

**CIMARRON HILLS SOUTHEAST FILING No. 1**  
**TRAFFIC IMPACT STUDY**  
**PCD No. SF2420**

**Prepared for:**

El Paso County, CO

**Prepared by:**



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**On Behalf of:**

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**Traffic Engineer's Statement**

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

\_\_\_\_\_

*MaríaAngélica Deeb, PE, PTOE, PTP, RSP1, ENV SP*

\_\_\_\_\_

Date

**Developer's Statement**

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

\_\_\_\_\_

*Dean Venezia*

*Jovenchi-I LLC*

*4779 N Academy Blvd.*

*Colorado Springs, CO 80918*

\_\_\_\_\_

Date

May 8, 2026

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## Introduction

The Cimarron Hills Southeast Filing No. 1 (Project) is a proposed 28.2-acre development located at the southeast corner of Peterson Road/Galley Road intersection in unincorporated El Paso County. The project consists of 142 single-family detached, and 301 multi-family homes.

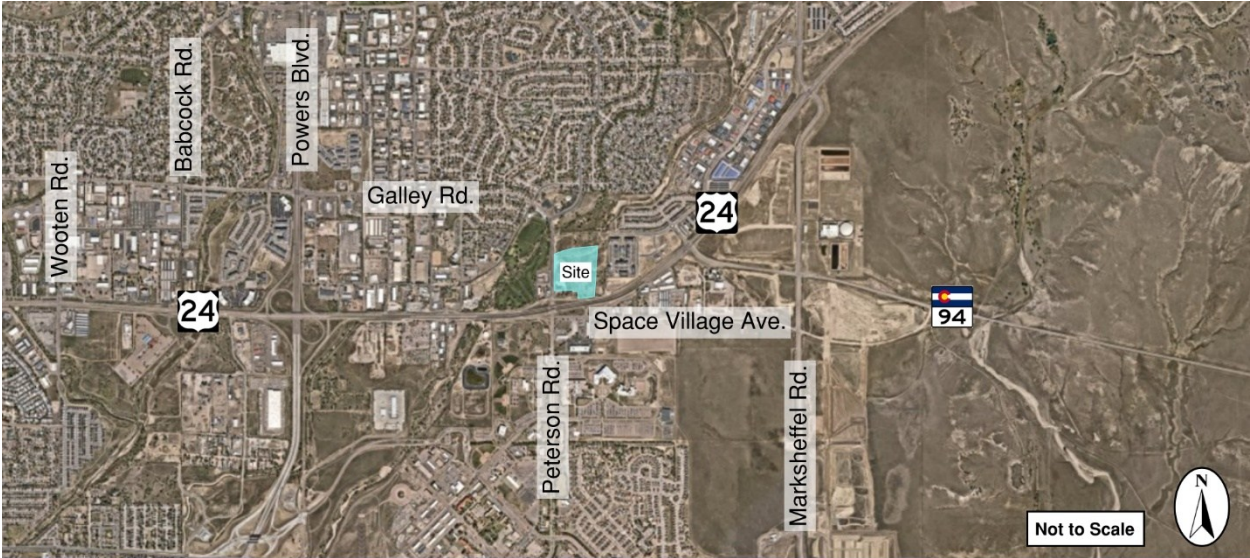
The project is anticipated to be in phases with 301 units of multi-family to be completed in 2027 with one full-movement access point located on Meadowbrook Parkway and one right-in-right-out (RIRO) access on Peterson Road. The other remaining 142 single-family dwelling units are intended for future development which is studied for the horizon year.

The purpose of this study is to assess the effects this proposed development will have on the surrounding transportation system.

The report is organized as follows:

- **Introduction** – Describes the purpose and intent of this study.
- **Proposed Development** – Describes the proposed development and the location.
- **Area Conditions** – Describes the study area land uses as well as the existing and future roadway network.
- **Projected Traffic** – Identifies the expected number of daily and peak hour trips that will be generated by the project. The expected external trip distribution is also shown.
- **Traffic Analysis** – Analyzes the existing conditions in the study area as well as buildout year (2027) and horizon year (2045) conditions with and without the project.
- **Findings and Conclusions** – Identifies any deficiencies in the study area roadway network with or without the project and mitigation measures that will alleviate any identified deficiencies.
- **Recommendations** – Provides a summary of the study findings.

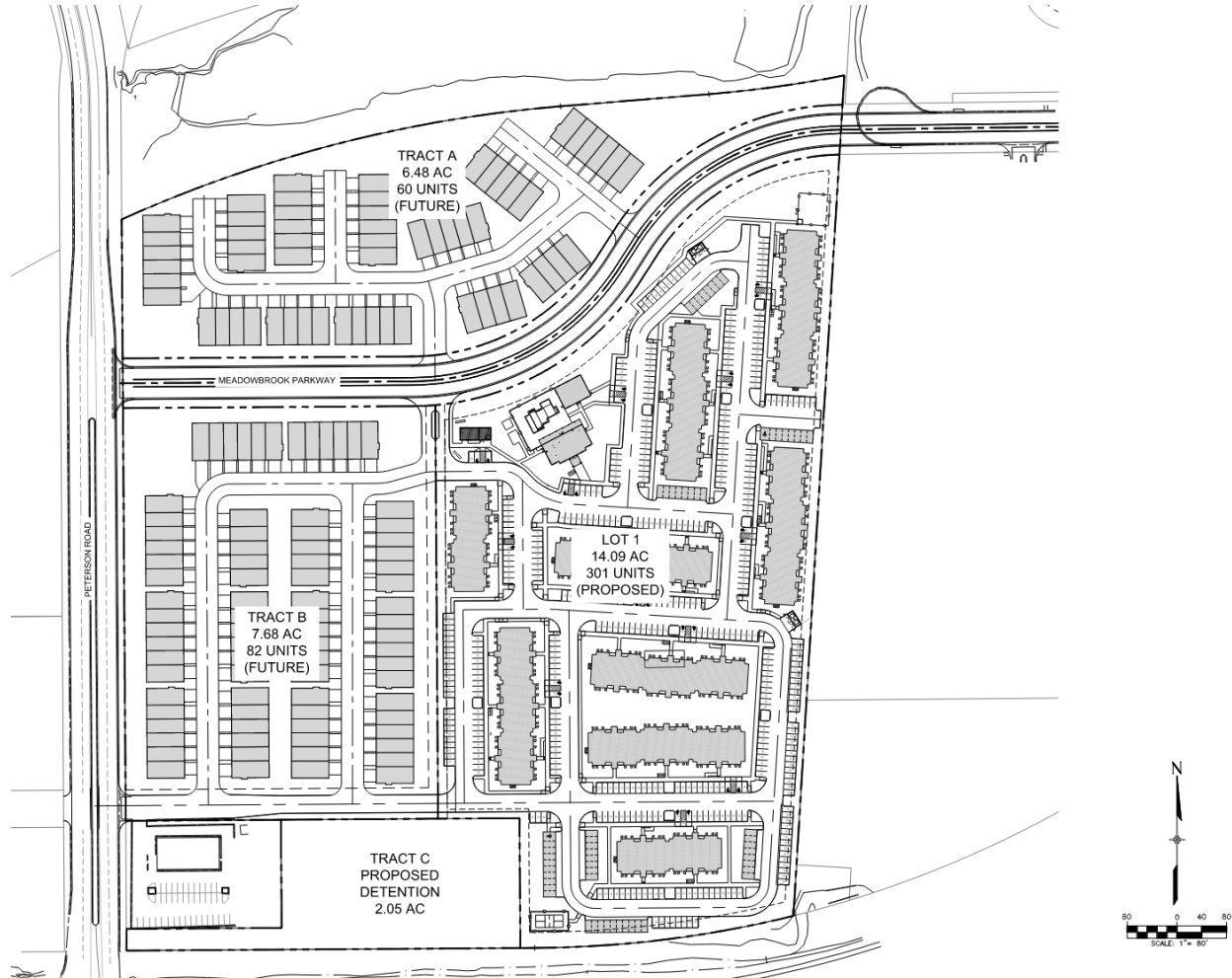
Figure 1. Vicinity Map



### Proposed Development

The proposed development consists of one lot (Lot 1) and two tracts (Tracts A and B). Lot 1, approximately 14.09 acres, is designated for immediate development and will include 301 low-rise, multi-family dwelling units. Tract A comprises approximately 6.48 acres and is planned for 60 single-family units. Tract B encompasses approximately 7.68 acres and is planned for 82 single-family units. Both Tracts A and B are intended for future development and are evaluated under the horizon (2045) scenario. Figure 2 illustrates the project site plan.

**Figure 2. Cimarron Hills Southeast Filing No. 1 Site Plan**



## Area Conditions

This section describes the existing conditions and the planned level of improvements adjacent to the proposed Project.

## Site Accessibility

The existing roadway system consists of the following transportation facilities:

**Peterson Road** is a north-south street that provides two lanes in each direction. Peterson Road is classified as an urban minor arterial in the 2045 El Paso County (EPC) Major Transportation Corridors Plan (MTCP). According to 2065 EPC MTCP, Peterson Road is classified as a 4-lane roadway. Each direction on this arterial road is separated by a median. A sidewalk is provided along the west side of Peterson Road starting at Panamint Court continuing north, although no sidewalk is provided north of the future intersection of Meadowbrook Parkway. The Average Daily Traffic (ADT) threshold capacity for this road is 20,000 vehicles. The posted speed limit is 30 miles-per-hour (mph) on this facility.

**State Highway 24 (SH-24)** is an east-west roadway and is classified as an expressway by both El Paso County and the City of Colorado Springs. This facility currently provides two lanes in each direction,

separated by a median and does not provide sidewalks. The ADT threshold capacity for this road is 48,000 vehicles. The speed limit is 55-mph on the eastbound and 65-mph on the westbound on this roadway. The CDOT access category for this roadway is E-X.

**State Highway 94 (SH-94)** is an east-west facility which intersects SH-24 at the studied area. SH-94 provides two lanes in each direction with a posted speed limit of 65 mph. This facility is owned and maintained by CDOT, and it is classified as a principal arterial.

**Meadowbrook Parkway** is a north–south road that will ultimately connect to Peterson Road. This road is classified as an urban non-residential collector. This facility currently ends at the northeast corner of the project and provides three lanes and sidewalk with curb and gutter in the vicinity of the project. The posted speed limit is 35 mph on this roadway.

There are three schools located within approximately two miles of the project site. Pedestrian routes are available along Galley Road, Hathaway Drive, and Peterson Road east of Galley Road. However, sidewalks and bike lanes are not currently provided along Peterson Road south of Galley Road near the project site. With the extension of Meadowbrook Parkway to Peterson Road, sidewalk and pedestrian ramps will be added to improve connectivity and accessibility. These enhancements will expand multimodal transportation options and support Transportation Demand Management (TDM) strategies by providing safer, more accessible pedestrian connections to nearby bus stops, schools, and surrounding destinations.

Traffic counts were collected on April 2, 2024, and the studied intersections were confined to intersections listed below:

- Galley Road/Peterson Road
- Peterson Road/Panamint Court
- Peterson Road/US-24 Westbound Ramps
- Peterson Boulevard/Space Village Avenue
- US-24 EB Ramps /Space Village Road
- US-24/SH-94/Newt Drive
- Newt Drive/Meadowbrook Parkway

The AM and PM peak hour volumes at the studied intersections are shown in Figure 3 and Figure 4. The daily traffic is shown in Figure 5. The intersection configurations are shown in Figure 6.

Figure 3. Existing Conditions Traffic Volumes (AM Peak Hour)

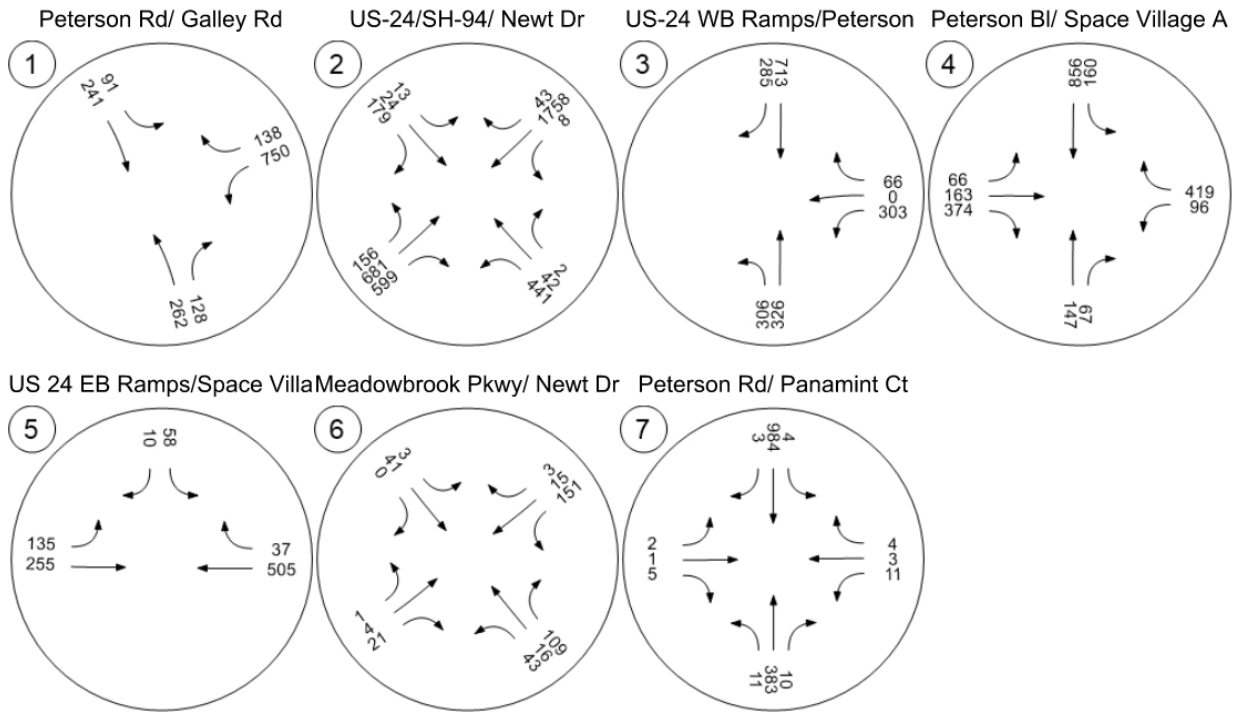
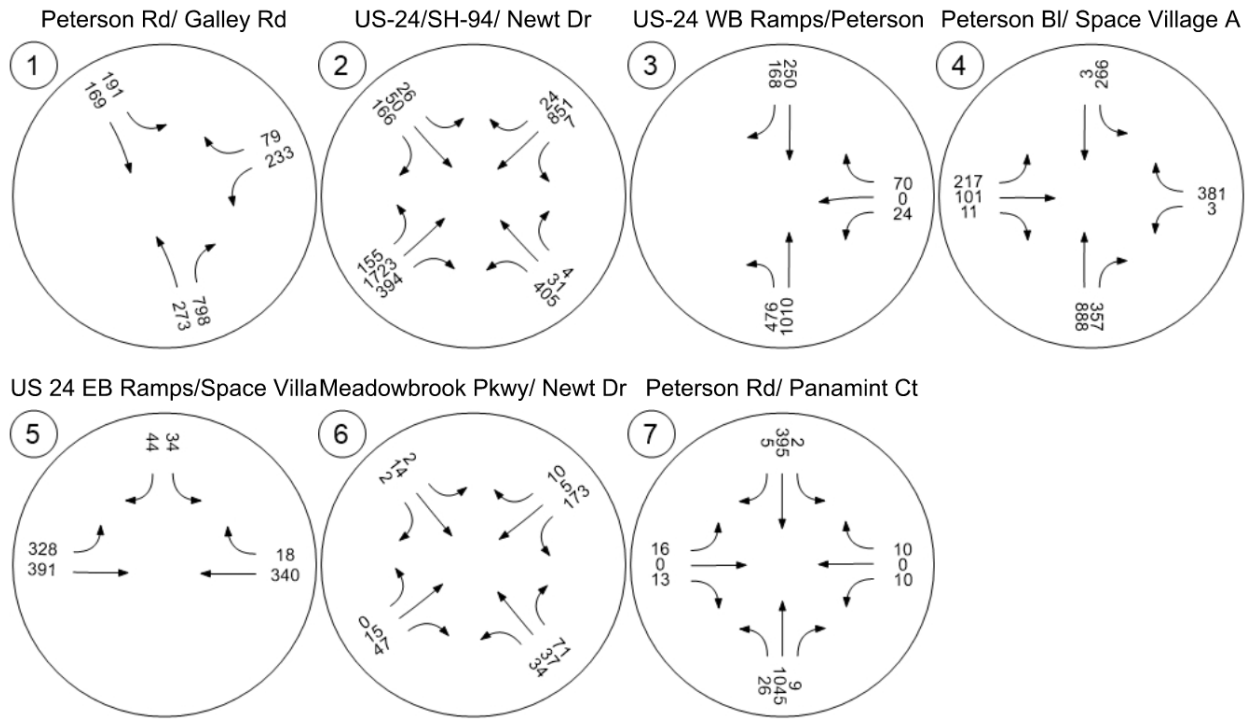


Figure 4. Existing Conditions Traffic Volumes (PM Peak Hour)



**Figure 5. Existing Conditions Daily Traffic Volumes and Roadway Classification**

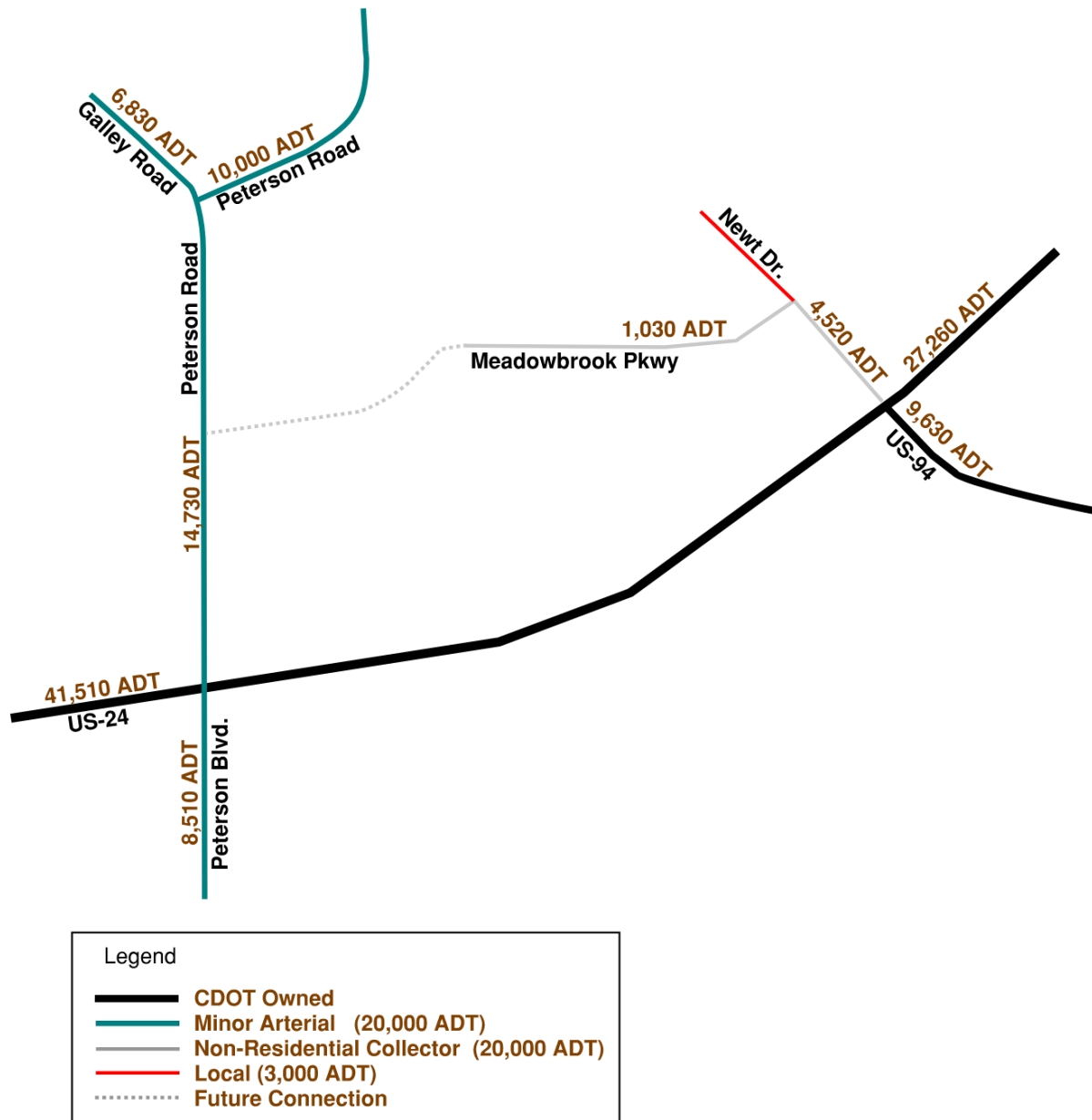
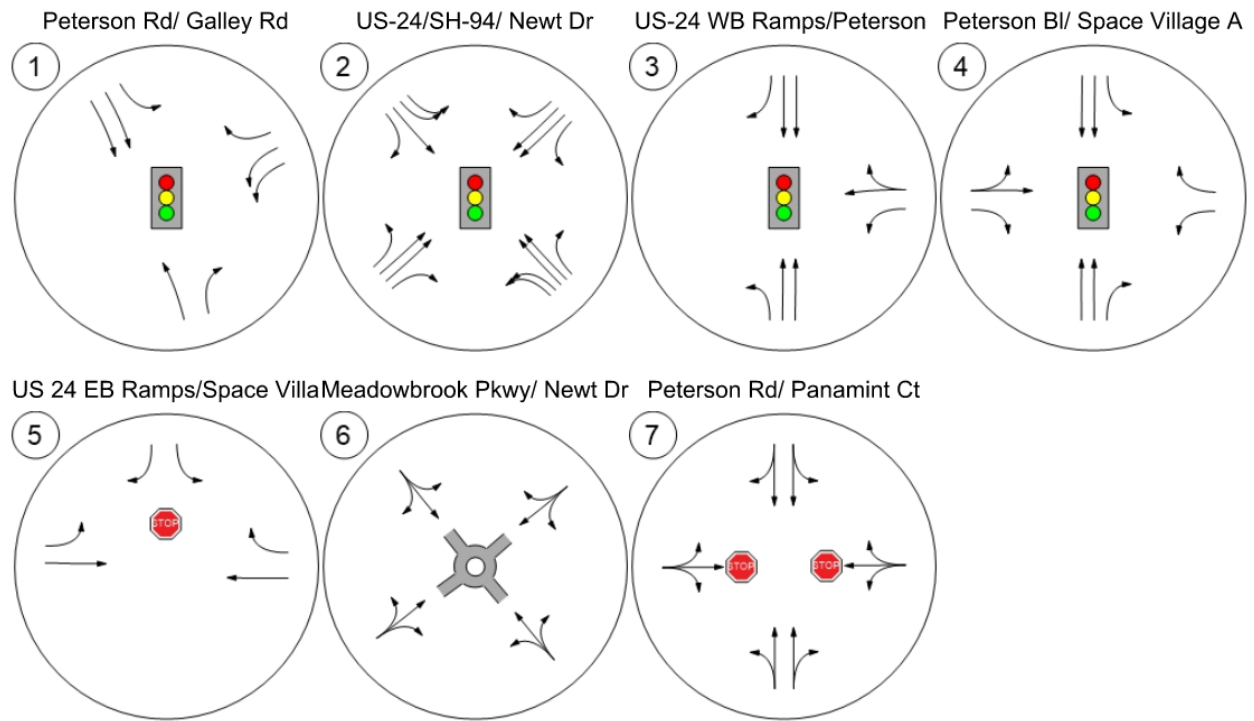


Figure 6. Existing Conditions Intersection Configurations



The intersection operations are shown in Table 1 and Table 2.

**Table 1. Existing Conditions Intersection Operations (AM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.499	15.4	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	NB Left	0.736	30.2	C
3	US-24 WB Ramps/Peterson Rd	Signalized	HCM 7th Edition	WB Left	0.606	25.4	C
4	Peterson Bl/ Space Village Av	Signalized	HCM 7th Edition	EB Thru	0.584	29.8	C
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.472	44.4	E
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		4.0	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Thru	0.048	52.8	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Table 2. Existing Conditions Intersection Operations (PM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.459	12.5	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	NB Left	0.693	29.6	C
3	US-24 WB Ramps/Peterson Rd	Signalized	HCM 7th Edition	WB Right	0.359	4.9	A
4	Peterson Bl/ Space Village Av	Signalized	HCM 7th Edition	WB Right	0.775	66.1	E
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.543	101.1	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	EB Right		4.3	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Left	0.162	60.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Acceptable operations are defined as any intersection that operates at LOS D or better. As shown in Table 1 and Table 2, all studied intersections operate at an acceptable LOS except for Peterson

Boulevard/Space Village Avenue (#4), US-24 EB Ramps/Space Village Avenue (#5), and Peterson Road/Panamint Court (#7).

**Peterson Blvd/Space Village Avenue (#4)**

This intersection operates at LOS E during the PM peak hour. The City of Colorado Springs is planning on constructing a roundabout replacing the current traffic signal, which is anticipated to be built in 2027. Therefore, no mitigation is recommended for the existing conditions.

**US-24 EB Ramps/Space Village Ave (#5)**

This stop-controlled intersection resulted in LOS E during the AM peak hour and LOS F during the PM peak hour, with the southbound left-turn being the worst movement. However, queue analysis showed that the 95<sup>th</sup>-percentile queue is no more than 2 vehicles for the deficient movement. Therefore, no mitigation is recommended.

**Peterson Rd/Panamint Ct (#7)**

This stop-controlled intersection operates at a LOS F during both the AM and PM peak hour with the westbound left being the worst movement. The intersection does not meet signal warrants, and the queue analysis shows one vehicle queuing for the westbound movement. Following coordination with El Paso County, the intersection at Peterson Road and Panamint Court (#7) will be modified from a full-movement intersection to a right-in/right-out (RIRO) configuration. Therefore, no mitigation is recommended.

Turn Lane evaluations for the existing conditions are summarized in Table 3.

**Table 3. Existing Conditions Turn Lane Evaluations**

ID	Intersection	Movement	No. of Lanes	Roadway Classification	Design Speed (mph)	Turning Volume (vph)	Queue (ft)	Deceleration (ft)	Taper (ft)	Storage (ft)	Total (ft)	Provided (ft)	Improvement (ft)
1	Galley Rd/Peterson Rd EPC Signalized	NBR	1	Minor Arterial	40	798	184	155	160	184	500	Continuos	-
		SBL	1	Minor Arterial	40	191	39	155	160	39	355	Median	-
		WBL	2	Minor Arterial	40	750	193	155	320	193	670	Continuos	-
		WBR	1	Minor Arterial	40	138	27	155	160	27	340	420	-
2	US-24/SH-94/Newt Dr CDOT Signalized	NBL (SH-94)	2	E-X	60	441	453	600	444	221	1265	1015	250
		NBR (SH-94)	1	E-X	60	4	3	600	222	-	820	1015	-
		SBL (Newt Dr.)	2	F-R	35	26	26	0	192	25	215	400	-
		SBR (Newt Dr.)	1	F-R	35	179	0	0	96	25	120	400	-
		EBL (US-24)	1	E-X	60	156	86	600	222	156	980	1120	-
		EBR (US-24)	1	E-X	60	599	0	600	222	-	820	840	-
		WBL (US-24)	1	E-X	60	8	2	600	222	25	845	975	-
		WBR (US-24)	1	E-X	60	43	10	600	222	-	820	975	-
		SBR to WBT Acceleration Lane	1	NR-A	70	179	0	1080 (Accel. Lane)	300	-	1380	895	485
EBR to SBT Acceleration Lane	1	E-X	60	599	0	960 (Accel. Lane)	222	-	1180	640	540		
3	US-24 WB Ramps/Peterson Rd CDOT Signalized	NBL	1	NR-C	35	476	181	0	96	476	570	300	This intersection will be converted into a roundabout
		SBR	1	NR-C	35	285	100	0	96	285	380	140	
		WBR	1	F-R	35	70	62	0	96	70	165	930	
		WBL	1	F-R	35	303	390	0	96	303	400	930	
4	Peterson Bl/Space Village Ave CDOT Signalized	NBR	1	NR-C	35	357	258	0	96	357	455	400	This intersection will be converted into a roundabout
		SBL	1	NR-C	35	266	316	0	96	266	360	85	
		EBL	1	F-R	35	217	525	0	96	217	315	900	
		EBR	1	F-R	35	374	238	0	96	374	470	1200	
		WBR	1	NR-C	35	419	419	0	96	419	515	500	
5	US-24 EB Ramps/Space Village Ave CDOT Stop-Controlled	SBL	1	F-R	35	58	56	0	96	50	145	290	-
		SBR	1	F-R	35	44	7	0	96	45	140	Continuos	-
		EBL	1	NR-C	40	328	39	0	120	328	450	415	35
		WBR	1	NR-C	40	37	0	Not Required			Continuos	-	

Design speed is based on the EPC ECM criteria. The speed limit was assumed to be 5 mph below the design speed.

Summary of turn lane improvements are as follows:

**US-24/SH-94/Newt Dr (#2)**

- A 250-ft extension of northbound left-turn.
- A 485-ft extension of southbound right to west bound thru acceleration lane.
- A 540-ft extension of eastbound right to southbound thru acceleration lane.

**US-24 EB Ramps/Space Village Avenue (#5)**

- A 35-ft extension of eastbound left turn.

### Crash History

The El Paso County Road Safety Plan website was used to obtain the number of severe and fatal crashes in the vicinity of the project. Crash data from the website was collected and shown as a density map. As shown in Figure 7, approximately 9 severe injury crashes occurred on SH-24 and Space Village Avenue in three distinct locations. The main cause of these crashes resulted from reckless and careless driving. As shown in Figure 8, two fatal crashes have also happened in the vicinity of the project along US 24, a high speed CDOT maintained facility.

Figure 7. Serious Injury Crash Density Map

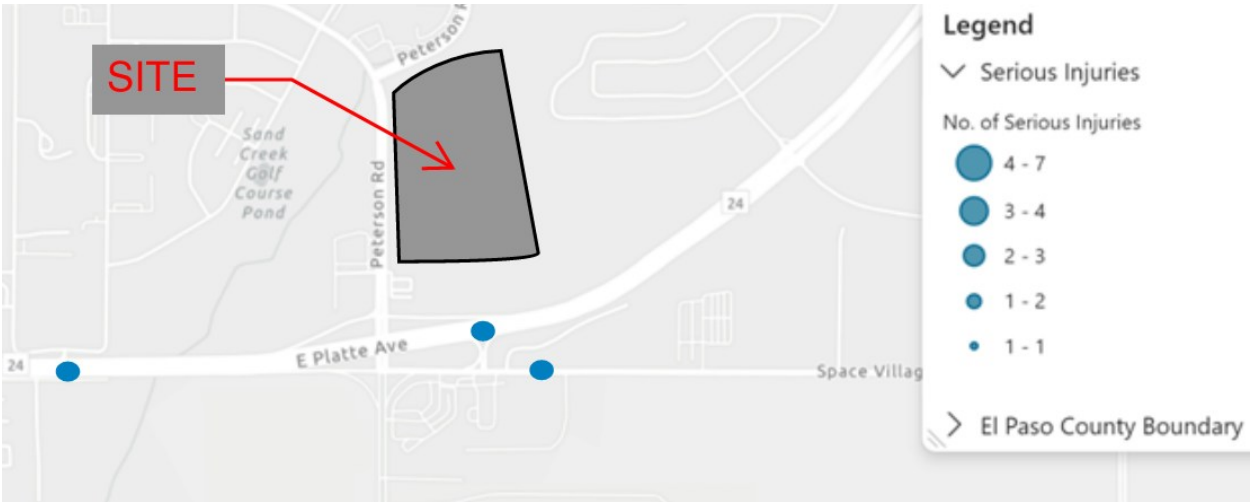
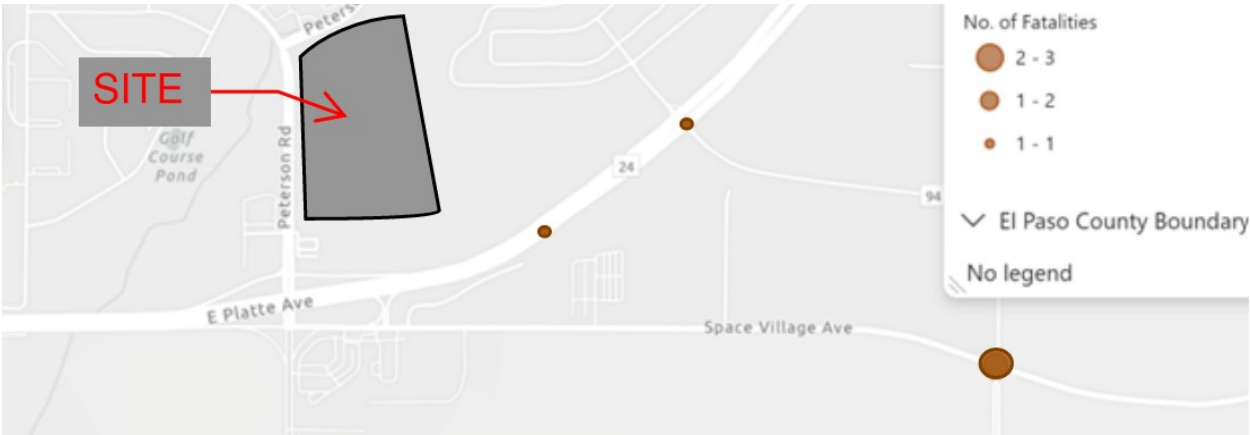


Figure 8. Fatal Crash Density Map



### Projected Development Traffic

This section documents how much anticipated traffic will be generated by the Project and how the external site trips will be distributed on the adjacent roadway network.

## Trip Generation

The vehicle trips associated with the Project were calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 12th Edition*. This methodology consists of choosing an independent variable for the land use for a particular time of day. The independent variable correlates to the variation in trip ends and is related to the land use. The value of the independent variable is either multiplied by a weighted average or used in a regression equation to calculate the trips generated by the land use. The *ITE Trip Generation Manual* provides guidance on when to use the weighted average versus the regression equation. In most cases, the regression equations are recommended when there are adequate study data points.

Table 4 shows the trips that are expected to be generated by the Project at buildout. Although there are bus stops near the project site, it was assumed that 100% of the trips would be made by vehicles. No internal or pass-by trips were accounted for in the site trip estimates either.

**Table 4. Cimarron Hills Southeast Filing No.1 Trip Generation**

Lot / Tract	ITE Code - Land Use	Size	Unit	AM Peak Hour			PM Peak Hour			Daily Total
				Inbound	Outbound	Total	Inbound	Outbound	Total	
1	220 - Multi-Family Housing	301	Dwelling Units	28	90	118	94	58	152	1,816
A	210 - Single-Family Detached Housing	60	Dwelling Units	12	33	45	37	23	60	750
B	210 - Single-Family Detached Housing	82	Dwelling Units	16	44	60	50	30	80	928
<b>Grand Total</b>				<b>56</b>	<b>167</b>	<b>223</b>	<b>181</b>	<b>111</b>	<b>292</b>	<b>3,494</b>

## Trip Distribution

Figure 9 illustrates the expected external distribution of travel for the site-generated trips. This distribution was determined by reviewing the existing traffic counts and road classifications in the MTCP.

**Figure 9. Trip Distribution**



The site trips for both the AM and PM peak hours for Lot 1 are shown in Figure 10 and Figure 11. The short-term daily site traffic is shown in Figure 12.

**Figure 10. Short-Term Site Trips (AM Peak Hour)**

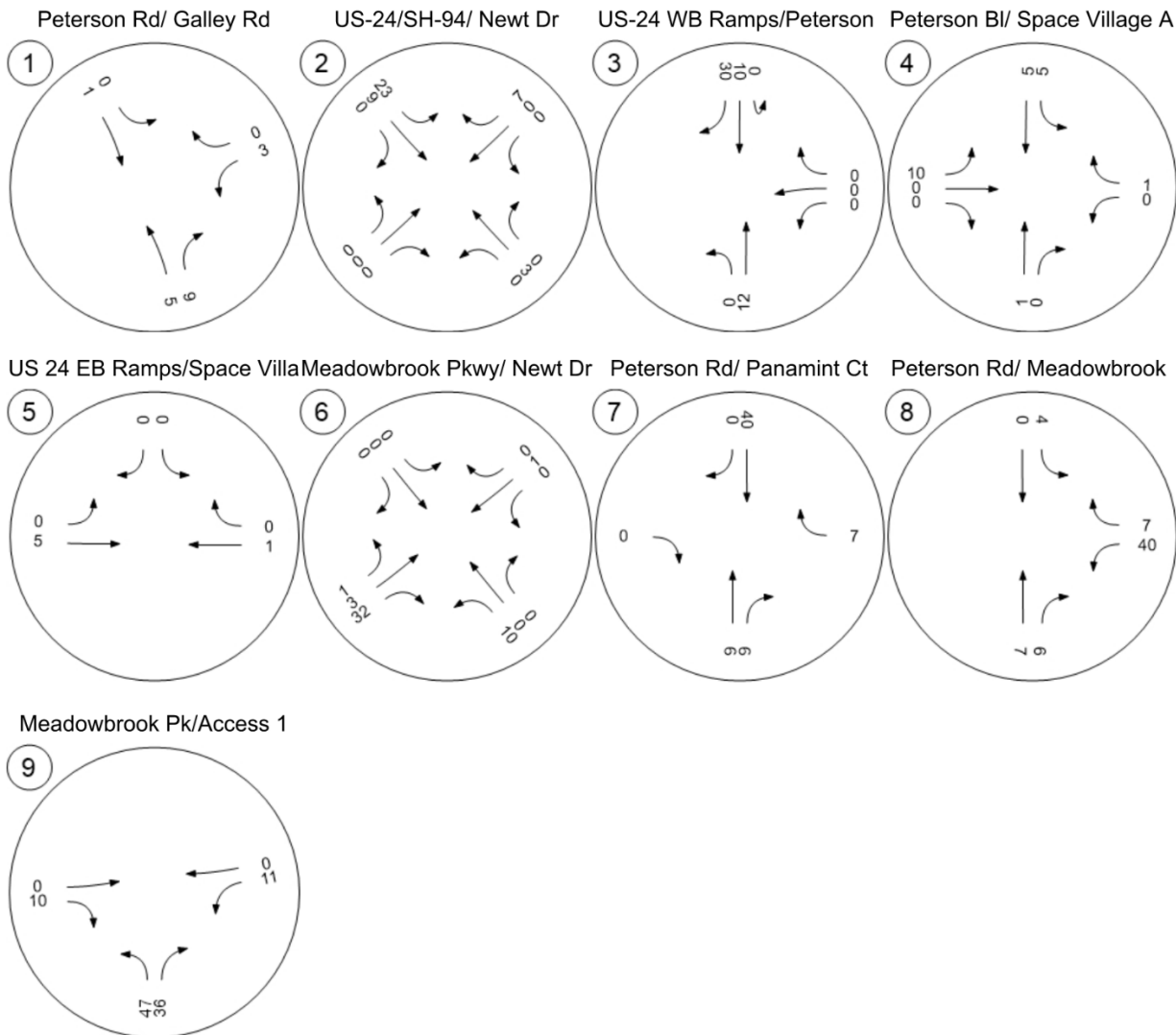


Figure 11. Short-Term Site Trips (PM Peak Hour)

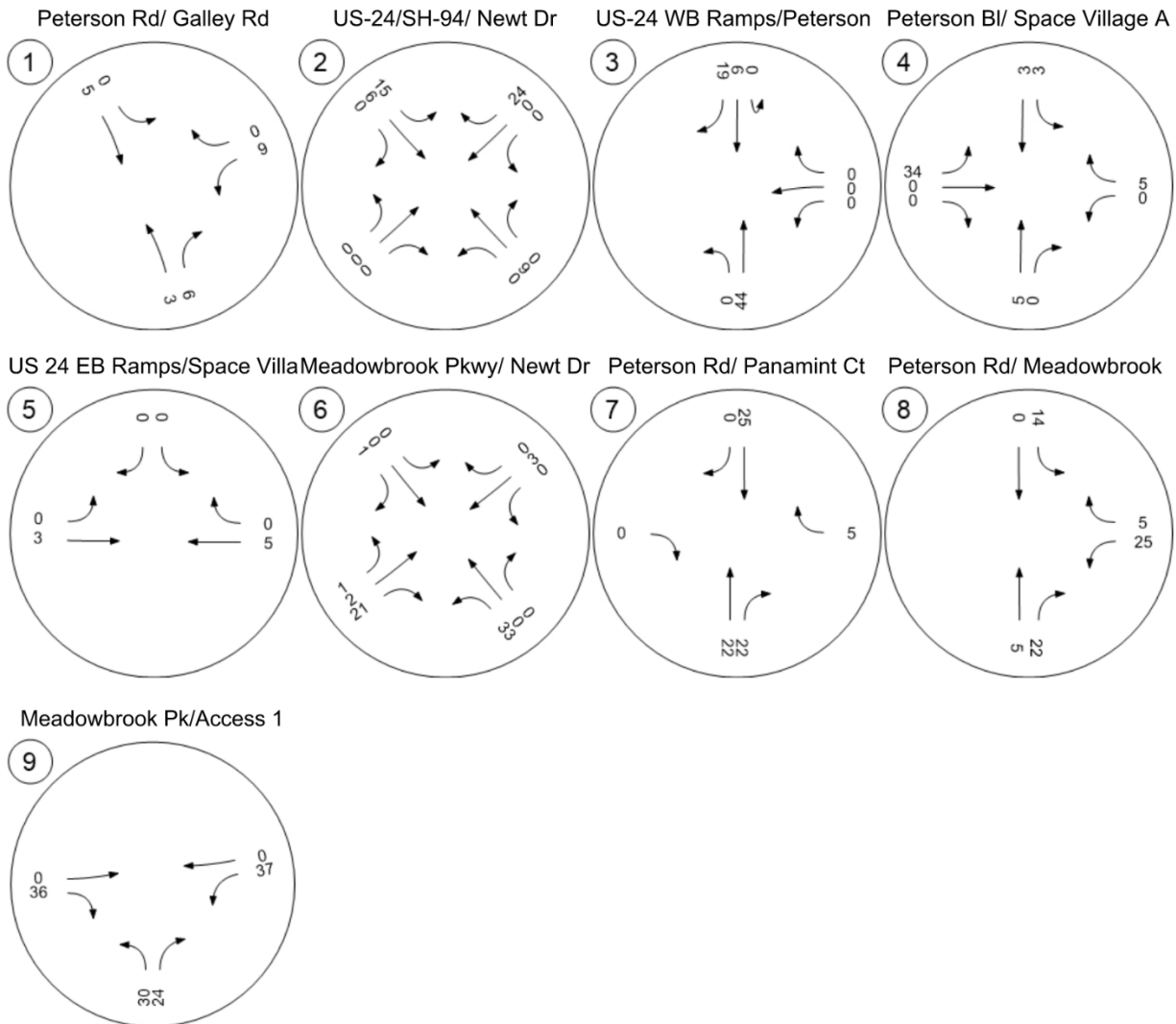


Figure 12. Short-Term Daily Site Traffic



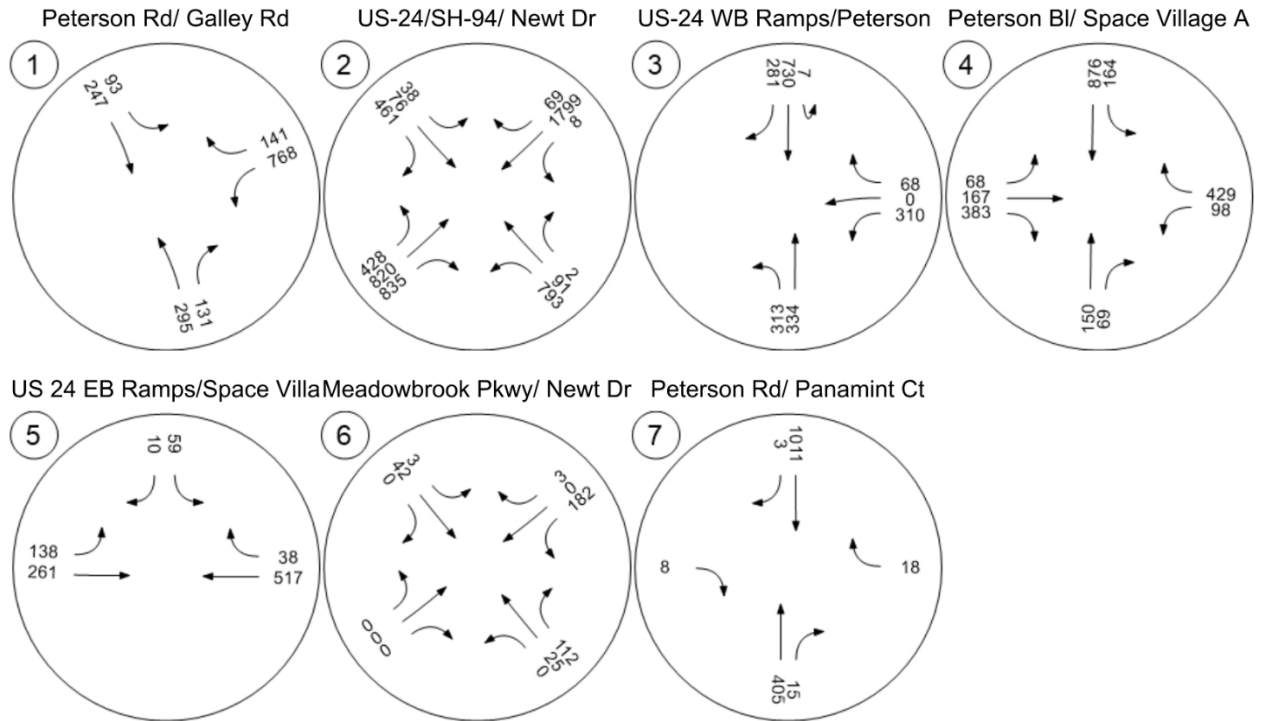
## Traffic Analysis

Traffic conditions both with and without the project were analyzed for buildout year (2027) and horizon year (2045) conditions.

