	B	C	B	B
d_A, Approach Delay [s/veh]	20.24			19.53			20.38			18.26		
Approach LOS	C			B			C			B		
d_I, Intersection Delay [s/veh]	19.40											
Intersection LOS	B											
Intersection V/C	0.581											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.690	2.741	2.717	2.863
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	491	527	709
d_b, Bicycle Delay [s]	27.65	31.31	29.82	22.91
l_b,int, Bicycle LOS Score for Intersection	1.990	2.013	1.989	2.296
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	363	6	12	265	2	14
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	5	0	27	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	519	13	16	373	3	18
Peak Hour Factor	0.7770	0.7770	0.7770	0.7770	0.7770	0.7770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	167	4	5	120	1	6
Total Analysis Volume [veh/h]	668	17	21	480	4	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.02	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.01	0.00	23.67	13.59
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.23	0.23
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.33	1.33	5.65	5.65
d_A, Approach Delay [s/veh]	0.00		0.38		15.09	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.626

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	66	316	117	13	198	59	38	29	18	71	61	18
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	2	4	13	11	21	7	0	0	6	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	434	154	21	271	88	71	45	24	92	86	32
Peak Hour Factor	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	140	50	7	87	28	23	15	8	30	28	10
Total Analysis Volume [veh/h]	111	560	199	27	350	114	92	58	31	119	111	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	20	20	20	20
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.53	0.53	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.11	0.31	0.13	0.03	0.19	0.07	0.17	0.02	0.27	0.03
s, saturation flow rate [veh/h]	1047	1800	1530	863	1800	1530	900	1530	843	1530
c, Capacity [veh/h]	551	964	819	396	964	819	395	507	370	507
d1, Uniform Delay [s]	11.61	9.41	7.45	14.33	8.04	7.00	16.10	13.70	21.43	13.79
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.82	2.56	0.70	0.33	1.06	0.35	0.60	0.05	1.85	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.58	0.24	0.07	0.36	0.14	0.38	0.06	0.62	0.08
d, Delay for Lane Group [s/veh]	12.43	11.96	8.15	14.66	9.11	7.36	16.70	13.75	23.28	13.86
Lane Group LOS	B	B	A	B	A	A	B	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	4.29	1.17	0.26	2.21	0.63	1.43	0.25	2.91	0.33
50th-Percentile Queue Length [ft/ln]	23.29	107.18	29.35	6.50	55.24	15.67	35.66	6.15	72.78	8.20
95th-Percentile Queue Length [veh/ln]	1.68	7.68	2.11	0.47	3.98	1.13	2.57	0.44	5.24	0.59
95th-Percentile Queue Length [ft/ln]	41.92	192.07	52.83	11.71	99.44	28.20	64.19	11.08	131.01	14.76

Movement, Approach, & Intersection Results

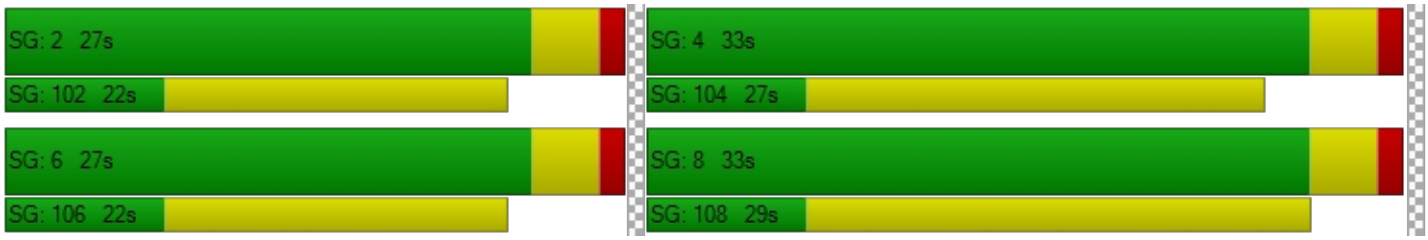
d_M, Delay for Movement [s/veh]	12.43	11.96	8.15	14.66	9.11	7.36	16.70	16.70	13.75	23.28	23.28	13.86
Movement LOS	B	B	A	B	A	A	B	B	B	C	C	B
d_A, Approach Delay [s/veh]	11.15			9.01			16.20			21.85		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	12.67											
Intersection LOS	B											
Intersection V/C	0.626											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.723	2.624	2.328	2.227
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.995	2.370	1.858	2.007
Bicycle LOS	C	B	A	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	43	2	14	42	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	534	2	14	402	1	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	1	4	109	0	1
Total Analysis Volume [veh/h]	580	2	15	437	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.65	0.00	19.44	12.05
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.14	0.00	0.89	0.89
d_A, Approach Delay [s/veh]	0.00		0.29		13.53	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.19					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	39	7	18	25	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	530	7	18	385	2	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	144	2	5	105	1	2
Total Analysis Volume [veh/h]	576	8	20	418	2	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.67	0.00	19.34	12.10
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	0.00	1.63	1.63
d_A, Approach Delay [s/veh]	0.00		0.40		13.71	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	C					

PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	80	171	136	150	110	154	89	334	28	109	429	48
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	21	41	11	14	6	8	39	13	37	37	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	123	244	218	207	157	206	124	474	49	179	596	75
Peak Hour Factor	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	63	57	54	41	53	32	123	13	46	155	19
Total Analysis Volume [veh/h]	128	253	226	215	163	214	129	492	51	186	619	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	16	37	0	16	33	0	15	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	11	11	9	13	13	6	11	11	8	13	13
g / C, Green / Cycle	0.11	0.20	0.20	0.16	0.25	0.25	0.11	0.21	0.21	0.14	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.15	0.13	0.05	0.14	0.08	0.14	0.03	0.11	0.18	0.05
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	190	677	302	275	848	379	190	707	316	242	810	362
d1, Uniform Delay [s]	23.22	18.90	20.53	21.89	16.16	17.89	23.22	19.99	17.71	22.48	19.34	16.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.12	0.34	3.70	4.79	0.11	1.33	4.18	1.25	0.24	5.10	1.53	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.67	0.37	0.75	0.78	0.19	0.57	0.68	0.70	0.16	0.77	0.76	0.22
d, Delay for Lane Group [s/veh]	27.34	19.24	24.24	26.67	16.27	19.22	27.40	21.23	17.94	27.58	20.87	16.99
Lane Group LOS	C	B	C	C	B	B	C	C	B	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.61	1.23	2.63	2.48	0.64	1.96	1.65	2.66	0.49	2.30	3.17	0.68
50th-Percentile Queue Length [ft/ln]	40.15	30.65	65.71	62.08	15.97	48.98	41.30	66.44	12.16	57.39	79.17	17.03
95th-Percentile Queue Length [veh/ln]	2.89	2.21	4.73	4.47	1.15	3.53	2.97	4.78	0.88	4.13	5.70	1.23
95th-Percentile Queue Length [ft/ln]	72.26	55.17	118.27	111.75	28.74	88.16	74.34	119.60	21.89	103.31	142.50	30.66

Movement, Approach, & Intersection Results

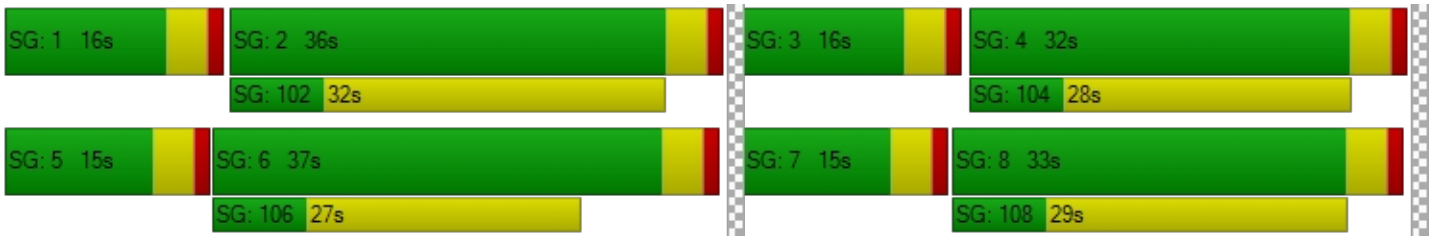
d_M, Delay for Movement [s/veh]	27.34	19.24	24.24	26.67	16.27	19.22	27.40	21.23	17.94	27.58	20.87	16.99
Movement LOS	C	B	C	C	B	B	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	22.81			21.12			22.17			21.94		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	22.01											
Intersection LOS	C											
Intersection V/C	0.621											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	39.61	39.61
l_p,int, Pedestrian LOS Score for Intersection	2.676	2.771	2.767	2.900
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	660	580	560
d_b, Bicycle Delay [s]	23.12	22.45	25.21	25.92
l_b,int, Bicycle LOS Score for Intersection	2.060	2.048	2.114	2.288
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	366	2	7	209	3	12
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	52	2	0	57	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	528	4	9	330	7	16
Peak Hour Factor	0.9021	0.9021	0.9021	0.9021	0.9021	0.9021
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	1	2	91	2	4
Total Analysis Volume [veh/h]	585	4	10	366	8	18
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.65	0.00	18.53	12.61
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.68	0.68	5.09	5.09
d_A, Approach Delay [s/veh]	0.00		0.23		14.43	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.480