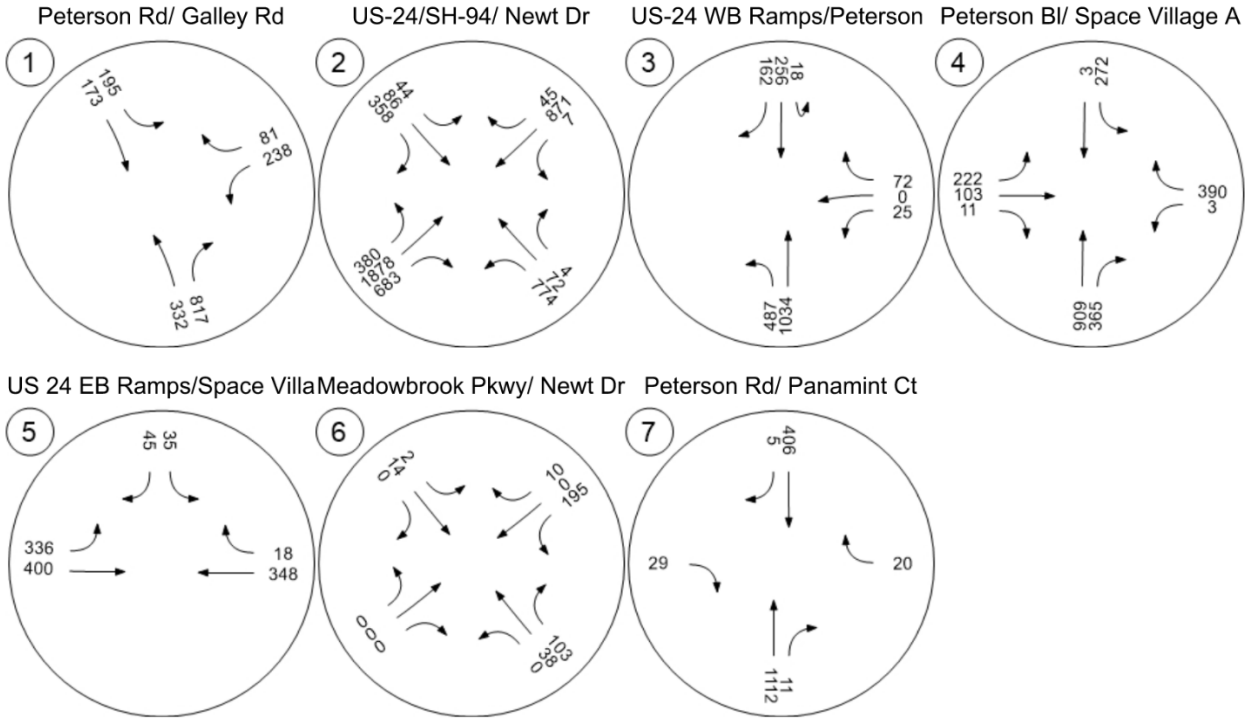
### Buildout (2027) No Project Conditions

The buildout year traffic volumes without the project are shown in Figure 13 and Figure 14 and daily traffic volumes are shown in Figure 15. The CDOT Traffic Counts Database System (TCDS) website was used to calculate the growth in the studied area. For this purpose, the earliest available counts (2009) and the latest available counts (2023) on Peterson Road N/O US-24 were used to obtain the growth rate. According to the TCDS, the traffic counts do not include the pandemic Year of 2020. A 0.77% annual growth rate was calculated resulting in a growth factor of 1.0234 (2027), and 1.1754 (2045). Following coordination with El Paso County, the intersection at Peterson Road and Panamint Court (#7) will be modified from a full-movement intersection to a right-in/right-out (RIRO) configuration. Moreover, since the City of Colorado Springs wishes to replace the signals and design a roundabout, the project intersection configuration for intersection US-24 WB ramps/Peterson Road (#3) and Peterson Boulevard/Space Village Avenue (#4) were modified to reflect this improvement. An excerpt of this design can be found in Appendix F – Supporting Documents. Additionally, traffic from four adjacent developments, namely, Crossroad Mixed-Use, Crossroads North, Meadowbrook Park, and Reagan Ranch were added to intersection of US-24/SH-94/Newt Drive (#2) and Meadowbrook Parkway/Newt Drive (#6). An excerpt of the *Crossroads-Meadowbrook and Reagan Ranch TIS* prepared by Kimley-Horn can be found in Appendix F – Supporting Documents.

**Figure 13. Buildout (2027) No Project Traffic Volumes (AM Peak Hour)**



**Figure 14. Buildout (2027) No Project Traffic Volumes (PM Peak Hour)**

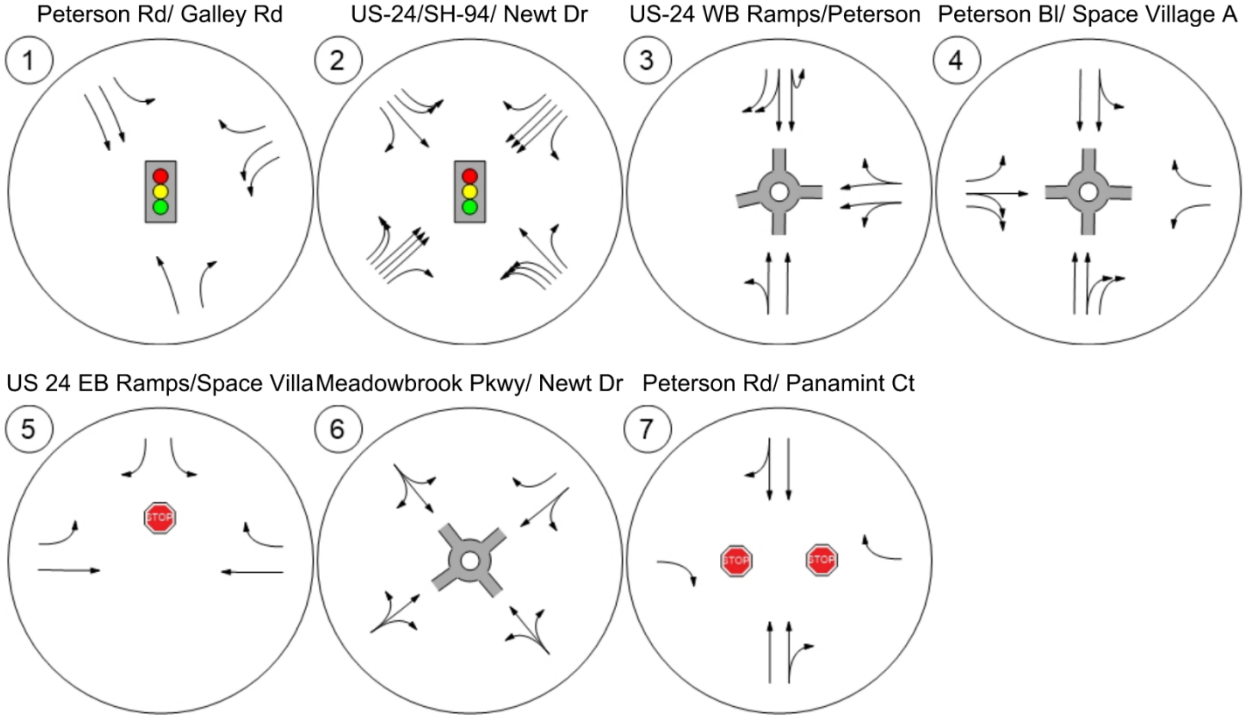


**Figure 15. Buildout (2027) No Project Daily Traffic**



The assumed intersection configurations are shown in Figure 16. The City of Colorado Springs is planning on changing the signalized intersections into roundabouts for US-24 WB Ramps/Peterson Road (#3) and Peterson Blvd/Space Village Ave (#4). These changes for future conditions are shown in Figure 16. Details can be found in Appendix F – Supporting Documents. The operations of the study area intersections in the buildout no project scenarios are shown in Table 5 and Table 6. The turn lane evaluations for the buildout no project are shown in Table 7.

Figure 16. Buildout (2027) No Project Intersection Configurations



**Table 5. Buildout (2027) No Project Intersection Operations (AM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.451	14.7	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.729	39.9	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	SB U-T		9.4	A
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	EB Thru		6.5	A
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.343	34.1	D
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.7	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	EB Right	0.019	12.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Table 6. Buildout (2027) No Project Intersection Operations (PM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.426	12.5	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.615	29.7	C
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	WB Right		9.5	A
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	WB Right		17.2	C
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.438	75.6	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.8	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Right	0.050	13.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

As shown in Table 5 and Table 6, all study area intersections operate at an acceptable level-of-service at buildout without the project traffic except for US-24 EB Ramps/Space Village Avenue (#5).

### US-24 EB Ramp/Space Village Avenue (#5)

This stop-controlled intersection operates at LOS D during the AM peak and LOS F during the PM peak hour. Queue analysis showed the 95-percentile queue is less than two vehicles in the PM peak hours for the deficient movement (southbound left-turn). Therefore, Matrix does not recommend any mitigation at this intersection.

**Table 7. Buildout (2027) Background Turn Lane Evaluations**

ID	Intersection	Movement	Roadway Classification	Design Speed (mph)	No. of Lanes	Turning Volume (vph)	Queue (ft)	Deceleration (ft)	Taper (ft)	Storage (ft)	Total (ft)	Required Improvement (ft) vs Improved Existing
1	Galley Rd/Peterson Rd EPC Signalized	NBR	Minor Arterial	40	1	817	165	155	160	165	480	-
		SBL	Minor Arterial	40	1	195	30	155	160	30	345	-
		WBL	Minor Arterial	40	2	768	174	155	320	174	650	-
		WBR	Minor Arterial	40	1	141	25	155	160	25	340	-
2	US-24/SH-94/Newt Dr CDOT Signalized	NBL (SH-94)	E-X	60	3	793	322	600	666	264	1530	One Additional Turn Lane
		NBR (SH-94)	E-X	60	1	4	2	600	222	0	820	-
		SBL (Newt Dr.)	F-R	35	2	44	30	0	192	25	215	-
		SBR (Newt Dr.)	F-R	35	1	461	0	0	96	25	120	-
		EBL (US-24)	E-X	60	2	428	273	600	444	214	1260	One Additional Turn Lane
		EBR (US-24)	E-X	60	1	835	0	600	222	0	820	-
		WBL (US-24)	E-X	70	1	8	3	600	222	25	845	-
		WBR (US-24)	E-X	70	1	69	28	600	222	0	820	-
		SBR to WBTAcceleration Lane	NR-A	70	1	461	0	1080 (Accel. Lane)	300		1380	-
EBR to SBTAcceleration Lane	E-X	60	1	835	0	960 (Accel. Lane)	222		1180	-		
5	US-24 EB Ramps/Space Village Ave CDOT Stop-Controlled	SBL	F-R	35	1	59	45	0	96	50	145	-
		SBR	F-R	35	1	45	6	0	96	50	145	-
		EBL	NR-C	40	1	336	34	0	120	336	455	5
		WBR	NR-C	40	1	38	0	Not Required				-

Design speed is based on the EPC ECM criteria.

The improvements for the buildout (2027) background scenario are in respect to the improvements for the existing scenario. In addition, it was assumed that the required improvements in the existing conditions have been addressed by the buildout year. Summary of recommended turn lane improvements are as follows:

#### US-24/SH-94/Newt Dr (#2)

- Triple northbound left-turn lanes. Include 666-ft of taper, 600-ft of deceleration and three 264-ft of storage lanes.
- Double eastbound left-turn lanes. Include 444-ft of taper, 600-ft of deceleration lane and two 216-ft storage lanes.

#### US-24 EB Ramps/Space Village Avenue (#5)

- A 5-ft extension of eastbound left turn.

## Buildout (2027) With Project Conditions

Buildout traffic volumes with the Lot 1 project traffic added are shown in Figure 17 and Figure 18 for AM and PM peak hour, respectively. The analysis also includes access points for Lot 1. The daily traffic volumes are shown in Figure 19. The intersection configurations are shown in Figure 20. Additionally, traffic from four adjacent developments, namely, Crossroad Mixed-Use, Crossroads North, Meadowbrook Park and Reagan Ranch were added to intersection of US-24/US-94/Newt Drive (#2) and Meadowbrook Parkway/Newt Drive (#6). An excerpt of the *Crossroads-Meadowbrook and Reagan Ranch TIS* can be found in Appendix F – Supporting Documents.

Figure 17. Buildout (2027) With Project Traffic Volumes (AM Peak Hour)

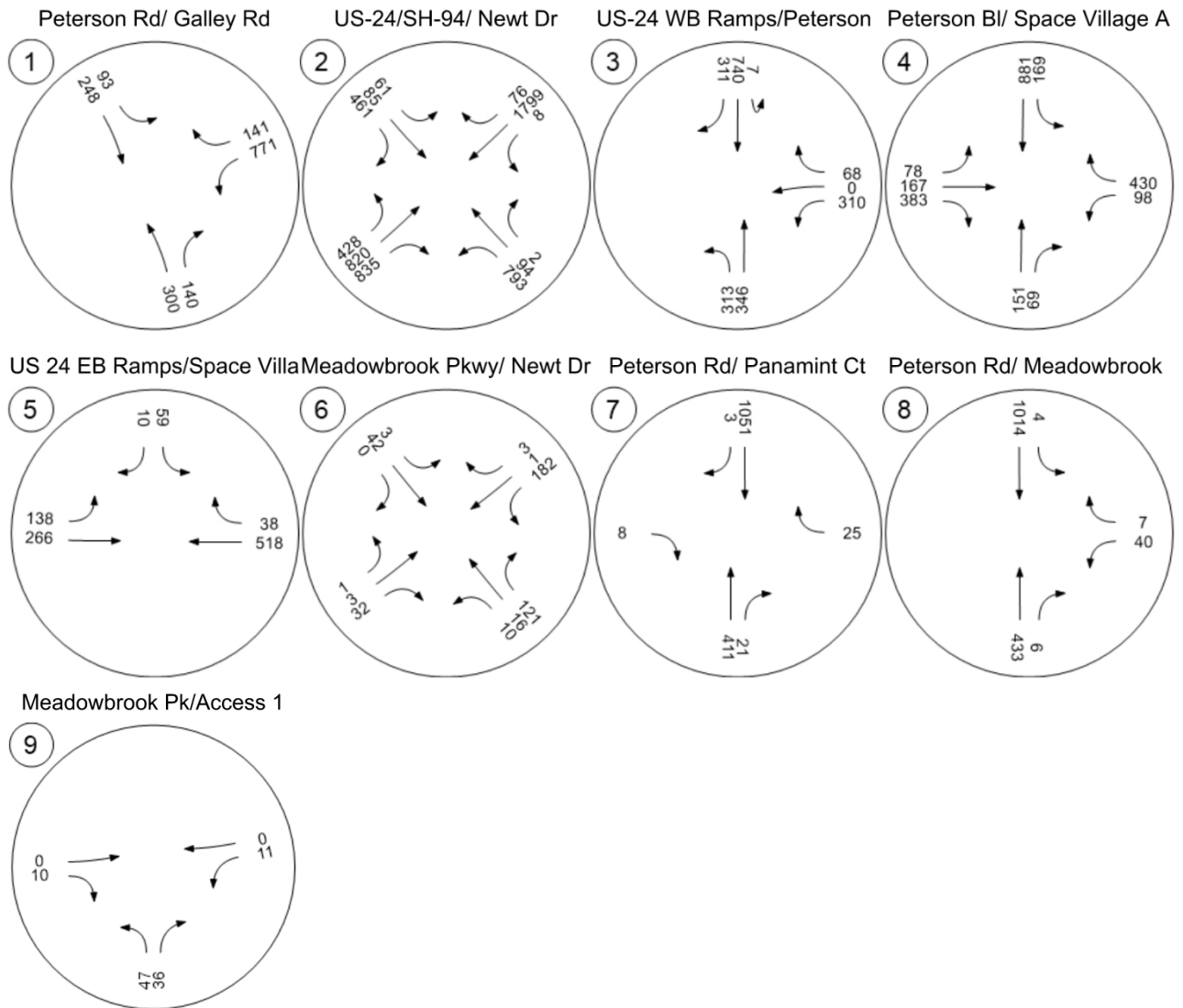


Figure 18. Buildout (2027) With Project Traffic Volumes (PM Peak Hour)

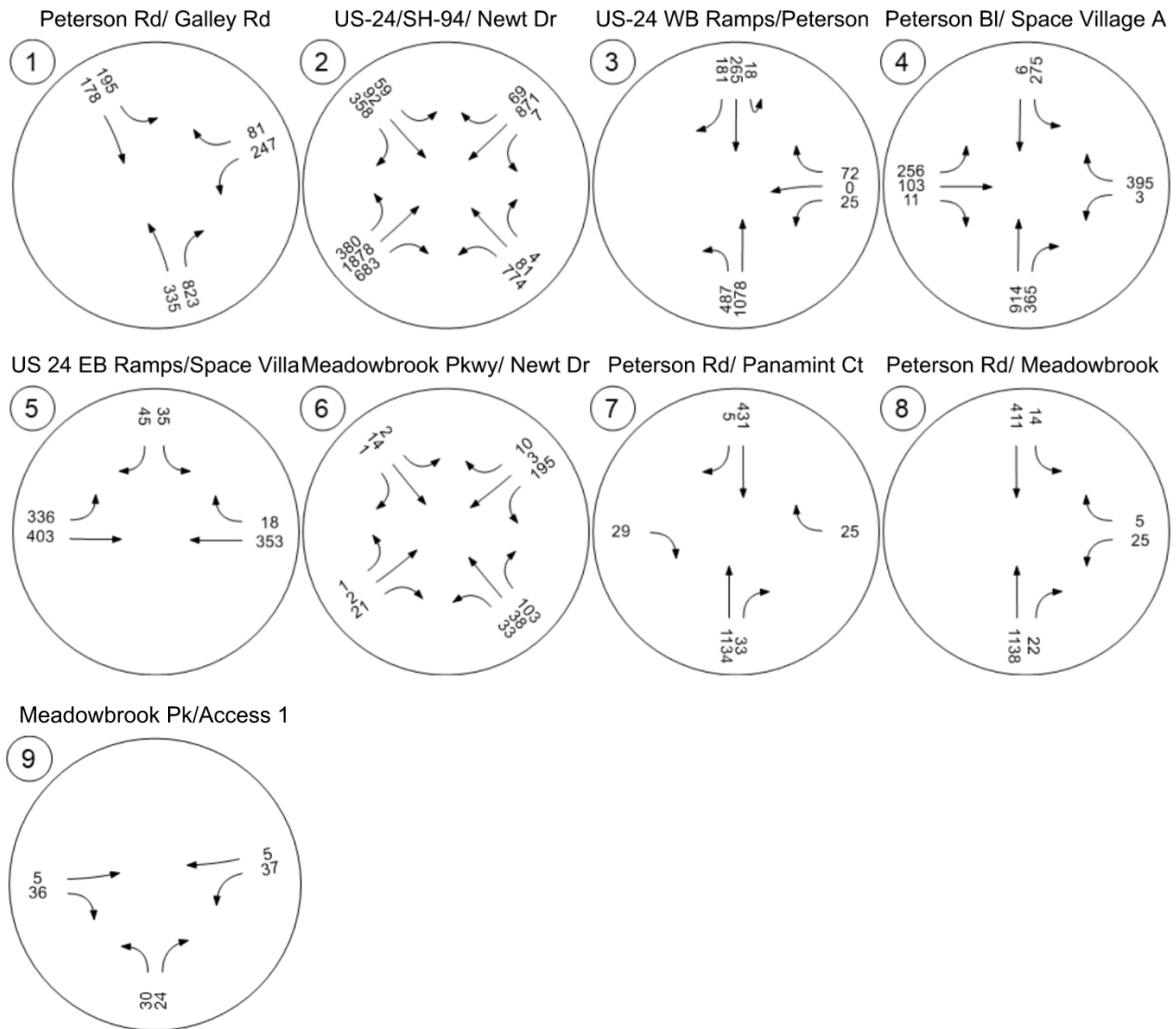


Figure 19. Buildout (2027) With Project Daily Traffic Volumes and Roadway Classification

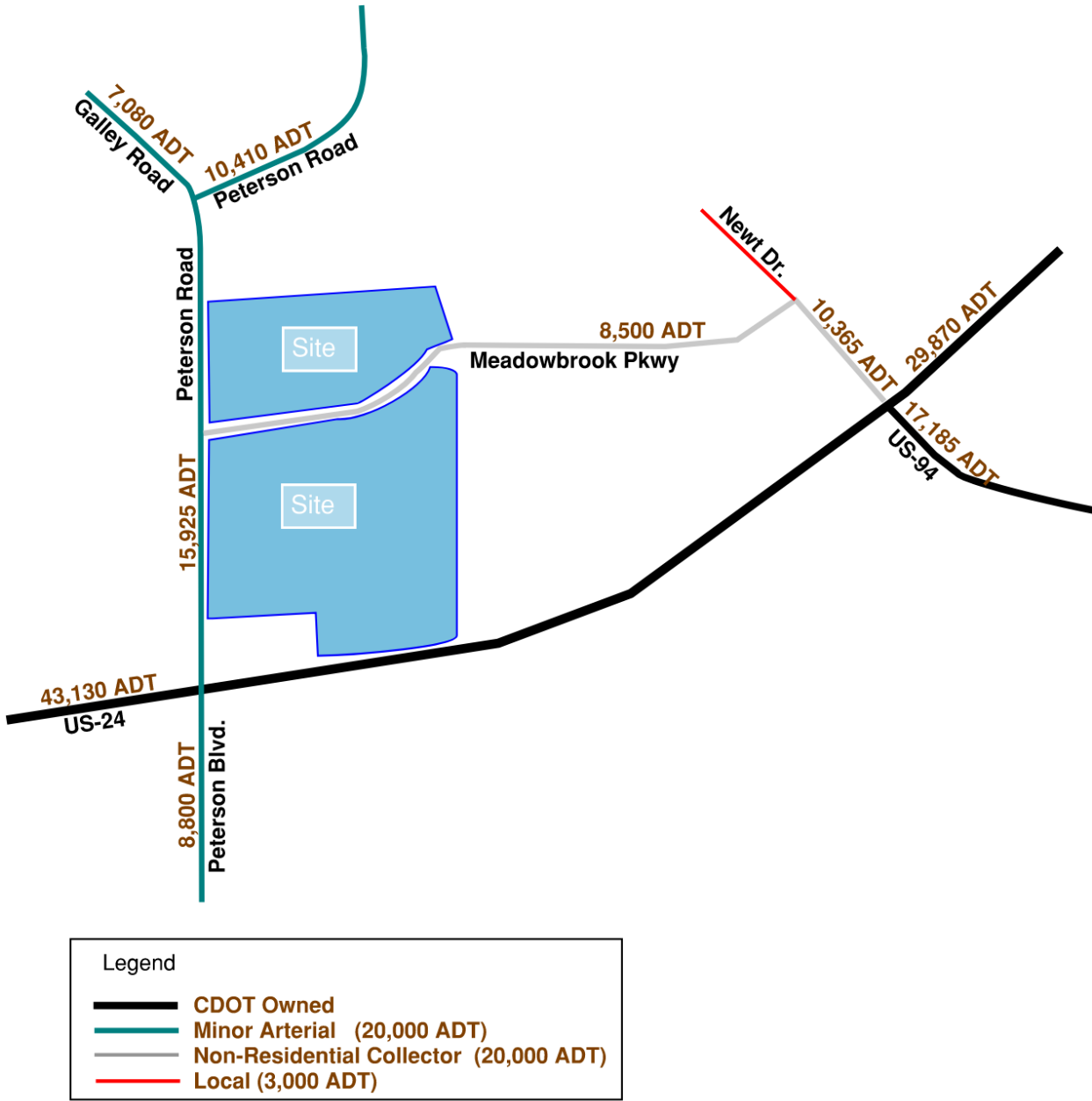
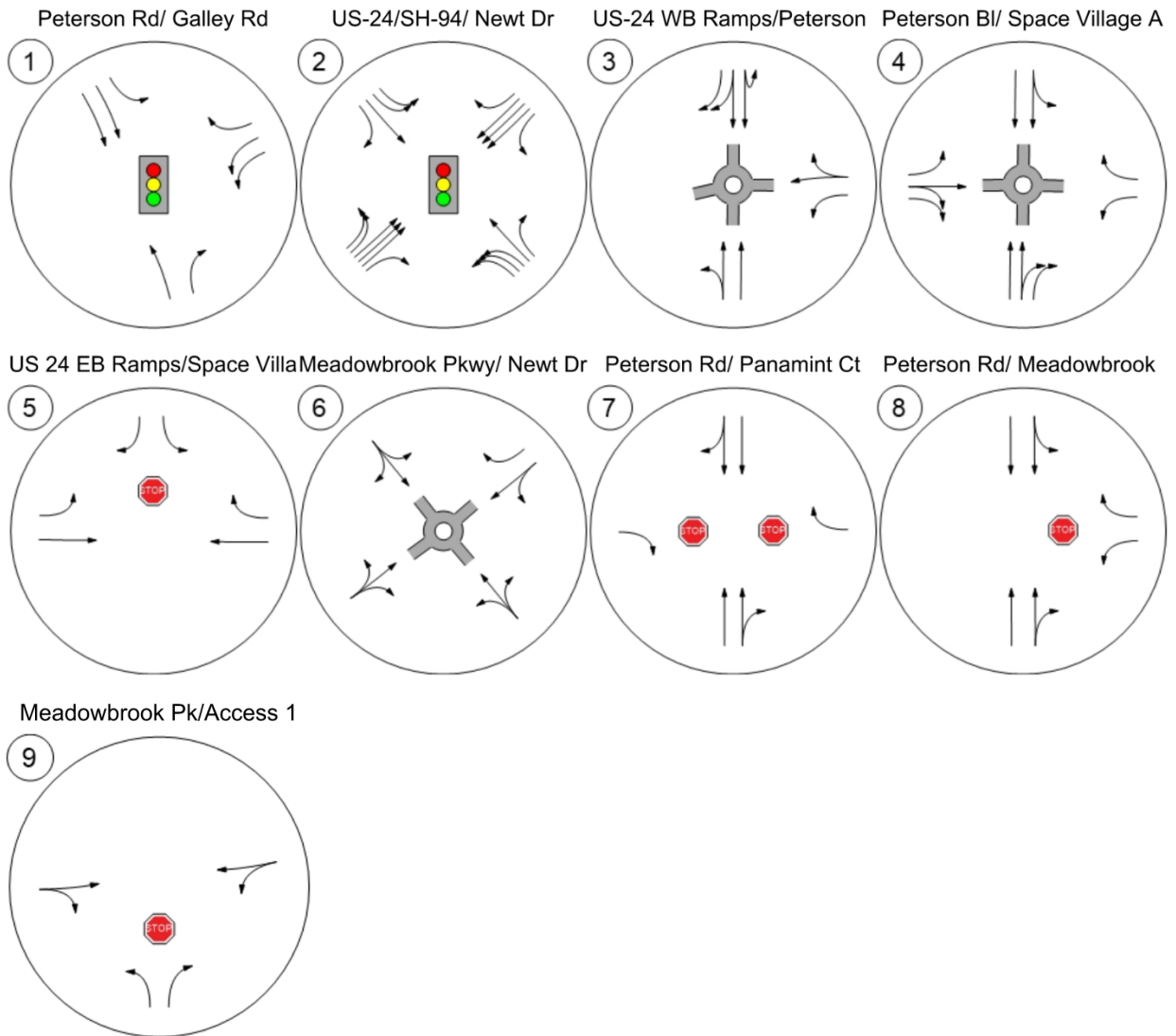


Figure 20. Buildout (2027) With Project Intersection Configurations



Analysis of the intersections and roadways for buildout conditions with the volumes and configurations shown above, results in the operations shown in Table 8 and Table 9.

**Table 8. Buildout (2027) With Project Intersection Operations (AM Peak Hour)**

Intersection Analysis Summary							
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.454	14.7	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.734	41.4	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	SB U-T		9.5	A
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	EB Thru		6.7	A
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.346	34.4	D
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.7	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	EB Right	0.019	12.9	B
8	Peterson Rd/ Meadowbrook Pk	Two-way stop	HCM 7th Edition	WB Left	0.190	24.4	C
9	Meadowbrook Pk/Access 1	Two-way stop	HCM 7th Edition	NB Left	0.052	8.9	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Table 9. Buildout (2027) With Project Intersection Operations (PM Peak Hour)**

Intersection Analysis Summary							
ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.431	12.6	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.618	30.0	C
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	WB Right		9.9	A
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	WB Right		19.3	C
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.445	77.3	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.9	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Right	0.064	14.1	B
8	Peterson Rd/ Meadowbrook Pk	Two-way stop	HCM 7th Edition	WB Left	0.248	48.7	E
9	Meadowbrook Pk/Access 1	Two-way stop	HCM 7th Edition	NB Left	0.039	9.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

As shown in Table 8 and Table 9, all study area intersections will operate at an acceptable LOS except for US-24 EB/Space Village Avenue (#5), and Peterson Road/Meadowbrook Parkway (#8).

### US-24 EB/Space Village Avenue (#5)

This intersection operates at LOS D during the AM peak and LOS F during the PM peak hours. Queue analysis showed the 95<sup>th</sup>-percentile queue is 1.84 vehicles in the PM peak hour. Since the queue is no more than two vehicles for the deficient movement (southbound left-turn), Matrix does not recommend any mitigation at this intersection.

### Peterson Road/Meadowbrook Parkway (#8)

This intersection operates at LOS E during the PM peak hour. The queue analysis showed the 95-percentile queue is less than two vehicles for the deficient movement (westbound left-turn) in just one hour during the day. Therefore, Matrix does not recommend any mitigation at this intersection. Note that the HCM LOS for stop-controlled intersection is based on the worst movement and it is not uncommon for motorists on the cross-street to experience delay for one hour during the day.

The turn lane evaluations are summarized in Table 10.

**Table 10. Buildout (2027) With Project Turn Lane Evaluations**

ID	Intersection	Movement	No. of Lanes	Roadway Classification	Design Speed (mph)	Turning Volume (vph)	Queue (ft)	Deceleration (ft)	Taper (ft)	Storage (ft)	Total (ft)	Improvement (ft) vs Buildout Background
1	Galley Rd/Peterson Rd EPC Signalized	NBR	1	Minor Arterial	40	823	167	155	160	167	480	-
		SBL	1	Minor Arterial	40	195	29	155	160	29	345	-
		WBL	2	Minor Arterial	40	771	174	155	320	174	650	-
		WBR	1	Minor Arterial	40	141	24	155	160	24	340	-
2	US-24/SH-94/Newt Dr CDOT Signalized	NBL (SH-94)	3	E-X	60	793	322	600	666	264	1530	-
		NBR (SH-94)	1	E-X	60	4	2	600	222	0	820	-
		SBL (Newt Dr.)	2	F-R	35	61	45	0	192	25	215	-
		SBR (Newt Dr.)	1	F-R	35	461	0	0	96	25	120	-
		EBL (US-24)	2	E-X	60	428	273	600	444	214	1260	-
		EBR (US-24)	1	E-X	60	835	0	600	222	0	820	-
		WBL (US-24)	1	E-X	70	8	4	600	222	25	845	-
		WBR (US-24)	1	E-X	70	76	32	600	222	0	820	-
		SBR to WBTAcceleration Lane	1	NR-A	70	461	0	1080 (Accel. Lane)	300		1380	-
EBR to SBTAcceleration Lane	1	E-X	60	835	0	960 (Accel. Lane)	222		1180	-		
5	US-24 EB Ramps/Space Village Ave CDOT Stop-Controlled	SBL	1	F-R	35	59	45	0	96	50	145	-
		SBR	1	F-R	35	45	6	0	96	50	145	-
		EBL	1	NR-C	40	336	34	0	120	336	455	-
		WBR	1	NR-C	40	38	0	Not Required			-	
7	Peterson Rd/ Panamint Ct EPC Stop-Controlled	NBR	1	Minor Arterial	35	33	0	Not Required			-	
		SBR	1	Minor Arterial	35	5	0	Not Required			-	
8	Peterson Rd/Meadowbrook Pkwy EPC Stop-Controlled	NBR	1	Minor Arterial	35	22	0	Not Required			-	
		SBL	1	Minor Arterial	35	14	4	Not Required			-	
		WBL	1	Collector	35	40	22	135	140	50	325	325
		WBR	1	Collector	35	7	22	Not Required			-	
9	Meadowbrook Pkwy/ Access #1 EPC Stop-Controlled	NBL (Access #1)	1	Collector	35	47	4	The Project will provide adequate storage to accommodate the vehicles in the queue.				
		NBR (Access #1)	1	Collector	35	36	3					

The improvements required under the buildout (2027) with-project scenario build on those identified for the buildout (2027) background scenario. The required improvements are summarized below:

**Peterson Road/Meadowbrook Parkway (#8)**

- A 325-ft westbound left-turn lane. Include 135-ft taper, 140-ft of deceleration and 50-ft of storage.

**Meadowbrook Parkway/Access #1 (#9)**

- A northbound left-turn lane. The Project will provide adequate storage to accommodate the vehicles in the queue.
- A northbound right-turn lane. The Project will provide adequate storage to accommodate the vehicles in the queue.
- The Project will provide a TWLTL (striped median) along Meadowbrook Parkway.

## Horizon (2045) No Project Conditions

The horizon year traffic volumes without the project are shown in Figure 21 and Figure 22, and daily traffic volumes are shown in Figure 23. To calculate the background volumes, an annual growth rate of 0.7% was applied to the collected counts from 2009-2023 at Peterson Road N/O SH 24. The collected counts did not account for 2020 (COVID-19 pandemic); therefore, this did not affect any of the calculations. The growth rate chosen is 0.7% considering the road is not a highway and is considerably closer to the project. It additionally represents the smallest percentage growth rate of all the other calculations. The growth rate was used to calculate the growth factor for the horizon year (2045) which is 1.1754. Moreover, traffic from four adjacent developments adjacent to Cimarron Hills namely, Crossroad Mixed-Use, Crossroads North, Meadowbrook Park and Reagan Ranch were added to intersection of US-24/US-94/Newt Drive (#2) and Meadowbrook Parkway/Newt Drive (#6) to better estimate the future conditions.

Figure 21. Horizon (2045) No Project Traffic Volumes (AM Peak Hour)

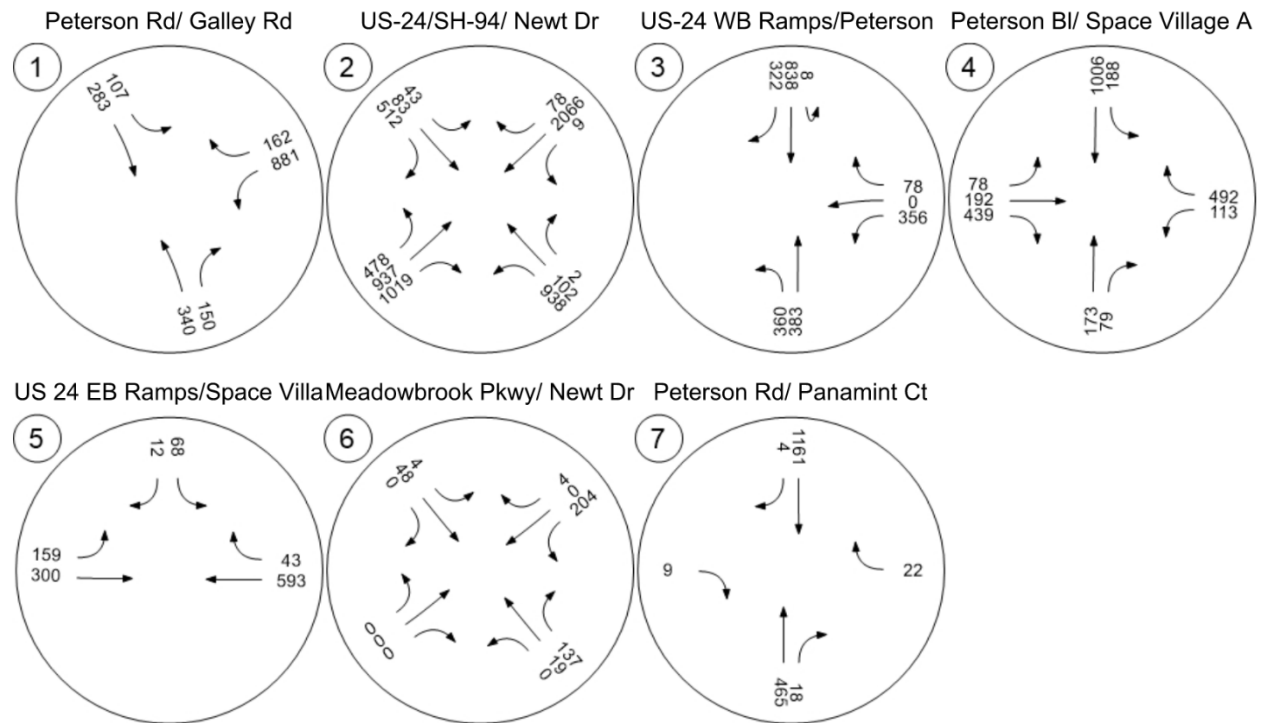
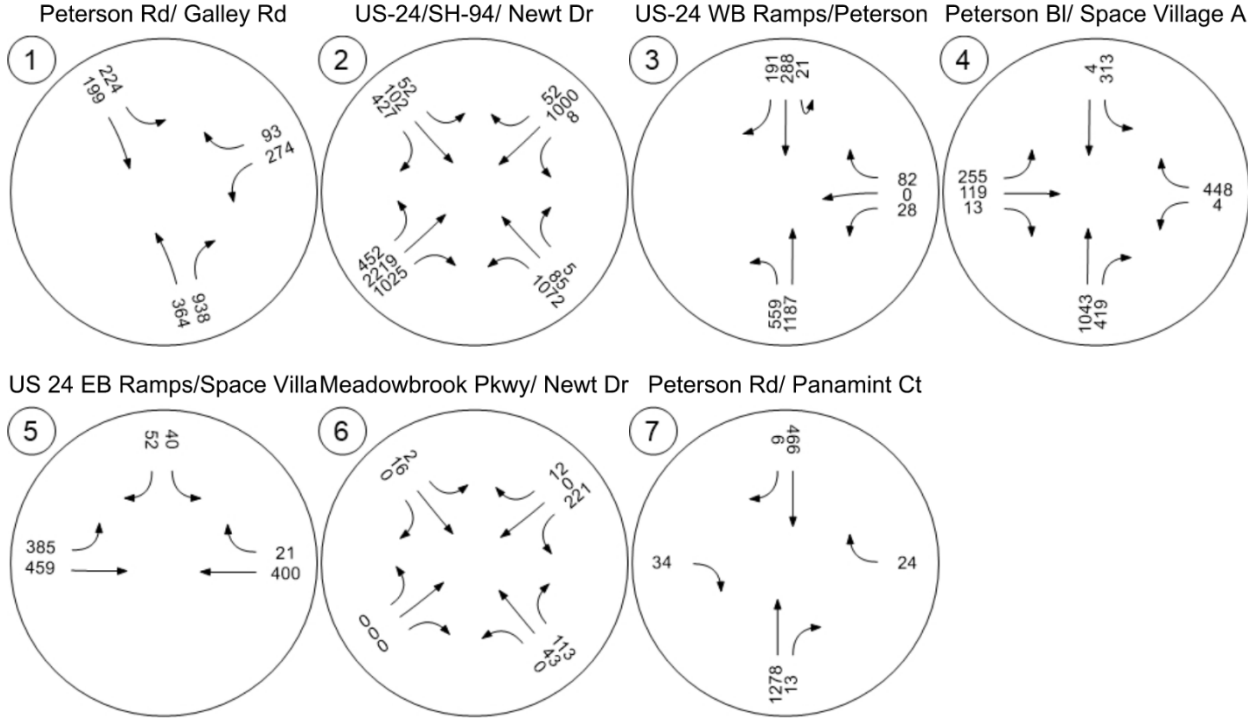


Figure 22. Horizon (2045) No Project Traffic Volumes (PM Peak Hour)

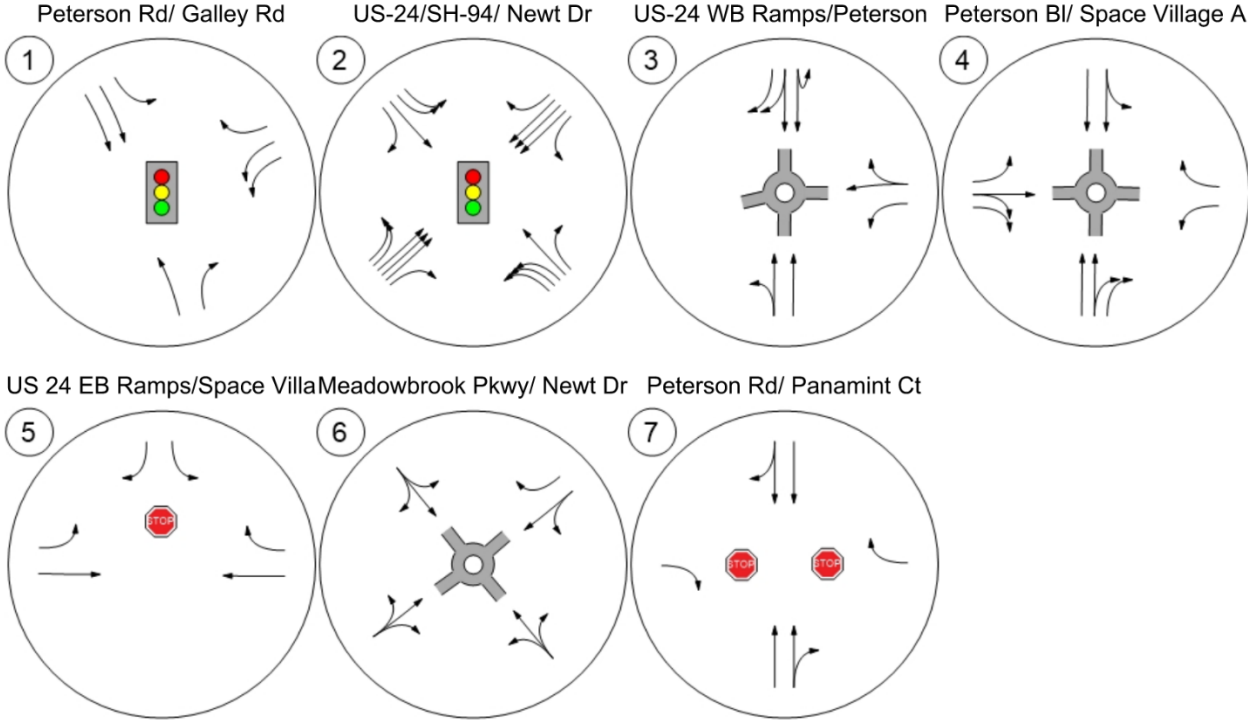


**Figure 23. Horizon (2045) No Project Daily Traffic Volumes**



The assumed intersection configurations are shown in Figure 24. The operations of the study area intersections in the horizon background (no project) scenario are shown in Table 11 and Table 12.