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	30	346	112	38	86	87	14	13	12	46	47	23
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	0	10	25	26	22	8	0	3	9	8
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	474	146	60	136	140	40	25	16	63	70	38
Peak Hour Factor	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	135	42	17	39	40	11	7	5	18	20	11
Total Analysis Volume [veh/h]	44	539	166	68	155	159	46	28	18	72	80	43
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	12	12	12	12
g / C, Green / Cycle	0.67	0.67	0.67	0.67	0.67	0.67	0.20	0.20	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.04	0.30	0.11	0.08	0.09	0.10	0.08	0.01	0.15	0.03
s, saturation flow rate [veh/h]	1251	1800	1530	880	1800	1530	900	1530	1020	1530
c, Capacity [veh/h]	886	1205	1024	565	1205	1024	275	302	290	302
d1, Uniform Delay [s]	4.68	4.68	3.68	7.96	3.59	3.66	21.07	19.57	23.43	19.89
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	1.20	0.34	0.44	0.22	0.32	0.52	0.08	1.47	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.45	0.16	0.12	0.13	0.16	0.27	0.06	0.52	0.14
d, Delay for Lane Group [s/veh]	4.79	5.88	4.02	8.40	3.81	3.98	21.59	19.65	24.90	20.11
Lane Group LOS	A	A	A	A	A	A	C	B	C	C
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.17	2.07	0.50	0.43	0.44	0.48	0.83	0.19	1.97	0.45
50th-Percentile Queue Length [ft/ln]	4.21	51.68	12.49	10.74	11.02	11.89	20.80	4.65	49.19	11.32
95th-Percentile Queue Length [veh/ln]	0.30	3.72	0.90	0.77	0.79	0.86	1.50	0.33	3.54	0.81
95th-Percentile Queue Length [ft/ln]	7.58	93.02	22.47	19.33	19.83	21.40	37.44	8.36	88.54	20.37

Movement, Approach, & Intersection Results

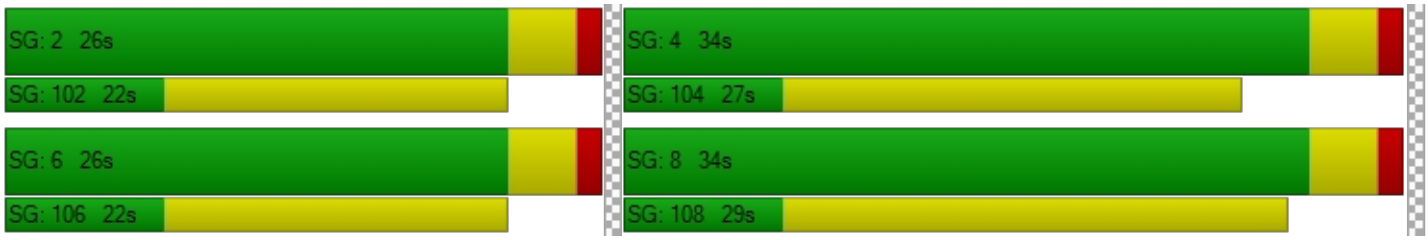
d_M, Delay for Movement [s/veh]	4.79	5.88	4.02	8.40	3.81	3.98	21.59	21.59	19.65	24.90	24.90	20.11
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	5.41			4.70			21.21			23.84		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	8.78											
Intersection LOS	A											
Intersection V/C	0.480											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.534	2.502	2.163	2.237
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
l_b,int, Bicycle LOS Score for Intersection	2.795	2.190	1.711	1.881
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	65	1	7	58	2	13
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	570	1	7	380	2	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	155	0	2	103	1	4
Total Analysis Volume [veh/h]	620	1	8	413	2	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.01	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.74	0.00	19.59	12.63
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.11	0.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.62	0.00	2.83	2.83
d_A, Approach Delay [s/veh]	0.00		0.17		13.50	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.27					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.031

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	48	4	10	50	7	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	553	4	10	372	7	18
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	1	3	101	2	5
Total Analysis Volume [veh/h]	601	4	11	404	8	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.70	0.00	19.59	12.83
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.85	0.00	5.67	5.67
d_A, Approach Delay [s/veh]	0.00		0.23		14.76	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	C					

OPENING YEAR (2027) WITH PROJECT

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	67	142	116	117	127	102	45	233	41	141	357	60
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	9	26	9	24	7	5	25	18	33	28	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	194	177	161	190	140	64	329	71	217	493	84
Peak Hour Factor	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856	0.8856
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	55	50	45	54	40	18	93	20	61	139	24
Total Analysis Volume [veh/h]	110	219	200	182	215	158	72	371	80	245	557	95
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	19	36	0	22	39	0	16	33	0	19	36	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	14	14	11	18	18	6	30	30	14	39	39
g / C, Green / Cycle	0.08	0.16	0.16	0.13	0.21	0.21	0.07	0.35	0.35	0.17	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.13	0.11	0.06	0.10	0.04	0.11	0.05	0.14	0.16	0.06
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	143	554	247	224	715	319	116	1205	538	289	1551	693
d1, Uniform Delay [s]	38.31	32.04	34.50	36.09	28.50	29.78	38.70	20.11	18.92	34.38	15.26	13.62
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.47	0.46	6.22	7.01	0.23	1.19	5.29	0.66	0.58	6.75	0.14	0.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.40	0.81	0.81	0.30	0.49	0.62	0.31	0.15	0.85	0.36	0.14
d, Delay for Lane Group [s/veh]	46.78	32.50	40.72	43.10	28.73	30.97	43.99	20.77	19.51	41.13	15.40	13.71
Lane Group LOS	D	C	D	D	C	C	D	C	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.49	1.96	4.22	3.81	1.71	2.69	1.59	2.65	1.12	5.14	3.14	0.97
50th-Percentile Queue Length [ft/ln]	62.30	49.12	105.56	95.13	42.72	67.37	39.84	66.21	27.92	128.59	78.59	24.14
95th-Percentile Queue Length [veh/ln]	4.49	3.54	7.59	6.85	3.08	4.85	2.87	4.77	2.01	8.86	5.66	1.74
95th-Percentile Queue Length [ft/ln]	112.14	88.42	189.81	171.23	76.90	121.27	71.72	119.19	50.26	221.58	141.46	43.45

Movement, Approach, & Intersection Results

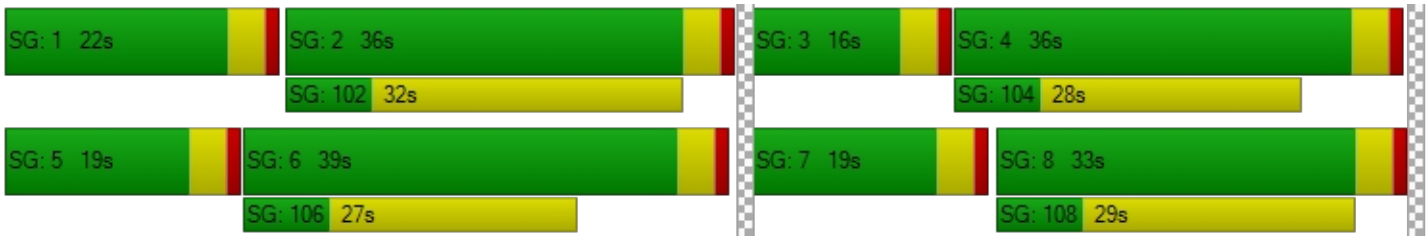
d_M, Delay for Movement [s/veh]	46.78	32.50	40.72	43.10	28.73	30.97	43.99	20.77	19.51	41.13	15.40	13.71
Movement LOS	D	C	D	D	C	C	D	C	B	D	B	B
d_A, Approach Delay [s/veh]	38.58			34.08			23.78			22.25		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	28.64											
Intersection LOS	C											
Intersection V/C	0.539											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.694	2.743	2.718	2.865
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	636	527	582
d_b, Bicycle Delay [s]	27.65	25.57	29.82	27.65
l_b,int, Bicycle LOS Score for Intersection	1.996	2.017	1.991	2.300
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	25.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	363	6	12	265	2	14
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	49	11	7	29	5	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	522	19	23	375	7	22
Peak Hour Factor	0.7770	0.7770	0.7770	0.7770	0.7770	0.7770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	168	6	7	121	2	7
Total Analysis Volume [veh/h]	672	24	30	483	9	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.03	0.00	0.05	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	9.09	0.00	25.26	14.26
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.08	0.36	0.36
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.94	1.94	9.12	9.12
d_A, Approach Delay [s/veh]	0.00		0.53		16.94	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	66	316	117	13	198	59	38	29	18	71	61	18
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	24	2	6	14	14	25	7	0	0	6	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	86	436	154	23	272	91	75	45	24	92	86	35
Peak Hour Factor	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747	0.7747
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	141	50	7	88	29	24	15	8	30	28	11
Total Analysis Volume [veh/h]	111	563	199	30	351	117	97	58	31	119	111	45
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	32	32	32	32	32	32	20	20	20	20
g / C, Green / Cycle	0.53	0.53	0.53	0.53	0.53	0.53	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.11	0.31	0.13	0.03	0.20	0.08	0.17	0.02	0.28	0.03
s, saturation flow rate [veh/h]	1046	1800	1530	861	1800	1530	900	1530	835	1530
c, Capacity [veh/h]	543	954	811	387	954	811	401	515	372	515
d1, Uniform Delay [s]	11.91	9.65	7.63	14.80	8.24	7.18	15.95	13.47	21.30	13.60
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.12	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	2.68	0.72	0.39	1.09	0.37	0.61	0.05	1.88	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.20	0.59	0.25	0.08	0.37	0.14	0.39	0.06	0.62	0.09
d, Delay for Lane Group [s/veh]	12.76	12.33	8.35	15.19	9.34	7.56	16.56	13.52	23.18	13.67
Lane Group LOS	B	B	A	B	A	A	B	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.95	4.41	1.19	0.30	2.26	0.66	1.47	0.24	2.91	0.36
50th-Percentile Queue Length [ft/ln]	23.70	110.19	29.87	7.40	56.45	16.40	36.70	6.09	72.81	8.92
95th-Percentile Queue Length [veh/ln]	1.71	7.85	2.15	0.53	4.06	1.18	2.64	0.44	5.24	0.64
95th-Percentile Queue Length [ft/ln]	42.67	196.27	53.77	13.33	101.61	29.52	66.06	10.96	131.05	16.06