Figure 24. Horizon (2045) No Project Intersection Configurations



**Table 11. Horizon (2045) No Project Intersection Operations (AM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	NB Thru	0.519	15.7	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.836	41.9	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	SB U-T		12.7	B
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	EB Thru		6.4	A
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.527	56.1	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.8	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	EB Right	0.024	13.7	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Table 12. Horizon (2045) No Project Intersection Operations (PM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.485	13.0	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.760	43.8	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	WB Right		12.0	B
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	NB Thru		14.3	B
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.756	170.0	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		3.9	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Right	0.068	15.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

As shown in Table 11 and Table 12, all intersections operate at acceptable LOS except for the intersection of US-24 EB Ramps/Space Village Avenue (#5). This stop-controlled intersection

operates at LOS F during both the AM and PM peak hours. Queue analysis showed the 95<sup>th</sup>-percentile queue is three vehicles in both the AM and PM peak hours. Since the queue is only three vehicles for the deficient movement (southbound left-turn), Matrix does not recommend any mitigation at this intersection.

Turn lane evaluations are summarized in Table 13.

**Table 13. Horizon (2045) No Project Turn Lane Evaluations**

ID	Intersection	Movement	Roadway Classification	Design Speed (mph)	No. of Lanes	Turning Volume (vph)	Queue (ft)	Deceleration (ft)	Taper (ft)	Storage (ft)	Total (ft)	Improvement (ft) vs Buildout Background
1	Galley Rd/Peterson Rd EPC Signalized	NBR	Minor Arterial	40	1	938	202	155	160	202	515	35
		SBL	Minor Arterial	40	1	224	39	155	160	39	355	10
		WBL	Minor Arterial	40	2	881	206	155	320	206	680	30
		WBR	Minor Arterial	40	1	162	29	155	160	29	345	5
2	US-24/SH-94/Newt Dr CDOT Signalized	NBL (SH-94)	E-X	60	3	1072	448	600	666	357	1625	90
		NBR (SH-94)	E-X	60	1	5	2	600	222	0	820	-
		SBL (Newt Dr.)	F-R	35	2	52	40	0	192	25	215	-
		SBR (Newt Dr.)	F-R	35	1	512	0	0	96	25	120	-
		EBL (US-24)	E-X	60	2	478	325	600	444	239	1285	25
		EBR (US-24)	E-X	60	1	1025	0	600	222	0	820	-
		WBL (US-24)	E-X	70	1	9	5	600	222	25	845	-
		WBR (US-24)	E-X	70	1	78	29	600	222	0	820	-
		SBR to WBT Acceleration Lane EBR to SBT	NR-A	70	1	512	0	1080 (Accel. Lane)	300	0	1380	-
Acceleration Lane	E-X	60	1	1025	0	960 (Accel. Lane)	222	0	1180	-		
5	US-24 EB Ramps/Space Village Ave CDOT Stop-Controlled	SBL	F-R	35	1	68	81	0	96	100	195	-
		SBR	F-R	35	1	52	7	0	96	50	145	-
		EBL	NR-C	40	1	385	45	0	120	385	505	40
		WBR	NR-C	40	1	43	0	Not Required			-	

Design speed is based on the EPC ECM criteria.

The improvements for the horizon (2045) background scenario are in respect to the improvements for the buildout (2027) total scenario. Summary of recommended turn lane improvements are as follows:

**Galley Road/Peterson Road (#1)**

- A 35-ft extension of northbound right-turn lane.
- A 10-ft extension of southbound left-turn lane.
- A 30-ft extension of westbound left-turn lane.
- A 5-ft extension of westbound right-turn lane.

**US-24/SH-94/Newt Dr (#2)**

- A 90-ft extension of northbound left-turn
- A 25-ft extension of eastbound left-turn lane.

**US-24 EB Ramps/Space Village Avenue (#5)**

- A 40-ft extension of eastbound left turn.

## Horizon (2045) With Project Conditions

The site trips associated with Tracts A and B, along with the traffic by Lot 1, have been combined to represent the total development impact. The AM and PM peak hour site trips of all three developments are shown in Figure 25 and Figure 26. The long-term daily site trips for this development are shown in Figure 27. When the project traffic from Lot 1, tract A and B is added to the 2045 traffic, the resulting AM, PM, and daily traffic volumes are as shown in Figure 28, Figure 29, and Figure 30.

Figure 25. Long-Term Site Trips (AM Peak Hour)

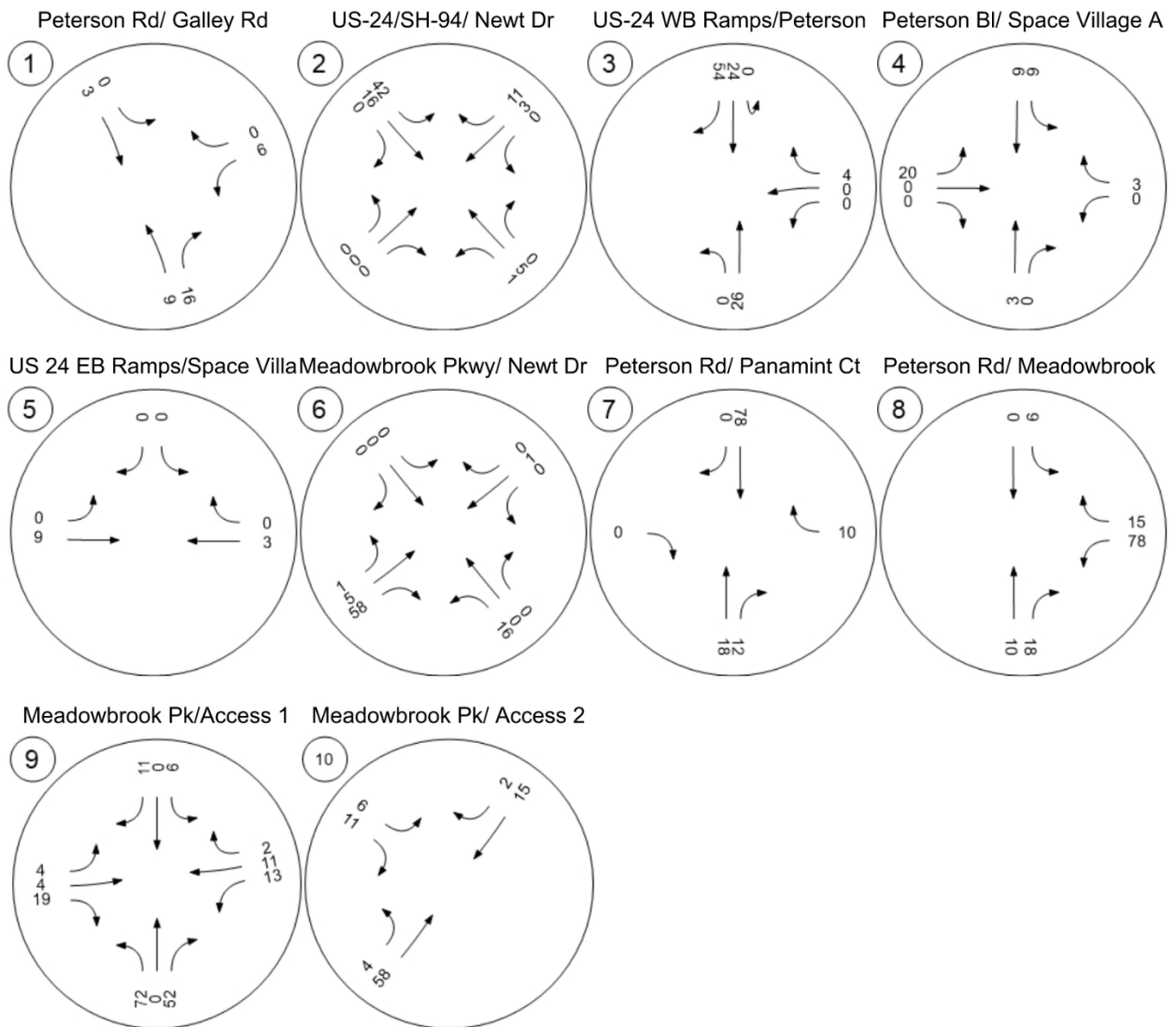


Figure 26. Long-Term Site Trips (PM Peak Hour)

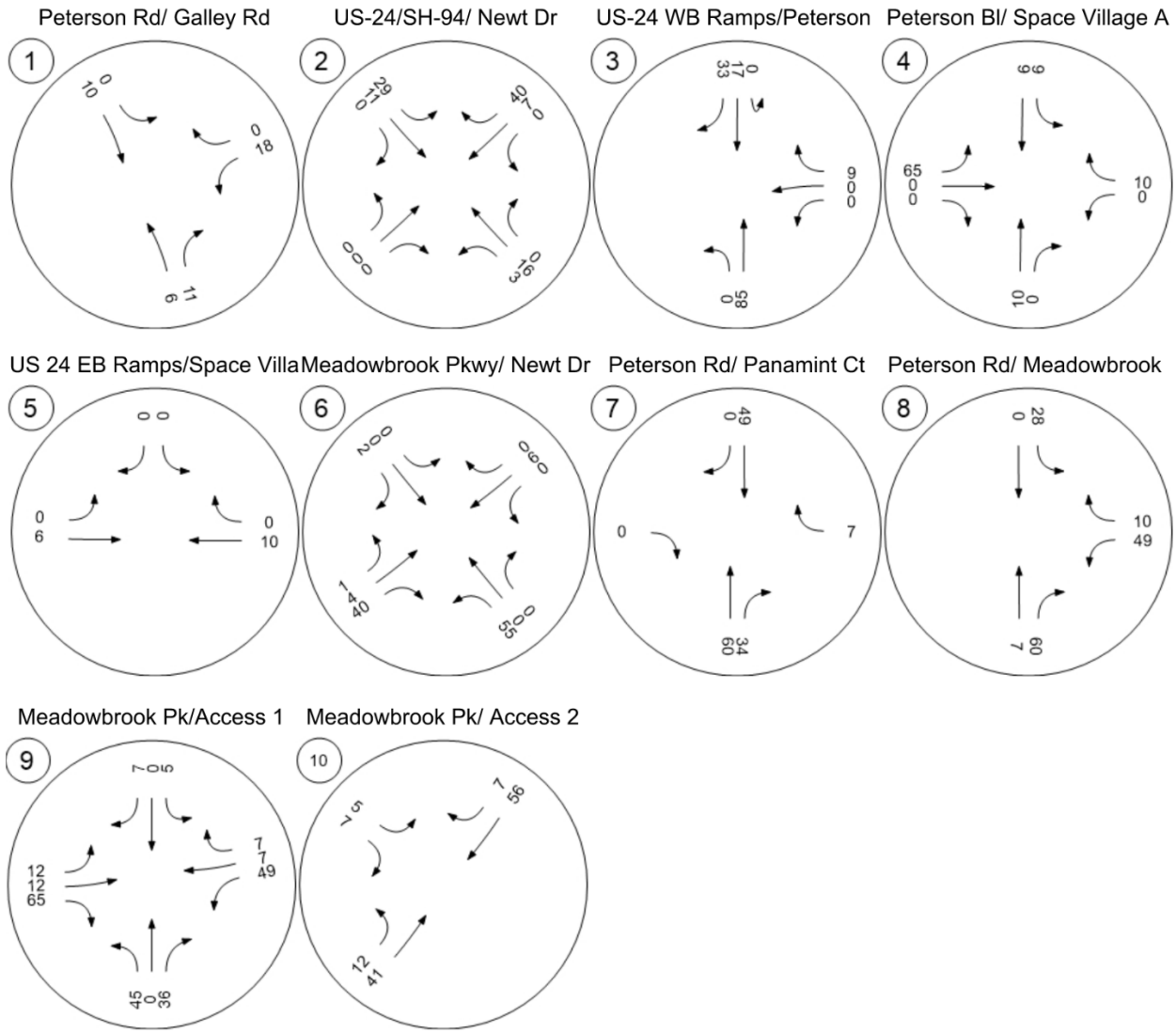


Figure 27. Long-Term Daily Site Trips



Figure 28. Horizon (2045) With Project Traffic Volumes (AM Peak Hour)

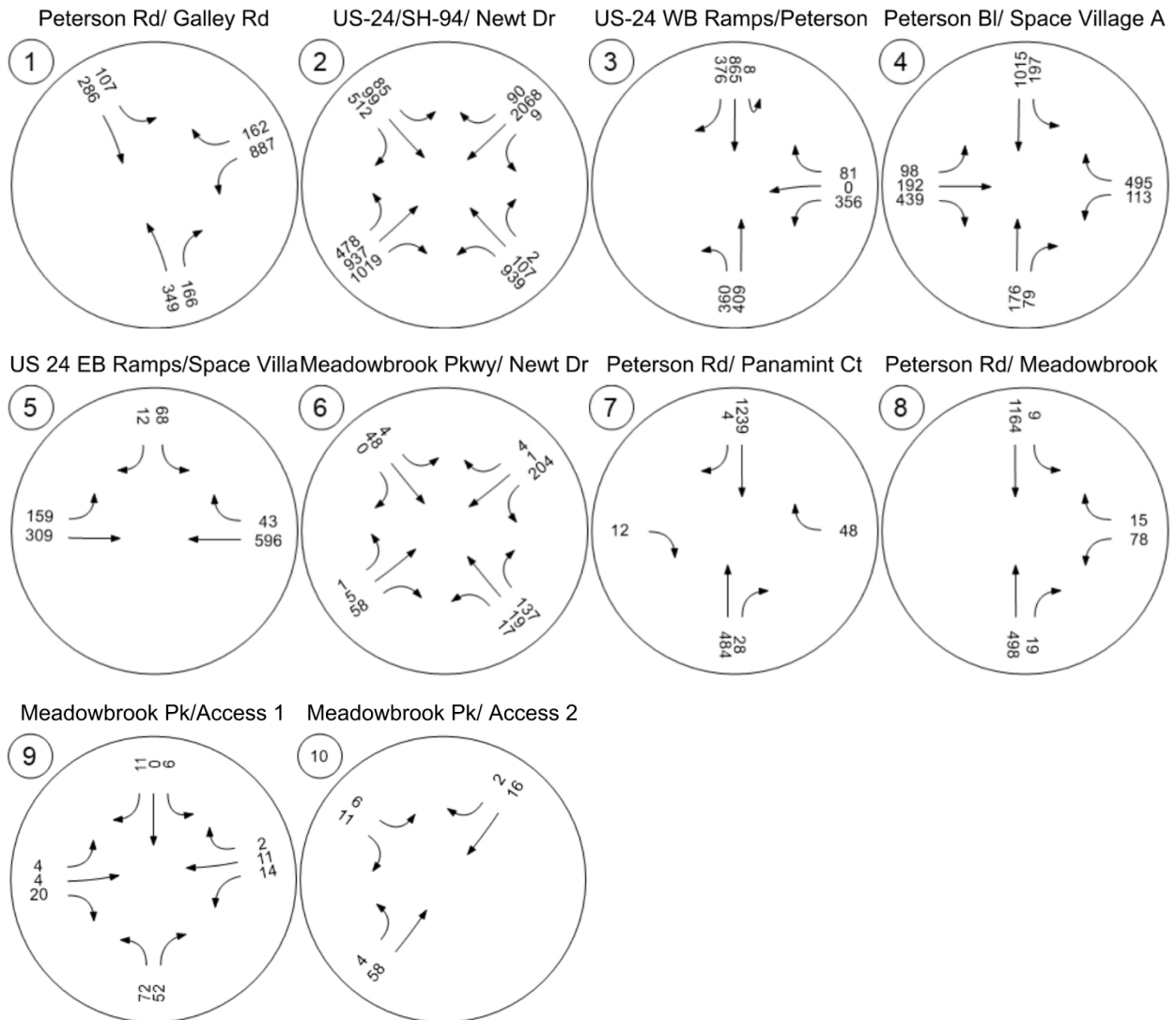
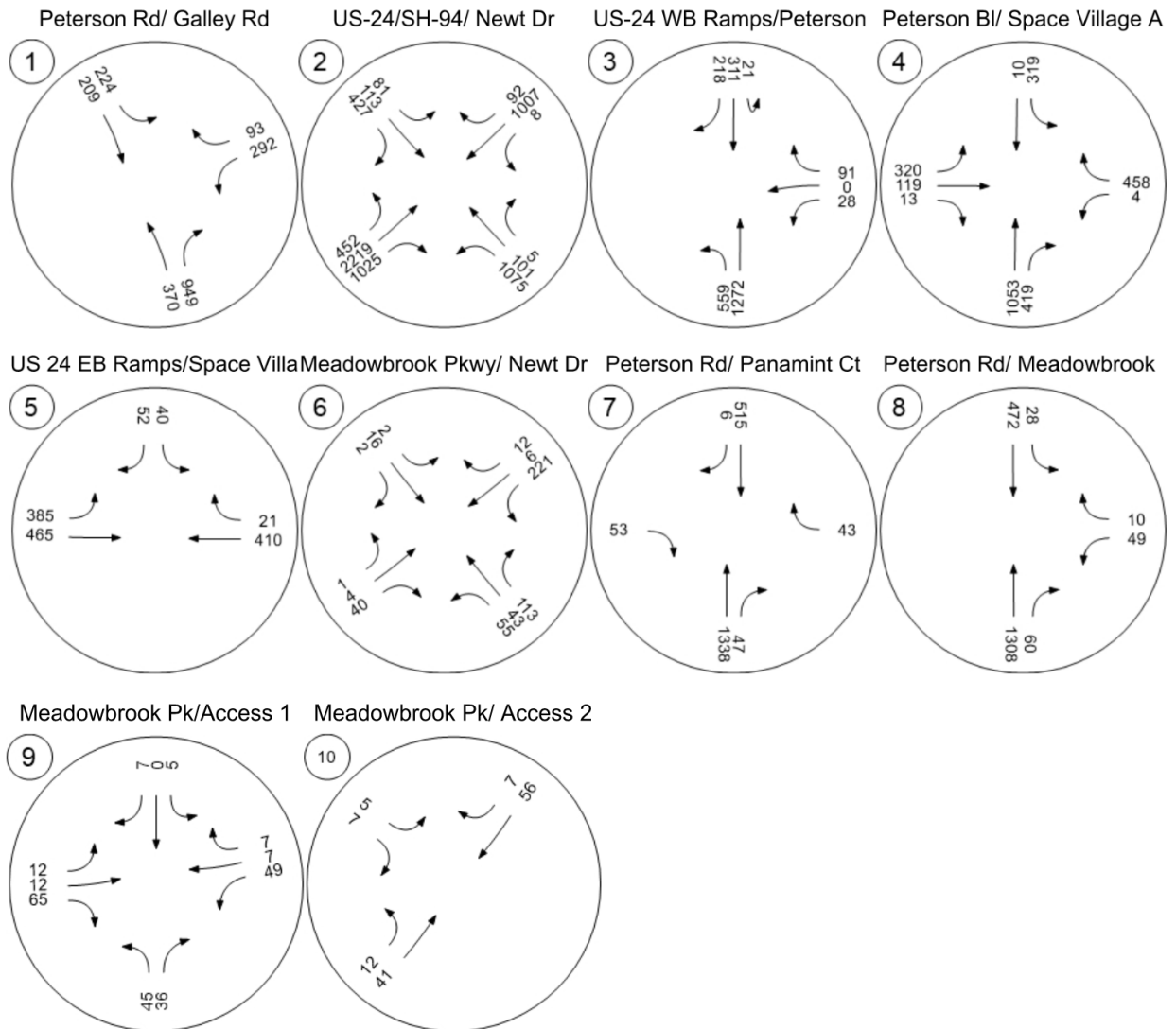


Figure 29. Horizon (2045) With Project Traffic Volumes (PM Peak Hour)

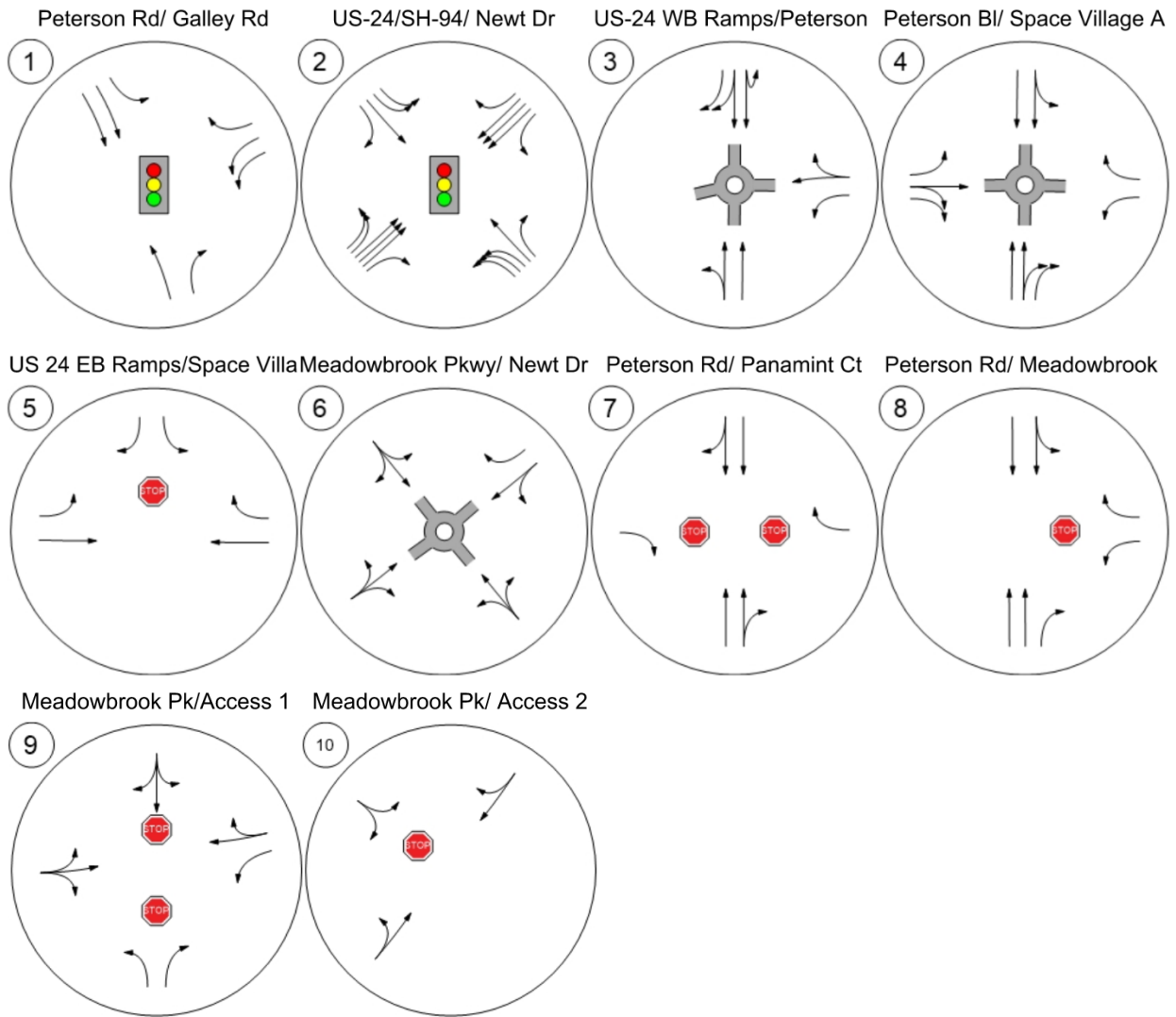


**Figure 30. Horizon (2045) With Project Daily Traffic Volumes**



The intersection configurations are shown in Figure 31. Analysis of the intersections and roadways for the horizon conditions with the volumes and configurations shown above results in the operations shown in Table 14 and Table 15.

Figure 31. Horizon (2045) With Project Intersection Configurations



**Table 14. Horizon (2045) With Project Intersection Operations (AM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	NB Thru	0.526	15.8	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.846	45.2	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	SB U-T		13.3	B
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	EB Thru		6.6	A
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.537	57.9	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	EB Right		4.0	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	EB Right	0.033	14.4	B
8	Peterson Rd/ Meadowbrook Pk	Two-way stop	HCM 7th Edition	WB Left	0.481	42.9	E
9	Meadowbrook Pk/Access 1	Two-way stop	HCM 7th Edition	SB Left	0.008	9.4	A
10	Meadowbrook Pk/ Access 2	Two-way stop	HCM 7th Edition	EB Left	0.008	9.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

**Table 15. Horizon (2054) With Project Intersection Operations (PM Peak Hour)**

**Intersection Analysis Summary**

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Peterson Rd/ Galley Rd	Signalized	HCM 7th Edition	WB Left	0.493	13.1	B
2	US-24/SH-94/ Newt Dr	Signalized	HCM 7th Edition	SB Thru	0.767	46.0	D
3	US-24 WB Ramps/Peterson Rd	Roundabout	HCM 7th Edition	WB Right		13.2	B
4	Peterson Bl/ Space Village Av	Roundabout	HCM 7th Edition	NB Thru		16.5	C
5	US 24 EB Ramps/Space Village Av	Two-way stop	HCM 7th Edition	SB Left	0.779	179.7	F
6	Meadowbrook Pkwy/ Newt Dr.	Roundabout	HCM 7th Edition	WB Left		4.2	A
7	Peterson Rd/ Panamint Ct	Two-way stop	HCM 7th Edition	WB Right	0.133	16.8	C
8	Peterson Rd/ Meadowbrook Pk	Two-way stop	HCM 7th Edition	WB Left	0.735	137.0	F
9	Meadowbrook Pk/Access 1	Two-way stop	HCM 7th Edition	NB Left	0.068	10.3	B
10	Meadowbrook Pk/ Access 2	Two-way stop	HCM 7th Edition	EB Left	0.006	9.3	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

As shown in Table 14, and Table 15 all intersections operate at an acceptable LOS except for the intersection of US-24 EB ramps/Space Village Avenue (#5) and Peterson Road/Meadowbrook Parkway (#8).

**US-24 EB/Space Village Avenue (#5)**

This intersection operates at LOS F during the AM and PM peak hours. Queue analysis showed the 95-percentile queue is approximately three vehicles in both the AM and PM peak hours. Since the queue is only three vehicles for the deficient movement (southbound left-turn), Matrix does not recommend any mitigation at this intersection.

**Peterson Road/Meadowbrook Parkway (#8)**

This intersection operates at LOS E during the AM peak hour and LOS F during the PM peak hour. The queue analysis showed the 95<sup>th</sup>-percentile queue is only three vehicles for the deficient movement (westbound left-turn). Therefore, Matrix does not recommend any mitigation at this intersection. Note that the HCM LOS for stop-controlled intersection is based on the worst movement and it is not uncommon for motorists on the cross-street to experience delay for one hour during the day.

Turn lane evaluations are shown in Table 16.

**Table 16. Horizon (2045) With Project Turn Lane Evaluations**

ID	Intersection	Movement	No. of Lanes	Roadway Classification	Design Speed (mph)	Turning Volume (vph)	Queue (ft)	Deceleration (ft)	Taper (ft)	Storage (ft)	Total (ft)	Improvement (ft) vs Horizon Background
1	Galley Rd/Peterson Rd EPC Signalized	NBR	1	Minor Arterial	40	949	204	155	160	204	520	5
		SBL	1	Minor Arterial	40	224	40	155	160	40	355	-
		WBL	2	Minor Arterial	40	887	208	155	320	208	685	5
		WBR	1	Minor Arterial	40	162	29	155	160	29	345	-
2	US-24/SH-94/Newt Dr CDOT Signalized	NBL (SH-94)	3	E-X	60	1075	473	600	666	358	1625	-
		NBR (SH-94)	1	E-X	60	5	0	600	222	0	820	-
		SBL (Newt Dr.)	2	F-R	35	85	63	0	192	25	215	-
		SBR (Newt Dr.)	1	F-R	35	512	0	0	96	25	120	-
		EBL (US-24)	2	E-X	60	476	298	600	444	238	1280	-
		EBR (US-24)	1	E-X	60	1025	0	600	222	0	820	-
		WBL (US-24)	1	E-X	70	9	5	600	222	25	845	-
		WBR (US-24)	1	E-X	70	92	45	600	222	0	820	-
		SBR to WBT Acceleration Lane	1	NR-A	70	512	0	1080 (Accel. Lane)	300	0	1380	-
EBR to SBT Acceleration Lane	1	E-X	60	1025	0	960 (Accel. Lane)	222	0	1180	-		
5	US-24 EB Ramps/Space Village Ave CDOT Stop-Controlled	SBL	1	F-R	35	68	83	0	96	100	195	-
		SBR	1	F-R	35	52	8	0	96	50	145	-
		EBL	1	NR-C	40	385	45	0	120	385	505	-
		WBR	1	NR-C	40	43	0	Not Required			-	
7	Peterson Rd/ Panamint Ct EPC Stop-Controlled	NBR	1	Minor Arterial	35	47	0	Not Required			-	
		SBR	1	Minor Arterial	35	6	0	Not Required			-	
8	Peterson Rd/Meadowbrook Pkwy EPC Stop-Controlled	NBR	1	Minor Arterial	35	60	0	135	140	-	275	275
		SBL	1	Minor Arterial	35	28	2	Not Required			-	
		WBL	1	Collector	35	78	85	135	140	100	375	50
		WBR	1	Collector	35	15	2	Not Required			-	
9	Meadowbrook Pkwy/ Access #1 EPC Stop-Controlled	NBL (Access #1)	1	Collector	35	72	7	The Project will provide adequate storage to accommodate the vehicles in the queue.				
		NBR (Access #1)	1	Collector	35	52	4					

The improvements for the horizon (2045) total scenario are in respect to the improvements for the horizon (2045) background scenario. Summary of recommended turn lane improvements are as follows:

**Galley Road/Peterson Road (#1)**

- A 5-ft extension of northbound right-turn lane.
- A 5-ft extension of westbound left-turn lane.

**Peterson Road/Meadowbrook Parkway (#8)**

- A 275-ft northbound right-turn lane. Include 140-ft of taper and 135-ft of deceleration lane.
- A 50-ft extension of westbound left-turn lane.

## Intersection/Access Spacing and Sight Distance

Access spacing within the proposed development has been planned in accordance with the requirements established in the El Paso County ECM. As specified in Table 2-7, Roadway Design Standards for Urban Collectors and Locals, the minimum required spacing is 660-ft for non-residential collectors and 330-ft when intersecting local roads. The intersection of Meadowbrook Pkwy/Access 1 (#9) and Meadowbrook Pkwy/Access 2 (#10) are within the minimum access spacing of 330-ft. A deviation is requested for the intersection spacing between Meadowbrook Parkway and the nearest intersection along Peterson Road since it does not meet minimum spacing of a quarter mile. For more information regarding the deviation request, please see the summary of requested deviations at the end of this report.

As for the sight distance, the minimum sight distance according to EPC ECM Table 2-33 for a roadway with posted speed limit of 30 mph is 200-ft. The sight distance for the proposed intersection of Peterson Road/Meadowbrook Pkwy (#8) complies with EPC standards. An exhibit showing the sight distance is provided in Appendix F – Supporting Documents.

## Conclusions and Recommendations

This study evaluates the transportation impacts of the proposed Cimarron Hills Southeast Filing No.1 development through existing conditions, full buildout (2027), and horizon (2045) year. The analysis included 10 off-site and internal intersections, identified necessary improvements, and incorporated traffic growth from adjacent developments and the existing traffic. Traffic forecasts and external trip distribution were developed in coordination with El Paso County using conservative assumptions and regionally accepted methodologies.

The findings indicate that the transportation network can accommodate the demand with strategic improvements in the interim analysis (2027). Intersection operation analysis shows that all intersections will operate at an acceptable LOS except for US-24 EB Ramps/Space Village Avenue (#5) which is deficient in the existing, buildout, and horizon conditions. Moreover, Peterson Road/Meadowbrook Parkway (#8) operates at a deficient LOS in both buildout (2027) and horizon (2045) years. These two stop-controlled intersections did not meet signal warrants, and the queue analysis showed the 95<sup>th</sup> - percentile queue is less than three vehicles for the deficient movement. Note that the HCM LOS for stop-controlled intersections is based on the worst movement and it is not uncommon for motorists on the cross-street to experience delay for one or two hours a day in an urban setting. Therefore, Matrix does not recommend any mitigation at these intersections. It should also be noted that the intersection of Peterson Road/Panamint Ct (#7) is analyzed as a right-in right-out with the construction of the project while it will serve as an access point to the planned development. A future traffic letter should study the access points for Tracts A and B as more information about the upcoming phases becomes available.

The summary of required improvements for the existing, buildout and horizon scenarios is shown in Table 17. All acceleration and deceleration lanes were designed per the EPC ECM criteria and CDOT SHAC. The Project will be responsible for the extension of Meadowbrook Parkway to Peterson Road by the buildout (2027) year and is not reimbursable under the MTCP.

**Table 17. Summary of Required Improvements**

ID	Intersection	Improvement	Year	Responsibility
2	US-24/SH-94/Newt Dr	A 250-ft extension of northbound left-turn.	Existing	The Project has no responsibility for these improvements.
		A 485-ft extension of southbound right to west bound thru acceleration lane.		
		A 540-ft extension of eastbound right to southbound thru acceleration lane.		
5	US-24 EB Ramps/Space Village Ave	A 35-ft extension of eastbound left turn.		
2	US-24/SH-94/Newt Dr	Triple northbound left-turn lanes. Include 666-ft of taper, 600-ft of deceleration and three 264-ft of storage lanes.	Buildout (2027) Background	The Project has no responsibility for these improvements.
		Double eastbound left-turn lanes. Include 444-ft of taper, 600-ft of deceleration lane and two 216-ft storage lanes.		
5	US-24 EB Ramps/Space Village Ave	A 5-ft extension of eastbound left-turn lane.		
8	Peterson Rd/Meadowbrook Pkwy	The extension of Meadowbrook Parkway to an Urban Non-Residential Collector.	Buildout (2027) Total	The Project is responsible for these improvements.
		A 325-ft westbound left -turn lane. Include 140-ft taper, 135-ft of deceleration and 50-ft of storage.		
9	Meadowbrook Pkwy/Access #2	A northbound left-turn lane. The Project will provide adequate storage to accommodate the vehicles in the queue.	Total	The Project is responsible for these improvements.
		A northbound right-turn lane. The Project will provide adequate storage to accommodate the vehicles in the queue.		
1	Galley Rd/Peterson Rd	A 35-ft extension of northbound right-turn lane.	Horizon (2045) Background	The Project has no responsibility for these improvements.
		A 10-ft extension of southbound left-turn.		
		A 30-ft extension of westbound left-turn lane.		
		A 5-ft extension of westbound right-turn lane.		
2	US-24/SH-94/Newt Dr	A 90-ft extension of northbound left-turn.	Background	The Project has no responsibility for these improvements.
		A 25-ft extension of eastbound left-turn lane.		
5	US-24 EB Ramps/Space Village Ave	A 40-ft extension of eastbound left turn.		
1	Galley Rd/Peterson Rd	A 5-ft extension of northbound right-turn.	Horizon (2045) Total	The Project is responsible for these improvements.
		A 5-ft extension of westbound left-turn.		
		A 275-ft northbound right -turn lane. Include 140-ft taper and 135-ft of deceleration.		
		A 50-ft extension of westbound left-turn lane.		

Finally, the applicant is required to pay road impact fees to El Paso County. The County allows the applicant to pay three different upfront fee amounts. The applicant can either pay the full fee amount, a smaller upfront fee to the 5 mill Public Improvement District (PID), or an even smaller upfront fee amount to the 10 mill PID. The different fee amounts are shown in Table 18, calculated based on 301 multi-family dwelling units for Lot 1. Note that the number of units for the first phase is based on the current sketch plan. These amounts should be adjusted once more information regarding each phase becomes available. The applicant will choose which fee method to follow at the subdivision application. If the applicant chooses one of the PIDs, the PID will collect taxes over time. The road impact fee for this project is shown in Table 18. The road impact fees are an estimate based upon the current fee schedule. Road impact fees are calculated at time of payment, and the fee schedule is subject to change.

**Table 18. Road Impact Fee**

Cimarron Hills Southeast Mixed Use Filing No.1 (Lot 1)					
Land Use	Unit	No. Units	Full Fee	5 Mill PID	10 Mill PID
Multi-Family	Dwelling	301	\$ 778,085.00	\$ 473,172.00	\$ 168,259.00

The Tract A and B impact fee will be determined as more information becomes available regarding the land use during the future access permit process. A traffic letter or traffic memorandum is required for Tracts A and B to determine the trigger points for the improvements outlined in the TIS.

Finally, there were two deviation requests to El Paso County, and they are listed as follows:

1) MINIMUM RADII DESIGN CHARACTERISTICS

Requested Deviation: A deviation from 565' required minimum centerline curve radius. In addition, to the deviation in curve radius, there will be a 45' tangent length between them deviating from table 2-10 that requires a minimum 150' tangent length.

2) INTERSECTION SPACING ALONG ARTERIAL

Requested Deviation: A reduction of the quarter mile minimum intersection spacing along an arterial right-of-way. The spacing shall be approximately 750 feet from nearest road intersection along Peterson Road north of Meadowbrook Parkway.

## **Appendix A- Traffic Counts**

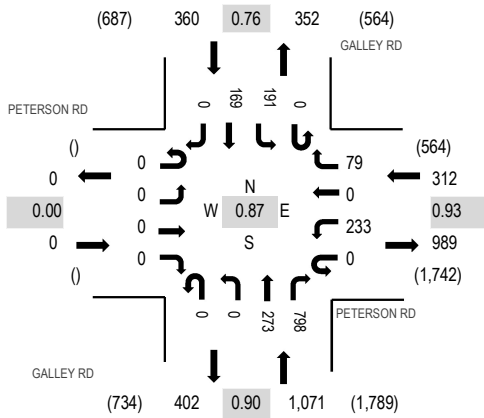
**Location:** 1 GALLEY RD & PETERSON RD PM

**Date:** Tuesday, April 2, 2024

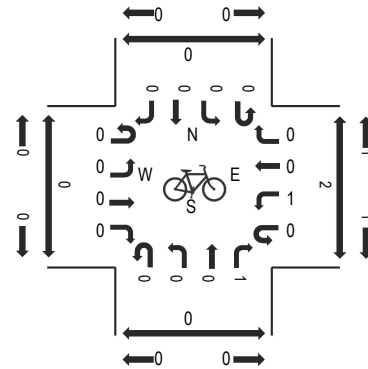
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**Peak 15-Minutes:** 04:00 PM - 04:15 PM

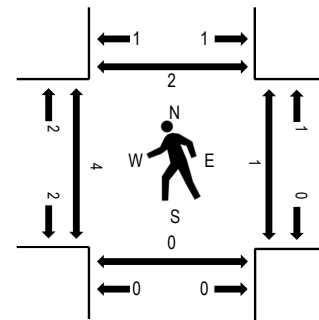
**Peak Hour - Motorized Vehicles**



**Peak Hour - Bicycles**



**Peak Hour - Pedestrians**

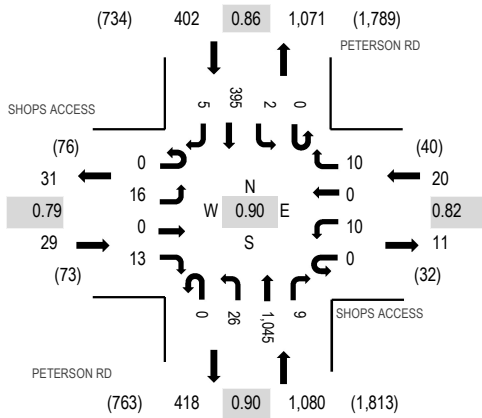


Note: Total study counts contained in parentheses.