Movement, Approach, & Intersection Results

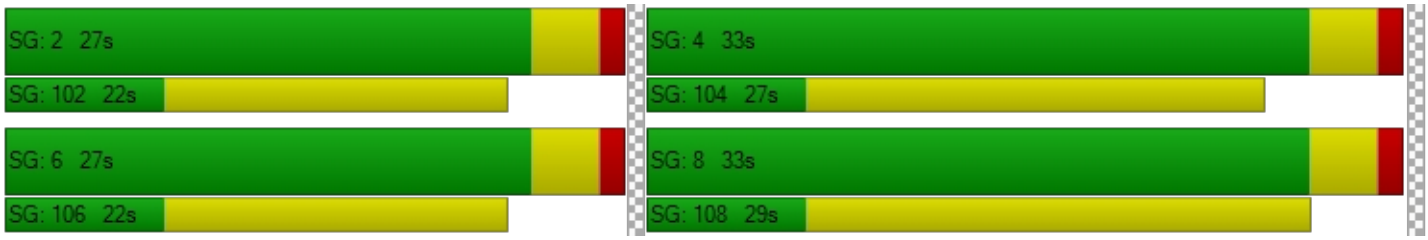
d_M, Delay for Movement [s/veh]	12.76	12.33	8.35	15.19	9.34	7.56	16.56	16.56	13.52	23.18	23.18	13.67
Movement LOS	B	B	A	B	A	A	B	B	B	C	C	B
d_A, Approach Delay [s/veh]	11.48			9.27			16.05			21.62		
Approach LOS	B			A			B			C		
d_I, Intersection Delay [s/veh]	12.86											
Intersection LOS	B											
Intersection V/C	0.630											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.724	2.637	2.331	2.234
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	3.000	2.381	1.867	2.013
Bicycle LOS	C	B	A	B

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	5	17	50	3	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	5	17	410	3	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	1	5	111	1	2
Total Analysis Volume [veh/h]	585	5	18	446	3	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.68	0.00	20.03	12.24
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.38	0.00	1.99	1.99
d_A, Approach Delay [s/veh]	0.00		0.34		14.58	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.28					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	377	0	0	277	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	46	7	19	34	2	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	537	7	19	394	2	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	2	5	107	1	2
Total Analysis Volume [veh/h]	584	8	21	428	2	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.70	0.00	19.76	12.18
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.62	0.00	1.66	1.66
d_A, Approach Delay [s/veh]	0.00		0.41		13.86	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	18	16	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	6	7	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	4	6	31	25	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	8	7	0
Total Analysis Volume [veh/h]	0	4	7	34	27	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.89	8.43	7.26	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.29	0.29	0.28	0.28	0.00	0.00
d_A, Approach Delay [s/veh]	8.43		1.24		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.17					
Intersection LOS	A					

PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.604

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	80	171	136	150	110	154	89	334	28	109	429	48
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	36	56	11	27	6	8	39	23	50	37	12
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	259	233	207	170	206	124	474	59	192	596	75
Peak Hour Factor	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633	0.9633
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	67	60	54	44	53	32	123	15	50	155	19
Total Analysis Volume [veh/h]	140	269	242	215	176	214	129	492	61	199	619	78
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	36	0	24	46	0	17	33	0	17	33	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	Yes		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	26	26	12	30	30	8	14	14	11	18	18
g / C, Green / Cycle	0.10	0.33	0.33	0.15	0.38	0.38	0.10	0.18	0.18	0.14	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.08	0.08	0.16	0.13	0.05	0.14	0.08	0.14	0.04	0.12	0.18	0.05
s, saturation flow rate [veh/h]	1714	3427	1530	1714	3427	1530	1714	3427	1530	1714	3427	1530
c, Capacity [veh/h]	179	1120	500	261	1283	573	167	614	274	244	769	343
d1, Uniform Delay [s]	34.99	19.72	21.58	32.93	16.54	18.24	35.33	31.54	28.13	33.34	29.42	25.40
k, delay calibration	0.11	0.11	0.11	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.21	0.11	0.73	6.45	0.22	1.86	7.48	2.49	0.41	6.50	2.04	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.24	0.48	0.82	0.14	0.37	0.77	0.80	0.22	0.81	0.81	0.23
d, Delay for Lane Group [s/veh]	42.20	19.83	22.31	39.38	16.76	20.10	42.81	34.03	28.54	39.84	31.46	25.74
Lane Group LOS	D	B	C	D	B	C	D	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.88	1.71	3.43	4.11	0.95	2.75	2.71	4.56	0.99	3.93	5.38	1.16
50th-Percentile Queue Length [ft/ln]	72.08	42.73	85.84	102.74	23.84	68.69	67.76	113.97	24.81	98.21	134.55	28.89
95th-Percentile Queue Length [veh/ln]	5.19	3.08	6.18	7.40	1.72	4.95	4.88	8.06	1.79	7.07	9.19	2.08
95th-Percentile Queue Length [ft/ln]	129.74	76.91	154.52	184.94	42.92	123.64	121.97	201.51	44.65	176.78	229.67	51.99

Movement, Approach, & Intersection Results

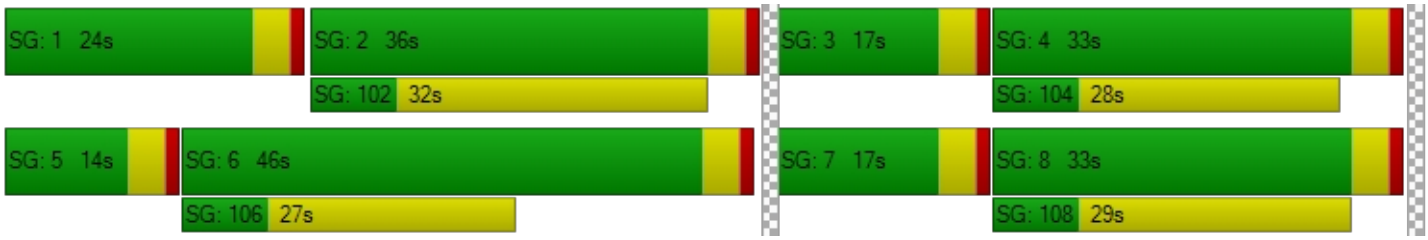
d_M, Delay for Movement [s/veh]	42.20	19.83	22.31	39.38	16.76	20.10	42.81	34.03	28.54	39.84	31.46	25.74
Movement LOS	D	B	C	D	B	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	25.56			25.98			35.20			32.83		
Approach LOS	C			C			D			C		
d_I, Intersection Delay [s/veh]	30.27											
Intersection LOS	C											
Intersection V/C	0.604											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.55	44.55	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.698	2.784	2.776	2.912
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	582	764	527	527
d_b, Bicycle Delay [s]	27.65	21.02	29.82	29.82
l_b,int, Bicycle LOS Score for Intersection	2.097	2.059	2.122	2.299
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.138

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	366	2	7	209	3	12
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	62	22	23	69	27	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	538	24	32	342	30	43
Peak Hour Factor	0.9021	0.9021	0.9021	0.9021	0.9021	0.9021
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	149	7	9	95	8	12
Total Analysis Volume [veh/h]	596	27	35	379	33	48
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.04	0.00	0.14	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	8.86	0.00	23.19	15.38
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.10	0.89	0.89
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.56	2.56	22.33	22.33
d_A, Approach Delay [s/veh]	0.00		0.75		18.56	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.497

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	30	346	112	38	86	87	14	13	12	46	47	23
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	31	0	22	33	41	35	8	0	3	9	18
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	39	481	146	72	144	155	53	25	16	63	70	48
Peak Hour Factor	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786	0.8786
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	137	42	20	41	44	15	7	5	18	20	14
Total Analysis Volume [veh/h]	44	547	166	82	164	176	60	28	18	72	80	55
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	26	0	0	26	0	0	34	0	0	34	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	39	39	13	13	13	13
g / C, Green / Cycle	0.65	0.65	0.65	0.65	0.65	0.65	0.21	0.21	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.04	0.30	0.11	0.09	0.09	0.12	0.10	0.01	0.16	0.04
s, saturation flow rate [veh/h]	1241	1800	1530	874	1800	1530	900	1530	953	1530
c, Capacity [veh/h]	857	1175	999	540	1175	999	293	327	292	327
d1, Uniform Delay [s]	5.14	5.20	4.06	8.91	3.98	4.09	20.55	18.76	22.93	19.23
k, delay calibration	0.50	0.50	0.50	0.50	0.50	0.50	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	1.33	0.36	0.59	0.25	0.39	0.57	0.07	1.43	0.24
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.05	0.47	0.17	0.15	0.14	0.18	0.30	0.05	0.52	0.17
d, Delay for Lane Group [s/veh]	5.25	6.53	4.42	9.51	4.23	4.48	21.11	18.83	24.36	19.47
Lane Group LOS	A	A	A	A	A	A	C	B	C	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.18	2.35	0.55	0.57	0.52	0.59	0.98	0.18	1.96	0.57
50th-Percentile Queue Length [ft/ln]	4.59	58.79	13.85	14.22	13.04	14.81	24.43	4.50	49.02	14.16
95th-Percentile Queue Length [veh/ln]	0.33	4.23	1.00	1.02	0.94	1.07	1.76	0.32	3.53	1.02
95th-Percentile Queue Length [ft/ln]	8.25	105.83	24.94	25.60	23.47	26.66	43.98	8.11	88.24	25.49

Movement, Approach, & Intersection Results

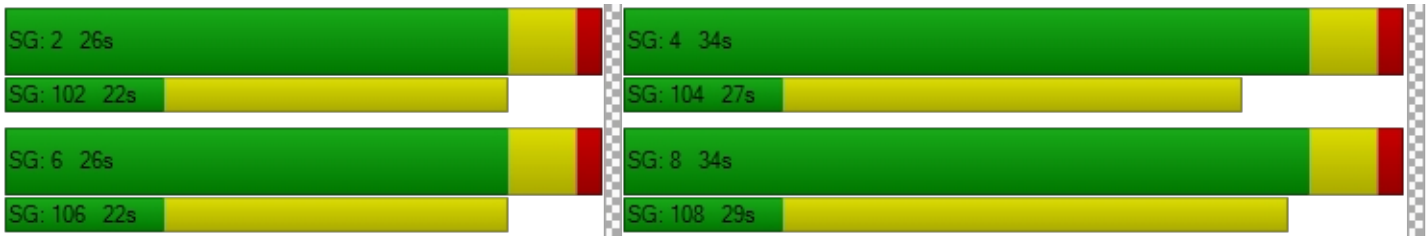
d_M, Delay for Movement [s/veh]	5.25	6.53	4.42	9.51	4.23	4.48	21.11	21.11	18.83	24.36	24.36	19.47
Movement LOS	A	A	A	A	A	A	C	C	B	C	C	B
d_A, Approach Delay [s/veh]	5.99			5.36			20.73			23.06		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	9.23											
Intersection LOS	A											
Intersection V/C	0.497											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.540	2.546	2.178	2.270
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	733	733	1000	1000
d_b, Bicycle Delay [s]	12.03	12.03	7.50	7.50
l_b,int, Bicycle LOS Score for Intersection	2.809	2.256	1.735	1.901
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	93	10	19	82	13	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	598	10	19	404	13	27
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	163	3	5	110	4	7
Total Analysis Volume [veh/h]	650	11	21	439	14	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.06	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	8.93	0.00	22.69	14.09
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.72	0.00	10.54	10.54
d_A, Approach Delay [s/veh]	0.00		0.41		16.89	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	387	0	0	247	0	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	84	5	11	84	8	19
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	589	5	11	406	8	19
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	160	1	3	110	2	5
Total Analysis Volume [veh/h]	640	5	12	441	9	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.84	0.00	21.38	13.41
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.27	0.27
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.96	0.00	6.71	6.71
d_A, Approach Delay [s/veh]	0.00		0.23		15.80	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.51					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	9	15	0
Base Volume Adjustment Factor	1.1569	1.1569	1.1569	1.1569	1.1569	1.1569
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.13	1.13	1.13	1.13	1.13	1.13
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	20	23	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	23	20	34	46	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	5	9	13	0
Total Analysis Volume [veh/h]	0	25	22	37	50	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.30	8.60	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.04	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.88	1.88	0.97	0.97	0.00	0.00
d_A, Approach Delay [s/veh]	8.60		2.73		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.81					
Intersection LOS	A					

YEAR 2040 WITHOUT PROJECT

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	97	196	179	164	244	143	65	336	71	275	503	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	196	179	164	244	143	65	336	71	275	503	86
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	52	47	43	64	38	17	88	19	72	132	23
Total Analysis Volume [veh/h]	102	206	188	173	257	151	68	354	75	289	529	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	36	0	15	31	0	16	33	0	26	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	14	14	11	18	18	6	41	41	18	53	53
g / C, Green / Cycle	0.07	0.14	0.14	0.11	0.18	0.18	0.06	0.41	0.41	0.18	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.12	0.10	0.07	0.09	0.04	0.10	0.05	0.16	0.15	0.06
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	132	513	229	200	648	289	108	1471	656	328	1910	853
d1, Uniform Delay [s]	45.54	39.06	41.69	43.79	36.30	37.20	45.95	19.54	18.48	39.90	13.05	11.81
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.03	0.51	7.11	10.75	0.39	1.46	5.86	0.08	0.08	7.64	0.36	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.40	0.82	0.87	0.40	0.52	0.63	0.24	0.11	0.88	0.28	0.11
d, Delay for Lane Group [s/veh]	54.58	39.57	48.81	54.55	36.70	38.66	51.81	19.62	18.56	47.54	13.41	12.06
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.76	2.28	4.82	4.56	2.64	3.25	1.80	2.64	1.07	7.30	3.05	0.98
50th-Percentile Queue Length [ft/ln]	68.91	56.91	120.43	113.93	65.88	81.20	45.07	65.99	26.63	182.39	76.24	24.48
95th-Percentile Queue Length [veh/ln]	4.96	4.10	8.42	8.06	4.74	5.85	3.24	4.75	1.92	11.73	5.49	1.76
95th-Percentile Queue Length [ft/ln]	124.03	102.44	210.42	201.45	118.59	146.17	81.12	118.78	47.94	293.14	137.23	44.06

Movement, Approach, & Intersection Results

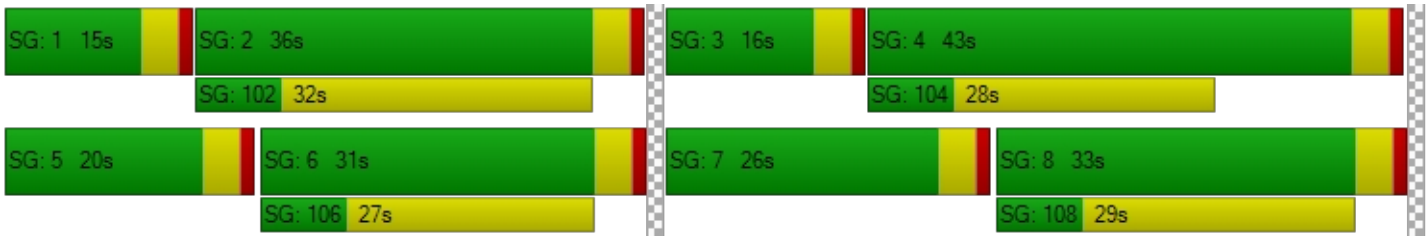
d_M, Delay for Movement [s/veh]	54.58	39.57	48.81	54.55	36.70	38.66	51.81	19.62	18.56	47.54	13.41	12.06
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.16			42.52			23.87			24.13		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.78											
Intersection LOS	C											
Intersection V/C	0.510											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	39.61	39.61
l_p,int, Pedestrian LOS Score for Intersection	2.700	2.740	2.700	2.854
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	540	580	780
d_b, Bicycle Delay [s]	23.12	26.65	25.21	18.61
l_b,int, Bicycle LOS Score for Intersection	1.969	2.039	1.970	2.310
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.014

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	529	13	16	548	3	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	529	13	16	548	3	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	139	3	4	144	1	5
Total Analysis Volume [veh/h]	557	14	17	577	3	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.01	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.62	0.00	22.71	12.24
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.16	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.20	1.20	3.96	3.96
d_A, Approach Delay [s/veh]	0.00		0.25		13.67	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.38					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.419