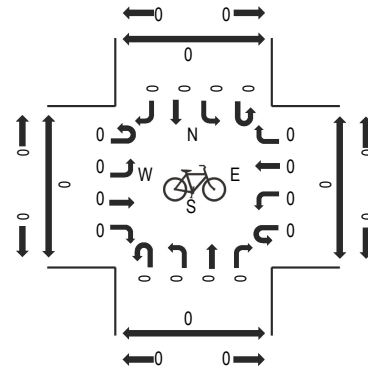
**Traffic Counts - Motorized Vehicles**

Interval Start Time	PETERSON RD Eastbound				PETERSON RD Westbound				GALLEY RD Northbound				GALLEY RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	59	0	25	0	0	76	221	0	61	58	0	500	1,743	0	1	0	0
4:15 PM	0	0	0	0	0	53	0	21	0	0	73	195	0	46	44	0	432	1,610	1	0	0	0
4:30 PM	0	0	0	0	0	61	0	18	0	0	58	217	0	43	33	0	430	1,534	2	0	0	1
4:45 PM	0	0	0	0	0	60	0	15	0	0	66	165	0	41	34	0	381	1,409	1	0	0	1
5:00 PM	0	0	0	0	0	60	0	19	0	0	41	151	0	44	52	0	367	1,297	0	0	0	0
5:15 PM	0	0	0	0	0	49	0	24	0	0	31	164	0	48	40	0	356		0	0	0	0
5:30 PM	0	0	0	0	0	37	0	17	0	0	27	151	0	39	34	0	305		0	0	0	0
5:45 PM	0	0	0	0	0	31	0	15	0	0	38	115	0	41	29	0	269		0	0	0	0
Count Total	0	0	0	0	0	410	0	154	0	0	410	1,379	0	363	324	0	3,040		4	1	0	2
Peak Hour	0	0	0	0	0	233	0	79	0	0	273	798	0	191	169	0	1,743		4	1	0	2

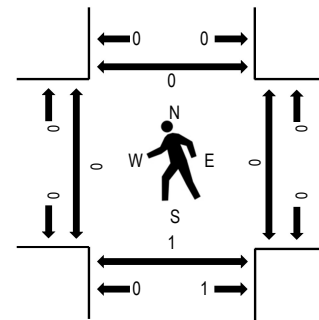
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	SHOPS ACCESS Eastbound				SHOPS ACCESS Westbound				PETERSON RD Northbound				PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	1	0	4	0	2	0	2	0	4	294	1	0	2	115	0	425	1,531	0	0	1	0
4:15 PM	0	5	0	5	0	3	0	4	0	7	259	2	0	0	94	3	382	1,433	0	0	0	0
4:30 PM	0	6	0	2	0	1	0	2	0	7	267	2	0	0	94	0	381	1,352	0	0	0	0
4:45 PM	0	4	0	2	0	4	0	2	0	8	225	4	0	0	92	2	343	1,240	0	0	0	0
5:00 PM	0	8	0	6	0	2	0	3	0	12	181	3	0	1	110	1	327	1,129	2	0	0	0
5:15 PM	0	5	0	2	0	3	0	2	0	8	188	4	0	3	85	1	301		0	0	0	0
5:30 PM	0	8	0	4	0	2	1	4	0	10	166	3	0	4	67	0	269		0	0	0	0
5:45 PM	0	7	1	3	0	2	0	1	0	11	145	2	0	0	59	1	232		0	0	0	1
Count Total	0	44	1	28	0	19	1	20	0	67	1,725	21	0	10	716	8	2,660		2	0	1	1
Peak Hour	0	16	0	13	0	10	0	10	0	26	1,045	9	0	2	395	5	1,531		0	0	1	0

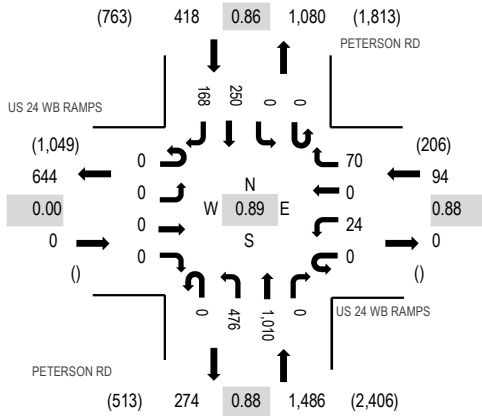
Location: 3 PETERSON RD & US 24 WB RAMPS PM

Date: Tuesday, April 2, 2024

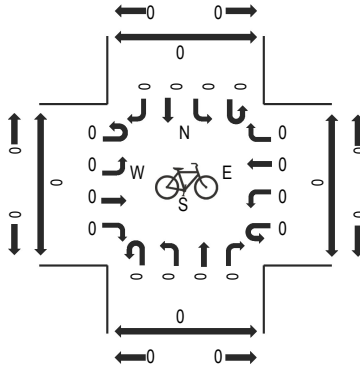
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

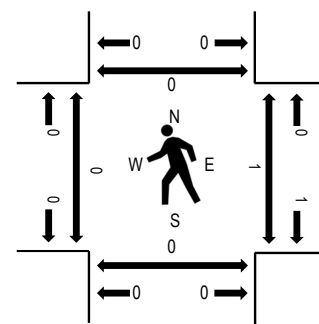
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians

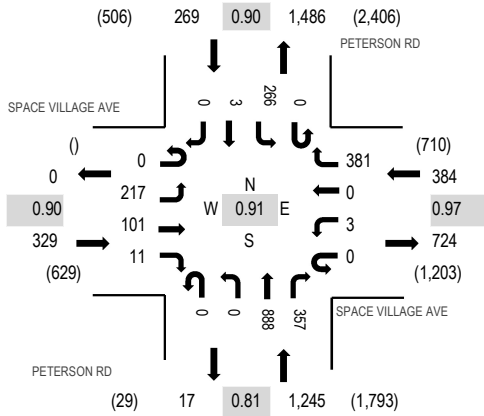


Note: Total study counts contained in parentheses.

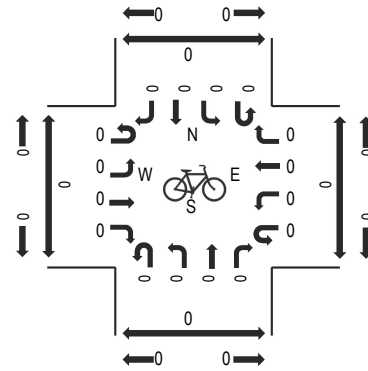
### Traffic Counts - Motorized Vehicles

Interval Start Time	US 24 WB RAMPS Eastbound				US 24 WB RAMPS Westbound				PETERSON RD Northbound				PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
4:00 PM	0	0	0	0	0	1	0	20	0	141	279	0	0	0	0	70	51	562	1,998	0	0	0	0
4:15 PM	0	0	0	0	0	15	0	24	0	110	244	0	0	0	0	56	46	495	1,835	0	1	0	0
4:30 PM	0	0	0	0	0	4	0	9	0	118	267	0	0	0	0	62	35	495	1,711	0	0	0	0
4:45 PM	0	0	0	0	0	4	0	17	0	107	220	0	0	0	0	62	36	446	1,540	0	0	0	0
5:00 PM	0	0	0	0	0	1	1	28	2	81	168	0	0	0	0	76	42	399	1,377	2	0	0	0
5:15 PM	0	0	0	0	0	8	0	24	0	73	176	0	0	0	0	50	40	371		0	1	0	0
5:30 PM	0	0	0	0	0	15	0	18	0	57	161	0	0	0	0	49	24	324		0	0	0	0
5:45 PM	0	0	0	0	0	1	0	16	0	60	142	0	0	0	0	37	27	283		0	0	0	0
Count Total	0	0	0	0	0	49	1	156	2	747	1,657	0	0	0	0	462	301	3,375		2	2	0	0
Peak Hour	0	0	0	0	0	24	0	70	0	476	1,010	0	0	0	0	250	168	1,998		0	1	0	0

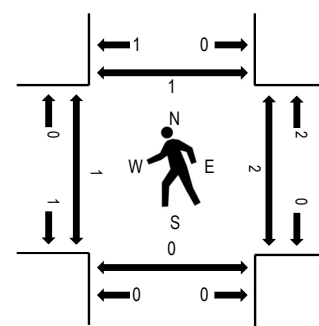
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	SPACE VILLAGE AVE Eastbound				SPACE VILLAGE AVE Westbound				PETERSON RD Northbound				PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	42	19	2	0	1	0	95	0	0	283	101	0	66	2	0	611	2,227	1	2	0	1
4:15 PM	0	52	22	4	0	1	0	89	0	0	213	91	0	68	1	0	541	2,023	0	0	0	0
4:30 PM	0	64	29	2	0	1	0	98	0	0	223	100	0	65	0	0	582	1,863	0	0	0	0
4:45 PM	0	59	31	3	0	0	0	99	0	0	169	65	0	67	0	0	493	1,603	0	0	0	0
5:00 PM	0	57	19	0	0	0	0	85	0	0	109	60	0	76	1	0	407	1,411	0	0	0	0
5:15 PM	0	42	36	1	0	0	0	67	0	0	140	37	0	58	0	0	381		0	0	0	0
5:30 PM	0	49	13	4	0	2	0	99	0	0	70	21	0	64	0	0	322		1	0	1	0
5:45 PM	0	47	31	1	0	1	0	72	0	0	83	28	0	36	2	0	301		0	0	0	0
Count Total	0	412	200	17	0	6	0	704	0	0	1,290	503	0	500	6	0	3,638		2	2	1	1
Peak Hour	0	217	101	11	0	3	0	381	0	0	888	357	0	266	3	0	2,227		1	2	0	1

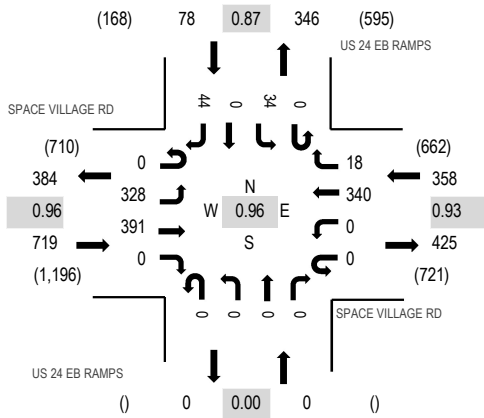
Location: 5 US 24 EB RAMPS & SPACE VILLAGE RD PM

Date: Tuesday, April 2, 2024

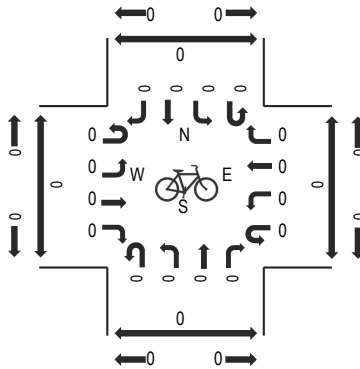
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

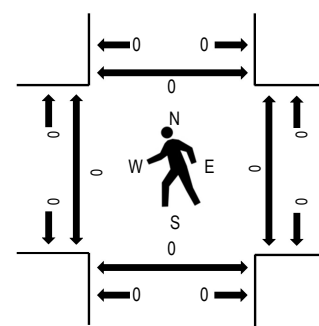
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians

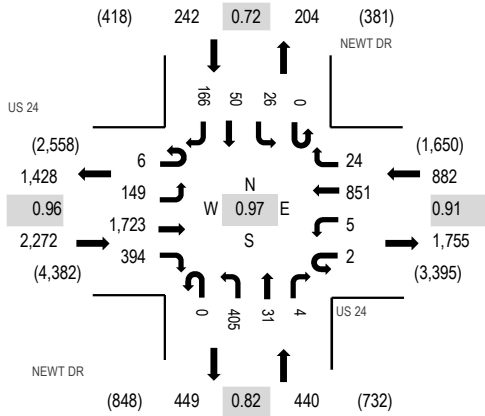


Note: Total study counts contained in parentheses.

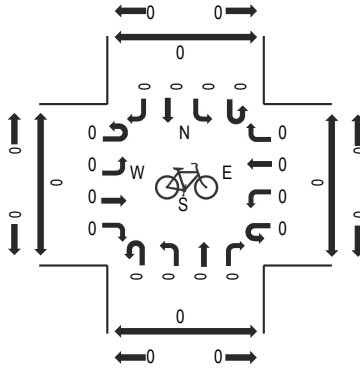
### Traffic Counts - Motorized Vehicles

Interval Start Time	SPACE VILLAGE RD Eastbound				SPACE VILLAGE RD Westbound				US 24 EB RAMPS Northbound				US 24 EB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	87	99	0	0	0	86	10	0	0	0	0	0	8	0	10	300	1,155	0	0	0	0
4:15 PM	0	84	103	0	0	0	82	2	0	0	0	0	0	9	0	8	288	1,109	0	0	0	0
4:30 PM	0	82	102	0	0	0	89	1	0	0	0	0	0	8	0	10	292	1,033	0	0	0	0
4:45 PM	0	75	87	0	0	0	83	5	0	0	0	0	0	9	0	16	275	968	0	0	0	0
5:00 PM	0	88	65	0	0	0	68	7	0	0	0	0	0	9	0	17	254	871	0	0	0	0
5:15 PM	0	55	76	0	0	0	62	3	0	0	0	0	0	11	0	5	212		0	0	0	0
5:30 PM	0	32	66	0	0	0	86	20	0	0	0	0	0	8	0	15	227		0	0	0	0
5:45 PM	0	43	52	0	0	0	57	1	0	0	0	0	0	9	0	16	178		0	0	0	0
Count Total	0	546	650	0	0	0	613	49	0	0	0	0	0	71	0	97	2,026		0	0	0	0
Peak Hour	0	328	391	0	0	0	340	18	0	0	0	0	0	34	0	44	1,155		0	0	0	0

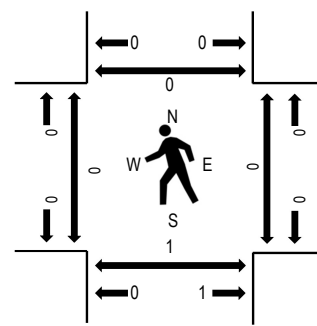
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	US 24 Eastbound				US 24 Westbound				NEWT DR Northbound				NEWT DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	1	36	389	97	0	1	197	9	0	105	11	1	0	8	9	46	910	3,769	0	0	0	0
4:15 PM	0	28	446	81	0	2	234	6	0	98	2	2	0	4	10	34	947	3,836	0	0	1	0
4:30 PM	2	34	404	98	1	2	184	6	0	131	11	0	0	10	10	29	922	3,809	0	0	0	0
4:45 PM	3	49	433	105	1	0	226	7	0	94	10	1	0	5	14	42	990	3,701	0	0	0	0
5:00 PM	1	38	440	110	0	1	207	5	0	82	8	1	0	7	16	61	977	3,413	0	0	0	0
5:15 PM	1	27	476	104	0	0	201	4	0	54	5	0	0	1	7	40	920		0	0	0	1
5:30 PM	1	29	415	87	0	2	189	7	0	49	4	0	0	4	6	21	814		0	0	0	1
5:45 PM	1	32	340	74	0	0	150	8	0	58	5	0	0	6	12	16	702		0	0	0	0
Count Total	10	273	3,343	756	2	8	1,588	52	0	671	56	5	0	45	84	289	7,182		0	0	1	2
Peak Hour	6	149	1,723	394	2	5	851	24	0	405	31	4	0	26	50	166	3,836		0	0	1	0

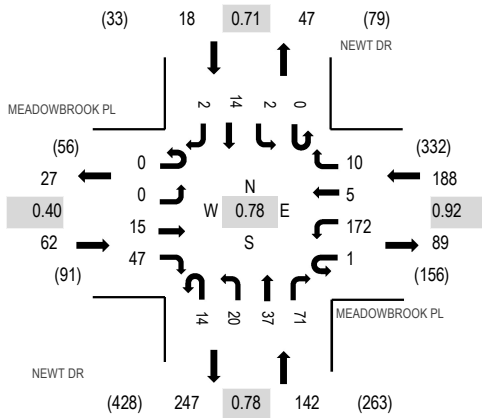
Location: 7 NEWT DR & MEADOWBROOK PL PM

Date: Tuesday, April 2, 2024

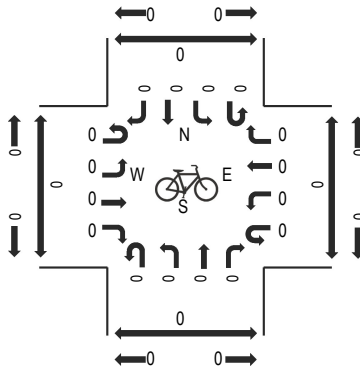
Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

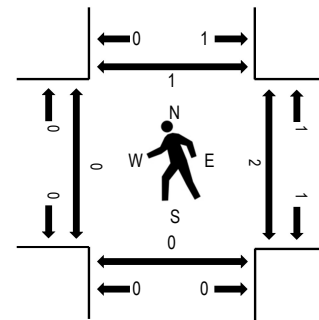
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	MEADOWBROOK PL Eastbound				MEADOWBROOK PL Westbound				NEWT DR Northbound				NEWT DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	1	6	0	48	2	1	4	7	8	17	0	1	2	0	97	375	0	2	0	0
4:15 PM	0	0	2	8	0	35	0	6	1	1	11	10	0	0	2	1	77	410	0	2	0	0
4:30 PM	0	0	2	6	0	42	3	3	4	3	8	19	0	1	5	0	96	410	0	0	0	1
4:45 PM	0	0	1	2	0	46	1	1	4	12	9	22	0	1	5	1	105	384	0	0	0	0
5:00 PM	0	0	10	31	1	49	1	0	5	4	9	20	0	0	2	0	132	344	0	0	0	0
5:15 PM	0	0	3	10	0	26	4	1	7	5	2	14	0	0	5	0	77		0	0	0	0
5:30 PM	0	0	1	4	0	24	6	2	8	3	5	12	0	2	3	0	70		0	0	0	0
5:45 PM	0	0	4	0	0	27	0	3	6	1	10	12	0	0	1	1	65		0	2	0	1
Count Total	0	0	24	67	1	297	17	17	39	36	62	126	0	5	25	3	719		0	6	0	2
Peak Hour	0	0	15	47	1	172	5	10	14	20	37	71	0	2	14	2	410		0	2	0	1

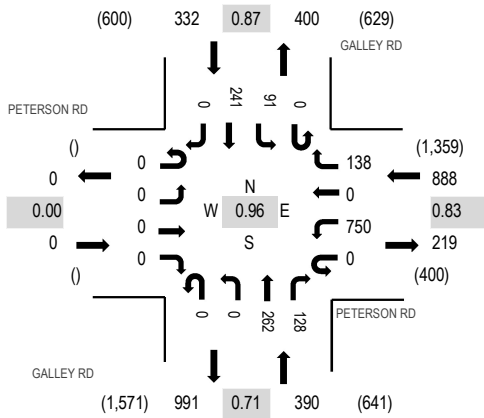
Location: 1 GALLEY RD & PETERSON RD AM

Date: Tuesday, April 2, 2024

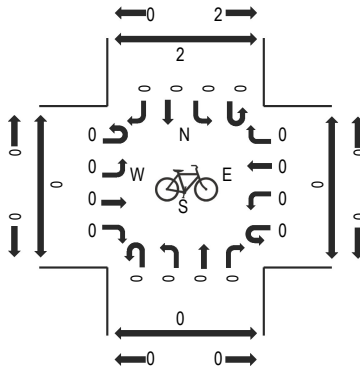
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

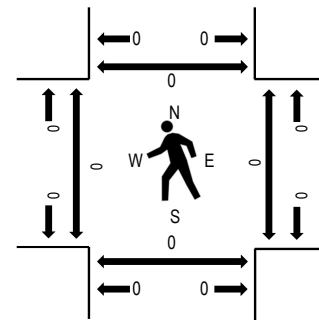
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	PETERSON RD Eastbound				PETERSON RD Westbound				GALLEY RD Northbound				GALLEY RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	0	0	157	0	19	0	0	41	25	0	12	61	0	315	1,560	0	0	0	0
7:15 AM	0	0	0	0	0	233	0	36	0	0	48	29	0	14	46	0	406	1,610	0	0	0	0
7:30 AM	0	0	0	0	0	175	0	33	0	0	101	37	0	18	56	0	420	1,473	0	0	0	0
7:45 AM	0	0	0	0	0	190	0	34	0	0	70	27	0	32	66	0	419	1,278	0	0	0	0
8:00 AM	0	0	0	0	0	152	0	35	0	0	43	35	0	27	73	0	365	1,040	0	0	0	0
8:15 AM	0	0	0	0	0	96	0	21	0	0	42	38	0	22	50	0	269		0	0	0	0
8:30 AM	0	0	0	0	0	69	0	25	0	0	34	21	0	27	49	0	225		0	0	0	0
8:45 AM	0	0	0	0	0	67	0	17	0	0	30	20	0	16	31	0	181		0	0	0	0
Count Total	0	0	0	0	0	1,139	0	220	0	0	409	232	0	168	432	0	2,600		0	0	0	0
Peak Hour	0	0	0	0	0	750	0	138	0	0	262	128	0	91	241	0	1,610		0	0	0	0

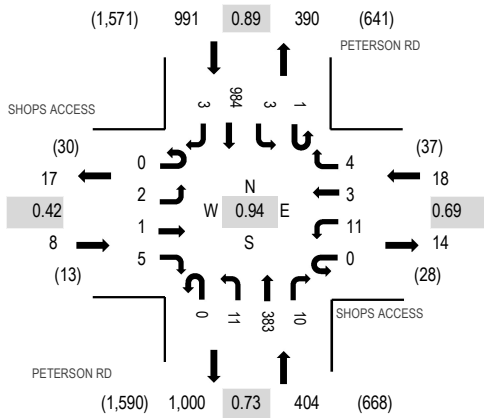
Location: 2 PETERSON RD & SHOPS ACCESS AM

Date: Tuesday, April 2, 2024

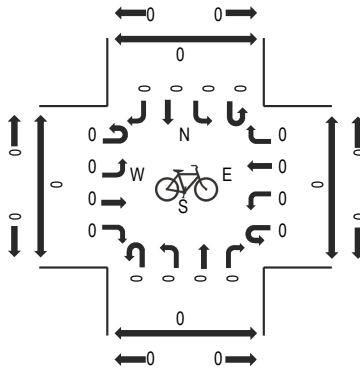
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

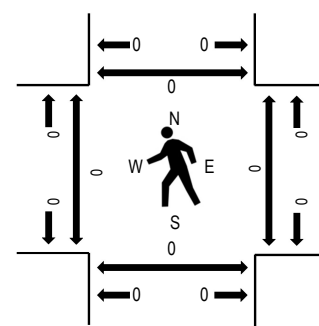
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians

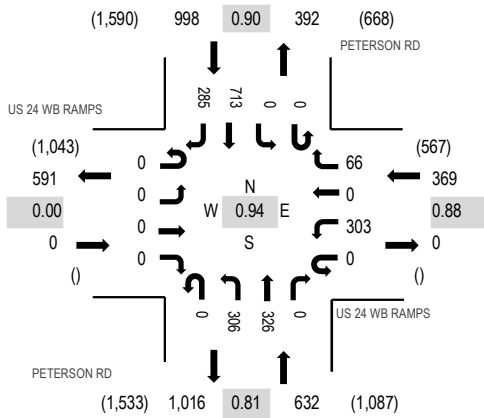


Note: Total study counts contained in parentheses.

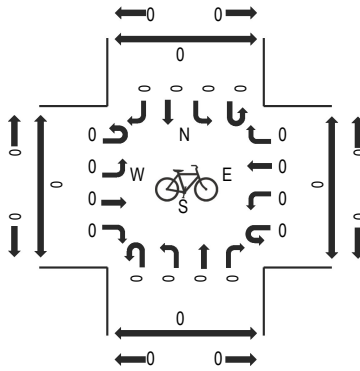
### Traffic Counts - Motorized Vehicles

Interval Start Time	SHOPS ACCESS Eastbound				SHOPS ACCESS Westbound				PETERSON RD Northbound				PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	0	0	0	3	1	2	1	2	63	3	0	0	218	0	294	1,407	0	0	0	0
7:15 AM	0	0	0	1	0	1	0	0	0	0	77	4	0	1	276	2	362	1,421	0	0	0	0
7:30 AM	0	1	0	0	0	3	3	1	0	3	136	1	0	1	230	0	379	1,295	0	0	0	0
7:45 AM	0	1	1	4	0	6	0	2	0	5	94	3	0	1	255	0	372	1,098	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	1	0	3	76	2	1	0	223	1	308	882	0	0	0	0
8:15 AM	0	2	0	1	0	2	0	2	0	5	76	2	0	1	145	0	236		0	0	0	0
8:30 AM	0	1	0	0	0	3	0	1	0	2	53	4	0	0	118	0	182		0	0	0	0
8:45 AM	0	0	0	0	0	2	0	3	0	3	47	3	0	1	97	0	156		0	0	0	0
Count Total	0	6	1	6	0	21	4	12	1	23	622	22	1	5	1,562	3	2,289		0	0	0	0
Peak Hour	0	2	1	5	0	11	3	4	0	11	383	10	1	3	984	3	1,421		0	0	0	0

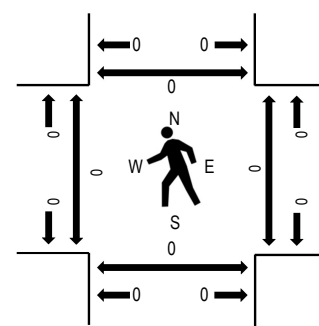
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	US 24 WB RAMPS Eastbound				US 24 WB RAMPS Westbound				PETERSON RD Northbound			PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
7:00 AM	0	0	0	0	0	88	0	17	0	55	52	0	0	0	144	78	434	1,999	0	0	0	0
7:15 AM	0	0	0	0	0	72	0	15	0	88	66	0	0	0	191	87	519	1,986	0	0	0	0
7:30 AM	0	0	0	0	0	79	0	20	0	81	120	0	0	0	172	61	533	1,785	0	0	0	0
7:45 AM	0	0	0	0	0	64	0	14	0	82	88	0	0	0	206	59	513	1,528	0	0	0	0
8:00 AM	0	0	0	0	0	56	0	18	1	59	63	0	0	0	154	70	421	1,245	0	0	0	0
8:15 AM	0	0	0	0	0	23	0	16	0	64	67	0	0	0	82	66	318		0	0	0	0
8:30 AM	0	0	0	0	0	42	0	12	0	54	47	0	0	0	79	42	276		0	0	0	0
8:45 AM	0	0	0	0	0	23	0	8	0	55	45	0	0	0	57	42	230		0	0	0	0
Count Total	0	0	0	0	0	447	0	120	1	538	548	0	0	0	1,085	505	3,244		0	0	0	0
Peak Hour	0	0	0	0	0	303	0	66	0	306	326	0	0	0	713	285	1,999		0	0	0	0

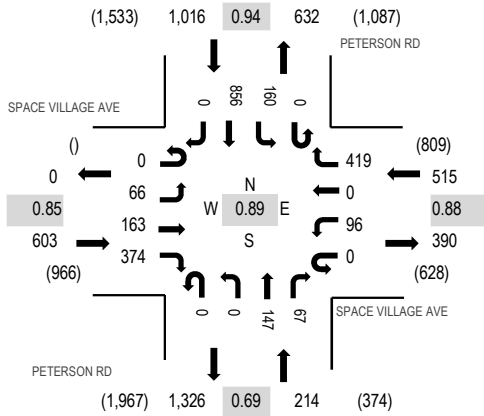
Location: 4 PETERSON RD & SPACE VILLAGE AVE AM

Date: Tuesday, April 2, 2024

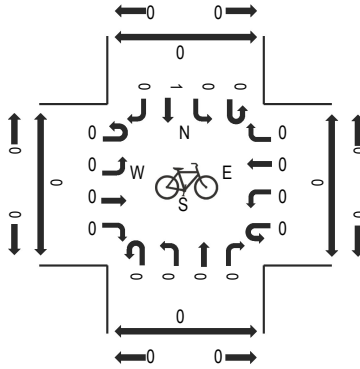
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:30 AM - 07:45 AM

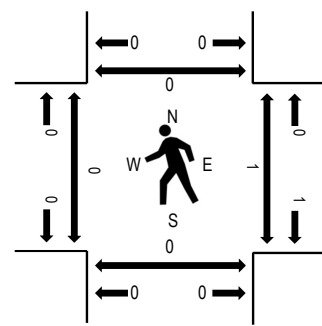
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	SPACE VILLAGE AVE Eastbound				SPACE VILLAGE AVE Westbound				PETERSON RD Northbound				PETERSON RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	5	16	90	0	16	0	88	0	0	14	21	0	37	195	0	482	2,348	0	0	0	0
7:15 AM	0	17	46	77	0	23	0	100	0	0	37	17	0	41	222	0	580	2,322	0	0	0	0
7:30 AM	0	25	45	110	0	33	0	114	0	0	62	18	0	46	205	0	658	2,080	0	0	0	0
7:45 AM	0	19	56	97	0	24	0	117	0	0	34	11	0	36	234	0	628	1,719	0	1	0	0
8:00 AM	0	24	21	73	0	17	0	73	0	0	26	11	0	38	173	0	456	1,334	0	1	0	0
8:15 AM	0	23	15	64	0	11	0	62	0	0	46	12	0	23	82	0	338		0	0	0	0
8:30 AM	0	29	11	42	0	11	0	55	0	0	17	11	0	32	89	0	297		0	0	0	0
8:45 AM	0	21	15	25	0	6	0	59	0	0	20	17	0	32	48	0	243		0	0	0	0
Count Total	0	163	225	578	0	141	0	668	0	0	256	118	0	285	1,248	0	3,682		0	2	0	0
Peak Hour	0	66	163	374	0	96	0	419	0	0	147	67	0	160	856	0	2,348		0	1	0	0

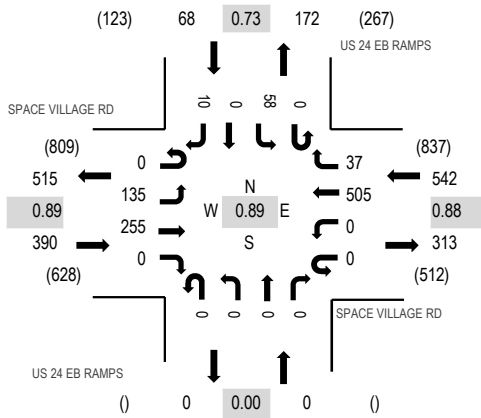
**Location:** 5 US 24 EB RAMPS & SPACE VILLAGE RD AM

**Date:** Tuesday, April 2, 2024

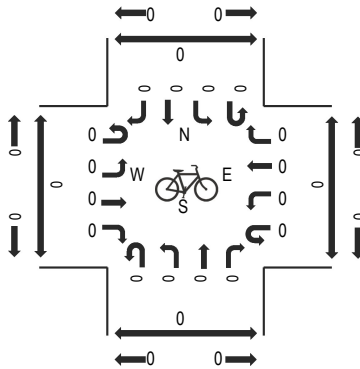
**Peak Hour:** 07:00 AM - 08:00 AM

**Peak 15-Minutes:** 07:30 AM - 07:45 AM

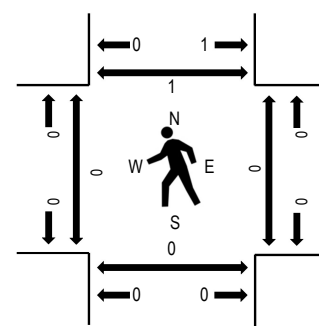
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians

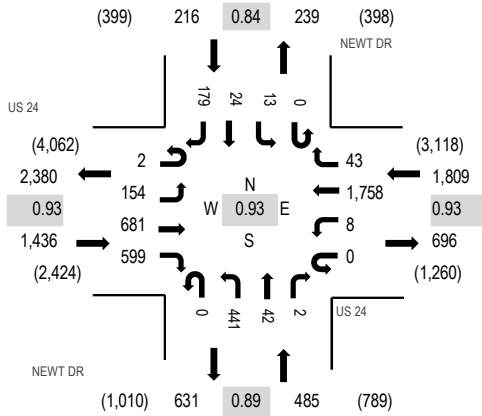


Note: Total study counts contained in parentheses.

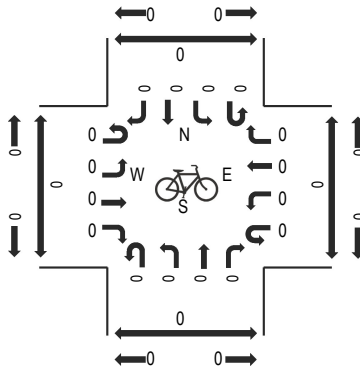
### Traffic Counts - Motorized Vehicles

Interval Start Time	SPACE VILLAGE RD Eastbound				SPACE VILLAGE RD Westbound				US 24 EB RAMPS Northbound				US 24 EB RAMPS Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	26	48	0	0	0	103	8	0	0	0	0	0	5	0	1	191	1,000	0	0	0	0
7:15 AM	0	33	71	0	0	0	121	6	0	0	0	0	0	14	0	2	247	984	0	0	0	0
7:30 AM	0	36	73	0	0	0	144	10	0	0	0	0	0	16	0	3	282	876	0	0	0	1
7:45 AM	0	40	63	0	0	0	137	13	0	0	0	0	0	23	0	4	280	729	0	0	0	0
8:00 AM	0	25	45	0	0	0	84	4	0	0	0	0	0	11	0	6	175	588	0	0	0	0
8:15 AM	0	13	37	0	0	0	71	4	0	0	0	0	0	12	0	2	139		0	0	0	0
8:30 AM	0	19	35	0	0	0	64	4	0	0	0	0	0	11	0	2	135		0	0	0	0
8:45 AM	0	23	41	0	0	0	61	3	0	0	0	0	0	7	0	4	139		0	0	0	0
Count Total	0	215	413	0	0	0	785	52	0	0	0	0	0	99	0	24	1,588		0	0	0	1
Peak Hour	0	135	255	0	0	0	505	37	0	0	0	0	0	58	0	10	1,000		0	0	0	1

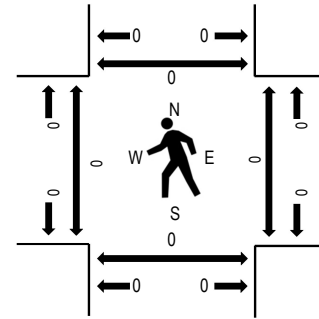
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	US 24 Eastbound				US 24 Westbound				NEWT DR Northbound				NEWT DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	32	151	158	0	0	479	7	0	90	12	0	0	0	3	45	977	3,946	0	0	0	0
7:15 AM	0	40	160	144	0	2	422	10	0	124	13	0	0	6	5	51	977	3,735	0	0	0	0
7:30 AM	1	34	191	159	0	4	467	9	0	125	9	1	0	3	14	47	1,064	3,473	0	0	0	0
7:45 AM	1	48	179	138	0	2	390	17	0	102	8	1	0	4	2	36	928	3,082	0	0	0	0
8:00 AM	0	32	150	94	0	0	355	15	0	69	8	0	0	3	6	34	766	2,784	0	0	0	0
8:15 AM	1	19	140	86	0	2	325	11	0	79	8	0	0	3	7	34	715		0	0	0	0
8:30 AM	0	18	135	87	0	2	294	12	0	59	9	0	0	3	12	42	673		0	0	0	0
8:45 AM	0	21	129	76	0	4	287	2	0	67	4	1	0	0	3	36	630		0	0	0	0
Count Total	3	244	1,235	942	0	16	3,019	83	0	715	71	3	0	22	52	325	6,730		0	0	0	0
Peak Hour	2	154	681	599	0	8	1,758	43	0	441	42	2	0	13	24	179	3,946		0	0	0	0

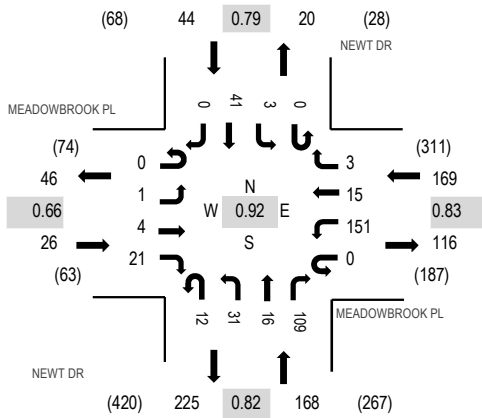
Location: 7 NEWT DR & MEADOWBROOK PL AM

Date: Tuesday, April 2, 2024

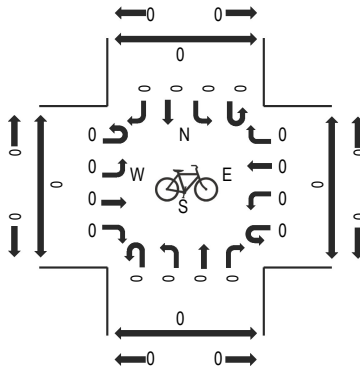
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

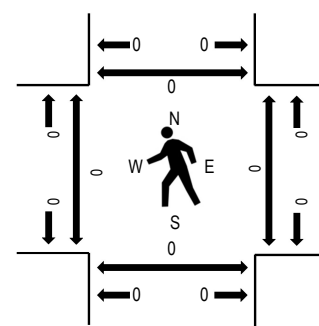
### Peak Hour - Motorized Vehicles



### Peak Hour - Bicycles



### Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

### Traffic Counts - Motorized Vehicles

Interval Start Time	MEADOWBROOK PL Eastbound				MEADOWBROOK PL Westbound				NEWT DR Northbound				NEWT DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	1	7	0	33	4	0	2	10	1	27	0	1	13	0	99	407	0	0	0	0
7:15 AM	0	1	1	4	0	46	3	2	4	10	1	29	0	0	10	0	111	385	0	0	0	0
7:30 AM	0	0	2	6	0	42	5	0	3	4	3	23	0	2	12	0	102	352	0	0	0	0
7:45 AM	0	0	0	4	0	30	3	1	3	7	11	30	0	0	6	0	95	330	0	0	0	0
8:00 AM	0	0	0	6	0	29	3	0	4	5	3	18	0	2	7	0	77	302	0	0	0	0
8:15 AM	0	0	3	4	1	33	5	0	8	5	2	10	0	0	7	0	78		0	0	0	0
8:30 AM	0	0	5	9	0	30	3	0	8	3	1	16	0	0	5	0	80		0	0	0	0
8:45 AM	1	0	4	5	0	36	2	0	1	1	2	12	0	0	3	0	67		0	0	0	1
Count Total	1	1	16	45	1	279	28	3	33	45	24	165	0	5	63	0	709		0	0	0	1
Peak Hour	0	1	4	21	0	151	15	3	12	31	16	109	0	3	41	0	407		0	0	0	0

**All Traffic Data Services**  
 9660 W 44th Ave  
 Wheat Ridge, CO 80033  
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Site Code: 8  
 Station ID: 8  
 GALLEY RD N.O. PETERSON RD

Start Time	02-Apr-24 Tue	NB	SB	Total						
12:00 AM		7	20	27						
01:00		3	7	10						
02:00		6	14	20						
03:00		7	5	12						
04:00		15	15	30						
05:00		48	32	80						
06:00		131	209	340						
07:00		<b>382</b>	<b>305</b>	<b>687</b>						
08:00		247	295	542						
09:00		188	152	340						
10:00		208	151	359						
11:00		186	146	332						
12:00 PM		195	147	342						
01:00		170	179	349						
02:00		258	190	448						
03:00		<b>397</b>	296	693						
04:00		352	<b>360</b>	<b>712</b>						
05:00		212	327	539						
06:00		166	205	371						
07:00		99	150	249						
08:00		59	106	165						
09:00		49	43	92						
10:00		34	26	60						
11:00		13	19	32						
Total		3432	3399	6831						
Percent		50.2%	49.8%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	382	305	-	-	-	-	-	-	687
PM Peak	-	15:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	397	360	-	-	-	-	-	-	712
Grand Total		3432	3399							6831
Percent		50.2%	49.8%							
ADT		ADT 6,831	AADT 6,831							



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Site Code: 10  
 Station ID: 10  
 US 24 W.O. PETERSON RD

Start Time	02-Apr-24 Tue	EB	WB	Total					
12:00 AM		88	53	141					
01:00		43	45	88					
02:00		50	46	96					
03:00		52	96	148					
04:00		115	239	354					
05:00		378	858	1236					
06:00		1310	1773	3083					
07:00		<b>1785</b>	<b>2445</b>	<b>4230</b>					
08:00		1189	1773	2962					
09:00		764	1252	2016					
10:00		768	1113	1881					
11:00		925	1088	2013					
12:00 PM		939	1125	2064					
01:00		853	1101	1954					
02:00		1217	1155	2372					
03:00		1645	1687	3332					
04:00		2028	<b>1777</b>	<b>3805</b>					
05:00		<b>2123</b>	1358	3481					
06:00		1276	949	2225					
07:00		862	593	1455					
08:00		663	430	1093					
09:00		465	269	734					
10:00		282	160	442					
11:00		176	125	301					
Total		19996	21510	41506					
Percent		48.2%	51.8%						
AM Peak	-	07:00	07:00	-	-	-	-	-	07:00
Vol.	-	1785	2445	-	-	-	-	-	4230
PM Peak	-	17:00	16:00	-	-	-	-	-	16:00
Vol.	-	2123	1777	-	-	-	-	-	3805
Grand Total		19996	21510						41506
Percent		48.2%	51.8%						
ADT		ADT 41,506	AADT 41,506						

**All Traffic Data Services**  
 9660 W 44th Ave  
 Wheat Ridge, CO 80033  
 www.alltrafficdata.net

Site Code: 11  
 Station ID: 11  
 PETERSON BLVD S.O. US 24

Start Time	02-Apr-24 Tue	NB	SB	Total					
12:00 AM		7	0	7					
01:00		1	0	1					
02:00		0	0	0					
03:00		1	1	2					
04:00		2	1	3					
05:00		14	25	39					
06:00		80	711	791					
07:00		214	1326	1540					
08:00		160	641	801					
09:00		173	17	190					
10:00		253	16	269					
11:00		363	19	382					
12:00 PM		305	17	322					
01:00		313	20	333					
02:00		645	5	650					
03:00		1176	17	1193					
04:00		1245	17	1262					
05:00		548	12	560					
06:00		38	15	53					
07:00		29	13	42					
08:00		25	7	32					
09:00		16	4	20					
10:00		10	4	14					
11:00		3	2	5					
Total		5621	2890	8511					
Percent		66.0%	34.0%						
AM Peak	-	11:00	07:00	-	-	-	-	-	07:00
Vol.	-	363	1326	-	-	-	-	-	1540
PM Peak	-	16:00	13:00	-	-	-	-	-	16:00
Vol.	-	1245	20	-	-	-	-	-	1262
Grand Total		5621	2890						8511
Percent		66.0%	34.0%						
ADT		ADT 8,511	AADT 8,511						

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 9660 W 44th Ave  
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Site Code: 12  
 Station ID: 12  
 SPACE VILLAGE AVE E.O. US 24 RAMPS

Start Time	02-Apr-24 Tue	EB	WB	Total					
12:00 AM		4	5	9					
01:00		4	4	8					
02:00		6	7	13					
03:00		5	9	14					
04:00		13	21	34					
05:00		80	61	141					
06:00		148	259	407					
07:00		<b>313</b>	<b>542</b>	<b>855</b>					
08:00		199	295	494					
09:00		154	197	351					
10:00		169	170	339					
11:00		213	212	425					
12:00 PM		229	185	414					
01:00		182	162	344					
02:00		228	174	402					
03:00		419	278	697					
04:00		<b>425</b>	<b>358</b>	<b>783</b>					
05:00		296	304	600					
06:00		183	185	368					
07:00		128	123	251					
08:00		80	78	158					
09:00		59	30	89					
10:00		35	15	50					
11:00		15	9	24					
Total		3587	3683	7270					
Percent		49.3%	50.7%						
AM Peak	-	07:00	07:00	-	-	-	-	-	07:00
Vol.	-	313	542	-	-	-	-	-	855
PM Peak	-	16:00	16:00	-	-	-	-	-	16:00
Vol.	-	425	358	-	-	-	-	-	783
Grand Total		3587	3683						7270
Percent		49.3%	50.7%						
ADT		ADT 7,270	AADT 7,270						

**All Traffic Data Services**  
 9660 W 44th Ave  
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Site Code: 13  
 Station ID: 13  
 HWY 94 S.O. US 24

Start Time	02-Apr-24 Tue	NB	SB	Total						
12:00 AM		6	19	25						
01:00		7	10	17						
02:00		7	5	12						
03:00		12	13	25						
04:00		37	46	83						
05:00		137	173	310						
06:00		342	483	825						
07:00		<b>485</b>	<b>631</b>	<b>1116</b>						
08:00		304	379	683						
09:00		241	267	508						
10:00		213	234	447						
11:00		209	227	436						
12:00 PM		261	220	481						
01:00		240	237	477						
02:00		277	263	540						
03:00		419	375	794						
04:00		<b>466</b>	<b>429</b>	<b>895</b>						
05:00		266	419	685						
06:00		195	286	481						
07:00		83	176	259						
08:00		68	152	220						
09:00		41	111	152						
10:00		32	50	82						
11:00		27	48	75						
Total		4375	5253	9628						
Percent		45.4%	54.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	485	631	-	-	-	-	-	-	1116
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	466	429	-	-	-	-	-	-	895
Grand Total		4375	5253							9628
Percent		45.4%	54.6%							
ADT		ADT 9,628	AADT 9,628							