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	88	443	157	28	394	120	72	46	24	94	88	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	443	157	28	394	120	72	46	24	94	88	33
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	117	41	7	104	32	19	12	6	25	23	9
Total Analysis Volume [veh/h]	93	466	165	29	415	126	76	48	25	99	93	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	76	76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	36	36	36	36	32	32	32	32
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.47	0.47	0.42	0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.09	0.25	0.10	0.03	0.22	0.08	0.14	0.02	0.15	0.02
s, saturation flow rate [veh/h]	987	1900	1615	941	1900	1615	900	1615	1263	1615
c, Capacity [veh/h]	385	893	759	348	893	759	459	686	608	686
d1, Uniform Delay [s]	21.00	14.20	11.93	20.99	13.71	11.62	14.64	12.82	17.38	12.90
k, delay calibration	0.50	0.50	0.50	0.11	0.12	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.49	2.17	0.66	0.10	0.43	0.10	1.45	0.10	0.29	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.52	0.22	0.08	0.46	0.17	0.27	0.04	0.32	0.05
d, Delay for Lane Group [s/veh]	22.49	16.37	12.59	21.09	14.15	11.72	16.09	12.92	17.68	12.93
Lane Group LOS	C	B	B	C	B	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.35	5.40	1.59	0.37	4.29	1.10	1.43	0.24	2.34	0.32
50th-Percentile Queue Length [ft/ln]	33.77	135.08	39.65	9.31	107.26	27.45	35.73	5.97	58.62	7.89
95th-Percentile Queue Length [veh/ln]	2.43	9.22	2.85	0.67	7.69	1.98	2.57	0.43	4.22	0.57
95th-Percentile Queue Length [ft/ln]	60.79	230.38	71.37	16.77	192.18	49.41	64.32	10.74	105.51	14.19

Movement, Approach, & Intersection Results

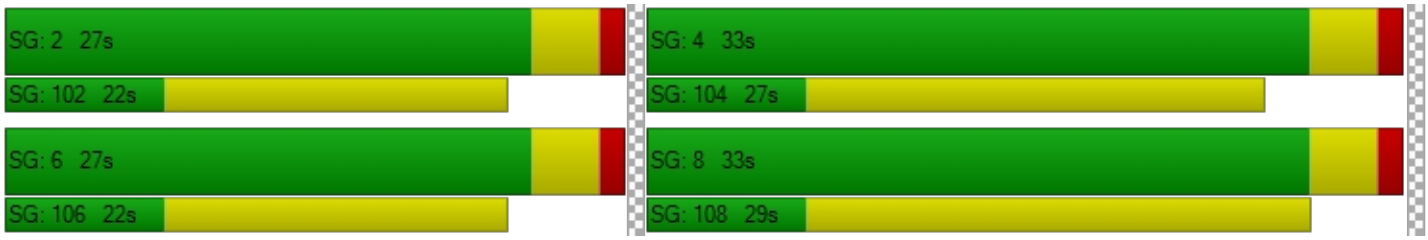
d_M, Delay for Movement [s/veh]	22.49	16.37	12.59	21.09	14.15	11.72	16.09	16.09	12.92	17.68	17.68	12.93
Movement LOS	C	B	B	C	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.30			13.96			15.55			16.94		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.52											
Intersection LOS	B											
Intersection V/C	0.419											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.660	2.589	2.275	2.188
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.754	2.500	1.805	1.934
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	545	2	14	550	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	545	2	14	550	1	4
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	143	1	4	145	0	1
Total Analysis Volume [veh/h]	574	2	15	579	1	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.63	0.00	22.41	12.01
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.13	0.00	0.95	0.95
d_A, Approach Delay [s/veh]	0.00		0.22		14.09	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.17					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	541	7	18	550	2	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	541	7	18	550	2	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	142	2	5	145	1	2
Total Analysis Volume [veh/h]	569	7	19	579	2	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.64	0.00	22.64	12.06
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.44	0.00	1.61	1.61
d_A, Approach Delay [s/veh]	0.00		0.27		14.70	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.24					
Intersection LOS	C					

PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.566

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	130	295	222	211	160	210	126	483	50	183	608	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	130	295	222	211	160	210	126	483	50	183	608	77
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	78	58	56	42	55	33	127	13	48	160	20
Total Analysis Volume [veh/h]	137	311	234	222	168	221	133	508	53	193	640	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	13	34	0	14	33	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	16	16	14	21	21	9	16	16	33	40	40
g / C, Green / Cycle	0.09	0.17	0.17	0.14	0.22	0.22	0.09	0.17	0.17	0.34	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.14	0.12	0.05	0.14	0.07	0.14	0.03	0.11	0.18	0.05
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	169	628	280	262	813	363	168	612	273	623	1520	679
d1, Uniform Delay [s]	42.24	35.52	37.96	39.60	29.94	33.08	42.18	38.16	33.92	22.88	19.41	16.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.84	0.61	6.47	7.39	0.12	1.65	7.98	2.99	0.34	1.29	0.19	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.50	0.84	0.85	0.21	0.61	0.79	0.83	0.19	0.31	0.42	0.12
d, Delay for Lane Group [s/veh]	51.08	36.12	44.44	46.99	30.07	34.73	50.17	41.16	34.26	24.18	19.60	16.90
Lane Group LOS	D	D	D	D	C	C	D	D	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.47	3.20	5.56	5.23	1.46	4.38	3.36	5.82	1.06	3.19	4.60	1.01
50th-Percentile Queue Length [ft/ln]	86.69	79.93	139.04	130.81	36.56	109.41	84.09	145.41	26.44	79.78	114.99	25.37
95th-Percentile Queue Length [veh/ln]	6.24	5.75	9.43	8.98	2.63	7.81	6.05	9.77	1.90	5.74	8.12	1.83
95th-Percentile Queue Length [ft/ln]	156.04	143.87	235.72	224.60	65.81	195.18	151.37	244.30	47.59	143.61	202.92	45.67

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.08	36.12	44.44	46.99	30.07	34.73	50.17	41.16	34.26	24.18	19.60	16.90
Movement LOS	D	D	D	D	C	C	D	D	C	C	B	B
d_A, Approach Delay [s/veh]	41.98			37.90			42.36			20.33		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	34.39											
Intersection LOS	C											
Intersection V/C	0.566											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	37.14	37.14
l_p,int, Pedestrian LOS Score for Intersection	2.693	2.794	2.776	2.913
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	674	632	611	589
d_b, Bicycle Delay [s]	20.89	22.24	22.93	23.63
l_b,int, Bicycle LOS Score for Intersection	2.122	2.064	2.132	2.314
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	604	4	9	337	7	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	604	4	9	337	7	16
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	159	1	2	89	2	4
Total Analysis Volume [veh/h]	636	4	9	355	7	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.81	0.00	19.22	13.11
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.71	0.71	4.92	4.92
d_A, Approach Delay [s/veh]	0.00		0.22		14.89	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	11.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.434

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	40	550	149	61	139	143	43	26	23	64	71	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	550	149	61	139	143	43	26	23	64	71	39
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	145	39	16	37	38	11	7	6	17	19	10
Total Analysis Volume [veh/h]	42	579	157	64	146	151	45	27	24	67	75	41
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	22	22	22	22
g / C, Green / Cycle	0.50	0.50	0.50	0.50	0.50	0.50	0.36	0.36	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.03	0.30	0.10	0.08	0.08	0.09	0.08	0.01	0.10	0.03
s, saturation flow rate [veh/h]	1262	1900	1615	848	1900	1615	900	1615	1421	1615
c, Capacity [veh/h]	664	957	813	337	957	813	424	587	605	587
d1, Uniform Delay [s]	10.04	10.64	8.19	17.99	8.01	8.16	13.23	12.36	13.87	12.49
k, delay calibration	0.11	0.16	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	0.94	0.11	1.25	0.34	0.50	0.86	0.13	0.20	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.61	0.19	0.19	0.15	0.19	0.17	0.04	0.23	0.07
d, Delay for Lane Group [s/veh]	10.08	11.58	8.31	19.24	8.35	8.67	14.09	12.49	14.06	12.54
Lane Group LOS	B	B	A	B	A	A	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.27	4.37	0.89	0.75	0.87	0.94	0.65	0.19	1.11	0.30
50th-Percentile Queue Length [ft/ln]	6.87	109.35	22.17	18.65	21.83	23.47	16.32	4.82	27.84	7.61
95th-Percentile Queue Length [veh/ln]	0.49	7.80	1.60	1.34	1.57	1.69	1.18	0.35	2.00	0.55
95th-Percentile Queue Length [ft/ln]	12.36	195.09	39.91	33.56	39.29	42.24	29.38	8.68	50.10	13.69

Movement, Approach, & Intersection Results

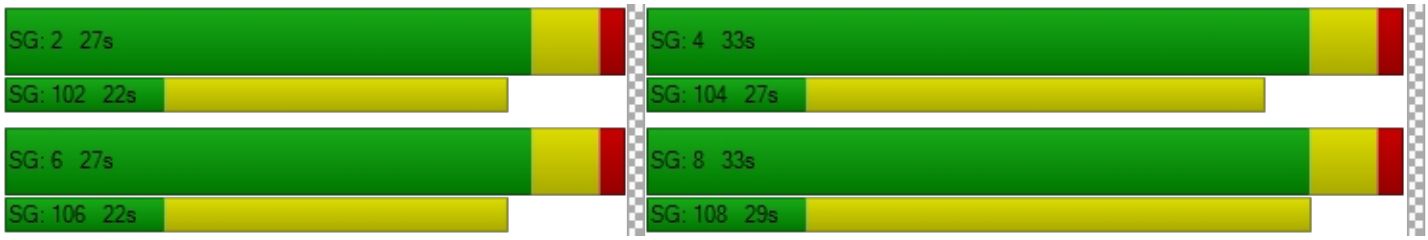
d_M, Delay for Movement [s/veh]	10.08	11.58	8.31	19.24	8.35	8.67	14.09	14.09	12.49	14.06	14.06	12.54
Movement LOS	B	B	A	B	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	10.84			10.41			13.69			13.72		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	11.30											
Intersection LOS	B											
Intersection V/C	0.434											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.534	2.506	2.155	2.219
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.843	2.155	1.718	1.862
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	620	1	7	388	2	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	620	1	7	388	2	13
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	163	0	2	102	1	3
Total Analysis Volume [veh/h]	653	1	7	408	2	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.01	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.85	0.00	20.13	12.98
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.12	0.12
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.56	0.00	2.95	2.95
d_A, Approach Delay [s/veh]	0.00		0.15		13.88	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	623	4	10	379	7	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	623	4	10	379	7	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	164	1	3	100	2	5
Total Analysis Volume [veh/h]	656	4	11	399	7	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.88	0.00	20.61	13.39
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.89	0.00	5.57	5.57
d_A, Approach Delay [s/veh]	0.00		0.24		15.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	C					

YEAR 2040 WITH PROJECT

AM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	32.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.515

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	97	196	179	164	244	143	65	336	71	275	503	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	2	2	0	4	0	0	0	3	4	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	198	181	164	248	143	65	336	74	279	503	86
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	52	48	43	65	38	17	88	19	73	132	23
Total Analysis Volume [veh/h]	104	208	191	173	261	151	68	354	78	294	529	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	20	36	0	15	31	0	16	33	0	26	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	14	14	11	18	18	6	40	40	18	53	53
g / C, Green / Cycle	0.07	0.14	0.14	0.11	0.18	0.18	0.06	0.40	0.40	0.18	0.53	0.53
(v / s)_i Volume / Saturation Flow Rate	0.06	0.06	0.12	0.10	0.07	0.09	0.04	0.10	0.05	0.16	0.15	0.06
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	135	520	232	200	650	290	108	1454	649	333	1903	850
d1, Uniform Delay [s]	45.47	38.91	41.60	43.79	36.29	37.15	45.95	19.84	18.81	39.76	13.16	11.90
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.95	0.50	7.11	10.75	0.40	1.45	5.86	0.09	0.08	8.04	0.36	0.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.40	0.82	0.87	0.40	0.52	0.63	0.24	0.12	0.88	0.28	0.11
d, Delay for Lane Group [s/veh]	54.42	39.41	48.71	54.55	36.70	38.59	51.81	19.93	18.89	47.80	13.52	12.16
Lane Group LOS	D	D	D	D	D	D	D	B	B	D	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.81	2.29	4.89	4.56	2.68	3.24	1.80	2.67	1.12	7.45	3.07	0.98
50th-Percentile Queue Length [ft/ln]	70.14	57.34	122.27	113.93	66.93	81.11	45.07	66.63	28.02	186.32	76.66	24.61
95th-Percentile Queue Length [veh/ln]	5.05	4.13	8.52	8.06	4.82	5.84	3.24	4.80	2.02	11.93	5.52	1.77
95th-Percentile Queue Length [ft/ln]	126.25	103.21	212.94	201.45	120.48	146.00	81.12	119.94	50.44	298.25	137.99	44.30

Movement, Approach, & Intersection Results

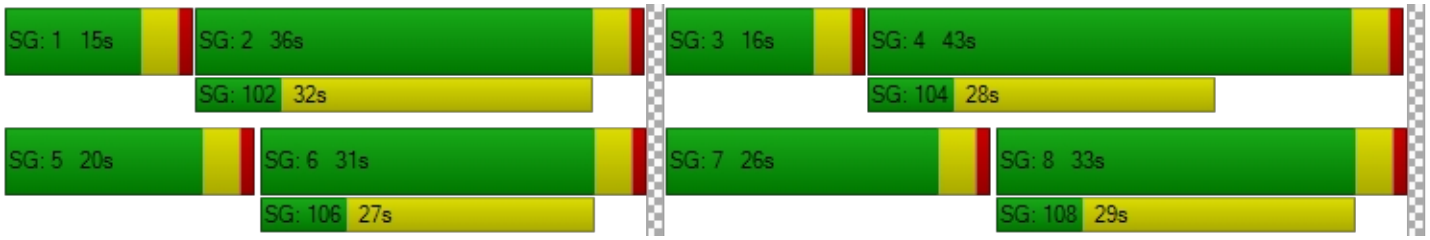
d_M, Delay for Movement [s/veh]	54.42	39.41	48.71	54.55	36.70	38.59	51.81	19.93	18.89	47.80	13.52	12.16
Movement LOS	D	D	D	D	D	D	D	B	B	D	B	B
d_A, Approach Delay [s/veh]	46.05			42.47			24.11			24.41		
Approach LOS	D			D			C			C		
d_I, Intersection Delay [s/veh]	32.92											
Intersection LOS	C											
Intersection V/C	0.515											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	39.61	39.61	39.61	39.61
l_p,int, Pedestrian LOS Score for Intersection	2.704	2.741	2.701	2.856
Crosswalk LOS	B	B	B	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	640	540	580	780
d_b, Bicycle Delay [s]	23.12	26.65	25.21	18.61
l_b,int, Bicycle LOS Score for Intersection	1.975	2.042	1.972	2.314
Bicycle LOS	A	B	A	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	529	13	16	548	3	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	6	7	2	4	4
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	532	19	23	550	7	22
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	5	6	145	2	6
Total Analysis Volume [veh/h]	560	20	24	579	7	23
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.04	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.67	0.00	23.81	12.67
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.07	0.26	0.26
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.76	1.76	6.38	6.38
d_A, Approach Delay [s/veh]	0.00		0.35		15.27	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.422

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	88	443	157	28	394	120	72	46	24	94	88	33
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	2	1	3	4	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	445	157	30	395	123	76	46	24	94	88	36
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	117	41	8	104	32	20	12	6	25	23	9
Total Analysis Volume [veh/h]	93	468	165	32	416	129	80	48	25	99	93	38
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	76	76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	36	36	36	36	36	36	32	32	32	32
g / C, Green / Cycle	0.47	0.47	0.47	0.47	0.47	0.47	0.42	0.42	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.09	0.25	0.10	0.03	0.22	0.08	0.14	0.02	0.15	0.02
s, saturation flow rate [veh/h]	986	1900	1615	940	1900	1615	900	1615	1250	1615
c, Capacity [veh/h]	384	893	759	347	893	759	459	686	603	686
d1, Uniform Delay [s]	20.96	14.16	11.89	21.05	13.67	11.60	14.64	12.76	17.42	12.86
k, delay calibration	0.50	0.50	0.50	0.11	0.12	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.50	2.20	0.66	0.11	0.43	0.10	1.51	0.10	0.30	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.52	0.22	0.09	0.47	0.17	0.28	0.04	0.32	0.06
d, Delay for Lane Group [s/veh]	22.45	16.36	12.55	21.16	14.10	11.71	16.15	12.85	17.72	12.89
Lane Group LOS	C	B	B	C	B	B	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.35	5.40	1.58	0.41	4.27	1.12	1.47	0.24	2.34	0.34
50th-Percentile Queue Length [ft/ln]	33.64	135.11	39.42	10.27	106.87	27.98	36.85	5.93	58.62	8.52
95th-Percentile Queue Length [veh/ln]	2.42	9.22	2.84	0.74	7.67	2.01	2.65	0.43	4.22	0.61
95th-Percentile Queue Length [ft/ln]	60.56	230.42	70.95	18.49	191.65	50.36	66.34	10.67	105.52	15.33