**All Traffic Data Services**  
 9660 W 44th Ave  
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Site Code: 14  
 Station ID: 14  
 HWY 24 E.O. HWY 94

Start Time	02-Apr-24 Tue	EB	WB							Total
12:00 AM		66	41							107
01:00		27	32							59
02:00		38	28							66
03:00		32	73							105
04:00		72	203							275
05:00		164	645							809
06:00		560	1454							2014
07:00		<b>696</b>	<b>1809</b>							<b>2505</b>
08:00		564	1309							1873
09:00		463	845							1308
10:00		484	652							1136
11:00		652	595							1247
12:00 PM		647	630							1277
01:00		620	624							1244
02:00		961	648							1609
03:00		1467	801							2268
04:00		<b>1705</b>	<b>876</b>							<b>2581</b>
05:00		1690	774							2464
06:00		930	622							1552
07:00		640	387							1027
08:00		467	280							747
09:00		308	181							489
10:00		196	114							310
11:00		110	79							189
Total		13559	13702							27261
Percent		49.7%	50.3%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	696	1809	-	-	-	-	-	-	2505
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	1705	876	-	-	-	-	-	-	2581
Grand Total		13559	13702							27261
Percent		49.7%	50.3%							
ADT		ADT 27,261	AADT 27,261							

## **Appendix B- Existing Conditions**

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	262	128	91	241	750	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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
Right Turn on Red Volume [veh/h]	0	64	0	0	0	69
Total Hourly Volume [veh/h]	262	64	91	241	750	69
Peak Hour Factor	0.7100	0.7100	0.8500	0.8500	0.8300	0.8300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	92	23	27	71	226	21
Total Analysis Volume [veh/h]	369	90	107	284	904	83
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5	0	0	0	5	0
Pedestrian Clearance [s]	17	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14	0	9	14	9	0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15	15	24	24	16	16
g / C, Green / Cycle	0.29	0.29	0.46	0.46	0.30	0.30
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.09	0.08	0.26	0.05
s, saturation flow rate [veh/h]	1870	1589	1179	3560	3459	1589
c, Capacity [veh/h]	543	461	590	1650	1054	484
d1, Uniform Delay [s]	16.25	13.83	8.83	8.10	16.94	13.20
k, delay calibration	0.11	0.11	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.51	0.20	0.05	0.05	0.81	0.06
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.68	0.20	0.18	0.17	0.86	0.17
d, Delay for Lane Group [s/veh]	17.76	14.03	8.88	8.14	17.76	13.27
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.58	0.72	0.56	0.75	4.33	0.61
50th-Percentile Queue Length [ft/ln]	89.45	18.04	13.89	18.81	108.17	15.26
95th-Percentile Queue Length [veh/ln]	6.44	1.30	1.00	1.35	7.74	1.10
95th-Percentile Queue Length [ft/ln]	161.02	32.47	25.00	33.86	193.45	27.47

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	17.76	14.03	8.88	8.14	17.76	13.27
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	17.03		8.35		17.38	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	15.37					
Intersection LOS	B					
Intersection V/C	0.499					

**Emissions**

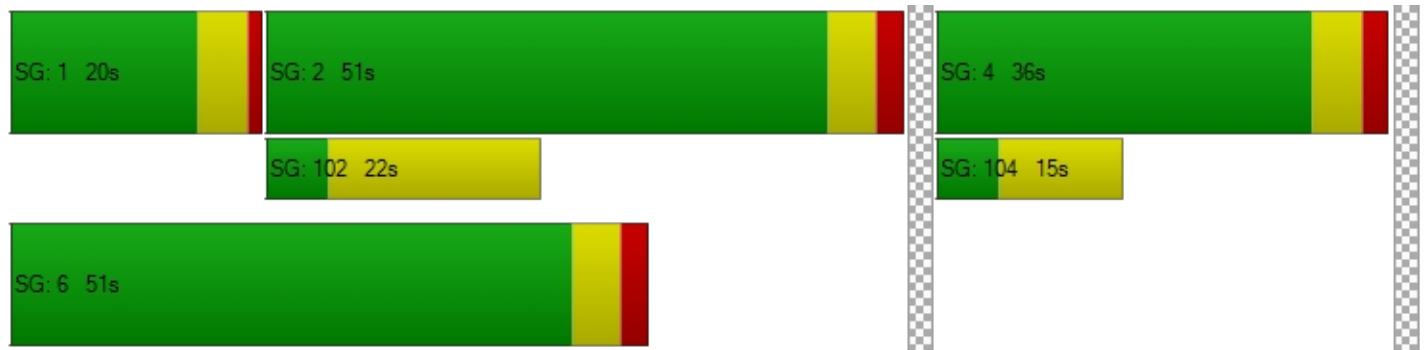
Vehicle Miles Traveled [mph]	52.35	12.77	10.60	28.15	170.38	15.64
Stops [stops/h]	249.52	50.32	38.75	104.93	603.45	42.57
Fuel consumption [US gal/h]	4.87	1.06	0.84	2.21	14.30	1.14
CO [g/h]	340.21	74.14	59.00	154.42	999.55	79.72
NOx [g/h]	66.19	14.42	11.48	30.05	194.48	15.51
VOC [g/h]	78.85	17.18	13.67	35.79	231.66	18.48

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		17.60		17.60	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.326		2.720	
Crosswalk LOS	F		B		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1743		1743		1162	
d_b, Bicycle Delay [s]	0.43		0.43		4.53	
I_b,int, Bicycle LOS Score for Intersection	2.423		1.882		1.560	
Bicycle LOS	B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	30.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	1000.00	100.00	1000.00	420.00	100.00	300.00	1150.00	100.00	850.00	950.00	100.00	950.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	2	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	920.00	0.00	0.00	374.61	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	441	42	2	13	24	179	156	681	599	8	1758	43
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	1	0	0	90	0	0	300	0	0	22
Total Hourly Volume [veh/h]	441	42	1	13	24	89	156	681	299	8	1758	21
Peak Hour Factor	0.8500	0.8500	0.8500	0.8400	0.8400	0.8400	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
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]	130	12	0	4	7	26	46	200	88	2	517	6
Total Analysis Volume [veh/h]	519	49	1	15	29	106	184	801	352	9	2068	25
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]	140
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Unsigna	ProtPer	Permiss	Unsigna	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	245.0	0.0	0.0	245.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	6.0	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

**Phasing & Timing: Pattern 1**

Split [s]	15	52	0	30	67	0	14	45	0	13	44	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	0.00	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	18	10	10	18	3	109	100	109	95	95
g / C, Green / Cycle	0.13	0.07	0.07	0.13	0.02	0.78	0.72	0.78	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.16	0.01	0.00	0.01	0.02	0.50	0.22	0.01	0.58	0.02
s, saturation flow rate [veh/h]	3227	3560	1589	2913	1870	372	3560	743	3560	1589
c, Capacity [veh/h]	494	259	116	457	47	274	2549	592	2403	1073
d1, Uniform Delay [s]	61.92	61.01	60.21	52.95	67.58	39.35	7.30	4.13	17.65	7.51
k, delay calibration	0.11	0.04	0.04	0.23	0.23	0.50	0.50	0.04	0.50	0.50
l, 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]	34.23	0.13	0.01	0.06	25.15	12.32	0.32	0.00	4.32	0.04
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	1.05	0.19	0.01	0.03	0.62	0.67	0.31	0.02	0.86	0.02
d, Delay for Lane Group [s/veh]	96.15	61.14	60.22	53.02	92.74	51.67	7.62	4.13	21.97	7.55
Lane Group LOS	F	E	E	D	F	D	A	A	C	A
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.91	0.80	0.03	0.24	1.36	1.91	3.74	0.04	22.66	0.23
50th-Percentile Queue Length [ft/ln]	272.83	20.02	0.81	5.91	34.00	47.67	93.46	1.08	566.61	5.76
95th-Percentile Queue Length [veh/ln]	16.70	1.44	0.06	0.43	2.45	3.43	6.73	0.08	30.47	0.41
95th-Percentile Queue Length [ft/ln]	417.46	36.04	1.46	10.64	61.19	85.80	168.23	1.95	761.80	10.37

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	96.15	61.14	60.22	53.02	92.74	0.00	51.67	7.62	0.00	4.13	21.97	7.55
Movement LOS	F	E	E	D	F		D	A		A	C	A
d_A, Approach Delay [s/veh]	93.07			26.20			12.16			21.72		
Approach LOS	F			C			B			C		
d_I, Intersection Delay [s/veh]	30.20											
Intersection LOS	C											
Intersection V/C	0.736											

**Emissions**

Vehicle Miles Traveled [mph]	198.32	18.72	0.38	1.58	3.06	78.00	339.53	2.74	629.79	7.61
Stops [stops/h]	561.25	41.18	0.83	12.16	34.97	49.03	192.26	1.11	1165.60	5.93
Fuel consumption [US gal/h]	27.21	2.00	0.04	0.29	0.87	5.45	16.17	0.12	51.96	0.40
CO [g/h]	1902.15	139.86	2.83	20.56	60.56	381.24	1130.37	8.38	3632.29	28.18
NOx [g/h]	370.09	27.21	0.55	4.00	11.78	74.18	219.93	1.63	706.71	5.48
VOC [g/h]	440.84	32.41	0.66	4.77	14.04	88.36	261.97	1.94	841.82	6.53

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			61.0			46.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			22.29			31.56		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			3.752			3.374		
Crosswalk LOS	F			F			D			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	657			871			543			529		
d_b, Bicycle Delay [s]	31.56			22.29			37.16			37.89		
I_b,int, Bicycle LOS Score for Intersection	2.030			1.632			2.372			3.312		
Bicycle LOS	B			A			B			C		

**Sequence**


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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Signalized	Delay (sec / veh):	25.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.606

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			US-24 WB Ramps					
	Northbound			Southbound			Eastbound			Westbound		
Approach												
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 Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd						US-24 WB Ramps		
Base Volume Input [veh/h]	306	326	0	0	713	285	0	0	0	303	0	66
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	143	0	0	0	0	0	33
Total Hourly Volume [veh/h]	306	326	0	0	713	142	0	0	0	303	0	33
Peak Hour Factor	0.8100	0.8100	1.0000	1.0000	0.8500	0.8500	1.0000	1.0000	1.0000	0.8500	0.8500	0.8500
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]	94	101	0	0	210	42	0	0	0	89	0	10
Total Analysis Volume [veh/h]	378	402	0	0	839	167	0	0	0	356	0	39
Presence of On-Street Parking	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	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	13.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Maximum Green [s]	20	15	0	0	15	0	0	0	0	0	20	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	18	70	0	0	52	0	0	0	0	0	30	0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	4	4	0	0	4	0	0	0	0	0	4	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	Yes			Yes						No	
Pedestrian Recall	Yes	No			No						No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	R		L	C
C, Calculated Cycle Length [s]	100	100	100	100		100	100
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00		6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	4.00		4.00	4.00
g_i, Effective Green Time [s]	64	64	46	46		24	24
g / C, Green / Cycle	0.64	0.64	0.46	0.46		0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.49	0.13	0.26	0.12		0.22	0.03
s, saturation flow rate [veh/h]	778	3204	3204	1431		1603	1431
c, Capacity [veh/h]	508	2057	1481	661		381	340
d1, Uniform Delay [s]	14.33	7.33	19.60	16.38		37.33	29.85
k, delay calibration	0.50	0.50	0.50	0.50		0.31	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	9.56	0.21	1.58	0.92		23.13	0.05
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

**Lane Group Results**

X, volume / capacity	0.74	0.20	0.57	0.25		0.93	0.11
d, Delay for Lane Group [s/veh]	23.89	7.54	21.18	17.30		60.45	29.90
Lane Group LOS	C	A	C	B		E	C
Critical Lane Group	Yes	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh/ln]	4.84	1.68	7.17	2.45		10.82	0.74
50th-Percentile Queue Length [ft/ln]	120.91	42.05	179.36	61.19		270.50	18.46
95th-Percentile Queue Length [veh/ln]	8.44	3.03	11.57	4.41		16.21	1.33
95th-Percentile Queue Length [ft/ln]	211.07	75.68	289.18	110.14		405.36	33.23

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	23.89	7.54	0.00	0.00	21.18	17.30	0.00	0.00	0.00	60.45	29.90	29.90
Movement LOS	C	A			C	B				E	C	C
d_A, Approach Delay [s/veh]	15.46		20.54			0.00			57.43			
Approach LOS	B		C			A			E			
d_I, Intersection Delay [s/veh]	25.40											
Intersection LOS	C											
Intersection V/C	0.606											

**Emissions**

Vehicle Miles Traveled [mph]	27.40	29.14	46.02	9.16		72.68	7.96
Stops [stops/h]	174.11	121.09	516.56	88.11		389.52	26.58
Fuel consumption [US gal/h]	3.93	2.49	8.36	1.45		9.52	0.71
CO [g/h]	274.50	173.72	584.70	101.49		665.66	49.77
NOx [g/h]	53.41	33.80	113.76	19.75		129.51	9.68
VOC [g/h]	63.62	40.26	135.51	23.52		154.27	11.53

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000
Crosswalk LOS	F		F		F		F
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000
c_b, Capacity of the bicycle lane [bicycles/h]	1280		920		0		480
d_b, Bicycle Delay [s]	6.48		14.58		50.00		28.88
I_b,int, Bicycle LOS Score for Intersection	2.203		2.508		4.132		2.266
Bicycle LOS	B		B		D		B

**Sequence**




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



**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Signalized	Delay (sec / veh):	29.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.584

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	147	67	160	856	0	66	163	374	96	0	419
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	34	0	0	0	0	0	187	0	0	210
Total Hourly Volume [veh/h]	0	147	33	160	856	0	66	163	187	96	0	209
Peak Hour Factor	1.0000	0.6900	0.6900	0.8500	0.8500	1.0000	0.8500	0.8500	0.8500	0.8500	1.0000	0.8500
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]	0	53	12	47	252	0	19	48	55	28	0	61
Total Analysis Volume [veh/h]	0	213	48	188	1007	0	78	192	220	113	0	246
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
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	20.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Permiss	Split
Signal Group	0	2	0	1	6	0	0	4	0	3	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	8	15	0	0	20	0	30	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No		No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	0	30	0	18	48	0	0	26	0	26	0	0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	4	0	4	4	0	0	4	0	4	0	0
Vehicle Extension [s]	0.0	2.0	0.0	3.0	2.0	0.0	0.0	3.0	0.0	1.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No		No		
Maximum Recall		Yes		No	Yes			No		No		
Pedestrian Recall		No		Yes	No			No		No		

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	C	R	L	R
C, Calculated Cycle Length [s]	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	33	33	48	48	17	17	17	17
g / C, Green / Cycle	0.33	0.33	0.48	0.48	0.17	0.17	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.06	0.03	0.15	0.28	0.15	0.14	0.06	0.15
s, saturation flow rate [veh/h]	3560	1589	1290	3560	1843	1589	1781	1589
c, Capacity [veh/h]	1189	531	671	1700	314	271	307	274
d1, Uniform Delay [s]	23.59	22.87	15.39	19.03	40.34	39.96	36.58	40.54
k, delay calibration	0.50	0.50	0.43	0.50	0.15	0.12	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.34	0.90	1.52	8.99	6.53	0.27	4.27
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.18	0.09	0.28	0.59	0.86	0.81	0.37	0.90
d, Delay for Lane Group [s/veh]	23.92	23.20	16.29	20.55	49.32	46.49	36.86	44.80
Lane Group LOS	C	C	B	C	D	D	D	D
Critical Lane Group	No	No	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.82	0.82	2.61	8.52	7.16	5.64	2.45	6.18
50th-Percentile Queue Length [ft/ln]	45.54	20.54	65.26	213.02	179.07	141.01	61.25	154.45
95th-Percentile Queue Length [veh/ln]	3.28	1.48	4.70	13.31	11.55	9.54	4.41	10.25
95th-Percentile Queue Length [ft/ln]	81.97	36.98	117.46	332.70	288.80	238.38	110.25	256.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	23.92	23.20	16.29	20.55	0.00	49.32	49.32	46.49	36.86	0.00	44.80
Movement LOS		C	C	B	C		D	D	D	D		D
d_A, Approach Delay [s/veh]	23.79			19.88			48.05			42.30		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	29.80											
Intersection LOS	C											
Intersection V/C	0.584											

**Emissions**

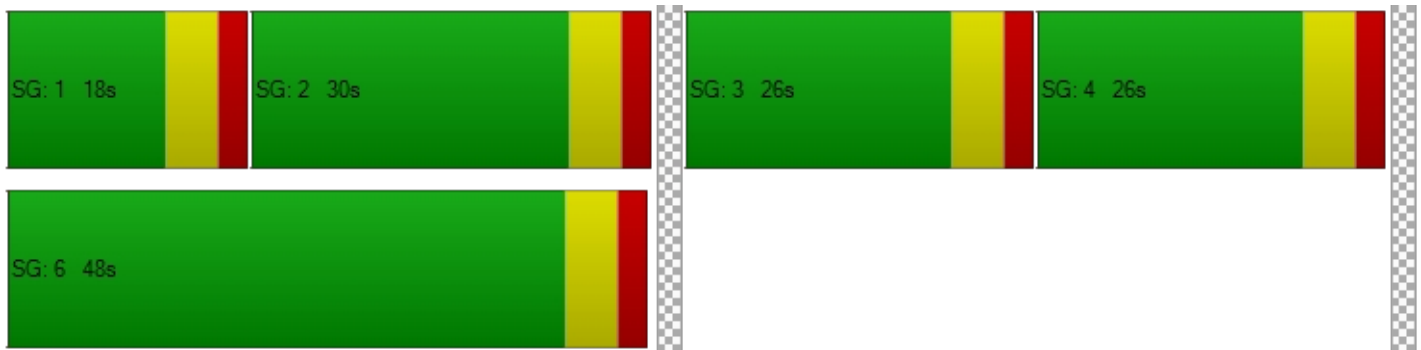
Vehicle Miles Traveled [mph]	38.12	8.59	13.63	72.99	30.08	24.51	15.63	34.02
Stops [stops/h]	131.15	29.58	93.97	613.49	257.86	203.05	88.20	222.41
Fuel consumption [US gal/h]	3.33	0.74	1.70	10.61	5.37	4.21	1.98	4.87
CO [g/h]	232.81	51.99	119.05	741.36	375.55	294.41	138.27	340.56
NOx [g/h]	45.30	10.11	23.16	144.24	73.07	57.28	26.90	66.26
VOC [g/h]	53.96	12.05	27.59	171.82	87.04	68.23	32.05	78.93

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	480	840	400	400
d_b, Bicycle Delay [s]	28.88	16.82	32.00	32.00
I_b,int, Bicycle LOS Score for Intersection	1.803	2.545	2.677	1.560
Bicycle LOS	A	B	B	A

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	44.4
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.472

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	1	0	1
Entry Pocket Length [ft]	100.00	290.00	350.00	405.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	58	10	135	255	505	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	58	10	135	255	505	37
Peak Hour Factor	0.7300	0.7300	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	3	40	75	149	11
Total Analysis Volume [veh/h]	79	14	159	300	594	44
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.47	0.03	0.17	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	44.42	12.33	9.57	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.23	0.09	0.60	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	55.81	2.14	15.06	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	39.59		3.32		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	4.37					
Intersection LOS	E					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	4.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	43	16	109	3	41	0	1	4	21	151	15	3
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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
Total Hourly Volume [veh/h]	43	16	109	3	41	0	1	4	21	151	15	3
Peak Hour Factor	0.8200	0.8200	0.8200	0.7900	0.7900	0.7900	0.6600	0.6600	0.6600	0.8300	0.8300	0.8300
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]	13	5	33	1	13	0	0	2	8	45	5	1
Total Analysis Volume [veh/h]	52	20	133	4	52	0	2	6	32	182	18	4
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	12			257			243			75		
Exiting Flow Rate [veh/h]	271			27			71			146		
Demand Flow Rate [veh/h]	43	16	109	3	41	0	1	4	21	151	15	3
Adjusted Demand Flow Rate [veh/h]	52	20	133	4	52	0	2	6	32	182	18	4

**Lanes**

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	210	58	41	209
Capacity of Entry and Bypass Lanes [veh/h]	1363	1062	1078	1278
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1337	1041	1057	1253
X, volume / capacity	0.15	0.05	0.04	0.16

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.54	0.17	0.12	0.58
95th-Percentile Queue Length [ft]	13.54	4.26	2.95	14.53
Approach Delay [s/veh]	3.95	3.92	3.73	4.25
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.05			
Intersection LOS	A			

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type:	Two-way stop	Delay (sec / veh):	52.8
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	11	383	10	4	984	3	2	1	5	11	3	4
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
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
Total Hourly Volume [veh/h]	11	383	10	4	984	3	2	1	5	11	3	4
Peak Hour Factor	0.7300	0.7300	0.7300	0.8500	0.8500	0.8500	0.4200	0.4200	0.4200	0.6900	0.6900	0.6900
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]	4	131	3	1	289	1	1	1	3	4	1	1
Total Analysis Volume [veh/h]	15	525	14	5	1158	4	5	2	12	16	4	6
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.01	0.00	0.06	0.02	0.03	0.11	0.05	0.01
d_M, Delay for Movement [s/veh]	11.05	0.00	0.00	8.52	0.00	0.00	51.75	50.99	15.52	35.52	52.83	14.73
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.01	0.00	0.01	0.00	0.00	0.37	0.37	0.37	0.59	0.59	0.59
95th-Percentile Queue Length [ft/ln]	0.63	0.32	0.00	0.21	0.10	0.00	9.24	9.24	9.24	14.85	14.85	14.85
d_A, Approach Delay [s/veh]	0.30			0.04			28.79			33.39		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	0.92											
Intersection LOS	F											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	542	390	68
2	526	378	66
3	515	371	65
4	482	347	61
5	428	308	54
6	423	304	53
7	417	300	52
8	379	273	48
9	374	269	47
10	369	265	46
11	320	230	40
12	298	215	37
13	293	211	37
14	217	156	27
15	217	156	27
16	152	109	19
17	87	62	11
18	87	62	11
19	49	35	6
20	27	20	3
21	16	12	2
22	5	4	1
23	5	4	1
24	5	4	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	932	2	68	No	No	No	No	No	No	No	Yes	No	No
2	3	904	2	66	No	No	No	No	No	No	No	Yes	No	No
3	3	886	2	65	No	No	No	No	No	No	No	Yes	No	No
4	3	829	2	61	No	No	No	No	No	No	No	Yes	No	No
5	3	736	2	54	No	No	No	No	No	No	No	No	No	No
6	3	727	2	53	No	No	No	No	No	No	No	No	No	No
7	3	717	2	52	No	No	No	No	No	No	No	No	No	No
8	3	652	2	48	No	No	No	No	No	No	No	No	No	No
9	3	643	2	47	No	No	No	No	No	No	No	No	No	No
10	3	634	2	46	No	No	No	No	No	No	No	No	No	No
11	3	550	2	40	No	No	No	No	No	No	No	No	No	No
12	3	513	2	37	No	No	No	No	No	No	No	No	No	No
13	3	504	2	37	No	No	No	No	No	No	No	No	No	No
14	3	373	2	27	No	No	No	No	No	No	No	No	No	No
15	3	373	2	27	No	No	No	No	No	No	No	No	No	No
16	3	261	2	19	No	No	No	No	No	No	No	No	No	No
17	3	149	2	11	No	No	No	No	No	No	No	No	No	No
18	3	149	2	11	No	No	No	No	No	No	No	No	No	No
19	3	84	2	6	No	No	No	No	No	No	No	No	No	No
20	3	47	2	3	No	No	No	No	No	No	No	No	No	No
21	3	28	2	2	No	No	No	No	No	No	No	No	No	No
22	3	9	2	1	No	No	No	No	No	No	No	No	No	No
23	3	9	2	1	No	No	No	No	No	No	No	No	No	No
24	3	9	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	4	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	39.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:44
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	68
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1000
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	404	991	18	8
2	392	961	17	8
3	384	941	17	8
4	360	882	16	7
5	319	783	14	6
6	315	773	14	6
7	311	763	14	6
8	283	694	13	6
9	279	684	12	6
10	275	674	12	5
11	238	585	11	5
12	222	545	10	4
13	218	535	10	4
14	162	396	7	3
15	162	396	7	3
16	113	277	5	2
17	65	159	3	1
18	65	159	3	1
19	36	89	2	1
20	20	50	1	0
21	12	30	1	0
22	4	10	0	0
23	4	10	0	0
24	4	10	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1395	1	18	No	No	No	No	No	No	No	No	No	No
2	2	1353	1	17	No	No	No	No	No	No	No	No	No	No
3	2	1325	1	17	No	No	No	No	No	No	No	No	No	No
4	2	1242	1	16	No	No	No	No	No	No	No	No	No	No
5	2	1102	1	14	No	No	No	No	No	No	No	No	No	No
6	2	1088	1	14	No	No	No	No	No	No	No	No	No	No
7	2	1074	1	14	No	No	No	No	No	No	No	No	No	No
8	2	977	1	13	No	No	No	No	No	No	No	No	No	No
9	2	963	1	12	No	No	No	No	No	No	No	No	No	No
10	2	949	1	12	No	No	No	No	No	No	No	No	No	No
11	2	823	1	11	No	No	No	No	No	No	No	No	No	No
12	2	767	1	10	No	No	No	No	No	No	No	No	No	No
13	2	753	1	10	No	No	No	No	No	No	No	No	No	No
14	2	558	1	7	No	No	No	No	No	No	No	No	No	No
15	2	558	1	7	No	No	No	No	No	No	No	No	No	No
16	2	390	1	5	No	No	No	No	No	No	No	No	No	No
17	2	224	1	3	No	No	No	No	No	No	No	No	No	No
18	2	224	1	3	No	No	No	No	No	No	No	No	No	No
19	2	125	1	2	No	No	No	No	No	No	No	No	No	No
20	2	70	1	1	No	No	No	No	No	No	No	No	No	No
21	2	42	1	1	No	No	No	No	No	No	No	No	No	No
22	2	14	1	0	No	No	No	No	No	No	No	No	No	No
23	2	14	1	0	No	No	No	No	No	No	No	No	No	No
24	2	14	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	33.4	28.8
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:10	0:03
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	18	8
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1421	1421
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	12.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.459

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	125.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	273	798	191	169	233	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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
Right Turn on Red Volume [veh/h]	0	399	0	0	0	40
Total Hourly Volume [veh/h]	273	399	191	169	233	39
Peak Hour Factor	0.8500	0.8500	0.7600	0.7600	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	117	63	56	69	11
Total Analysis Volume [veh/h]	321	469	251	222	274	46
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5	0	0	0	5	0
Pedestrian Clearance [s]	17	0	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14	0	9	14	9	0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	47	47	47	47	47	47
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	17	17	27	27	8	8
g / C, Green / Cycle	0.36	0.36	0.58	0.58	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.17	0.30	0.25	0.06	0.08	0.03
s, saturation flow rate [veh/h]	1870	1589	1015	3560	3459	1589
c, Capacity [veh/h]	674	573	726	2050	582	268
d1, Uniform Delay [s]	11.59	13.61	5.52	4.50	17.61	16.70
k, delay calibration	0.11	0.11	0.17	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	2.97	0.45	0.02	0.22	0.11
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.48	0.82	0.35	0.11	0.47	0.17
d, Delay for Lane Group [s/veh]	12.11	16.58	5.97	4.52	17.83	16.81
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.21	4.09	0.86	0.32	1.16	0.37
50th-Percentile Queue Length [ft/ln]	55.17	102.31	21.56	7.98	29.08	9.32
95th-Percentile Queue Length [veh/ln]	3.97	7.37	1.55	0.57	2.09	0.67
95th-Percentile Queue Length [ft/ln]	99.31	184.16	38.81	14.36	52.34	16.78

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	12.11	16.58	5.97	4.52	17.83	16.81
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	14.76		5.29		17.69	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	12.52					
Intersection LOS	B					
Intersection V/C	0.459					

**Emissions**

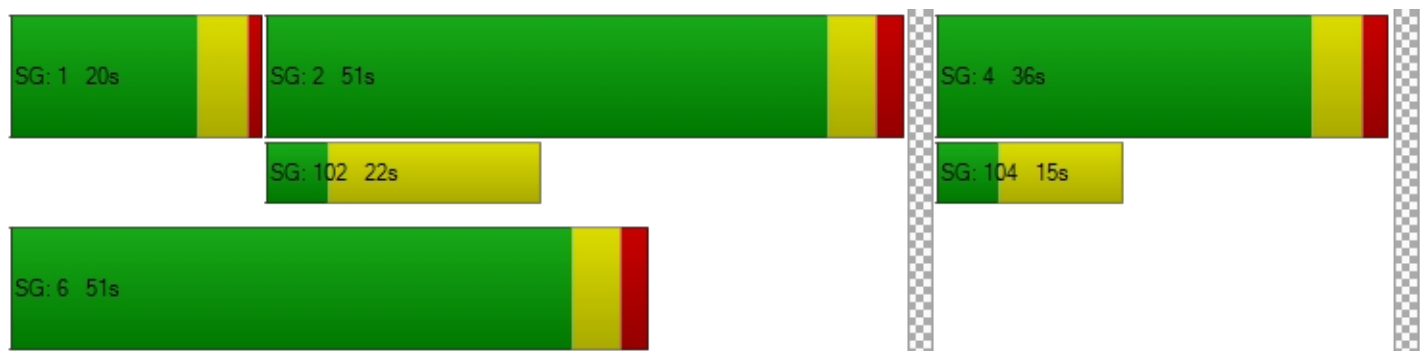
Vehicle Miles Traveled [mph]	45.54	66.54	24.88	22.00	51.64	8.67
Stops [stops/h]	169.77	314.81	66.35	49.09	178.96	28.69
Fuel consumption [US gal/h]	3.60	6.06	1.70	1.38	4.31	0.70
CO [g/h]	251.91	423.67	118.53	96.56	301.18	49.18
NOx [g/h]	49.01	82.43	23.06	18.79	58.60	9.57
VOC [g/h]	58.38	98.19	27.47	22.38	69.80	11.40

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		15.26		15.26	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.312		2.803	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1923		1923		1282	
d_b, Bicycle Delay [s]	0.03		0.03		3.01	
I_b,int, Bicycle LOS Score for Intersection	3.521		1.950		1.560	
Bicycle LOS	D		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	29.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
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 Entry Pocket	2	0	1	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	1000.00	100.00	1000.00	420.00	100.00	300.00	1150.00	100.00	850.00	950.00	100.00	950.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	2	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	920.00	0.00	0.00	374.61	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			Yes			Yes		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	405	31	4	26	50	166	155	1723	394	7	851	24
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	2	0	0	83	0	0	197	0	0	12
Total Hourly Volume [veh/h]	405	31	2	26	50	83	155	1723	197	7	851	12
Peak Hour Factor	0.8200	0.8200	0.8200	0.7200	0.7200	0.7200	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
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]	123	9	1	9	17	29	46	507	58	2	250	4
Total Analysis Volume [veh/h]	494	38	2	36	69	115	182	2027	232	8	1001	14
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]	140
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Unsigna	ProtPer	Permiss	Unsigna	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	245.0	0.0	0.0	245.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	6.0	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

**Phasing & Timing: Pattern 1**

Split [s]	12	35	0	63	86	0	13	29	0	13	29	0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	140	140	140	140	140	140	140	140	140	140
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	7.00	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	0.00	4.00	4.00	0.00	4.00	0.00	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	19	10	10	19	7	108	100	108	95	95
g / C, Green / Cycle	0.14	0.07	0.07	0.14	0.05	0.77	0.71	0.77	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.16	0.01	0.00	0.01	0.04	0.27	0.57	0.03	0.28	0.01
s, saturation flow rate [veh/h]	3035	3560	1589	2965	1870	675	3560	299	3560	1589
c, Capacity [veh/h]	433	252	113	490	99	524	2529	225	2418	1079
d1, Uniform Delay [s]	61.31	61.08	60.50	52.46	65.16	5.91	13.63	14.78	10.03	7.27
k, delay calibration	0.12	0.04	0.04	0.23	0.23	0.50	0.50	0.04	0.50	0.50
l, 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]	70.53	0.10	0.02	0.13	16.96	1.82	2.78	0.02	0.52	0.02
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	1.14	0.15	0.02	0.07	0.69	0.35	0.80	0.04	0.41	0.01
d, Delay for Lane Group [s/veh]	131.84	61.18	60.53	52.60	82.13	7.72	16.41	14.80	10.56	7.30
Lane Group LOS	F	E	E	D	F	A	B	B	B	A
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	11.54	0.62	0.07	0.57	2.90	1.27	17.95	0.04	6.05	0.13
50th-Percentile Queue Length [ft/ln]	288.52	15.52	1.63	14.16	72.54	31.76	448.86	1.03	151.21	3.14
95th-Percentile Queue Length [veh/ln]	18.11	1.12	0.12	1.02	5.22	2.29	24.90	0.07	10.08	0.23
95th-Percentile Queue Length [ft/ln]	452.72	27.93	2.93	25.49	130.57	57.17	622.59	1.86	252.04	5.66

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	131.84	61.18	60.53	52.60	82.13	0.00	7.72	16.41	0.00	14.80	10.56	7.30
Movement LOS	F	E	E	D	F		A	B		B	B	A
d_A, Approach Delay [s/veh]	126.54			40.21			14.41			10.54		
Approach LOS	F			D			B			B		
d_I, Intersection Delay [s/veh]	29.56											
Intersection LOS	C											
Intersection V/C	0.693											

**Emissions**

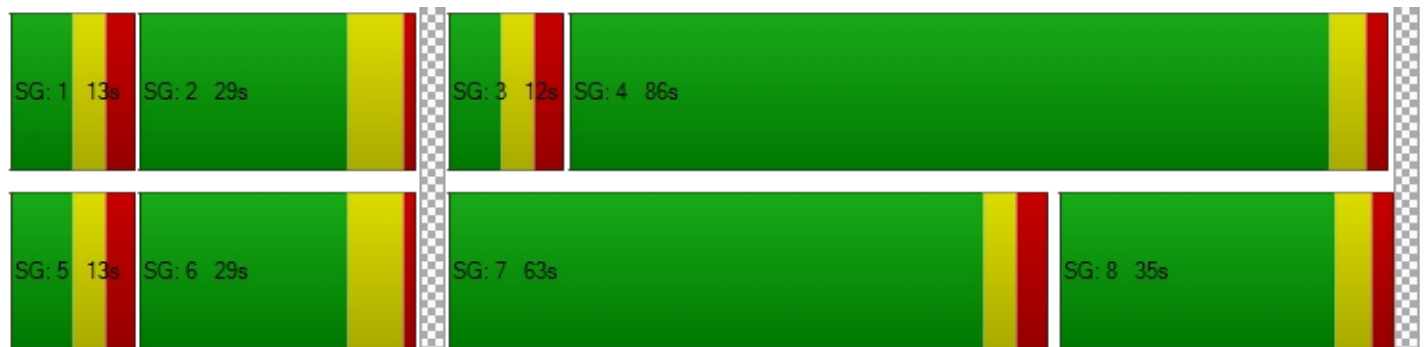
Vehicle Miles Traveled [mph]	193.61	14.89	0.78	3.80	7.28	77.15	859.22	2.44	304.85	4.26
Stops [stops/h]	593.53	31.93	1.67	29.13	74.61	32.67	923.37	1.06	311.05	3.23
Fuel consumption [US gal/h]	30.75	1.56	0.08	0.70	1.86	3.47	52.66	0.13	18.13	0.22
CO [g/h]	2149.59	109.34	5.73	49.11	130.36	242.80	3681.24	8.76	1266.98	15.62
NOx [g/h]	418.23	21.27	1.11	9.56	25.36	47.24	716.24	1.70	246.51	3.04
VOC [g/h]	498.19	25.34	1.33	11.38	30.21	56.27	853.16	2.03	293.64	3.62

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			80.0			29.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			12.86			44.00		
I_p,int, Pedestrian LOS Score for Intersectio	0.000			0.000			3.826			3.416		
Crosswalk LOS	F			F			D			C		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	414			1143			314			314		
d_b, Bicycle Delay [s]	44.00			12.86			49.73			49.73		
I_b,int, Bicycle LOS Score for Intersection	2.002			1.733			3.382			2.413		
Bicycle LOS	B			A			C			B		

**Sequence**




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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Signalized	Delay (sec / veh):	4.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.359

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			US-24 WB Ramps					
	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Turning Movement												
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 Entry Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	120.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	450.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd						US-24 WB Ramps		
Base Volume Input [veh/h]	476	1010	0	0	250	168	0	0	0	24	0	70
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	84	0	0	0	0	0	35
Total Hourly Volume [veh/h]	476	1010	0	0	250	84	0	0	0	24	0	35
Peak Hour Factor	0.8500	0.8500	1.0000	1.0000	0.8500	0.8500	1.0000	1.0000	1.0000	0.8500	0.8500	0.8500
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]	140	297	0	0	74	25	0	0	0	7	0	10
Total Analysis Volume [veh/h]	560	1188	0	0	294	99	0	0	0	28	0	41
Presence of On-Street Parking	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]	125
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	116.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	ProtPer	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	0	0	0	8	0
Auxiliary Signal Groups												
Maximum Green [s]	20	15	0	0	15	0	0	0	0	0	20	0
Amber [s]	4.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0
All red [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	24	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	4.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	54	97	0	0	43	0	0	0	0	0	28	0
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	4	4	0	0	4	0	0	0	0	0	4	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes						No	
Maximum Recall	No	Yes			Yes						No	
Pedestrian Recall	Yes	No			No						No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	C	R		L	C
C, Calculated Cycle Length [s]	125	125	125	125		125	125
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00		6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.00	4.00	4.00		4.00	4.00
g_i, Effective Green Time [s]	108	108	93	93		5	5
g / C, Green / Cycle	0.87	0.87	0.74	0.74		0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.51	0.33	0.08	0.06		0.02	0.03
s, saturation flow rate [veh/h]	1091	3560	3560	1589		1781	1589
c, Capacity [veh/h]	1005	3084	2635	1176		67	60
d1, Uniform Delay [s]	1.74	1.68	4.60	4.51		58.79	59.40
k, delay calibration	0.50	0.50	0.50	0.50		0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	2.23	0.37	0.09	0.14		1.51	4.97
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

**Lane Group Results**

X, volume / capacity	0.56	0.39	0.11	0.08		0.42	0.68
d, Delay for Lane Group [s/veh]	3.97	2.04	4.69	4.65		60.30	64.37
Lane Group LOS	A	A	A	A		E	E
Critical Lane Group	No	Yes	No	No		No	Yes
50th-Percentile Queue Length [veh/ln]	2.06	1.73	1.01	0.69		0.90	1.37
50th-Percentile Queue Length [ft/ln]	51.51	43.13	25.33	17.32		22.42	34.19
95th-Percentile Queue Length [veh/ln]	3.71	3.11	1.82	1.25		1.61	2.46
95th-Percentile Queue Length [ft/ln]	92.72	77.64	45.59	31.18		40.35	61.55

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	3.97	2.04	0.00	0.00	4.69	4.65	0.00	0.00	0.00	60.30	64.37	64.37
Movement LOS	A	A			A	A				E	E	E
d_A, Approach Delay [s/veh]	2.66		4.68			0.00			62.72			
Approach LOS	A		A			A			E			
d_I, Intersection Delay [s/veh]	4.90											
Intersection LOS	A											
Intersection V/C	0.359											

**Emissions**

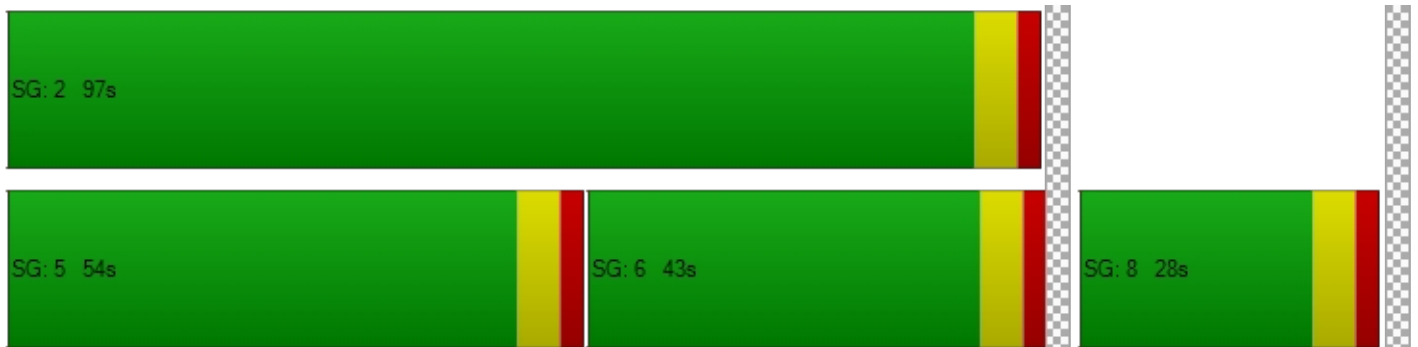
Vehicle Miles Traveled [mph]	40.59	86.11	16.13	5.43			5.72	8.37
Stops [stops/h]	59.34	99.38	58.36	19.95			25.83	39.39
Fuel consumption [US gal/h]	2.45	4.59	1.27	0.43			0.72	1.10
CO [g/h]	171.34	320.72	88.56	29.88			50.44	76.83
NOx [g/h]	33.34	62.40	17.23	5.81			9.81	14.95
VOC [g/h]	39.71	74.33	20.53	6.92			11.69	17.81

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1456		592		0		352	
d_b, Bicycle Delay [s]	4.62		30.98		62.50		42.44	
I_b,int, Bicycle LOS Score for Intersection	3.002		1.953		4.132		1.731	
Bicycle LOS	C		A		D		A	

**Sequence**





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



**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Signalized	Delay (sec / veh):	66.1
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	888	357	266	3	0	217	101	11	3	0	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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	179	0	0	0	0	0	6	0	0	191
Total Hourly Volume [veh/h]	0	888	178	266	3	0	217	101	5	3	0	190
Peak Hour Factor	1.0000	0.8100	0.8100	0.8500	0.8500	1.0000	0.8500	0.8500	0.8500	0.8500	1.0000	0.8500
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]	0	274	55	78	1	0	64	30	1	1	0	56
Total Analysis Volume [veh/h]	0	1096	220	313	4	0	255	119	6	4	0	224
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]	125
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permiss	Permiss	Permiss	ProtPer	Permiss	Permiss	Split	Split	Split	Split	Permiss	Split
Signal Group	0	2	0	1	6	0	0	4	0	3	0	0
Auxiliary Signal Groups												
Maximum Green [s]	0	15	0	8	15	0	0	30	0	30	0	0
Amber [s]	0.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
All red [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
Walk [s]	0	0	0	0	0	0	0	7	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	20	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No		No		
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	0.0	4.0	0.0	4.0	4.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	0	42	0	24	66	0	0	36	0	23	0	0
Lead / Lag	-	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	0	4	0	4	4	0	0	4	0	4	0	0
Vehicle Extension [s]	0.0	2.0	0.0	3.0	2.0	0.0	0.0	3.0	0.0	1.0	0.0	0.0
Minimum Recall		Yes		No	Yes			No		No		
Maximum Recall		Yes		No	Yes			No		No		
Pedestrian Recall		No		Yes	No			No		No		