Movement, Approach, & Intersection Results

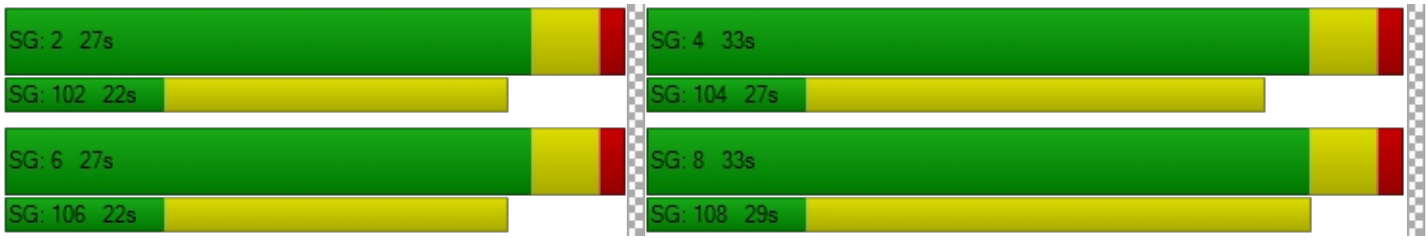
d_M, Delay for Movement [s/veh]	22.45	16.36	12.55	21.16	14.10	11.71	16.15	16.15	12.85	17.72	17.72	12.89
Movement LOS	C	B	B	C	B	B	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	16.28			13.96			15.61			16.92		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.51											
Intersection LOS	B											
Intersection V/C	0.422											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.661	2.600	2.278	2.195
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.758	2.512	1.812	1.939
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	545	2	14	550	1	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	3	4	7	2	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	549	5	18	557	3	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	144	1	5	147	1	2
Total Analysis Volume [veh/h]	578	5	19	586	3	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.66	0.00	23.11	12.22
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.45	0.00	2.03	2.03
d_A, Approach Delay [s/veh]	0.00		0.27		15.85	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	541	7	18	550	2	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	9	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	548	7	18	559	2	6
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	144	2	5	147	1	2
Total Analysis Volume [veh/h]	577	7	19	588	2	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.67	0.00	23.06	12.13
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.45	0.00	1.64	1.64
d_A, Approach Delay [s/veh]	0.00		0.27		14.87	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.24					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	24	21	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	6	7	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	4	6	31	25	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	2	8	7	0
Total Analysis Volume [veh/h]	0	4	6	33	26	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.86	8.42	7.26	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.29	0.29	0.28	0.28	0.00	0.00
d_A, Approach Delay [s/veh]	8.42		1.12		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.12					
Intersection LOS	A					

PM PEAK HOUR

Intersection Level Of Service Report
Intersection 1: Sheep Creek Rd (NS) at Phelan Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	34.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	97.00	100.00	100.00	105.00	100.00	100.00	105.00	100.00	100.00	102.00	100.00	100.00
Speed [mph]	40.00			55.00			35.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Phelan Rd			Phelan Rd		
Base Volume Input [veh/h]	130	295	222	211	160	210	126	483	50	183	608	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	15	15	0	13	0	0	0	10	13	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	142	310	237	211	173	210	126	483	60	196	608	77
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	82	62	56	46	55	33	127	16	52	160	20
Total Analysis Volume [veh/h]	149	326	249	222	182	221	133	508	63	206	640	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	95
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	36	0	13	34	0	14	33	0	13	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	25	0	0	20	0	0	22	0	0	21	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	95	95	95	95	95	95	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	10	17	17	14	22	22	9	16	16	32	39	39
g / C, Green / Cycle	0.10	0.18	0.18	0.14	0.23	0.23	0.09	0.17	0.17	0.33	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.08	0.09	0.15	0.12	0.05	0.14	0.07	0.14	0.04	0.11	0.18	0.05
s, saturation flow rate [veh/h]	1810	3618	1615	1810	3618	1615	1810	3618	1615	1810	3618	1615
c, Capacity [veh/h]	182	662	295	262	823	367	168	613	274	605	1486	663
d1, Uniform Delay [s]	41.90	34.86	37.51	39.60	29.87	32.86	42.18	38.14	34.12	23.76	20.05	17.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.76	0.57	6.46	7.39	0.13	1.59	7.98	2.97	0.43	1.53	0.20	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.49	0.84	0.85	0.22	0.60	0.79	0.83	0.23	0.34	0.43	0.12
d, Delay for Lane Group [s/veh]	50.66	35.43	43.97	46.99	30.00	34.45	50.17	41.11	34.54	25.28	20.25	17.46
Lane Group LOS	D	D	D	D	C	C	D	D	C	C	C	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.76	3.32	5.90	5.23	1.58	4.35	3.36	5.81	1.27	3.51	4.70	1.04
50th-Percentile Queue Length [ft/ln]	93.90	82.96	147.44	130.81	39.61	108.86	84.09	145.32	31.65	87.74	117.46	25.92
95th-Percentile Queue Length [veh/ln]	6.76	5.97	9.88	8.98	2.85	7.78	6.05	9.77	2.28	6.32	8.25	1.87
95th-Percentile Queue Length [ft/ln]	169.02	149.33	247.01	224.60	71.30	194.42	151.37	244.17	56.97	157.93	206.33	46.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	50.66	35.43	43.97	46.99	30.00	34.45	50.17	41.11	34.54	25.28	20.25	17.46
Movement LOS	D	D	D	D	C	C	D	D	C	C	C	B
d_A, Approach Delay [s/veh]	41.50			37.61			42.23			21.13		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	34.52											
Intersection LOS	C											
Intersection V/C	0.580											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	37.14	37.14	37.14	37.14
l_p,int, Pedestrian LOS Score for Intersection	2.710	2.802	2.780	2.920
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	674	632	611	589
d_b, Bicycle Delay [s]	20.89	22.24	22.93	23.63
l_b,int, Bicycle LOS Score for Intersection	2.157	2.075	2.140	2.324
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sheep Creek Rd (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.140

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Warbler Rd	
Base Volume Input [veh/h]	604	4	9	337	7	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	20	23	12	23	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	614	24	32	349	30	43
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	162	6	8	92	8	11
Total Analysis Volume [veh/h]	646	25	34	367	32	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.04	0.00	0.14	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	9.02	0.00	24.18	16.09
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.11	0.11	0.90	0.90
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.67	2.67	22.58	22.58
d_A, Approach Delay [s/veh]	0.00		0.76		19.45	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.57					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Sheep Creek Rd (NS) at Nielson Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.441

Intersection Setup

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	102.00	100.00	103.00	95.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sheep Creek Rd			Sheep Creek Rd			Nielson Rd			Nielson Rd		
Base Volume Input [veh/h]	40	550	149	61	139	143	43	26	23	64	71	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	0	12	8	15	13	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	40	557	149	73	147	158	56	26	23	64	71	49
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	147	39	19	39	42	15	7	6	17	19	13
Total Analysis Volume [veh/h]	42	586	157	77	155	166	59	27	24	67	75	52
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	4.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	27	0	0	27	0	0	33	0	0	33	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	15	0	0	15	0	0	22	0	0	20	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	C	R	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	30	30	30	30	30	30	22	22	22	22
g / C, Green / Cycle	0.50	0.50	0.50	0.50	0.50	0.50	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.03	0.31	0.10	0.09	0.08	0.10	0.10	0.01	0.10	0.03
s, saturation flow rate [veh/h]	1251	1900	1615	843	1900	1615	900	1615	1371	1615
c, Capacity [veh/h]	651	949	806	327	949	806	432	594	592	594
d1, Uniform Delay [s]	10.30	10.88	8.34	18.78	8.20	8.39	13.28	12.19	13.85	12.41
k, delay calibration	0.11	0.17	0.11	0.50	0.50	0.50	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	1.03	0.12	1.68	0.37	0.58	1.03	0.13	0.21	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.06	0.62	0.19	0.24	0.16	0.21	0.20	0.04	0.24	0.09
d, Delay for Lane Group [s/veh]	10.34	11.92	8.45	20.46	8.57	8.97	14.31	12.32	14.06	12.47
Lane Group LOS	B	B	A	C	A	A	B	B	B	B
Critical Lane Group	No	Yes	No	No	No	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.28	4.53	0.90	0.94	0.94	1.06	0.79	0.19	1.10	0.38
50th-Percentile Queue Length [ft/ln]	7.00	113.16	22.48	23.41	23.62	26.46	19.67	4.77	27.59	9.62
95th-Percentile Queue Length [veh/ln]	0.50	8.02	1.62	1.69	1.70	1.90	1.42	0.34	1.99	0.69
95th-Percentile Queue Length [ft/ln]	12.60	200.38	40.46	42.13	42.52	47.62	35.40	8.59	49.67	17.32