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	C	R	L	R
C, Calculated Cycle Length [s]	125	125	125	125	125	125	125	125
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	38	38	62	62	28	28	17	17
g / C, Green / Cycle	0.31	0.31	0.50	0.50	0.22	0.22	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.31	0.14	0.35	0.00	0.21	0.00	0.00	0.14
s, saturation flow rate [veh/h]	3560	1589	900	3560	1808	1589	1781	1589
c, Capacity [veh/h]	1088	486	407	1772	402	353	242	216
d1, Uniform Delay [s]	43.40	34.97	34.41	15.79	47.65	37.94	46.76	54.00
k, delay calibration	0.50	0.50	0.50	0.50	0.31	0.11	0.04	0.06
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	29.02	3.03	13.08	0.00	21.93	0.02	0.01	30.65
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	1.01	0.45	0.77	0.00	0.93	0.02	0.02	1.04
d, Delay for Lane Group [s/veh]	72.41	38.00	47.49	15.79	69.59	37.96	46.77	84.65
Lane Group LOS	F	D	D	B	E	D	D	F
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	21.00	5.82	7.00	0.03	13.83	0.15	0.11	8.62
50th-Percentile Queue Length [ft/ln]	525.06	145.57	174.96	0.74	345.80	3.68	2.73	215.62
95th-Percentile Queue Length [veh/ln]	28.65	9.78	11.34	0.05	19.93	0.27	0.20	13.65
95th-Percentile Queue Length [ft/ln]	716.33	244.50	283.42	1.34	498.29	6.63	4.92	341.31

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	0.00	72.41	38.00	47.49	15.79	0.00	69.59	69.59	37.96	46.77	0.00	84.65
Movement LOS		F	D	D	B		E	E	D	D		F
d_A, Approach Delay [s/veh]	66.66		47.09			69.09			83.99			
Approach LOS	E		D			E			F			
d_I, Intersection Delay [s/veh]	66.07											
Intersection LOS	E											
Intersection V/C	0.775											

**Emissions**

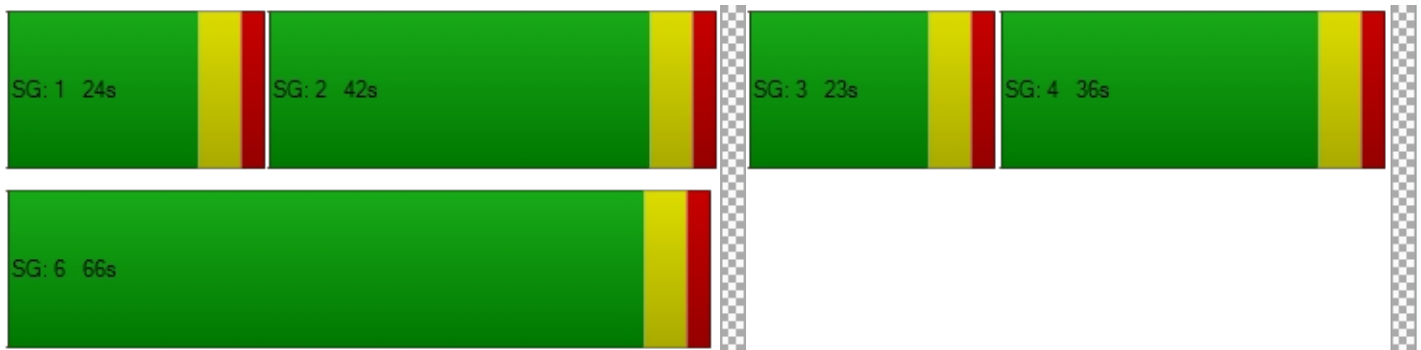
Vehicle Miles Traveled [mph]	196.16	39.37	22.69	0.29	41.67	0.67	0.55	30.98
Stops [stops/h]	1209.74	167.69	201.55	1.71	398.37	4.24	3.15	248.40
Fuel consumption [US gal/h]	30.91	4.25	5.07	0.03	9.21	0.10	0.08	6.51
CO [g/h]	2160.44	296.97	354.51	2.39	643.90	6.80	5.47	454.76
NOx [g/h]	420.34	57.78	68.97	0.47	125.28	1.32	1.06	88.48
VOC [g/h]	500.70	68.83	82.16	0.55	149.23	1.58	1.27	105.40

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	576	960	480	272
d_b, Bicycle Delay [s]	31.68	16.90	36.10	46.66
I_b,int, Bicycle LOS Score for Intersection	2.793	1.821	2.197	1.560
Bicycle LOS	C	A	B	A

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	101.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	1	0	1
Entry Pocket Length [ft]	100.00	290.00	350.00	405.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	34	44	328	391	340	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	34	44	328	391	340	18
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	13	96	115	100	5
Total Analysis Volume [veh/h]	40	52	386	460	400	21
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.54	0.08	0.34	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	101.05	11.02	9.78	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.30	0.26	1.52	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	57.57	6.50	37.88	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	50.16		4.46		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	6.17					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	4.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	34	37	71	2	14	2	0	15	47	173	5	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth 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
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
Total Hourly Volume [veh/h]	34	37	71	2	14	2	0	15	47	173	5	10
Peak Hour Factor	0.7800	0.7800	0.7800	0.7100	0.7100	0.7100	0.4000	0.4000	0.4000	0.8500	0.8500	0.8500
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	12	23	1	5	1	0	9	29	51	1	3
Total Analysis Volume [veh/h]	44	47	91	3	20	3	0	38	118	204	6	12
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	42			259			232			93		
Exiting Flow Rate [veh/h]	349			60			54			135		
Demand Flow Rate [veh/h]	34	37	71	2	14	2	0	15	47	173	5	10
Adjusted Demand Flow Rate [veh/h]	44	47	91	3	20	3	0	38	118	204	6	12

**Lanes**

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	186	27	160	227
Capacity of Entry and Bypass Lanes [veh/h]	1323	1060	1090	1256
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1297	1039	1069	1231
X, volume / capacity	0.14	0.03	0.15	0.18

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	0.49	0.08	0.51	0.66
95th-Percentile Queue Length [ft]	12.21	1.92	12.77	16.42
Approach Delay [s/veh]	3.93	3.68	4.68	4.47
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	4.32			
Intersection LOS	A			

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type:	Two-way stop	Delay (sec / veh):	60.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.162

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	26	1045	9	2	395	5	16	0	13	10	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
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
Total Hourly Volume [veh/h]	26	1045	9	2	395	5	16	0	13	10	0	10
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.7900	0.7900	0.7900	0.8200	0.8200	0.8200
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]	8	307	3	1	116	1	5	0	4	3	0	3
Total Analysis Volume [veh/h]	31	1229	11	2	465	6	20	0	16	12	0	12
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.00	0.00	0.14	0.00	0.02	0.16	0.00	0.03
d_M, Delay for Movement [s/veh]	8.35	0.00	0.00	11.46	0.00	0.00	33.41	54.19	12.79	60.04	57.47	19.89
Movement LOS	A	A	A	B	A	A	D	F	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.05	0.03	0.00	0.00	0.00	0.00	0.56	0.56	0.56	0.67	0.67	0.67
95th-Percentile Queue Length [ft/ln]	1.31	0.66	0.00	0.08	0.04	0.00	14.11	14.11	14.11	16.67	16.67	16.67
d_A, Approach Delay [s/veh]	0.20			0.05			24.24			39.96		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	1.17											
Intersection LOS	F											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	358	719	78
2	347	697	76
3	340	683	74
4	319	640	69
5	283	568	62
6	279	561	61
7	276	554	60
8	251	503	55
9	247	496	54
10	243	489	53
11	211	424	46
12	197	395	43
13	193	388	42
14	143	288	31
15	143	288	31
16	100	201	22
17	57	115	12
18	57	115	12
19	32	65	7
20	18	36	4
21	11	22	2
22	4	7	1
23	4	7	1
24	4	7	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	1077	2	78	No	No	No	No	No	No	Yes	Yes	No	No
2	3	1044	2	76	No	No	No	No	No	No	Yes	Yes	No	No
3	3	1023	2	74	No	No	No	No	No	No	Yes	Yes	No	No
4	3	959	2	69	No	No	No	No	No	No	No	Yes	No	No
5	3	851	2	62	No	No	No	No	No	No	No	Yes	No	No
6	3	840	2	61	No	No	No	No	No	No	No	Yes	No	No
7	3	830	2	60	No	No	No	No	No	No	No	Yes	No	No
8	3	754	2	55	No	No	No	No	No	No	No	No	No	No
9	3	743	2	54	No	No	No	No	No	No	No	No	No	No
10	3	732	2	53	No	No	No	No	No	No	No	No	No	No
11	3	635	2	46	No	No	No	No	No	No	No	No	No	No
12	3	592	2	43	No	No	No	No	No	No	No	No	No	No
13	3	581	2	42	No	No	No	No	No	No	No	No	No	No
14	3	431	2	31	No	No	No	No	No	No	No	No	No	No
15	3	431	2	31	No	No	No	No	No	No	No	No	No	No
16	3	301	2	22	No	No	No	No	No	No	No	No	No	No
17	3	172	2	12	No	No	No	No	No	No	No	No	No	No
18	3	172	2	12	No	No	No	No	No	No	No	No	No	No
19	3	97	2	7	No	No	No	No	No	No	No	No	No	No
20	3	54	2	4	No	No	No	No	No	No	No	No	No	No
21	3	33	2	2	No	No	No	No	No	No	No	No	No	No
22	3	11	2	1	No	No	No	No	No	No	No	No	No	No
23	3	11	2	1	No	No	No	No	No	No	No	No	No	No
24	3	11	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	3	7	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	50.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	1:05
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	78
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1155
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1080	402	20	29
2	1048	390	19	28
3	1026	382	19	28
4	961	358	18	26
5	853	318	16	23
6	842	314	16	23
7	832	310	15	22
8	756	281	14	20
9	745	277	14	20
10	734	273	14	20
11	637	237	12	17
12	594	221	11	16
13	583	217	11	16
14	432	161	8	12
15	432	161	8	12
16	302	113	6	8
17	173	64	3	5
18	173	64	3	5
19	97	36	2	3
20	54	20	1	1
21	32	12	1	1
22	11	4	0	0
23	11	4	0	0
24	11	4	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1482	1	29	No	No	No	No	No	No	No	No	No	No
2	2	1438	1	28	No	No	No	No	No	No	No	No	No	No
3	2	1408	1	28	No	No	No	No	No	No	No	No	No	No
4	2	1319	1	26	No	No	No	No	No	No	No	No	No	No
5	2	1171	1	23	No	No	No	No	No	No	No	No	No	No
6	2	1156	1	23	No	No	No	No	No	No	No	No	No	No
7	2	1142	1	22	No	No	No	No	No	No	No	No	No	No
8	2	1037	1	20	No	No	No	No	No	No	No	No	No	No
9	2	1022	1	20	No	No	No	No	No	No	No	No	No	No
10	2	1007	1	20	No	No	No	No	No	No	No	No	No	No
11	2	874	1	17	No	No	No	No	No	No	No	No	No	No
12	2	815	1	16	No	No	No	No	No	No	No	No	No	No
13	2	800	1	16	No	No	No	No	No	No	No	No	No	No
14	2	593	1	12	No	No	No	No	No	No	No	No	No	No
15	2	593	1	12	No	No	No	No	No	No	No	No	No	No
16	2	415	1	8	No	No	No	No	No	No	No	No	No	No
17	2	237	1	5	No	No	No	No	No	No	No	No	No	No
18	2	237	1	5	No	No	No	No	No	No	No	No	No	No
19	2	133	1	3	No	No	No	No	No	No	No	No	No	No
20	2	74	1	1	No	No	No	No	No	No	No	No	No	No
21	2	44	1	1	No	No	No	No	No	No	No	No	No	No
22	2	15	1	0	No	No	No	No	No	No	No	No	No	No
23	2	15	1	0	No	No	No	No	No	No	No	No	No	No
24	2	15	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	40	24.2
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:13	0:11
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	20	29
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1531	1531
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

## **Appendix C- Trip Generation**

**PROJECT DETAILS**

Project Name: Cimarron Hills	Type of Project:
Project No:	City:
Country:	Built-up Area(Sq.ft):
Analyst Name: Timothy Cason	Clients Name:
Date: 4/29/2026	ZIP/Postal Code:
State/Province:	No. of Scenarios: 3
Analysis Region:	

**SCENARIO SUMMARY**

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak Hour	3	1	0		56	167	223
Scenario - 1	PM Peak Hour	3	1	0		181	111	292
Scenario - 1	Weekday	3	1	0		1747	1747	3494

**Scenario - 1**

Scenario Name: AM Peak Hour

User Group:

Dev. phase: 1

No. of Years to Project 0  
Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	301	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	28	90	118
Data Source: Trip Generation Manual, 12th Ed					$T = 0.35(X) + 12.93$	24%	76%	
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	60	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	12	33	45
Data Source: Trip Generation Manual, 12th Ed					$T = 0.67(X) + 5.59$	27%	73%	
210(1) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	82	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	16	44	60
Data Source: Trip Generation Manual, 12th Ed					$T = 0.67(X) + 5.59$	27%	73%	

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76
210 - Single-Family Detached Housing	100	100	1	1	27	73
210(1) - Single-Family Detached Housing	100	100	1	1	27	73

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	90	0	0	28	90
	118		0		118	
210 - Single-Family Detached Housing	12	33	0	0	12	33
	45		0		45	
210(1) - Single-Family Detached Housing	16	44	0	0	16	44
	60		0		60	

**Scenario - 2**

Scenario Name: PM Peak Hour

User Group:

Dev. phase: 1

No. of Years to Project 0

Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	301	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN)	94	58	152
Data Source: Trip Generation Manual, 12th Ed					$T = 0.48(X) + 7.35$	62%	38%	
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	60	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG)	37	23	60
Data Source: Trip Generation Manual, 12th Ed					$\ln(T) = 0.92\ln(X) + 0.33$	62%	38%	
210(1) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	82	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG)	50	30	80
Data Source: Trip Generation Manual, 12th Ed					$\ln(T) = 0.92\ln(X) + 0.33$	62%	38%	

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	62	38
210 - Single-Family Detached Housing	100	100	1	1	62	38
210(1) - Single-Family Detached Housing	100	100	1	1	62	38

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	58	0	0	94	58
	152		0		152	
210 - Single-Family Detached Housing	37	23	0	0	37	23
	60		0		60	
210(1) - Single-Family Detached Housing	50	30	0	0	50	30
	80		0		80	

**Scenario - 3**

Scenario Name: Weekday

User Group:

Dev. phase: 1

No. of Years to Project 0

Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Data Source: Trip Generation Manual, 12th Ed	General Urban/Suburban	Dwelling Units	301	Weekday	Best Fit (LIN) T = 5.63(X) + 120.45	908 50%	908 50%	1816
210 - Single-Family Detached Housing Data Source: Trip Generation Manual, 12th Ed	General Urban/Suburban	Dwelling Units	60	Weekday	Best Fit (LIN) T = 8.07(X) + 265.45	375 50%	375 50%	750
210(1) - Single-Family Detached Housing Data Source: Trip Generation Manual, 12th Ed	General Urban/Suburban	Dwelling Units	82	Weekday	Best Fit (LIN) T = 8.07(X) + 265.45	464 50%	464 50%	928

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	50	50
210 - Single-Family Detached Housing	100	100	1	1	50	50
210(1) - Single-Family Detached Housing	100	100	1	1	50	50

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	908	908	0	0	908	908
	1816		0		1816	
210 - Single-Family Detached Housing	375	375	0	0	375	375
	750		0		750	
210(1) - Single-Family Detached Housing	464	464	0	0	464	464
	928		0		928	

## **Appendix D- Buildout Conditions**

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	262	128	91	241	750	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	27	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
Right Turn on Red Volume [veh/h]	0	66	0	0	0	71
Total Hourly Volume [veh/h]	295	65	93	247	768	70
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]	80	18	25	67	209	19
Total Analysis Volume [veh/h]	321	71	101	268	835	76
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	50	50	50	50	50	50
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.0	15.0	23.8	23.8	14.2	14.2
g / C, Green / Cycle	0.30	0.30	0.48	0.48	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.17	0.04	0.08	0.08	0.24	0.05
s, saturation flow rate [veh/h]	1870	1589	1218	3560	3459	1589
c, Capacity [veh/h]	559	475	648	1690	988	454
d1, Uniform Delay [s]	14.87	12.90	7.92	7.48	16.85	13.42
k, delay calibration	0.11	0.11	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.94	0.14	0.04	0.04	0.78	0.06
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.57	0.15	0.16	0.16	0.84	0.17
d, Delay for Lane Group [s/veh]	15.81	13.04	7.96	7.52	17.63	13.49
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.80	0.53	0.48	0.65	3.86	0.55
50th-Percentile Queue Length [ft/ln]	69.97	13.20	11.97	16.21	96.53	13.81
95th-Percentile Queue Length [veh/ln]	5.04	0.95	0.86	1.17	6.95	0.99
95th-Percentile Queue Length [ft/ln]	125.95	23.76	21.55	29.18	173.76	24.86

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	15.81	13.04	7.96	7.52	17.63	13.49
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	15.31		7.64		17.29	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	14.69					
Intersection LOS	B					
Intersection V/C	0.451					

**Emissions**

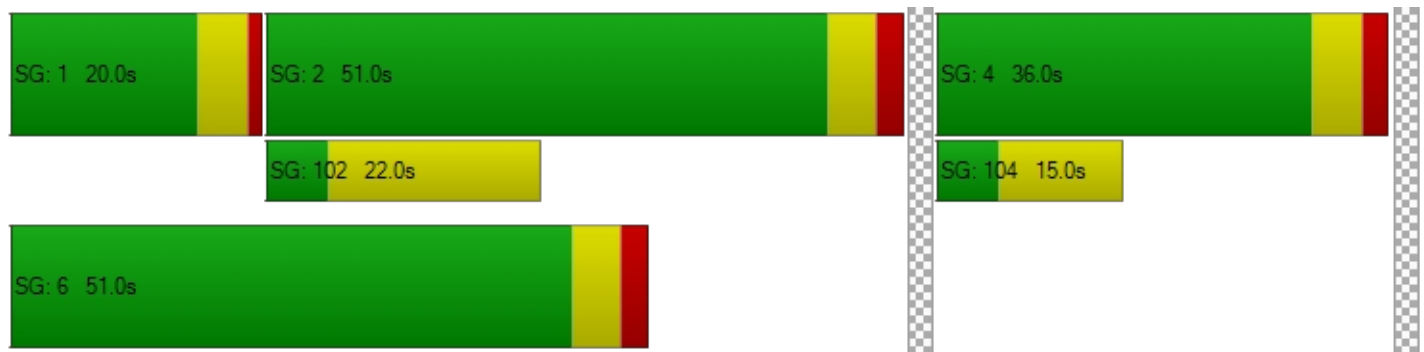
Vehicle Miles Traveled [mph]	45.54	10.07	10.01	26.56	157.38	14.32
Stops [stops/h]	201.57	38.02	34.49	93.39	556.14	39.78
Fuel consumption [US gal/h]	4.02	0.81	0.77	2.02	13.18	1.05
CO [g/h]	281.09	56.84	53.57	141.16	921.14	73.66
NOx [g/h]	54.69	11.06	10.42	27.46	179.22	14.33
VOC [g/h]	65.14	13.17	12.42	32.72	213.48	17.07

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		16.81		16.81	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.306		2.698	
Crosswalk LOS	F		B		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1800		1800		1200	
d_b, Bicycle Delay [s]	0.25		0.25		4.00	
I_b,int, Bicycle LOS Score for Intersection	2.315		1.864		1.560	
Bicycle LOS	B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	39.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.729

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	645.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	330.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	441	42	2	13	24	179	156	681	599	8	1758	43
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	342	48	0	25	51	278	268	123	222	0	0	25
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	1	0	0	231	0	0	418	0	0	35
Total Hourly Volume [veh/h]	793	91	1	38	76	230	428	820	417	8	1799	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	25	0	10	21	63	116	223	113	2	489	9
Total Analysis Volume [veh/h]	862	99	1	41	83	250	465	891	453	9	1955	37
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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	28.0	24.0	0.0	19.0	15.0	0.0	25.0	64.0	0.0	13.0	52.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.50	6.00	6.00	6.50	6.00	6.50	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.50	4.00	4.00	4.50	4.00	4.50	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	21.5	25.3	25.3	3.1	6.9	18.1	64.1	72.1	47.6	47.6
g / C, Green / Cycle	0.18	0.21	0.21	0.03	0.06	0.15	0.53	0.60	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.00	0.01	0.04	0.13	0.17	0.01	0.38	0.02
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	722	5094	1589
c, Capacity [veh/h]	929	393	334	90	107	521	2717	460	2019	630
d1, Uniform Delay [s]	48.48	39.51	37.44	57.59	55.80	50.01	15.84	10.24	35.48	22.39
k, delay calibration	0.04	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, 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]	1.88	0.12	0.00	1.33	22.05	2.21	0.32	0.01	13.84	0.18
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	0.93	0.25	0.00	0.45	0.78	0.89	0.33	0.02	0.97	0.06
d, Delay for Lane Group [s/veh]	50.36	39.63	37.44	58.92	77.85	52.22	16.16	10.24	49.32	22.56
Lane Group LOS	D	D	D	E	E	D	B	B	D	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.20	2.34	0.02	0.63	3.13	6.68	4.23	0.08	19.61	0.64
50th-Percentile Queue Length [ft/ln]	205.11	58.57	0.56	15.77	78.37	167.12	105.71	2.12	490.30	16.03
95th-Percentile Queue Length [veh/ln]	12.90	4.22	0.04	1.14	5.64	10.93	7.60	0.15	26.87	1.15
95th-Percentile Queue Length [ft/ln]	322.55	105.43	1.01	28.38	141.07	273.13	190.01	3.81	671.87	28.85

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	50.36	39.63	37.44	58.92	77.85	0.00	52.22	16.16	0.00	10.24	49.32	22.56
Movement LOS	D	D	D	E	E		D	B		B	D	C
d_A, Approach Delay [s/veh]	49.24			25.08			21.82			48.65		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	39.93											
Intersection LOS	D											
Intersection V/C	0.729											

**Emissions**

Vehicle Miles Traveled [mph]	337.84	38.80	0.39	4.33	8.76	197.11	377.68	2.74	595.38	11.27
Stops [stops/h]	738.39	70.29	0.67	37.84	94.04	401.10	380.54	2.54	1765.07	19.23
Fuel consumption [US gal/h]	33.85	3.40	0.03	0.88	2.19	18.98	22.63	0.16	72.32	0.90
CO [g/h]	2366.09	237.79	2.32	61.43	153.43	1327.05	1582.03	11.02	5055.35	63.19
NOx [g/h]	460.35	46.27	0.45	11.95	29.85	258.20	307.81	2.14	983.59	12.29
VOC [g/h]	548.36	55.11	0.54	14.24	35.56	307.56	366.65	2.55	1171.63	14.65

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	300		150		950		750	
d_b, Bicycle Delay [s]	43.35		51.34		16.54		23.44	
I_b,int, Bicycle LOS Score for Intersection	3.149		1.764		2.305		2.679	
Bicycle LOS	C		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 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr									
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	306	326	0	0	0	713	285	0	0	0	303	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0234	1.0234	1.0234	1.023	1.023	1.023	1.023	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	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	0
Diverted Trips [veh/h]	0	0	0	7	0	0	-11	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	313	334	0	7	0	730	281	0	0	0	310	0	68
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	91	0	2	0	198	76	0	0	0	84	0	18
Total Analysis Volume [veh/h]	340	363	0	8	0	793	305	0	0	0	337	0	74
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			1			2			
Circulating Flow Rate [veh/h]	8			691			1161			725			
Exiting Flow Rate [veh/h]	1153			454			347			0			
Demand Flow Rate [veh/h]	313	334	0	7	0	730	281	0	0	0	310	0	68
Adjusted Demand Flow Rate [veh/h]	340	363	0	8	0	793	305	0	0	0	337	0	74

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	347	371	384	434	0		344	76
Capacity of Entry and Bypass Lanes [veh/h]	1340	1411	716	790	1058		693	767
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1314	1383	702	775	1037		680	752
X, volume / capacity	0.26	0.26	0.54	0.55	0.29		0.50	0.10

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	B	B	A		B	A
95th-Percentile Queue Length [veh]	1.04	1.06	3.22	3.38	1.23		2.77	0.33
95th-Percentile Queue Length [ft]	25.97	26.48	80.56	84.55	30.85		69.37	8.16
Approach Delay [s/veh]	4.91		11.34				0.00	11.61
Approach LOS	A		B				A	B
Intersection Delay [s/veh]	9.36							
Intersection LOS	A							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	6.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	10.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	147	67	160	856	0	66	163	374	96	0	419
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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
Total Hourly Volume [veh/h]	0	150	69	164	876	0	68	167	383	98	0	429
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	19	45	238	0	18	45	104	27	0	117
Total Analysis Volume [veh/h]	0	163	75	178	952	0	74	182	416	107	0	466
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	443			109			1262			242		
Exiting Flow Rate [veh/h]	1080			717			0			367		
Demand Flow Rate [veh/h]	0	150	69	164	876	0	68	167	383	98	0	429
Adjusted Demand Flow Rate [veh/h]	0	163	75	178	952	0	74	182	416	107	0	466

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1350.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00092	0.00085	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	79	89	0	542	611	76	186	0	110	476	476
Capacity of Entry and Bypass Lanes [veh/h]	899	975	1040	1222	1295	423	486	102000	1081	1157	1157
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	881	956	1019	1198	1269	415	477	100000	1060	1134	1134
X, volume / capacity	0.09	0.09	0.07	0.44	0.47	0.18	0.38	0.00	0.10	0.41	0.41

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	B	B	A	A	A	
95th-Percentile Queue Length [veh]	0.28	0.30	0.24	2.33	2.60	0.64	1.77	0.00	0.34	2.04	
95th-Percentile Queue Length [ft]	7.12	7.43	5.95	58.18	65.03	16.05	44.25	0.00	8.40	51.10	
Approach Delay [s/veh]	4.57			7.66			5.07			6.84	
Approach LOS	A			A			A			A	
Intersection Delay [s/veh]	6.53										
Intersection LOS	A										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	34.1
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.343

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	58	10	135	255	505	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	59	10	138	261	517	38
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]	16	3	38	71	140	10
Total Analysis Volume [veh/h]	64	11	150	284	562	41
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.34	0.02	0.15	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	34.08	11.98	9.36	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.43	0.06	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	35.84	1.60	13.57	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	30.84		3.24		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.34					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+r		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	16	109	3	41	0	0	0	0	151	0	3
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0234	1.0234	1.0234	1.0234	1.0000	1.0000	1.0000	1.0000	1.0234	1.0000	1.0234
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	9	0	0	0	0	0	0	0	27	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	25	112	3	42	0	0	0	0	182	0	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	30	1	11	0	0	0	0	49	0	1
Total Analysis Volume [veh/h]	0	27	122	3	46	0	0	0	0	198	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	3			202			252			28		
Exiting Flow Rate [veh/h]	249			31			0			128		
Demand Flow Rate [veh/h]	0	25	112	3	42	0	0	0	0	182	0	3
Adjusted Demand Flow Rate [veh/h]	0	27	122	3	46	0	0	0	0	198	0	3

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	152	50	0	202	4
Capacity of Entry and Bypass Lanes [veh/h]	1376	1124	1068	1385	1385
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1349	1102	1047	1358	1358
X, volume / capacity	0.11	0.04	0.00	0.15	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.37	0.14	0.00	0.51	0.01
95th-Percentile Queue Length [ft]	9.29	3.49	0.00	12.76	0.17
Approach Delay [s/veh]	3.55	3.64	3.44	3.82	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.70				
Intersection LOS	A				

**Intersection Level Of Service Report  
Intersection 7: Peterson Rd/ Panamint Ct**

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 12.7  
 Level Of Service: B  
 Volume to Capacity (v/c): 0.019

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	11	383	10	4	984	3	2	1	5	11	3	4
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	-11	13	5	-4	4	0	-2	-1	3	-11	-3	14
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
Total Hourly Volume [veh/h]	0	405	15	0	1011	3	0	0	8	0	0	18
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	110	4	0	275	1	0	0	2	0	0	5
Total Analysis Volume [veh/h]	0	440	16	0	1099	3	0	0	9	0	0	20
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	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	0.00	0.00	0.02	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.67	0.00	0.00	9.77
Movement LOS		A	A		A	A			B			A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	0.00	0.00	1.99
d_A, Approach Delay [s/veh]	0.00			0.00			12.67			9.77		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	0.20											
Intersection LOS	B											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	555	399	69
2	538	387	67
3	527	379	66
4	494	355	61
5	438	315	55
6	433	311	54
7	427	307	53
8	389	279	48
9	383	275	48
10	377	271	47
11	327	235	41
12	305	219	38
13	300	215	37
14	222	160	28
15	222	160	28
16	155	112	19
17	89	64	11
18	89	64	11
19	50	36	6
20	28	20	3
21	17	12	2
22	6	4	1
23	6	4	1
24	6	4	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	954	2	69	No	No	No	No	No	No	No	Yes	No	No
2	2	925	2	67	No	No	No	No	No	No	No	Yes	No	No
3	2	906	2	66	No	No	No	No	No	No	No	Yes	No	No
4	2	849	2	61	No	No	No	No	No	No	No	Yes	No	No
5	2	753	2	55	No	No	No	No	No	No	No	No	No	No
6	2	744	2	54	No	No	No	No	No	No	No	No	No	No
7	2	734	2	53	No	No	No	No	No	No	No	No	No	No
8	2	668	2	48	No	No	No	No	No	No	No	No	No	No
9	2	658	2	48	No	No	No	No	No	No	No	No	No	No
10	2	648	2	47	No	No	No	No	No	No	No	No	No	No
11	2	562	2	41	No	No	No	No	No	No	No	No	No	No
12	2	524	2	38	No	No	No	No	No	No	No	No	No	No
13	2	515	2	37	No	No	No	No	No	No	No	No	No	No
14	2	382	2	28	No	No	No	No	No	No	No	No	No	No
15	2	382	2	28	No	No	No	No	No	No	No	No	No	No
16	2	267	2	19	No	No	No	No	No	No	No	No	No	No
17	2	153	2	11	No	No	No	No	No	No	No	No	No	No
18	2	153	2	11	No	No	No	No	No	No	No	No	No	No
19	2	86	2	6	No	No	No	No	No	No	No	No	No	No
20	2	48	2	3	No	No	No	No	No	No	No	No	No	No
21	2	29	2	2	No	No	No	No	No	No	No	No	No	No
22	2	10	2	1	No	No	No	No	No	No	No	No	No	No
23	2	10	2	1	No	No	No	No	No	No	No	No	No	No
24	2	10	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	4	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	30.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:35
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	69
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1023
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	420	1014	18	8
2	407	984	17	8
3	399	963	17	8
4	374	902	16	7
5	332	801	14	6
6	328	791	14	6
7	323	781	14	6
8	294	710	13	6
9	290	700	12	6
10	286	690	12	5
11	248	598	11	5
12	231	558	10	4
13	227	548	10	4
14	168	406	7	3
15	168	406	7	3
16	118	284	5	2
17	67	162	3	1
18	67	162	3	1
19	38	91	2	1
20	21	51	1	0
21	13	30	1	0
22	4	10	0	0
23	4	10	0	0
24	4	10	0	0

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1434	1	18	No	No	No	No	No	No	No	No	No	No
2	2	1391	1	17	No	No	No	No	No	No	No	No	No	No
3	2	1362	1	17	No	No	No	No	No	No	No	No	No	No
4	2	1276	1	16	No	No	No	No	No	No	No	No	No	No
5	2	1133	1	14	No	No	No	No	No	No	No	No	No	No
6	2	1119	1	14	No	No	No	No	No	No	No	No	No	No
7	2	1104	1	14	No	No	No	No	No	No	No	No	No	No
8	2	1004	1	13	No	No	No	No	No	No	No	No	No	No
9	2	990	1	12	No	No	No	No	No	No	No	No	No	No
10	2	976	1	12	No	No	No	No	No	No	No	No	No	No
11	2	846	1	11	No	No	No	No	No	No	No	No	No	No
12	2	789	1	10	No	No	No	No	No	No	No	No	No	No
13	2	775	1	10	No	No	No	No	No	No	No	No	No	No
14	2	574	1	7	No	No	No	No	No	No	No	No	No	No
15	2	574	1	7	No	No	No	No	No	No	No	No	No	No
16	2	402	1	5	No	No	No	No	No	No	No	No	No	No
17	2	229	1	3	No	No	No	No	No	No	No	No	No	No
18	2	229	1	3	No	No	No	No	No	No	No	No	No	No
19	2	129	1	2	No	No	No	No	No	No	No	No	No	No
20	2	72	1	1	No	No	No	No	No	No	No	No	No	No
21	2	43	1	1	No	No	No	No	No	No	No	No	No	No
22	2	14	1	0	No	No	No	No	No	No	No	No	No	No
23	2	14	1	0	No	No	No	No	No	No	No	No	No	No
24	2	14	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

**Warrant 3 Condition A**

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.8	12.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:02	0:01
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	18	8
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1460	1460
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	12.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.426

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	273	798	191	169	233	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	53	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
Right Turn on Red Volume [veh/h]	0	409	0	0	0	41
Total Hourly Volume [veh/h]	332	408	195	173	238	40
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]	90	111	53	47	65	11
Total Analysis Volume [veh/h]	361	443	212	188	259	43
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.7	15.7	25.3	25.3	7.8	7.8
g / C, Green / Cycle	0.35	0.35	0.56	0.56	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.28	0.21	0.05	0.07	0.03
s, saturation flow rate [veh/h]	1870	1589	1010	3560	3459	1589
c, Capacity [veh/h]	650	553	702	1999	599	275
d1, Uniform Delay [s]	11.93	13.35	5.70	4.59	16.71	15.89
k, delay calibration	0.11	0.11	0.07	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.74	2.76	0.14	0.02	0.18	0.10
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.56	0.80	0.30	0.09	0.43	0.16
d, Delay for Lane Group [s/veh]	12.67	16.11	5.84	4.61	16.90	15.99
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.51	3.68	0.66	0.27	1.03	0.33
50th-Percentile Queue Length [ft/ln]	62.73	92.10	16.49	6.65	25.79	8.21
95th-Percentile Queue Length [veh/ln]	4.52	6.63	1.19	0.48	1.86	0.59
95th-Percentile Queue Length [ft/ln]	112.91	165.77	29.69	11.97	46.42	14.77

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	12.67	16.11	5.84	4.61	16.90	15.99
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	14.56		5.26		16.77	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	12.54					
Intersection LOS	B					
Intersection V/C	0.426					

**Emissions**

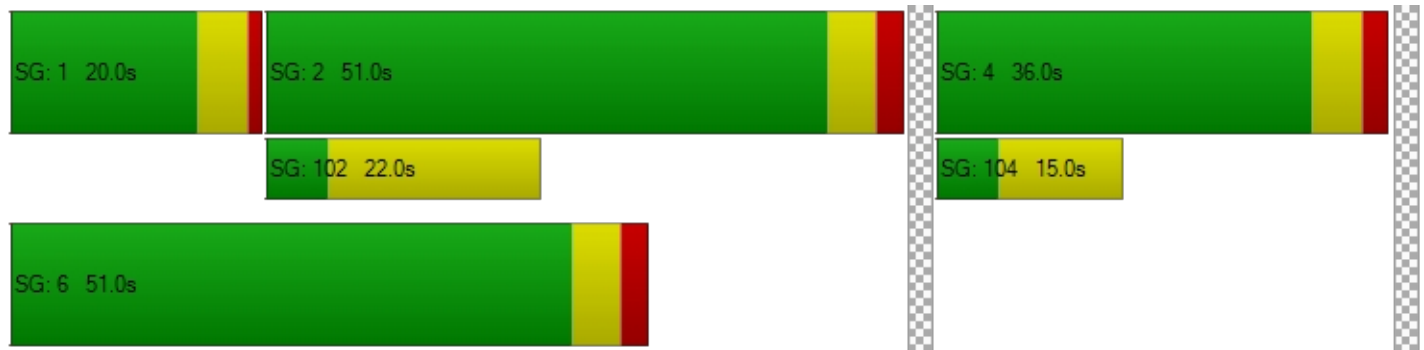
Vehicle Miles Traveled [mph]	51.21	62.85	21.01	18.63	48.81	8.10
Stops [stops/h]	199.99	293.61	52.58	42.41	164.44	26.17
Fuel consumption [US gal/h]	4.14	5.66	1.41	1.18	3.99	0.65
CO [g/h]	289.70	395.74	98.39	82.33	278.77	45.13
NOx [g/h]	56.36	77.00	19.14	16.02	54.24	8.78
VOC [g/h]	67.14	91.72	22.80	19.08	64.61	10.46

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		14.48		14.48	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.302		2.761	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1993		1993		1328	
d_b, Bicycle Delay [s]	0.00		0.00		2.55	
I_b,int, Bicycle LOS Score for Intersection	3.561		1.890		1.560	
Bicycle LOS	D		A		A	

**Sequence**

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



**Intersection Level Of Service Report  
Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	645.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	300.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	405	31	4	26	50	166	155	1723	394	7	851	24
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	360	40	0	17	35	188	221	115	280	0	0	20
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	2	0	0	179	0	0	342	0	0	23
Total Hourly Volume [veh/h]	774	72	2	44	86	179	380	1878	341	7	871	22
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	210	20	1	12	23	49	103	510	93	2	237	6
Total Analysis Volume [veh/h]	841	78	2	48	93	195	413	2041	371	8	947	24
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
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	28.0	24.0	0.0	22.0	18.0	0.0	30.0	51.0	0.0	13.0	34.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	6.50	6.00	6.00	6.50	6.00	6.50	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.50	4.00	4.00	4.50	4.00	4.50	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	19.9	23.8	23.8	3.2	7.1	15.4	55.6	63.5	41.6	41.6
g / C, Green / Cycle	0.18	0.22	0.22	0.03	0.06	0.14	0.51	0.58	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.16	0.04	0.00	0.01	0.05	0.12	0.40	0.02	0.19	0.02
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	353	5094	1589
c, Capacity [veh/h]	938	404	344	103	122	484	2573	231	1924	600
d1, Uniform Delay [s]	44.05	35.26	33.83	52.51	50.58	46.21	22.48	16.56	26.16	21.62
k, delay calibration	0.04	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, 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]	1.30	0.09	0.00	1.22	18.68	1.70	2.61	0.02	0.90	0.12
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	0.90	0.19	0.01	0.47	0.76	0.85	0.79	0.03	0.49	0.04
d, Delay for Lane Group [s/veh]	45.36	35.34	33.83	53.73	69.26	47.91	25.09	16.58	27.06	21.74
Lane Group LOS	D	D	C	D	E	D	C	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.14	1.63	0.04	0.67	3.15	5.34	13.20	0.07	5.97	0.39
50th-Percentile Queue Length [ft/ln]	178.58	40.75	1.00	16.74	78.67	133.41	330.01	1.82	149.17	9.64
95th-Percentile Queue Length [veh/ln]	11.53	2.93	0.07	1.21	5.66	9.12	19.16	0.13	9.97	0.69
95th-Percentile Queue Length [ft/ln]	288.16	73.36	1.80	30.13	141.60	228.12	478.97	3.28	249.33	17.36

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	45.36	35.34	33.83	53.73	69.26	0.00	47.91	25.09	0.00	16.58	27.06	21.74
Movement LOS	D	D	C	D	E		D	C		B	C	C
d_A, Approach Delay [s/veh]	44.48			28.19			25.40			26.84		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	29.71											
Intersection LOS	C											
Intersection V/C	0.615											

**Emissions**

Vehicle Miles Traveled [mph]	329.61	30.57	0.78	5.07	9.82	175.07	865.16	2.44	288.40	7.31
Stops [stops/h]	701.34	53.35	1.31	43.82	102.98	349.28	1296.04	2.39	585.85	12.62
Fuel consumption [US gal/h]	31.81	2.57	0.06	0.98	2.28	16.37	63.43	0.15	25.74	0.59
CO [g/h]	2223.87	179.96	4.50	68.18	159.62	1144.25	4434.08	10.69	1799.49	40.90
NOx [g/h]	432.68	35.01	0.88	13.27	31.06	222.63	862.71	2.08	350.12	7.96
VOC [g/h]	515.40	41.71	1.04	15.80	36.99	265.19	1027.64	2.48	417.05	9.48

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
l_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	327		218		800		491	
d_b, Bicycle Delay [s]	38.47		43.65		19.80		31.31	
l_b,int, Bicycle LOS Score for Intersection	3.083		1.792		2.909		2.111	
Bicycle LOS	C		A		C		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr									
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	0.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	476	1010	0	0	0	250	168	0	0	0	24	0	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0234	1.0234	1.0234	1.023	1.023	1.023	1.023	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	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	0
Diverted Trips [veh/h]	0	0	0	18	0	0	-10	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	487	1034	0	18	0	256	162	0	0	0	25	0	72
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	132	281	0	5	0	70	44	0	0	0	7	0	20
Total Analysis Volume [veh/h]	529	1124	0	20	0	278	176	0	0	0	27	0	78
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			1			2			
Circulating Flow Rate [veh/h]	20			567			332			1706			
Exiting Flow Rate [veh/h]	311			1246			540			0			
Demand Flow Rate [veh/h]	487	1034	0	18	0	256	162	0	0	0	25	0	72
Adjusted Demand Flow Rate [veh/h]	529	1124	0	20	0	278	176	0	0	0	27	0	78

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	793	894	143	162	0		28	80
Capacity of Entry and Bypass Lanes [veh/h]	1325	1396	802	877	898		281	333
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1299	1369	786	860	881		276	327
X, volume / capacity	0.60	0.64	0.18	0.18	0.20		0.10	0.24

**Movement, Approach, & Intersection Results**

Lane LOS	A	B	A	A	A		B	C
95th-Percentile Queue Length [veh]	4.20	4.94	0.65	0.67	0.74		0.32	0.92
95th-Percentile Queue Length [ft]	104.88	123.58	16.15	16.75	18.59		8.07	22.88
Approach Delay [s/veh]	10.11		6.19				0.00	15.48
Approach LOS	B		A				A	C
Intersection Delay [s/veh]	9.53							
Intersection LOS	A							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	296.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	888	357	266	3	0	217	101	11	3	0	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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
Total Hourly Volume [veh/h]	0	909	365	272	3	0	222	103	11	3	0	390
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	247	99	74	1	0	60	28	3	1	0	106
Total Analysis Volume [veh/h]	0	988	397	296	3	0	241	112	12	3	0	424
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	662			3			308			1254		
Exiting Flow Rate [veh/h]	6			1686			0			416		
Demand Flow Rate [veh/h]	0	909	365	272	3	0	222	103	11	3	0	390
Adjusted Demand Flow Rate [veh/h]	0	988	397	296	3	0	241	112	12	3	0	424

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1350.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00092	0.00085	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	474	535	0	302	4	246	115	0	4	433	433
Capacity of Entry and Bypass Lanes [veh/h]	735	809	997	1347	1417	1017	1093	102000	427	490	490
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	720	794	978	1320	1389	997	1072	100000	418	480	480
X, volume / capacity	0.65	0.66	0.41	0.22	0.00	0.24	0.10	0.00	0.01	0.88	0.88

**Movement, Approach, & Intersection Results**

Lane LOS	C	C	A	A	A	A	A	A	A	A	E
95th-Percentile Queue Length [veh]	4.75	5.07	2.00	0.86	0.01	0.95	0.35	0.00	0.02	0.02	9.60
95th-Percentile Queue Length [ft]	118.68	126.69	49.93	21.54	0.16	23.67	8.73	0.00	0.54	0.54	240.05
Approach Delay [s/veh]	14.13			4.62			5.25			46.11	
Approach LOS	B			A			A			E	
Intersection Delay [s/veh]	17.19										
Intersection LOS	C										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	75.6
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.438