Movement, Approach, & Intersection Results

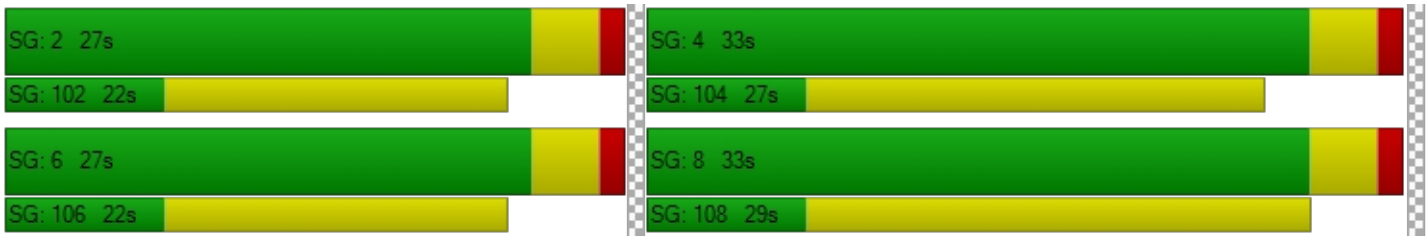
d_M, Delay for Movement [s/veh]	10.34	11.92	8.45	20.46	8.57	8.97	14.31	14.31	12.32	14.06	14.06	12.47
Movement LOS	B	B	A	C	A	A	B	B	B	B	B	B
d_A, Approach Delay [s/veh]	11.14			11.03			13.88			13.63		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	11.64											
Intersection LOS	B											
Intersection V/C	0.441											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	20.01	20.01	20.01	20.01
l_p,int, Pedestrian LOS Score for Intersection	2.539	2.548	2.169	2.249
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	767	767	967	967
d_b, Bicycle Delay [s]	11.41	11.41	8.01	8.01
l_b,int, Bicycle LOS Score for Intersection	2.855	2.216	1.741	1.880
Bicycle LOS	C	B	A	A

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 4: Sheep Creek Rd (NS) at Project NW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.065

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project NW Dwy	
Base Volume Input [veh/h]	620	1	7	388	2	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	29	9	12	24	11	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	649	10	19	412	13	27
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	171	3	5	108	3	7
Total Analysis Volume [veh/h]	683	11	20	434	14	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.00	0.07	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	9.04	0.00	23.39	14.53
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.00	0.43	0.43
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.68	0.00	10.80	10.80
d_A, Approach Delay [s/veh]	0.00		0.40		17.49	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.77					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Sheep Creek Rd (NS) at Project SW Dwy (EW)

Control Type:	Two-way stop	Delay (sec / veh):	22.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.037

Intersection Setup

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sheep Creek Rd		Sheep Creek Rd		Project SW Dwy	
Base Volume Input [veh/h]	623	4	10	379	7	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	1	1	34	1	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	659	5	11	413	8	20
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	1	3	109	2	5
Total Analysis Volume [veh/h]	694	5	12	435	8	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.02	0.00	22.51	14.02
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.00	0.27	0.27
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.01	0.00	6.82	6.82
d_A, Approach Delay [s/veh]	0.00		0.24		16.36	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Project S Dwy (NS) at Warbler Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project S Dwy		Warbler Rd		Warbler Rd	
Base Volume Input [veh/h]	0	0	0	11	20	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	23	20	23	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	23	20	34	47	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	5	9	12	0
Total Analysis Volume [veh/h]	0	24	21	36	49	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.27	8.60	7.32	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.04	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.80	1.80	0.97	0.97	0.00	0.00
d_A, Approach Delay [s/veh]	8.60		2.70		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.77					
Intersection LOS	A					

ATTACHMENT H

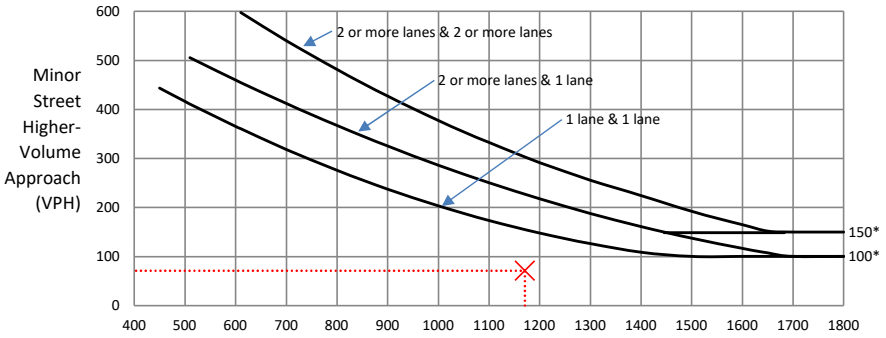
TRAFFIC SIGNAL WARRANT WORKSHEETS

Figure H-1

Sheep Creek Road (NS) / Warbler Road (EW) - #2
Year 2040 With Project
AM

Major Street: Sheep Creek Road — Volume: 1171
Minor Street: Warbler Road — Volume: 71

Warrant 3, Peak Hour Vehicular Volume (100% Factor)



This figure is not applicable; see Figure 4C-4 below.

*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.

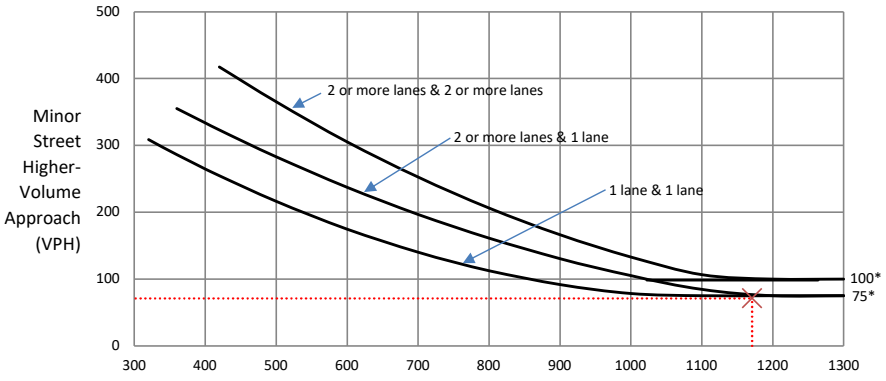
Figure H-1

Sheep Creek Road (NS) / Warbler Road (EW) - #2
Year 2040 With Project
AM

Major Street: Sheep Creek Road — Volume: 1171
Minor Street: Warbler Road — Volume: 71

Warrant 3, Peak Hour Vehicular Volume (70% Factor)

(Community less than 10,000 population or above 40 mph on the major street)



Traffic Signal Warrant Is NOT Satisfied

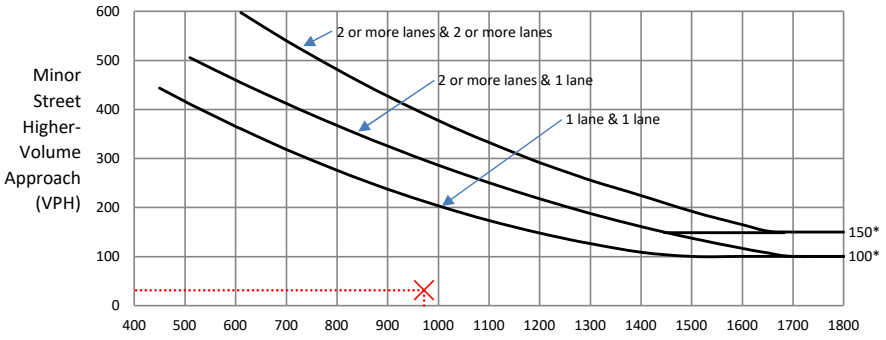
*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Figure H-2

Sheep Creek Road (NS) / Warbler Road (EW) - #2
Year 2040 With Project
PM

Major Street: Sheep Creek Road — Volume: 972
Minor Street: Warbler Road — Volume: 31

Warrant 3, Peak Hour Vehicular Volume (100% Factor)



This figure is not applicable; see Figure 4C-4 below.

*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.

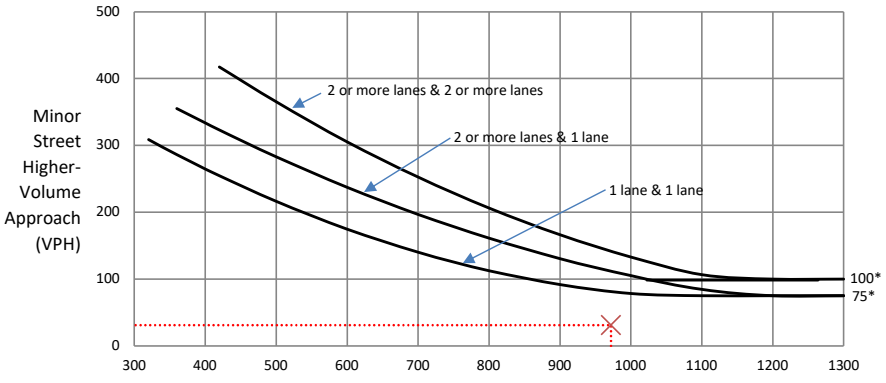
Figure H-2

Sheep Creek Road (NS) / Warbler Road (EW) - #2
Year 2040 With Project
PM

Major Street: Sheep Creek Road — Volume: 972
Minor Street: Warbler Road — Volume: 31

Warrant 3, Peak Hour Vehicular Volume (70% Factor)

(Community less than 10,000 population or above 40 mph on the major street)



Traffic Signal Warrant Is NOT Satisfied

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.



GANDDINI GROUP, INC.
550 Parkcenter Drive, Suite 202, Santa Ana, CA 92705
714.795.3100 | www.ganddini.com