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	34	44	328	391	340	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	35	45	336	400	348	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]	10	12	91	109	95	5
Total Analysis Volume [veh/h]	38	49	365	435	378	20
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.44	0.07	0.31	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	75.58	10.81	9.52	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.81	0.24	1.36	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	45.14	5.91	33.94	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	39.10		4.34		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	5.35					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	37	71	2	14	0	0	0	0	173	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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	30	0	0	0	0	0	0	18	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	38	103	2	14	0	0	0	0	195	0	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	28	1	4	0	0	0	0	53	0	3
Total Analysis Volume [veh/h]	0	41	112	2	15	0	0	0	0	212	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	2			216			234			42		
Exiting Flow Rate [veh/h]	232			53			0			116		
Demand Flow Rate [veh/h]	0	38	103	2	14	0	0	0	0	195	0	10
Adjusted Demand Flow Rate [veh/h]	0	41	112	2	15	0	0	0	0	212	0	11

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	157	18	0	217	12
Capacity of Entry and Bypass Lanes [veh/h]	1378	1107	1088	1367	1367
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1351	1086	1067	1341	1341
X, volume / capacity	0.11	0.02	0.00	0.16	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.38	0.05	0.00	0.56	0.02
95th-Percentile Queue Length [ft]	9.56	1.19	0.00	14.04	0.62
Approach Delay [s/veh]	3.57	3.45	3.38	3.92	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.77				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	26	1045	9	2	395	5	16	0	13	10	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
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]	-27	43	2	-2	2	0	-16	0	16	-10	0	10
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
Total Hourly Volume [veh/h]	0	1112	11	0	406	5	0	0	29	0	0	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	302	3	0	110	1	0	0	8	0	0	5
Total Analysis Volume [veh/h]	0	1209	12	0	441	5	0	0	32	0	0	22
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.81	0.00	0.00	13.67
Movement LOS		A	A		A	A			A			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.16
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.20	0.00	0.00	3.96
d_A, Approach Delay [s/veh]	0.00			0.00			9.81			13.67		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	B											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	366	736	80
2	355	714	78
3	348	699	76
4	326	655	71
5	289	581	63
6	285	574	62
7	282	567	62
8	256	515	56
9	253	508	55
10	249	500	54
11	216	434	47
12	201	405	44
13	198	397	43
14	146	294	32
15	146	294	32
16	102	206	22
17	59	118	13
18	59	118	13
19	33	66	7
20	18	37	4
21	11	22	2
22	4	7	1
23	4	7	1
24	4	7	1

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1102	2	80	No	No	No	No	No	Yes	Yes	Yes	No	No
2	2	1069	2	78	No	No	No	No	No	No	Yes	Yes	No	No
3	2	1047	2	76	No	No	No	No	No	No	Yes	Yes	No	No
4	2	981	2	71	No	No	No	No	No	No	Yes	Yes	No	No
5	2	870	2	63	No	No	No	No	No	No	No	Yes	No	No
6	2	859	2	62	No	No	No	No	No	No	No	Yes	No	No
7	2	849	2	62	No	No	No	No	No	No	No	Yes	No	No
8	2	771	2	56	No	No	No	No	No	No	No	Yes	No	No
9	2	761	2	55	No	No	No	No	No	No	No	No	No	No
10	2	749	2	54	No	No	No	No	No	No	No	No	No	No
11	2	650	2	47	No	No	No	No	No	No	No	No	No	No
12	2	606	2	44	No	No	No	No	No	No	No	No	No	No
13	2	595	2	43	No	No	No	No	No	No	No	No	No	No
14	2	440	2	32	No	No	No	No	No	No	No	No	No	No
15	2	440	2	32	No	No	No	No	No	No	No	No	No	No
16	2	308	2	22	No	No	No	No	No	No	No	No	No	No
17	2	177	2	13	No	No	No	No	No	No	No	No	No	No
18	2	177	2	13	No	No	No	No	No	No	No	No	No	No
19	2	99	2	7	No	No	No	No	No	No	No	No	No	No
20	2	55	2	4	No	No	No	No	No	No	No	No	No	No
21	2	33	2	2	No	No	No	No	No	No	No	No	No	No
22	2	11	2	1	No	No	No	No	No	No	No	No	No	No
23	2	11	2	1	No	No	No	No	No	No	No	No	No	No
24	2	11	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	1	4	8	0	0

**Warrant 3 Condition A**

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	39.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:52
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	80
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1182
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1123	411	20	29
2	1089	399	19	28
3	1067	390	19	28
4	999	366	18	26
5	887	325	16	23
6	876	321	16	23
7	865	316	15	22
8	786	288	14	20
9	775	284	14	20
10	764	279	14	20
11	663	242	12	17
12	618	226	11	16
13	606	222	11	16
14	449	164	8	12
15	449	164	8	12
16	314	115	6	8
17	180	66	3	5
18	180	66	3	5
19	101	37	2	3
20	56	21	1	1
21	34	12	1	1
22	11	4	0	0
23	11	4	0	0
24	11	4	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1534	1	29	No	No	No	No	No	No	No	No	No	No
2	2	1488	1	28	No	No	No	No	No	No	No	No	No	No
3	2	1457	1	28	No	No	No	No	No	No	No	No	No	No
4	2	1365	1	26	No	No	No	No	No	No	No	No	No	No
5	2	1212	1	23	No	No	No	No	No	No	No	No	No	No
6	2	1197	1	23	No	No	No	No	No	No	No	No	No	No
7	2	1181	1	22	No	No	No	No	No	No	No	No	No	No
8	2	1074	1	20	No	No	No	No	No	No	No	No	No	No
9	2	1059	1	20	No	No	No	No	No	No	No	No	No	No
10	2	1043	1	20	No	No	No	No	No	No	No	No	No	No
11	2	905	1	17	No	No	No	No	No	No	No	No	No	No
12	2	844	1	16	No	No	No	No	No	No	No	No	No	No
13	2	828	1	16	No	No	No	No	No	No	No	No	No	No
14	2	613	1	12	No	No	No	No	No	No	No	No	No	No
15	2	613	1	12	No	No	No	No	No	No	No	No	No	No
16	2	429	1	8	No	No	No	No	No	No	No	No	No	No
17	2	246	1	5	No	No	No	No	No	No	No	No	No	No
18	2	246	1	5	No	No	No	No	No	No	No	No	No	No
19	2	138	1	3	No	No	No	No	No	No	No	No	No	No
20	2	77	1	1	No	No	No	No	No	No	No	No	No	No
21	2	46	1	1	No	No	No	No	No	No	No	No	No	No
22	2	15	1	0	No	No	No	No	No	No	No	No	No	No
23	2	15	1	0	No	No	No	No	No	No	No	No	No	No
24	2	15	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.7	9.8
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:04	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	20	29
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1583	1583
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.454

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	262	128	91	241	750	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	9	0	1	3	0
Diverted Trips [veh/h]	27	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
Right Turn on Red Volume [veh/h]	0	70	0	0	0	71
Total Hourly Volume [veh/h]	300	70	93	248	771	70
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]	82	19	25	67	210	19
Total Analysis Volume [veh/h]	326	76	101	270	838	76
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	50	50	50	50	50	50
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.0	15.0	23.8	23.8	14.3	14.3
g / C, Green / Cycle	0.30	0.30	0.47	0.47	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.08	0.08	0.24	0.05
s, saturation flow rate [veh/h]	1870	1589	1212	3560	3459	1589
c, Capacity [veh/h]	558	474	643	1689	991	456
d1, Uniform Delay [s]	14.96	12.97	7.97	7.50	16.86	13.41
k, delay calibration	0.11	0.11	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.97	0.16	0.04	0.04	0.79	0.06
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.58	0.16	0.16	0.16	0.85	0.17
d, Delay for Lane Group [s/veh]	15.93	13.12	8.01	7.55	17.64	13.48
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	0.57	0.48	0.66	3.88	0.55
50th-Percentile Queue Length [ft/ln]	71.54	14.21	12.02	16.40	97.03	13.82
95th-Percentile Queue Length [veh/ln]	5.15	1.02	0.87	1.18	6.99	0.99
95th-Percentile Queue Length [ft/ln]	128.78	25.59	21.64	29.53	174.66	24.87

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	15.93	13.12	8.01	7.55	17.64	13.48
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	15.40		7.67		17.29	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	14.73					
Intersection LOS	B					
Intersection V/C	0.454					

**Emissions**

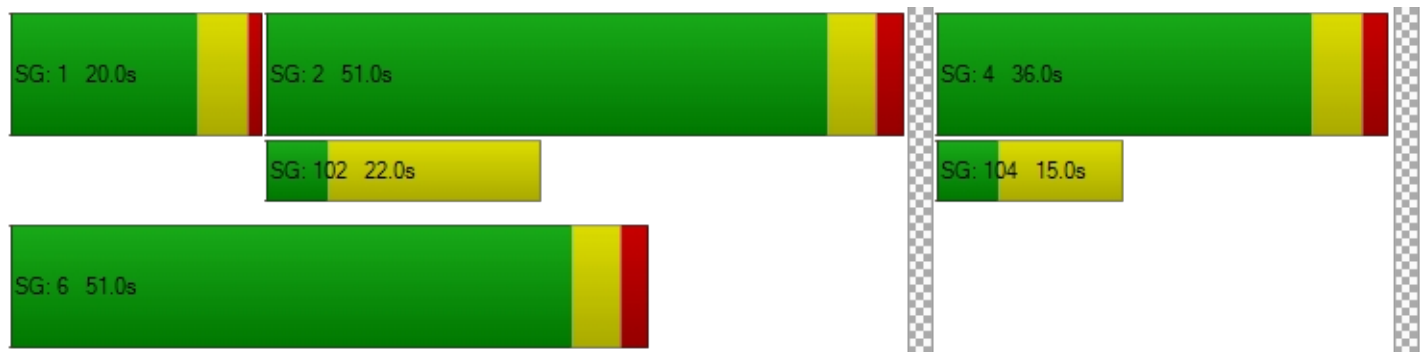
Vehicle Miles Traveled [mph]	46.25	10.78	10.01	26.76	157.94	14.32
Stops [stops/h]	205.79	40.89	34.58	94.37	558.22	39.74
Fuel consumption [US gal/h]	4.10	0.87	0.77	2.04	13.23	1.05
CO [g/h]	286.43	61.01	53.67	142.43	924.58	73.63
NOx [g/h]	55.73	11.87	10.44	27.71	179.89	14.32
VOC [g/h]	66.38	14.14	12.44	33.01	214.28	17.06

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		16.84		16.84	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.307		2.700	
Crosswalk LOS	F		B		B	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1798		1798		1199	
d_b, Bicycle Delay [s]	0.26		0.26		4.02	
I_b,int, Bicycle LOS Score for Intersection	2.338		1.866		1.560	
Bicycle LOS	B		A		A	

**Sequence**

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



**Intersection Level Of Service Report  
Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	41.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.734

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	850.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	600.00	0.00	0.00	300.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	441	42	2	13	24	179	156	681	599	8	1758	43
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	23	9	0	0	0	0	0	0	7
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]	342	48	0	25	51	278	268	123	222	0	0	25
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	1	0	0	231	0	0	418	0	0	38
Total Hourly Volume [veh/h]	793	94	1	61	85	230	428	820	417	8	1799	38
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	215	26	0	17	23	63	116	223	113	2	489	10
Total Analysis Volume [veh/h]	862	102	1	66	92	250	465	891	453	9	1955	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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	28.0	24.0	0.0	20.0	16.0	0.0	25.0	63.0	0.0	13.0	51.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.50	6.00	6.00	6.50	6.00	6.50	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.50	4.00	4.00	4.50	4.00	4.50	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	21.5	25.1	25.1	3.9	7.5	18.1	63.4	71.5	46.9	46.9
g / C, Green / Cycle	0.18	0.21	0.21	0.03	0.06	0.15	0.53	0.60	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.00	0.02	0.05	0.13	0.17	0.01	0.38	0.03
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	723	5094	1589
c, Capacity [veh/h]	929	391	332	114	118	521	2688	455	1989	621
d1, Uniform Delay [s]	48.48	39.70	37.56	57.20	55.42	50.00	16.22	10.53	36.17	22.88
k, delay calibration	0.04	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, 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]	1.88	0.13	0.00	1.72	20.94	2.19	0.33	0.01	16.50	0.20
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	0.93	0.26	0.00	0.58	0.78	0.89	0.33	0.02	0.98	0.07
d, Delay for Lane Group [s/veh]	50.36	39.83	37.56	58.92	76.35	52.19	16.56	10.54	52.67	23.08
Lane Group LOS	D	D	D	E	E	D	B	B	D	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.20	2.42	0.02	1.02	3.43	6.68	4.30	0.09	20.27	0.72
50th-Percentile Queue Length [ft/ln]	205.11	60.57	0.56	25.38	85.70	167.06	107.43	2.16	506.71	18.02
95th-Percentile Queue Length [veh/ln]	12.90	4.36	0.04	1.83	6.17	10.92	7.70	0.16	27.65	1.30
95th-Percentile Queue Length [ft/ln]	322.55	109.03	1.01	45.69	154.25	273.04	192.43	3.89	691.30	32.44

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	50.36	39.83	37.56	58.92	76.35	0.00	52.19	16.56	0.00	10.54	52.67	23.08
Movement LOS	D	D	D	E	E		D	B		B	D	C
d_A, Approach Delay [s/veh]	49.23			28.13			22.01			51.87		
Approach LOS	D			C			C			D		
d_I, Intersection Delay [s/veh]	41.44											
Intersection LOS	D											
Intersection V/C	0.734											

**Emissions**

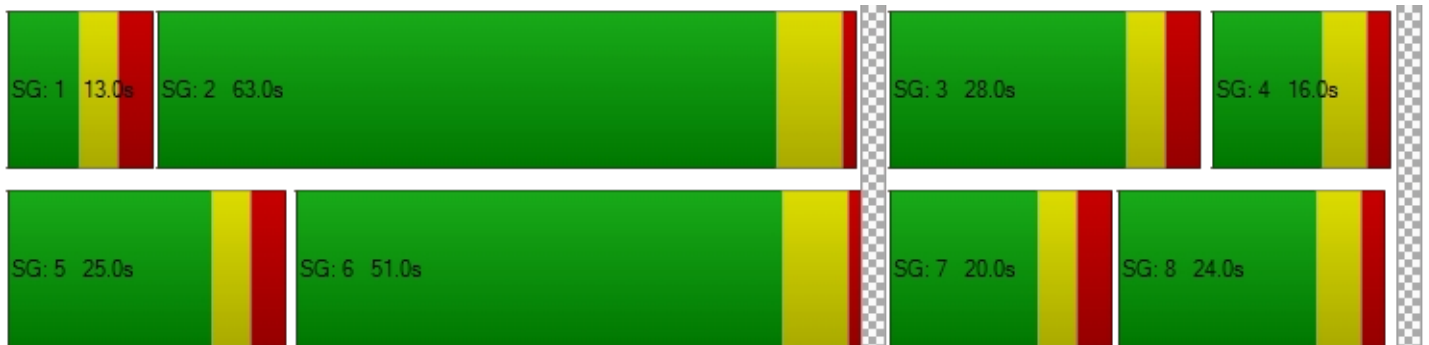
Vehicle Miles Traveled [mph]	337.84	39.98	0.39	6.97	9.71	197.11	377.68	2.74	595.38	12.49
Stops [stops/h]	738.39	72.69	0.67	60.92	102.84	400.94	386.76	2.59	1824.16	21.63
Fuel consumption [US gal/h]	33.85	3.51	0.03	1.41	2.40	18.98	22.82	0.16	74.75	1.01
CO [g/h]	2366.09	245.64	2.33	98.88	167.56	1326.60	1595.12	11.12	5225.14	70.74
NOx [g/h]	460.35	47.79	0.45	19.24	32.60	258.11	310.35	2.16	1016.62	13.76
VOC [g/h]	548.36	56.93	0.54	22.92	38.83	307.45	369.68	2.58	1210.98	16.39

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	300		167		933		733	
d_b, Bicycle Delay [s]	43.35		50.42		17.07		24.07	
I_b,int, Bicycle LOS Score for Intersection	3.154		1.820		2.305		2.683	
Bicycle LOS	C		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 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	9.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							tr		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	306	326	0	0	0	713	285	0	0	0	303	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0234	1.0234	1.0234	1.023	1.023	1.023	1.023	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	0	0	0	10	30	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	7	0	0	-11	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	313	346	0	7	0	740	311	0	0	0	310	0	68
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	94	0	2	0	201	85	0	0	0	84	0	18
Total Analysis Volume [veh/h]	340	376	0	8	0	804	338	0	0	0	337	0	74
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			1			2			
Circulating Flow Rate [veh/h]	8			691			1172			738			
Exiting Flow Rate [veh/h]	1164			467			347			0			
Demand Flow Rate [veh/h]	313	346	0	7	0	740	311	0	0	0	310	0	68
Adjusted Demand Flow Rate [veh/h]	340	376	0	8	0	804	338	0	0	0	337	0	74

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	347	384	390	439	0		344	76
Capacity of Entry and Bypass Lanes [veh/h]	1340	1411	716	790	1058		685	759
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1314	1383	702	775	1037		671	744
X, volume / capacity	0.26	0.27	0.54	0.56	0.33		0.50	0.10

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	B	B	A		B	A
95th-Percentile Queue Length [veh]	1.04	1.11	3.31	3.48	1.43		2.84	0.33
95th-Percentile Queue Length [ft]	25.97	27.77	82.72	86.88	35.70		70.88	8.26
Approach Delay [s/veh]	4.96		11.48				0.00	11.85
Approach LOS	A		B				A	B
Intersection Delay [s/veh]	9.49							
Intersection LOS	A							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	6.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	147	67	160	856	0	66	163	374	96	0	419
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	5	5	0	10	0	0	0	0	1
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
Total Hourly Volume [veh/h]	0	151	69	169	881	0	78	167	383	98	0	430
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	41	19	46	239	0	21	45	104	27	0	117
Total Analysis Volume [veh/h]	0	164	75	184	958	0	85	182	416	107	0	467
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	460			109			1274			254		
Exiting Flow Rate [veh/h]	1086			730			0			373		
Demand Flow Rate [veh/h]	0	151	69	169	881	0	78	167	383	98	0	430
Adjusted Demand Flow Rate [veh/h]	0	164	75	184	958	0	85	182	416	107	0	467

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1350.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00092	0.00085	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	79	89	0	548	618	87	186	0	110	477	477
Capacity of Entry and Bypass Lanes [veh/h]	885	961	1034	1222	1295	419	481	102000	1069	1145	1145
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	867	942	1014	1198	1269	410	472	100000	1048	1122	1122
X, volume / capacity	0.09	0.09	0.07	0.45	0.48	0.21	0.39	0.00	0.10	0.42	0.42

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	B	B	A	A	A	
95th-Percentile Queue Length [veh]	0.29	0.30	0.24	2.37	2.65	0.77	1.80	0.00	0.34	2.09	
95th-Percentile Queue Length [ft]	7.30	7.61	5.98	59.26	66.29	19.25	44.93	0.00	8.51	52.16	
Approach Delay [s/veh]	4.63			7.73			5.31			6.96	
Approach LOS	A			A			A			A	
Intersection Delay [s/veh]	6.66										
Intersection LOS	A										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	34.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.346

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	58	10	135	255	505	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	5	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]	59	10	138	266	518	38
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]	16	3	38	72	141	10
Total Analysis Volume [veh/h]	64	11	150	289	563	41
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.35	0.02	0.15	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	34.44	11.99	9.37	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.45	0.06	0.54	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	36.23	1.60	13.59	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	31.15		3.20		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	3.35					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	16	109	3	41	0	0	0	0	151	0	3
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0234	1.0234	1.0234	1.0234	1.0000	1.0000	1.0000	1.0000	1.0234	1.0000	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	0	0	0	0	1	3	32	0	1	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	9	0	0	0	0	0	0	27	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	16	121	3	42	0	1	3	32	182	1	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	4	33	1	11	0	0	1	9	49	0	1
Total Analysis Volume [veh/h]	11	17	132	3	46	0	1	3	35	198	1	3
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	7			214			252			30		
Exiting Flow Rate [veh/h]	285			21			12			141		
Demand Flow Rate [veh/h]	10	16	121	3	42	0	1	3	32	182	1	3
Adjusted Demand Flow Rate [veh/h]	11	17	132	3	46	0	1	3	35	198	1	3

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	164	50	40	203	4
Capacity of Entry and Bypass Lanes [veh/h]	1370	1110	1068	1383	1383
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1344	1088	1047	1356	1356
X, volume / capacity	0.12	0.05	0.04	0.15	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.40	0.14	0.12	0.51	0.01
95th-Percentile Queue Length [ft]	10.11	3.54	2.90	12.86	0.17
Approach Delay [s/veh]	3.64	3.69	3.76	3.83	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.74				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 12.9  
 Level Of Service: B  
 Volume to Capacity (v/c): 0.019

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	IT			IT			R			R		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	11	383	10	4	984	3	2	1	5	11	3	4
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	6	0	40	0	0	0	0	0	0	7
Diverted Trips [veh/h]	-11	13	5	-4	4	0	-2	-1	3	-11	-3	14
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
Total Hourly Volume [veh/h]	0	411	21	0	1051	3	0	0	8	0	0	25
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	112	6	0	286	1	0	0	2	0	0	7
Total Analysis Volume [veh/h]	0	447	23	0	1142	3	0	0	9	0	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	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	0.00	0.00	0.02	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.93	0.00	0.00	9.87
Movement LOS		A	A		A	A			B			A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.00	0.00	2.73
d_A, Approach Delay [s/veh]	0.00			0.00			12.93			9.87		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	0.23											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 8: Peterson Rd/ Meadowbrook Pk**

Control Type:	Two-way stop	Delay (sec / veh):	24.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.190

**Intersection Setup**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
Approach	Northbound		Southbound		Westbound	
Lane Configuration					T	
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 Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
Base Volume Input [veh/h]	390	0	0	991	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0000	1.0000	1.0234	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	6	4	0	40	7
Diverted Trips [veh/h]	27	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	6	4	1014	40	7
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]	118	2	1	276	11	2
Total Analysis Volume [veh/h]	471	7	4	1102	43	8
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	0.01	0.19	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.34	0.00	24.37	13.22
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.00	0.73	0.73
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.17	0.08	18.23	18.23
d_A, Approach Delay [s/veh]	0.00		0.03		22.62	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.73					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 9: Meadowbrook Pk/Access 1**

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

**Intersection Setup**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	0	36	0	0	0	0	0	10	11	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
Total Hourly Volume [veh/h]	47	0	36	0	0	0	0	0	10	11	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	0	10	0	0	0	0	0	3	3	0	0
Total Analysis Volume [veh/h]	51	0	39	0	0	0	0	0	11	12	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.05	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	8.91	0.00	8.47	0.00	0.00	0.00	0.00	0.00	0.00	7.26	0.00	0.00
Movement LOS	A		A					A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.17	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00
95th-Percentile Queue Length [ft/ln]	4.15	0.00	2.81	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.56	0.00
d_A, Approach Delay [s/veh]	8.72		0.00		0.00		7.26					
Approach LOS	A		A		A		A					
d_I, Intersection Delay [s/veh]	7.71											
Intersection LOS	A											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	556	404	69
2	539	392	67
3	528	384	66
4	495	360	61
5	439	319	55
6	434	315	54
7	428	311	53
8	389	283	48
9	384	279	48
10	378	275	47
11	328	238	41
12	306	222	38
13	300	218	37
14	222	162	28
15	222	162	28
16	156	113	19
17	89	65	11
18	89	65	11
19	50	36	6
20	28	20	3
21	17	12	2
22	6	4	1
23	6	4	1
24	6	4	1

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	960	2	69	No	No	No	No	No	No	No	Yes	No	No
2	2	931	2	67	No	No	No	No	No	No	No	Yes	No	No
3	2	912	2	66	No	No	No	No	No	No	No	Yes	No	No
4	2	855	2	61	No	No	No	No	No	No	No	Yes	No	No
5	2	758	2	55	No	No	No	No	No	No	No	No	No	No
6	2	749	2	54	No	No	No	No	No	No	No	No	No	No
7	2	739	2	53	No	No	No	No	No	No	No	No	No	No
8	2	672	2	48	No	No	No	No	No	No	No	No	No	No
9	2	663	2	48	No	No	No	No	No	No	No	No	No	No
10	2	653	2	47	No	No	No	No	No	No	No	No	No	No
11	2	566	2	41	No	No	No	No	No	No	No	No	No	No
12	2	528	2	38	No	No	No	No	No	No	No	No	No	No
13	2	518	2	37	No	No	No	No	No	No	No	No	No	No
14	2	384	2	28	No	No	No	No	No	No	No	No	No	No
15	2	384	2	28	No	No	No	No	No	No	No	No	No	No
16	2	269	2	19	No	No	No	No	No	No	No	No	No	No
17	2	154	2	11	No	No	No	No	No	No	No	No	No	No
18	2	154	2	11	No	No	No	No	No	No	No	No	No	No
19	2	86	2	6	No	No	No	No	No	No	No	No	No	No
20	2	48	2	3	No	No	No	No	No	No	No	No	No	No
21	2	29	2	2	No	No	No	No	No	No	No	No	No	No
22	2	10	2	1	No	No	No	No	No	No	No	No	No	No
23	2	10	2	1	No	No	No	No	No	No	No	No	No	No
24	2	10	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	4	0	0

**Warrant 3 Condition A**

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	31.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:35
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	69
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1029
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	432	1054	25	8
2	419	1022	24	8
3	410	1001	24	8
4	384	938	22	7
5	341	833	20	6
6	337	822	20	6
7	333	812	19	6
8	302	738	18	6
9	298	727	17	6
10	294	717	17	5
11	255	622	15	5
12	238	580	14	4
13	233	569	14	4
14	173	422	10	3
15	173	422	10	3
16	121	295	7	2
17	69	169	4	1
18	69	169	4	1
19	39	95	2	1
20	22	53	1	0
21	13	32	1	0
22	4	11	0	0
23	4	11	0	0
24	4	11	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1486	1	25	No	No	No	No	No	No	No	No	No	No
2	2	1441	1	24	No	No	No	No	No	No	No	No	No	No
3	2	1411	1	24	No	No	No	No	No	No	No	No	No	No
4	2	1322	1	22	No	No	No	No	No	No	No	No	No	No
5	2	1174	1	20	No	No	No	No	No	No	No	No	No	No
6	2	1159	1	20	No	No	No	No	No	No	No	No	No	No
7	2	1145	1	19	No	No	No	No	No	No	No	No	No	No
8	2	1040	1	18	No	No	No	No	No	No	No	No	No	No
9	2	1025	1	17	No	No	No	No	No	No	No	No	No	No
10	2	1011	1	17	No	No	No	No	No	No	No	No	No	No
11	2	877	1	15	No	No	No	No	No	No	No	No	No	No
12	2	818	1	14	No	No	No	No	No	No	No	No	No	No
13	2	802	1	14	No	No	No	No	No	No	No	No	No	No
14	2	595	1	10	No	No	No	No	No	No	No	No	No	No
15	2	595	1	10	No	No	No	No	No	No	No	No	No	No
16	2	416	1	7	No	No	No	No	No	No	No	No	No	No
17	2	238	1	4	No	No	No	No	No	No	No	No	No	No
18	2	238	1	4	No	No	No	No	No	No	No	No	No	No
19	2	134	1	2	No	No	No	No	No	No	No	No	No	No
20	2	75	1	1	No	No	No	No	No	No	No	No	No	No
21	2	45	1	1	No	No	No	No	No	No	No	No	No	No
22	2	15	1	0	No	No	No	No	No	No	No	No	No	No
23	2	15	1	0	No	No	No	No	No	No	No	No	No	No
24	2	15	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9	12.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:04	0:01
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	25	8
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1519	1519
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 8: Peterson Rd/ Meadowbrook Pk

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	439	1018	47
2	426	987	46
3	417	967	45
4	391	906	42
5	347	804	37
6	342	794	37
7	338	784	36
8	307	713	33
9	303	702	32
10	299	692	32
11	259	601	28
12	241	560	26
13	237	550	25
14	176	407	19
15	176	407	19
16	123	285	13
17	70	163	8
18	70	163	8
19	40	92	4
20	22	51	2
21	13	31	1
22	4	10	0
23	4	10	0
24	4	10	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1457	1	47	No	No	No	No	No	No	No	Yes	No	No
2	2	1413	1	46	No	No	No	No	No	No	No	Yes	No	No
3	2	1384	1	45	No	No	No	No	No	No	No	Yes	No	No
4	2	1297	1	42	No	No	No	No	No	No	No	Yes	No	No
5	2	1151	1	37	No	No	No	No	No	No	No	No	No	No
6	2	1136	1	37	No	No	No	No	No	No	No	No	No	No
7	2	1122	1	36	No	No	No	No	No	No	No	No	No	No
8	2	1020	1	33	No	No	No	No	No	No	No	No	No	No
9	2	1005	1	32	No	No	No	No	No	No	No	No	No	No
10	2	991	1	32	No	No	No	No	No	No	No	No	No	No
11	2	860	1	28	No	No	No	No	No	No	No	No	No	No
12	2	801	1	26	No	No	No	No	No	No	No	No	No	No
13	2	787	1	25	No	No	No	No	No	No	No	No	No	No
14	2	583	1	19	No	No	No	No	No	No	No	No	No	No
15	2	583	1	19	No	No	No	No	No	No	No	No	No	No
16	2	408	1	13	No	No	No	No	No	No	No	No	No	No
17	2	233	1	8	No	No	No	No	No	No	No	No	No	No
18	2	233	1	8	No	No	No	No	No	No	No	No	No	No
19	2	132	1	4	No	No	No	No	No	No	No	No	No	No
20	2	73	1	2	No	No	No	No	No	No	No	No	No	No
21	2	44	1	1	No	No	No	No	No	No	No	No	No	No
22	2	14	1	0	No	No	No	No	No	No	No	No	No	No
23	2	14	1	0	No	No	No	No	No	No	No	No	No	No
24	2	14	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	4	0	0

### Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	22.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:17
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	47
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1504
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 9: Meadowbrook Pk/Access 1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	11	10	83
2	11	10	81
3	10	10	79
4	10	9	74
5	9	8	66
6	9	8	65
7	8	8	64
8	8	7	58
9	8	7	57
10	7	7	56
11	6	6	49
12	6	6	46
13	6	5	45
14	4	4	33
15	4	4	33
16	3	3	23
17	2	2	13
18	2	2	13
19	1	1	7
20	1	1	4
21	0	0	2
22	0	0	1
23	0	0	1
24	0	0	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	1	21	2	83	No	No	No	No	No	No	No	No	No	No
2	1	21	2	81	No	No	No	No	No	No	No	No	No	No
3	1	20	2	79	No	No	No	No	No	No	No	No	No	No
4	1	19	2	74	No	No	No	No	No	No	No	No	No	No
5	1	17	2	66	No	No	No	No	No	No	No	No	No	No
6	1	17	2	65	No	No	No	No	No	No	No	No	No	No
7	1	16	2	64	No	No	No	No	No	No	No	No	No	No
8	1	15	2	58	No	No	No	No	No	No	No	No	No	No
9	1	15	2	57	No	No	No	No	No	No	No	No	No	No
10	1	14	2	56	No	No	No	No	No	No	No	No	No	No
11	1	12	2	49	No	No	No	No	No	No	No	No	No	No
12	1	12	2	46	No	No	No	No	No	No	No	No	No	No
13	1	11	2	45	No	No	No	No	No	No	No	No	No	No
14	1	8	2	33	No	No	No	No	No	No	No	No	No	No
15	1	8	2	33	No	No	No	No	No	No	No	No	No	No
16	1	6	2	23	No	No	No	No	No	No	No	No	No	No
17	1	4	2	13	No	No	No	No	No	No	No	No	No	No
18	1	4	2	13	No	No	No	No	No	No	No	No	No	No
19	1	2	2	7	No	No	No	No	No	No	No	No	No	No
20	1	2	2	4	No	No	No	No	No	No	No	No	No	No
21	1	0	2	2	No	No	No	No	No	No	No	No	No	No
22	1	0	2	1	No	No	No	No	No	No	No	No	No	No
23	1	0	2	1	No	No	No	No	No	No	No	No	No	No
24	1	0	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:12
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	83
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	104
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.431

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	273	798	191	169	233	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	6	0	5	9	0
Diverted Trips [veh/h]	53	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
Right Turn on Red Volume [veh/h]	0	412	0	0	0	41
Total Hourly Volume [veh/h]	335	411	195	178	247	40
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]	91	112	53	48	67	11
Total Analysis Volume [veh/h]	364	447	212	193	268	43
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	45	45	45	45	45	45
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.9	15.9	25.5	25.5	7.9	7.9
g / C, Green / Cycle	0.35	0.35	0.56	0.56	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.19	0.28	0.21	0.05	0.08	0.03
s, saturation flow rate [veh/h]	1870	1589	1005	3560	3459	1589
c, Capacity [veh/h]	655	556	700	2005	598	275
d1, Uniform Delay [s]	11.92	13.36	5.70	4.59	16.85	15.98
k, delay calibration	0.11	0.11	0.07	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.74	2.77	0.16	0.02	0.20	0.10
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.56	0.80	0.30	0.10	0.45	0.16
d, Delay for Lane Group [s/veh]	12.66	16.13	5.86	4.61	17.04	16.07
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.54	3.73	0.66	0.27	1.08	0.33
50th-Percentile Queue Length [ft/ln]	63.44	93.35	16.58	6.85	26.96	8.26
95th-Percentile Queue Length [veh/ln]	4.57	6.72	1.19	0.49	1.94	0.59
95th-Percentile Queue Length [ft/ln]	114.18	168.02	29.85	12.34	48.52	14.87

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	12.66	16.13	5.86	4.61	17.04	16.07
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	14.57		5.26		16.91	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	12.58					
Intersection LOS	B					
Intersection V/C	0.431					

**Emissions**

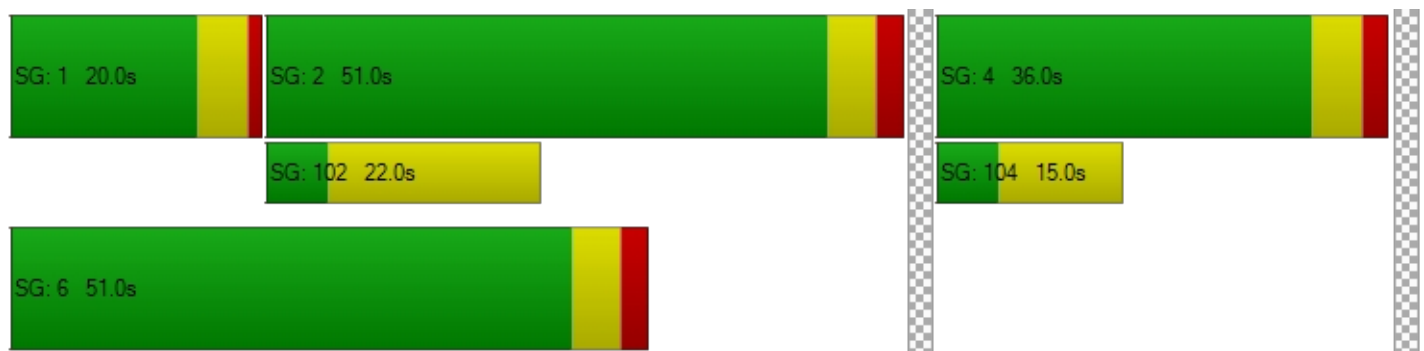
Vehicle Miles Traveled [mph]	51.64	63.42	21.01	19.13	50.51	8.10
Stops [stops/h]	201.33	296.27	52.63	43.50	171.10	26.23
Fuel consumption [US gal/h]	4.18	5.71	1.41	1.21	4.14	0.65
CO [g/h]	291.92	399.45	98.46	84.50	289.51	45.21
NOx [g/h]	56.80	77.72	19.16	16.44	56.33	8.80
VOC [g/h]	67.66	92.58	22.82	19.58	67.10	10.48

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		14.58		14.58	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.304		2.765	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1984		1984		1322	
d_b, Bicycle Delay [s]	0.00		0.00		2.60	
I_b,int, Bicycle LOS Score for Intersection	3.578		1.894		1.560	
Bicycle LOS	D		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	600.00	0.00	0.00	330.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	405	31	4	26	50	166	155	1723	394	7	851	24
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	9	0	15	6	0	0	0	0	0	0	24
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]	360	40	0	17	35	188	221	115	280	0	0	20
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	2	0	0	179	0	0	342	0	0	35
Total Hourly Volume [veh/h]	774	81	2	59	92	179	380	1878	341	7	871	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	210	22	1	16	25	49	103	510	93	2	237	9
Total Analysis Volume [veh/h]	841	88	2	64	100	195	413	2041	371	8	947	37
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
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	27.0	24.0	0.0	22.0	19.0	0.0	30.0	51.0	0.0	13.0	34.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	6.50	6.00	6.00	6.50	6.00	6.50	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.50	4.00	4.00	4.50	4.00	4.50	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	19.7	23.8	23.8	3.6	7.6	15.4	55.3	63.2	41.3	41.3
g / C, Green / Cycle	0.18	0.22	0.22	0.03	0.07	0.14	0.50	0.57	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.16	0.05	0.00	0.02	0.05	0.12	0.40	0.02	0.19	0.02
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	353	5094	1589
c, Capacity [veh/h]	930	403	343	115	130	484	2558	230	1910	596
d1, Uniform Delay [s]	44.22	35.51	33.88	52.38	50.30	46.21	22.74	16.77	26.40	22.00
k, delay calibration	0.04	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, 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]	1.42	0.10	0.00	1.57	18.06	1.70	2.70	0.02	0.92	0.20
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	0.90	0.22	0.01	0.56	0.77	0.85	0.80	0.03	0.50	0.06
d, Delay for Lane Group [s/veh]	45.64	35.61	33.88	53.95	68.36	47.91	25.44	16.79	27.32	22.20
Lane Group LOS	D	D	C	D	E	D	C	B	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.17	1.85	0.04	0.89	3.35	5.34	13.32	0.07	6.00	0.60
50th-Percentile Queue Length [ft/ln]	179.21	46.29	1.00	22.37	83.82	133.41	332.92	1.84	150.08	15.09
95th-Percentile Queue Length [veh/ln]	11.56	3.33	0.07	1.61	6.04	9.12	19.30	0.13	10.02	1.09
95th-Percentile Queue Length [ft/ln]	288.98	83.32	1.81	40.27	150.88	228.12	482.54	3.32	250.54	27.16

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	45.64	35.61	33.88	53.95	68.36	0.00	47.91	25.44	0.00	16.79	27.32	22.20
Movement LOS	D	D	C	D	E		D	C		B	C	C
d_A, Approach Delay [s/veh]	44.67			30.00			25.65			27.04		
Approach LOS	D			C			C			C		
d_I, Intersection Delay [s/veh]	30.01											
Intersection LOS	C											
Intersection V/C	0.618											

**Emissions**

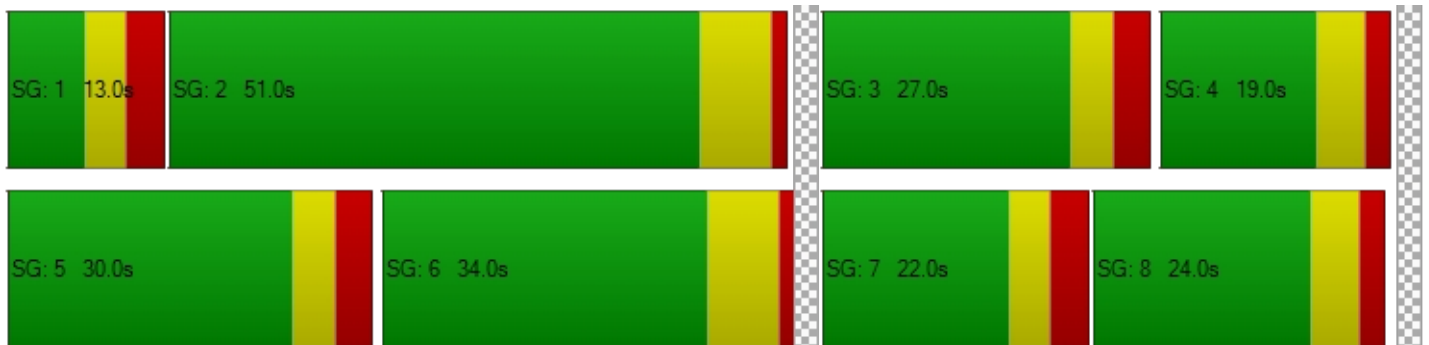
Vehicle Miles Traveled [mph]	329.61	34.49	0.78	6.75	10.55	175.07	865.16	2.44	288.40	11.27
Stops [stops/h]	703.79	60.60	1.31	58.58	109.73	349.29	1307.47	2.41	589.41	19.75
Fuel consumption [US gal/h]	31.91	2.92	0.06	1.30	2.43	16.37	63.79	0.15	25.86	0.91
CO [g/h]	2230.48	203.90	4.50	91.17	169.97	1144.29	4459.00	10.74	1807.64	63.68
NOx [g/h]	433.97	39.67	0.88	17.74	33.07	222.64	867.56	2.09	351.70	12.39
VOC [g/h]	516.94	47.25	1.04	21.13	39.39	265.20	1033.42	2.49	418.94	14.76

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	327		236		800		491	
d_b, Bicycle Delay [s]	38.47		42.77		19.80		31.31	
I_b,int, Bicycle LOS Score for Intersection	3.099		1.830		2.909		2.124	
Bicycle LOS	C		A		C		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							t		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	100.0	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	476	1010	0	0	0	253	168	0	0	0	24	0	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.0234	1.0234	1.0234	1.023	1.023	1.023	1.023	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	44	0	0	0	6	19	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	18	0	0	-10	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	487	1078	0	18	0	265	181	0	0	0	25	0	72
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Total 15-Minute Volume [veh/h]	132	293	0	5	0	72	49	0	0	0	7	0	20
Total Analysis Volume [veh/h]	529	1172	0	20	0	288	197	0	0	0	27	0	78
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2			
Circulating Flow Rate [veh/h]	20			567			342			1755			
Exiting Flow Rate [veh/h]	321			1295			540			0			
Demand Flow Rate [veh/h]	487	1078	0	18	0	265	181	0	0	0	25	0	72
Adjusted Demand Flow Rate [veh/h]	529	1172	0	20	0	288	197	0	0	0	27	0	78

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	816	920	148	167	0		28	80
Capacity of Entry and Bypass Lanes [veh/h]	1325	1396	802	877	898		269	320
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1299	1369	786	860	881		264	314
X, volume / capacity	0.62	0.66	0.18	0.19	0.22		0.10	0.25

**Movement, Approach, & Intersection Results**

Lane LOS	B	B	A	A	A		C	C
95th-Percentile Queue Length [veh]	4.48	5.31	0.67	0.70	0.86		0.34	0.96
95th-Percentile Queue Length [ft]	112.01	132.79	16.80	17.44	21.42		8.47	24.09
Approach Delay [s/veh]	10.53		6.34				0.00	16.32
Approach LOS	B		A				A	C
Intersection Delay [s/veh]	9.88							
Intersection LOS	A							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	19.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	888	357	266	3	0	217	101	11	3	0	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	3	3	0	34	0	0	0	0	5
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
Total Hourly Volume [veh/h]	0	914	365	275	6	0	256	103	11	3	0	395
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	248	99	75	2	0	70	28	3	1	0	107
Total Analysis Volume [veh/h]	0	993	397	299	7	0	278	112	12	3	0	429
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	703			3			315			1296		
Exiting Flow Rate [veh/h]	10			1734			0			419		
Demand Flow Rate [veh/h]	0	914	365	275	6	0	256	103	11	3	0	395
Adjusted Demand Flow Rate [veh/h]	0	993	397	299	7	0	278	112	12	3	0	429

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1350.00	1420.00	1420.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00092	0.00085	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	477	537	0	305	8	284	115	0	4	438	438
Capacity of Entry and Bypass Lanes [veh/h]	708	782	995	1347	1417	1011	1087	102000	410	472	472
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	694	767	975	1320	1389	991	1065	100000	402	463	463
X, volume / capacity	0.67	0.69	0.41	0.23	0.01	0.28	0.11	0.00	0.01	0.93	0.93

**Movement, Approach, & Intersection Results**

Lane LOS	C	C	A	A	A	A	A	A	A	A	F
95th-Percentile Queue Length [veh]	5.22	5.56	2.01	0.87	0.02	1.16	0.35	0.00	0.02	10.76	10.76
95th-Percentile Queue Length [ft]	130.44	138.89	50.14	21.82	0.38	28.89	8.79	0.00	0.56	269.04	269.04
Approach Delay [s/veh]	15.32			4.61			5.66			55.09	
Approach LOS	C			A			A			F	
Intersection Delay [s/veh]	19.28										
Intersection LOS	C										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	77.3
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.445

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	34	44	328	391	340	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	3	5	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]	35	45	336	403	353	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]	10	12	91	110	96	5
Total Analysis Volume [veh/h]	38	49	365	438	384	20
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.44	0.07	0.32	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	77.31	10.86	9.55	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.84	0.24	1.37	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	45.90	5.96	34.19	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	39.88		4.34		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	5.38					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	37	71	2	14	0	0	0	0	173	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0234	1.0234	1.0234	1.0234	1.0000	1.0000	1.0000	1.0000	1.0234	1.0000	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	33	0	0	0	0	1	1	2	21	0	3	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	30	0	0	0	0	0	0	18	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	38	103	2	14	1	1	2	21	195	3	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	10	28	1	4	0	0	1	6	53	1	3
Total Analysis Volume [veh/h]	36	41	112	2	15	1	1	2	23	212	3	11
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	5			256			234			80		
Exiting Flow Rate [veh/h]	255			54			41			118		
Demand Flow Rate [veh/h]	33	38	103	2	14	1	1	2	21	195	3	10
Adjusted Demand Flow Rate [veh/h]	36	41	112	2	15	1	1	2	23	212	3	11

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	193	19	27	220	12
Capacity of Entry and Bypass Lanes [veh/h]	1373	1063	1088	1321	1321
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1346	1042	1067	1295	1295
X, volume / capacity	0.14	0.02	0.02	0.17	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.49	0.05	0.07	0.59	0.03
95th-Percentile Queue Length [ft]	12.21	1.32	1.87	14.87	0.64
Approach Delay [s/veh]	3.81	3.60	3.58	4.10	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.93				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.064

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	26	1045	9	2	395	5	16	0	13	10	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234	1.0234
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	22	22	0	25	0	0	0	0	0	0	5
Diverted Trips [veh/h]	-27	43	2	-2	2	0	-16	0	16	-10	0	10
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
Total Hourly Volume [veh/h]	0	1134	33	0	431	5	0	0	29	0	0	25
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	308	9	0	117	1	0	0	8	0	0	7
Total Analysis Volume [veh/h]	0	1233	36	0	468	5	0	0	32	0	0	27
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.91	0.00	0.00	14.12
Movement LOS		A	A		A	A			A			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	0.00	0.00	5.11
d_A, Approach Delay [s/veh]	0.00			0.00			9.91			14.12		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	0.39											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 8: Peterson Rd/ Meadowbrook Pk**

Control Type:	Two-way stop	Delay (sec / veh):	48.7
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.248

**Intersection Setup**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
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 Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	235.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
Base Volume Input [veh/h]	1055	0	0	402	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0234	1.0000	1.0000	1.0234	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	22	14	0	25	5
Diverted Trips [veh/h]	53	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]	1138	22	14	411	25	5
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]	309	6	4	112	7	1
Total Analysis Volume [veh/h]	1237	24	15	447	27	5
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.25	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	11.60	0.00	48.66	13.59
Movement LOS	A	A	B	A	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.01	0.91	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.63	0.32	22.72	0.89
d_A, Approach Delay [s/veh]	0.00		0.38		43.18	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	0.89					
Intersection LOS	E					

**Intersection Level Of Service Report**  
**Intersection 9: Meadowbrook Pk/Access 1**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

**Intersection Setup**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	5	0	0	5	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	0	24	0	0	0	0	0	36	37	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
Total Hourly Volume [veh/h]	30	0	24	0	0	0	0	5	36	37	5	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	0	7	0	0	0	0	1	10	10	1	0
Total Analysis Volume [veh/h]	33	0	26	0	0	0	0	5	39	40	5	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	9.42	0.00	8.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.35	0.00	0.00
Movement LOS	A		A					A	A	A	A	A	
95th-Percentile Queue Length [veh/ln]	0.12	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.07	0.00
95th-Percentile Queue Length [ft/ln]	3.04	0.00	1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	1.75	0.00
d_A, Approach Delay [s/veh]	9.02			0.00			0.00			6.53			
Approach LOS	A			A			A			A			
d_I, Intersection Delay [s/veh]	5.58												
Intersection LOS	A												

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	371	739	80
2	360	717	78
3	352	702	76
4	330	658	71
5	293	584	63
6	289	576	62
7	286	569	62
8	260	517	56
9	256	510	55
10	252	503	54
11	219	436	47
12	204	406	44
13	200	399	43
14	148	296	32
15	148	296	32
16	104	207	22
17	59	118	13
18	59	118	13
19	33	67	7
20	19	37	4
21	11	22	2
22	4	7	1
23	4	7	1
24	4	7	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B	
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%			
1	2	1110	2	80	No	No	No	No	No	Yes	Yes	Yes	No	No	
2	2	1077	2	78	No	No	No	No	No	No	Yes	Yes	No	No	
3	2	1054	2	76	No	No	No	No	No	No	Yes	Yes	No	No	
4	2	988	2	71	No	No	No	No	No	No	Yes	Yes	No	No	
5	2	877	2	63	No	No	No	No	No	No	No	Yes	No	No	
6	2	865	2	62	No	No	No	No	No	No	No	Yes	No	No	
7	2	855	2	62	No	No	No	No	No	No	No	Yes	No	No	
8	2	777	2	56	No	No	No	No	No	No	No	Yes	No	No	
9	2	766	2	55	No	No	No	No	No	No	No	No	No	No	
10	2	755	2	54	No	No	No	No	No	No	No	No	No	No	
11	2	655	2	47	No	No	No	No	No	No	No	No	No	No	
12	2	610	2	44	No	No	No	No	No	No	No	No	No	No	
13	2	599	2	43	No	No	No	No	No	No	No	No	No	No	
14	2	444	2	32	No	No	No	No	No	No	No	No	No	No	
15	2	444	2	32	No	No	No	No	No	No	No	No	No	No	
16	2	311	2	22	No	No	No	No	No	No	No	No	No	No	
17	2	177	2	13	No	No	No	No	No	No	No	No	No	No	
18	2	177	2	13	No	No	No	No	No	No	No	No	No	No	
19	2	100	2	7	No	No	No	No	No	No	No	No	No	No	
20	2	56	2	4	No	No	No	No	No	No	No	No	No	No	
21	2	33	2	2	No	No	No	No	No	No	No	No	No	No	
22	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
23	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
24	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
Hours Met					0	0	0	0	0	0	1	4	8	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	39.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:53
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	80
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1190
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1167	436	25	29
2	1132	423	24	28
3	1109	414	24	28
4	1039	388	22	26
5	922	344	20	23
6	910	340	20	23
7	899	336	19	22
8	817	305	18	20
9	805	301	17	20
10	794	296	17	20
11	689	257	15	17
12	642	240	14	16
13	630	235	14	16
14	467	174	10	12
15	467	174	10	12
16	327	122	7	8
17	187	70	4	5
18	187	70	4	5
19	105	39	2	3
20	58	22	1	1
21	35	13	1	1
22	12	4	0	0
23	12	4	0	0
24	12	4	0	0

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1603	1	29	No	No	No	No	No	No	No	No	No	No
2	2	1555	1	28	No	No	No	No	No	No	No	No	No	No
3	2	1523	1	28	No	No	No	No	No	No	No	No	No	No
4	2	1427	1	26	No	No	No	No	No	No	No	No	No	No
5	2	1266	1	23	No	No	No	No	No	No	No	No	No	No
6	2	1250	1	23	No	No	No	No	No	No	No	No	No	No
7	2	1235	1	22	No	No	No	No	No	No	No	No	No	No
8	2	1122	1	20	No	No	No	No	No	No	No	No	No	No
9	2	1106	1	20	No	No	No	No	No	No	No	No	No	No
10	2	1090	1	20	No	No	No	No	No	No	No	No	No	No
11	2	946	1	17	No	No	No	No	No	No	No	No	No	No
12	2	882	1	16	No	No	No	No	No	No	No	No	No	No
13	2	865	1	16	No	No	No	No	No	No	No	No	No	No
14	2	641	1	12	No	No	No	No	No	No	No	No	No	No
15	2	641	1	12	No	No	No	No	No	No	No	No	No	No
16	2	449	1	8	No	No	No	No	No	No	No	No	No	No
17	2	257	1	5	No	No	No	No	No	No	No	No	No	No
18	2	257	1	5	No	No	No	No	No	No	No	No	No	No
19	2	144	1	3	No	No	No	No	No	No	No	No	No	No
20	2	80	1	1	No	No	No	No	No	No	No	No	No	No
21	2	48	1	1	No	No	No	No	No	No	No	No	No	No
22	2	16	1	0	No	No	No	No	No	No	No	No	No	No
23	2	16	1	0	No	No	No	No	No	No	No	No	No	No
24	2	16	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

**Warrant 3 Condition A**

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	14.1	9.9
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:05	0:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	25	29
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1657	1657
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 8: Peterson Rd/ Meadowbrook Pk

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	1160	425	30
2	1125	412	29
3	1102	404	29
4	1032	378	27
5	916	336	24
6	905	332	23
7	893	327	23
8	812	298	21
9	800	293	21
10	789	289	20
11	684	251	18
12	638	234	17
13	626	230	16
14	464	170	12
15	464	170	12
16	325	119	8
17	186	68	5
18	186	68	5
19	104	38	3
20	58	21	2
21	35	13	1
22	12	4	0
23	12	4	0
24	12	4	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1585	2	30	No	No	No	No	No	No	No	No	No	No
2	2	1537	2	29	No	No	No	No	No	No	No	No	No	No
3	2	1506	2	29	No	No	No	No	No	No	No	No	No	No
4	2	1410	2	27	No	No	No	No	No	No	No	No	No	No
5	2	1252	2	24	No	No	No	No	No	No	No	No	No	No
6	2	1237	2	23	No	No	No	No	No	No	No	No	No	No
7	2	1220	2	23	No	No	No	No	No	No	No	No	No	No
8	2	1110	2	21	No	No	No	No	No	No	No	No	No	No
9	2	1093	2	21	No	No	No	No	No	No	No	No	No	No
10	2	1078	2	20	No	No	No	No	No	No	No	No	No	No
11	2	935	2	18	No	No	No	No	No	No	No	No	No	No
12	2	872	2	17	No	No	No	No	No	No	No	No	No	No
13	2	856	2	16	No	No	No	No	No	No	No	No	No	No
14	2	634	2	12	No	No	No	No	No	No	No	No	No	No
15	2	634	2	12	No	No	No	No	No	No	No	No	No	No
16	2	444	2	8	No	No	No	No	No	No	No	No	No	No
17	2	254	2	5	No	No	No	No	No	No	No	No	No	No
18	2	254	2	5	No	No	No	No	No	No	No	No	No	No
19	2	142	2	3	No	No	No	No	No	No	No	No	No	No
20	2	79	2	2	No	No	No	No	No	No	No	No	No	No
21	2	48	2	1	No	No	No	No	No	No	No	No	No	No
22	2	16	2	0	No	No	No	No	No	No	No	No	No	No
23	2	16	2	0	No	No	No	No	No	No	No	No	No	No
24	2	16	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	43.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:21
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	30
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1615
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 9: Meadowbrook Pk/Access 1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	42	41	54
2	41	40	52
3	40	39	51
4	37	36	48
5	33	32	43
6	33	32	42
7	32	32	42
8	29	29	38
9	29	28	37
10	29	28	37
11	25	24	32
12	23	23	30
13	23	22	29
14	17	16	22
15	17	16	22
16	12	11	15
17	7	7	9
18	7	7	9
19	4	4	5
20	2	2	3
21	1	1	2
22	0	0	1
23	0	0	1
24	0	0	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	1	83	2	54	No	No	No	No	No	No	No	No	No	No
2	1	81	2	52	No	No	No	No	No	No	No	No	No	No
3	1	79	2	51	No	No	No	No	No	No	No	No	No	No
4	1	73	2	48	No	No	No	No	No	No	No	No	No	No
5	1	65	2	43	No	No	No	No	No	No	No	No	No	No
6	1	65	2	42	No	No	No	No	No	No	No	No	No	No
7	1	64	2	42	No	No	No	No	No	No	No	No	No	No
8	1	58	2	38	No	No	No	No	No	No	No	No	No	No
9	1	57	2	37	No	No	No	No	No	No	No	No	No	No
10	1	57	2	37	No	No	No	No	No	No	No	No	No	No
11	1	49	2	32	No	No	No	No	No	No	No	No	No	No
12	1	46	2	30	No	No	No	No	No	No	No	No	No	No
13	1	45	2	29	No	No	No	No	No	No	No	No	No	No
14	1	33	2	22	No	No	No	No	No	No	No	No	No	No
15	1	33	2	22	No	No	No	No	No	No	No	No	No	No
16	1	23	2	15	No	No	No	No	No	No	No	No	No	No
17	1	14	2	9	No	No	No	No	No	No	No	No	No	No
18	1	14	2	9	No	No	No	No	No	No	No	No	No	No
19	1	8	2	5	No	No	No	No	No	No	No	No	No	No
20	1	4	2	3	No	No	No	No	No	No	No	No	No	No
21	1	2	2	2	No	No	No	No	No	No	No	No	No	No
22	1	0	2	1	No	No	No	No	No	No	No	No	No	No
23	1	0	2	1	No	No	No	No	No	No	No	No	No	No
24	1	0	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	54
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	137
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

## **Appendix E- Horizon Conditions**

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	15.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	262	128	91	241	750	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	32	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
Right Turn on Red Volume [veh/h]	0	75	0	0	0	81
Total Hourly Volume [veh/h]	340	75	107	283	881	81
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]	92	20	29	77	239	22
Total Analysis Volume [veh/h]	370	82	116	308	958	88
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.0	15.0	24.1	24.1	16.8	16.8
g / C, Green / Cycle	0.28	0.28	0.46	0.46	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.20	0.05	0.10	0.09	0.28	0.06
s, saturation flow rate [veh/h]	1870	1589	1187	3560	3459	1589
c, Capacity [veh/h]	530	450	577	1621	1100	506
d1, Uniform Delay [s]	16.97	14.35	9.36	8.60	17.03	13.04
k, delay calibration	0.11	0.11	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	0.19	0.06	0.06	0.87	0.06
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.70	0.18	0.20	0.19	0.87	0.17
d, Delay for Lane Group [s/veh]	18.65	14.54	9.42	8.66	17.90	13.10
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.77	0.68	0.64	0.87	4.71	0.65
50th-Percentile Queue Length [ft/ln]	94.32	17.12	16.11	21.87	117.87	16.32
95th-Percentile Queue Length [veh/ln]	6.79	1.23	1.16	1.57	8.28	1.17
95th-Percentile Queue Length [ft/ln]	169.78	30.82	29.00	39.36	206.90	29.37

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	18.65	14.54	9.42	8.66	17.90	13.10
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	17.90		8.87		17.50	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	15.69					
Intersection LOS	B					
Intersection V/C	0.519					

**Emissions**

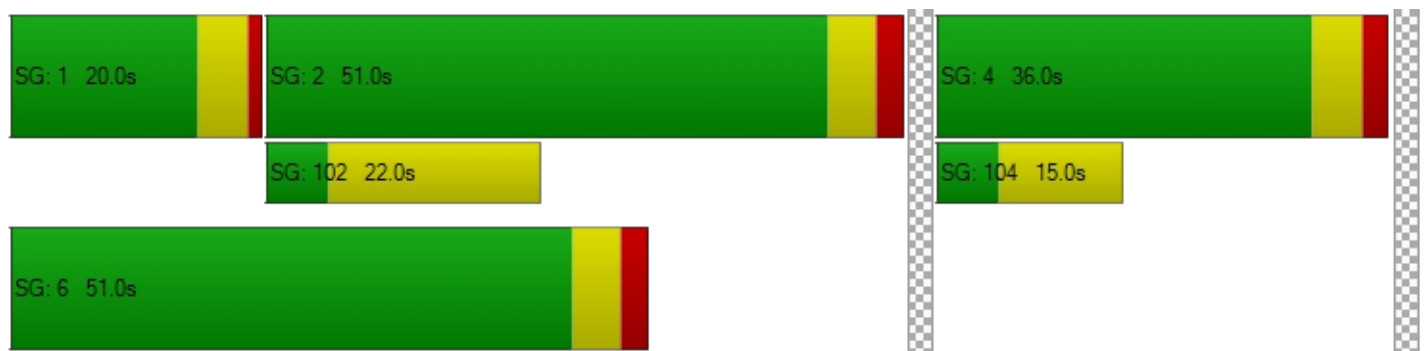
Vehicle Miles Traveled [mph]	52.49	11.63	11.50	30.52	180.56	16.59
Stops [stops/h]	256.80	46.62	43.87	119.07	641.87	44.43
Fuel consumption [US gal/h]	4.98	0.98	0.94	2.46	15.20	1.20
CO [g/h]	348.38	68.44	65.58	171.76	1062.49	83.94
NOx [g/h]	67.78	13.32	12.76	33.42	206.72	16.33
VOC [g/h]	80.74	15.86	15.20	39.81	246.24	19.46

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		18.21		18.21	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.339		2.760	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1702		1702		1134	
d_b, Bicycle Delay [s]	0.59		0.59		4.95	
I_b,int, Bicycle LOS Score for Intersection	2.429		1.909		1.560	
Bicycle LOS	B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	41.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	420.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	300.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	441	42	2	13	24	179	156	681	599	8	1758	43
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	420	53	0	28	55	302	295	137	315	0	0	27
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	1	0	0	256	0	0	510	0	0	39
Total Hourly Volume [veh/h]	938	102	1	43	83	256	478	937	509	9	2066	39
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	255	28	0	12	23	70	130	255	138	2	561	11
Total Analysis Volume [veh/h]	1020	111	1	47	90	278	520	1018	553	10	2246	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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	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
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	28.0	24.0	0.0	18.0	14.0	0.0	24.0	68.0	0.0	10.0	54.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
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]	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	24.0	28.1	28.1	3.2	7.4	20.0	70.9	76.6	52.6	52.6
g / C, Green / Cycle	0.20	0.23	0.23	0.03	0.06	0.17	0.59	0.64	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.00	0.01	0.05	0.15	0.20	0.02	0.44	0.03
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	614	5094	1589
c, Capacity [veh/h]	1038	437	372	96	115	576	3006	423	2233	697
d1, Uniform Delay [s]	47.80	37.43	35.23	57.49	55.49	49.06	12.59	8.58	33.69	19.43
k, delay calibration	0.04	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, 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]	4.91	0.11	0.00	1.43	21.06	2.22	0.31	0.01	20.41	0.17
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	0.98	0.25	0.00	0.49	0.78	0.90	0.34	0.02	1.01	0.06
d, Delay for Lane Group [s/veh]	52.71	37.55	35.23	58.92	76.55	51.28	12.90	8.59	54.10	19.60
Lane Group LOS	D	D	D	E	E	D	B	A	F	B
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.06	2.55	0.02	0.72	3.36	7.45	4.17	0.08	23.70	0.67
50th-Percentile Queue Length [ft/ln]	251.40	63.76	0.54	18.07	84.00	186.23	104.18	2.04	592.54	16.65
95th-Percentile Queue Length [veh/ln]	15.26	4.59	0.04	1.30	6.05	11.93	7.50	0.15	31.82	1.20
95th-Percentile Queue Length [ft/ln]	381.41	114.76	0.97	32.53	151.21	298.13	187.52	3.68	795.56	29.97

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	52.71	37.55	35.23	58.92	76.55	0.00	51.28	12.90	0.00	8.59	54.10	19.60
Movement LOS	D	D	D	E	E		D	B		A	F	B
d_A, Approach Delay [s/veh]	51.21			24.58			19.44			53.27		
Approach LOS	D			C			B			D		
d_I, Intersection Delay [s/veh]	41.85											
Intersection LOS	D											
Intersection V/C	0.836											

**Emissions**

Vehicle Miles Traveled [mph]	399.77	43.50	0.39	4.96	9.50	220.42	431.52	3.05	684.00	12.79
Stops [stops/h]	905.03	76.51	0.65	43.38	100.80	446.94	375.04	2.45	2133.14	19.98
Fuel consumption [US gal/h]	41.12	3.72	0.03	1.01	2.35	21.10	24.07	0.16	87.23	0.97
CO [g/h]	2874.54	260.33	2.26	70.42	164.25	1475.00	1682.73	11.53	6097.27	67.56
NOx [g/h]	559.28	50.65	0.44	13.70	31.96	286.98	327.40	2.24	1186.31	13.14
VOC [g/h]	666.20	60.34	0.52	16.32	38.07	341.84	389.99	2.67	1413.10	15.66

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	333		167		1067		833	
d_b, Bicycle Delay [s]	41.67		50.42		13.07		20.42	
I_b,int, Bicycle LOS Score for Intersection	3.429		1.786		2.406		2.845	
Bicycle LOS	C		A		B		C	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	12.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							tr		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	306	326	0	0	0	713	285	0	0	0	303	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.1750	1.1750	1.1750	1.175	1.175	1.175	1.175	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	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	0
Diverted Trips [veh/h]	0	0	0	8	0	0	-13	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	383	0	8	0	838	322	0	0	0	356	0	78
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	98	104	0	2	0	228	88	0	0	0	97	0	21
Total Analysis Volume [veh/h]	391	416	0	9	0	911	350	0	0	0	387	0	85
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2				1			2		
Circulating Flow Rate [veh/h]	9			794				1333			832		
Exiting Flow Rate [veh/h]	1324			520				399			0		
Demand Flow Rate [veh/h]	360	383	0	8	0	838	322	0	0	0	356	0	78
Adjusted Demand Flow Rate [veh/h]	391	416	0	9	0	911	350	0	0	0	387	0	85

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	399	425	442	498	0		395	87
Capacity of Entry and Bypass Lanes [veh/h]	1339	1409	651	724	1012		628	700
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1313	1382	638	710	992		616	687
X, volume / capacity	0.30	0.30	0.68	0.69	0.35		0.63	0.12

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	C	C	A		C	A
95th-Percentile Queue Length [veh]	1.26	1.28	5.24	5.51	1.60		4.40	0.42
95th-Percentile Queue Length [ft]	31.48	31.98	131.12	137.68	40.09		110.09	10.54
Approach Delay [s/veh]	5.31		16.13				0.00	16.26
Approach LOS	A		C				A	C
Intersection Delay [s/veh]	12.73							
Intersection LOS	B							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	6.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	50.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	147	67	160	856	0	66	163	374	96	0	419
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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
Total Hourly Volume [veh/h]	0	173	79	188	1006	0	78	192	439	113	0	492
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	47	21	51	273	0	21	52	119	31	0	134
Total Analysis Volume [veh/h]	0	188	86	204	1093	0	85	209	477	123	0	535
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	508			125			1448			278		
Exiting Flow Rate [veh/h]	1240			278			0			421		
Demand Flow Rate [veh/h]	0	173	79	188	1006	0	78	192	439	113	0	492
Adjusted Demand Flow Rate [veh/h]	0	188	86	204	1093	0	85	209	477	123	0	535

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1420.00	0.00	0.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00085	0.00000	0.00000
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	91	102	0	622	702	87	214	0	126	0	0
Capacity of Entry and Bypass Lanes [veh/h]	847	923	993	1203	1277	357	415	102000	1121	102000	102000
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	830	905	974	1180	1252	350	407	100000	1099	100000	100000
X, volume / capacity	0.11	0.11	0.09	0.52	0.55	0.24	0.51	0.00	0.11	0.01	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	B	C	A	A	A	
95th-Percentile Queue Length [veh]	0.36	0.37	0.29	3.08	3.48	0.94	2.85	0.00	0.38	0.00	
95th-Percentile Queue Length [ft]	8.91	9.26	7.25	76.93	87.12	23.47	71.18	0.00	9.43	0.00	
Approach Delay [s/veh]	4.98			8.97			7.17			0.79	
Approach LOS	A			A			A			A	
Intersection Delay [s/veh]	6.35										
Intersection LOS	A										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	56.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	58	10	135	255	505	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	68	12	159	300	593	43
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]	18	3	43	82	161	12
Total Analysis Volume [veh/h]	74	13	173	326	645	47
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.53	0.03	0.19	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	56.12	12.84	9.93	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.55	0.08	0.71	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	63.87	2.12	17.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	49.65		3.44		0.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	4.72					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	16	109	3	41	0	0	0	0	151	0	3
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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	9	0	0	0	0	0	0	27	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	137	4	48	0	0	0	0	204	0	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	37	1	13	0	0	0	0	55	0	1
Total Analysis Volume [veh/h]	0	21	149	4	52	0	0	0	0	222	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	4			226			284			21		
Exiting Flow Rate [veh/h]	279			26			0			156		
Demand Flow Rate [veh/h]	0	19	137	4	48	0	0	0	0	204	0	4
Adjusted Demand Flow Rate [veh/h]	0	21	149	4	52	0	0	0	0	222	0	4

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	174	58	0	227	5
Capacity of Entry and Bypass Lanes [veh/h]	1375	1096	1034	1393	1393
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1348	1074	1014	1366	1366
X, volume / capacity	0.13	0.05	0.00	0.16	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.43	0.16	0.00	0.58	0.01
95th-Percentile Queue Length [ft]	10.80	4.12	0.00	14.50	0.22
Approach Delay [s/veh]	3.69	3.80	3.55	3.94	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.83				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 13.7  
 Level Of Service: B  
 Volume to Capacity (v/c): 0.024

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	11	383	10	4	984	3	2	1	5	11	3	4
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	-13	15	6	-5	5	0	-2	-1	3	-13	-4	17
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
Total Hourly Volume [veh/h]	0	465	18	0	1161	4	0	0	9	0	0	22
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	126	5	0	315	1	0	0	2	0	0	6
Total Analysis Volume [veh/h]	0	505	20	0	1262	4	0	0	10	0	0	24
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.73	0.00	0.00	10.06
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.10
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00	2.53
d_A, Approach Delay [s/veh]	0.00			0.00			13.73			10.06		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.21											
Intersection LOS	B											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	636	459	80
2	617	445	78
3	604	436	76
4	566	409	71
5	502	363	63
6	496	358	62
7	490	353	62
8	445	321	56
9	439	317	55
10	432	312	54
11	375	271	47
12	350	252	44
13	343	248	43
14	254	184	32
15	254	184	32
16	178	129	22
17	102	73	13
18	102	73	13
19	57	41	7
20	32	23	4
21	19	14	2
22	6	5	1
23	6	5	1
24	6	5	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1095	2	80	No	No	No	No	No	Yes	Yes	Yes	No	No
2	2	1062	2	78	No	No	No	No	No	No	Yes	Yes	No	No
3	2	1040	2	76	No	No	No	No	No	No	Yes	Yes	No	No
4	2	975	2	71	No	No	No	No	No	No	Yes	Yes	No	No
5	2	865	2	63	No	No	No	No	No	No	No	Yes	No	No
6	2	854	2	62	No	No	No	No	No	No	No	Yes	No	No
7	2	843	2	62	No	No	No	No	No	No	No	Yes	No	No
8	2	766	2	56	No	No	No	No	No	No	No	Yes	No	No
9	2	756	2	55	No	No	No	No	No	No	No	No	No	No
10	2	744	2	54	No	No	No	No	No	No	No	No	No	No
11	2	646	2	47	No	No	No	No	No	No	No	No	No	No
12	2	602	2	44	No	No	No	No	No	No	No	No	No	No
13	2	591	2	43	No	No	No	No	No	No	No	No	No	No
14	2	438	2	32	No	No	No	No	No	No	No	No	No	No
15	2	438	2	32	No	No	No	No	No	No	No	No	No	No
16	2	307	2	22	No	No	No	No	No	No	No	No	No	No
17	2	175	2	13	No	No	No	No	No	No	No	No	No	No
18	2	175	2	13	No	No	No	No	No	No	No	No	No	No
19	2	98	2	7	No	No	No	No	No	No	No	No	No	No
20	2	55	2	4	No	No	No	No	No	No	No	No	No	No
21	2	33	2	2	No	No	No	No	No	No	No	No	No	No
22	2	11	2	1	No	No	No	No	No	No	No	No	No	No
23	2	11	2	1	No	No	No	No	No	No	No	No	No	No
24	2	11	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	1	4	8	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	49.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	1:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	80
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1175
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	483	1165	22	9
2	469	1130	21	9
3	459	1107	21	9
4	430	1037	20	8
5	382	920	17	7
6	377	909	17	7
7	372	897	17	7
8	338	816	15	6
9	333	804	15	6
10	328	792	15	6
11	285	687	13	5
12	266	641	12	5
13	261	629	12	5
14	193	466	9	4
15	193	466	9	4
16	135	326	6	3
17	77	186	4	1
18	77	186	4	1
19	43	105	2	1
20	24	58	1	0
21	14	35	1	0
22	5	12	0	0
23	5	12	0	0
24	5	12	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1648	1	22	No	No	No	No	No	No	No	No	No	No
2	2	1599	1	21	No	No	No	No	No	No	No	No	No	No
3	2	1566	1	21	No	No	No	No	No	No	No	No	No	No
4	2	1467	1	20	No	No	No	No	No	No	No	No	No	No
5	2	1302	1	17	No	No	No	No	No	No	No	No	No	No
6	2	1286	1	17	No	No	No	No	No	No	No	No	No	No
7	2	1269	1	17	No	No	No	No	No	No	No	No	No	No
8	2	1154	1	15	No	No	No	No	No	No	No	No	No	No
9	2	1137	1	15	No	No	No	No	No	No	No	No	No	No
10	2	1120	1	15	No	No	No	No	No	No	No	No	No	No
11	2	972	1	13	No	No	No	No	No	No	No	No	No	No
12	2	907	1	12	No	No	No	No	No	No	No	No	No	No
13	2	890	1	12	No	No	No	No	No	No	No	No	No	No
14	2	659	1	9	No	No	No	No	No	No	No	No	No	No
15	2	659	1	9	No	No	No	No	No	No	No	No	No	No
16	2	461	1	6	No	No	No	No	No	No	No	No	No	No
17	2	263	1	4	No	No	No	No	No	No	No	No	No	No
18	2	263	1	4	No	No	No	No	No	No	No	No	No	No
19	2	148	1	2	No	No	No	No	No	No	No	No	No	No
20	2	82	1	1	No	No	No	No	No	No	No	No	No	No
21	2	49	1	1	No	No	No	No	No	No	No	No	No	No
22	2	17	1	0	No	No	No	No	No	No	No	No	No	No
23	2	17	1	0	No	No	No	No	No	No	No	No	No	No
24	2	17	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.1	13.7
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:03	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	22	9
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1679	1679
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	273	798	191	169	233	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	43	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
Right Turn on Red Volume [veh/h]	0	469	0	0	0	47
Total Hourly Volume [veh/h]	364	469	224	199	274	46
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]	99	127	61	54	74	13
Total Analysis Volume [veh/h]	396	510	243	216	298	50
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	49	49	49	49	49	49
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	18.8	18.8	28.8	28.8	7.9	7.9
g / C, Green / Cycle	0.39	0.39	0.59	0.59	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.21	0.32	0.26	0.06	0.09	0.03
s, saturation flow rate [veh/h]	1870	1589	938	3560	3459	1589
c, Capacity [veh/h]	723	614	677	2106	563	259
d1, Uniform Delay [s]	11.65	13.52	5.75	4.34	18.73	17.67
k, delay calibration	0.11	0.11	0.23	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	2.97	0.67	0.02	0.29	0.13
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.55	0.83	0.36	0.10	0.53	0.19
d, Delay for Lane Group [s/veh]	12.30	16.50	6.43	4.36	19.01	17.80
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.86	4.58	0.87	0.31	1.36	0.43
50th-Percentile Queue Length [ft/ln]	71.43	114.58	21.83	7.78	34.06	10.85
95th-Percentile Queue Length [veh/ln]	5.14	8.09	1.57	0.56	2.45	0.78
95th-Percentile Queue Length [ft/ln]	128.57	202.35	39.30	14.01	61.31	19.52

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	12.30	16.50	6.43	4.36	19.01	17.80
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	14.66		5.45		18.84	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	13.04					
Intersection LOS	B					
Intersection V/C	0.485					

**Emissions**

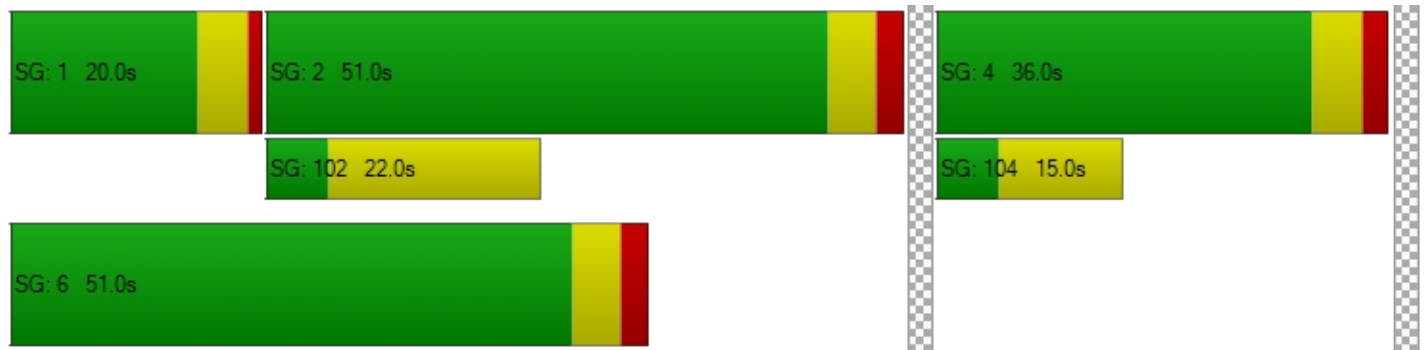
Vehicle Miles Traveled [mph]	56.18	72.35	24.08	21.41	56.17	9.42
Stops [stops/h]	211.11	338.66	64.53	46.01	201.34	32.06
Fuel consumption [US gal/h]	4.47	6.56	1.67	1.33	4.81	0.78
CO [g/h]	312.50	458.69	116.44	92.76	336.09	54.62
NOx [g/h]	60.80	89.24	22.65	18.05	65.39	10.63
VOC [g/h]	72.43	106.31	26.99	21.50	77.89	12.66

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		16.19		16.19	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.332		2.851	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1847		1847		1232	
d_b, Bicycle Delay [s]	0.14		0.14		3.60	
I_b,int, Bicycle LOS Score for Intersection	3.828		1.938		1.560	
Bicycle LOS	D		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	43.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.760

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	300.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	405	31	4	26	50	166	155	1723	394	7	851	24
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	596	49	0	21	43	232	270	194	562	0	0	24
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	3	0	0	214	0	0	513	0	0	26
Total Hourly Volume [veh/h]	1072	85	2	52	102	213	452	2219	512	8	1000	26
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	291	23	1	14	28	58	123	603	139	2	272	7
Total Analysis Volume [veh/h]	1165	92	2	57	111	232	491	2412	557	9	1087	28
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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	3.5	4.0	0.0	3.5	4.0	0.0	3.5	6.0	0.0	3.5	6.0	0.0
All red [s]	3.0	2.0	0.0	3.0	2.0	0.0	3.0	1.0	0.0	3.0	1.0	0.0
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.5	4.0	0.0	4.5	4.0	0.0	4.5	5.0	0.0	4.5	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	33.0	26.0	0.0	22.0	15.0	0.0	33.0	59.0	0.0	13.0	39.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.50	6.00	6.00	6.50	6.00	6.50	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.50	4.00	4.00	4.50	4.00	4.50	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	26.5	31.8	31.8	3.5	8.8	19.2	57.1	65.2	39.5	39.5
g / C, Green / Cycle	0.22	0.26	0.26	0.03	0.07	0.16	0.48	0.54	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.22	0.05	0.00	0.02	0.06	0.14	0.47	0.03	0.21	0.02
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	297	5094	1589
c, Capacity [veh/h]	1146	494	420	103	137	554	2423	184	1676	523
d1, Uniform Delay [s]	46.75	34.16	32.52	57.41	54.78	49.32	31.34	26.73	34.34	27.50
k, delay calibration	0.04	0.04	0.04	0.04	0.26	0.04	0.50	0.04	0.50	0.50
l, 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]	12.29	0.07	0.00	1.70	22.70	1.96	17.29	0.04	1.96	0.19
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	1.02	0.19	0.00	0.55	0.81	0.89	1.00	0.05	0.65	0.05
d, Delay for Lane Group [s/veh]	59.04	34.23	32.53	59.11	77.48	51.28	48.63	26.77	36.30	27.69
Lane Group LOS	F	C	C	E	E	D	D	C	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	12.06	1.99	0.04	0.88	4.17	7.01	24.42	0.10	8.75	0.55
50th-Percentile Queue Length [ft/ln]	301.57	49.77	1.03	21.96	104.23	175.29	610.39	2.58	218.78	13.77
95th-Percentile Queue Length [veh/ln]	17.92	3.58	0.07	1.58	7.50	11.35	32.52	0.19	13.60	0.99
95th-Percentile Queue Length [ft/ln]	448.08	89.58	1.85	39.54	187.62	283.86	812.98	4.65	340.07	24.79

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	59.04	34.23	32.53	59.11	77.48	0.00	51.28	48.63	0.00	26.77	36.30	27.69
Movement LOS	F	C	C	E	E		D	D		C	D	C
d_A, Approach Delay [s/veh]	57.19			31.42			41.72			36.01		
Approach LOS	E			C			D			D		
d_I, Intersection Delay [s/veh]	43.80											
Intersection LOS	D											
Intersection V/C	0.760											

**Emissions**

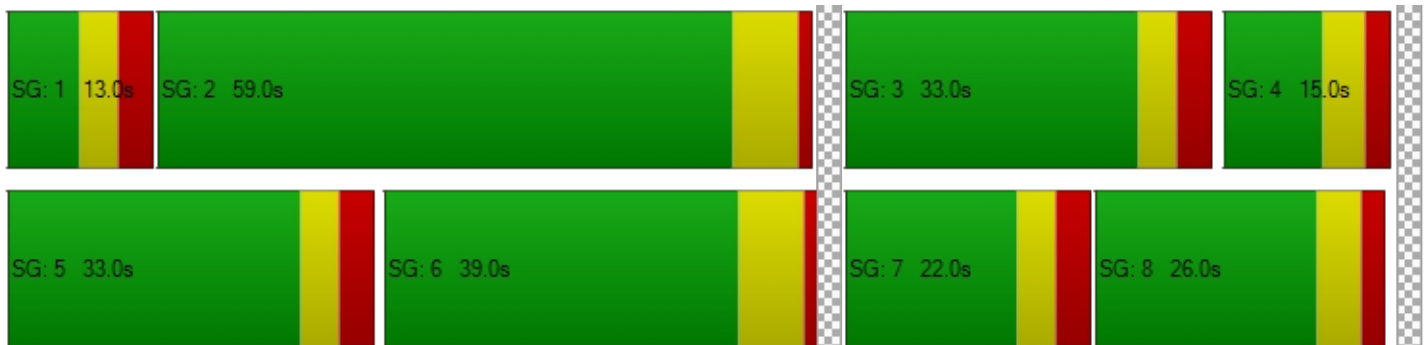
Vehicle Miles Traveled [mph]	456.60	36.06	0.78	6.02	11.72	208.13	1022.42	2.74	331.04	8.53
Stops [stops/h]	1085.65	59.72	1.24	52.72	125.08	420.70	2197.41	3.10	787.61	16.53
Fuel consumption [US gal/h]	49.44	2.96	0.06	1.22	2.92	19.90	98.89	0.20	33.73	0.75
CO [g/h]	3455.55	206.65	4.36	85.59	204.34	1390.98	6912.09	13.86	2357.89	52.43
NOx [g/h]	672.32	40.21	0.85	16.65	39.76	270.63	1344.84	2.70	458.76	10.20
VOC [g/h]	800.86	47.89	1.01	19.84	47.36	322.37	1601.94	3.21	546.46	12.15

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	333		150		867		533	
d_b, Bicycle Delay [s]	41.67		51.34		19.27		32.27	
I_b,int, Bicycle LOS Score for Intersection	3.642		1.837		3.156		2.192	
Bicycle LOS	D		A		C		B	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	12.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							tr		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	476	1010	0	0	0	250	168	0	0	0	24	0	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.1750	1.1750	1.1750	1.175	1.175	1.175	1.175	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	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	0
Diverted Trips [veh/h]	0	0	0	21	0	-6	-6	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	1187	0	21	0	288	191	0	0	0	28	0	82
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Total 15-Minute Volume [veh/h]	152	323	0	6	0	78	52	0	0	0	8	0	22
Total Analysis Volume [veh/h]	608	1290	0	23	0	313	208	0	0	0	30	0	89
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2				1			2		
Circulating Flow Rate [veh/h]	23			651				373			1959		
Exiting Flow Rate [veh/h]	350			1430				620			0		
Demand Flow Rate [veh/h]	559	1187	0	21	0	288	191	0	0	0	28	0	82
Adjusted Demand Flow Rate [veh/h]	608	1290	0	23	0	313	208	0	0	0	30	0	89

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	910	1027	162	182	0		31	91
Capacity of Entry and Bypass Lanes [veh/h]	1322	1392	742	817	839		223	269
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1296	1365	728	801	822		219	264
X, volume / capacity	0.69	0.74	0.22	0.22	0.25		0.14	0.34

**Movement, Approach, & Intersection Results**

Lane LOS	B	B	A	A	A		C	C
95th-Percentile Queue Length [veh]	5.94	7.24	0.82	0.85	1.00		0.47	1.44
95th-Percentile Queue Length [ft]	148.44	181.07	20.56	21.22	25.09		11.72	35.94
Approach Delay [s/veh]	12.75		7.13				0.00	21.59
Approach LOS	B		A				A	C
Intersection Delay [s/veh]	11.97							
Intersection LOS	B							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	14.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	888	357	266	3	0	217	101	11	3	0	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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
Total Hourly Volume [veh/h]	0	1043	419	313	4	0	255	119	13	4	0	448
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	283	114	85	1	0	69	32	4	1	0	122
Total Analysis Volume [veh/h]	0	1134	455	340	4	0	277	129	14	4	0	487
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	761			4			355			1439		
Exiting Flow Rate [veh/h]	8			1439			0			478		
Demand Flow Rate [veh/h]	0	1043	419	313	4	0	255	119	13	4	0	448
Adjusted Demand Flow Rate [veh/h]	0	1134	455	340	4	0	277	129	14	4	0	487

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1420.00	0.00	0.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00085	0.00000	0.00000
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	544	614	0	347	5	283	132	0	5	0	0
Capacity of Entry and Bypass Lanes [veh/h]	671	744	946	1345	1416	974	1051	102000	418	102000	102000
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	658	730	928	1319	1388	955	1030	100000	410	100000	100000
X, volume / capacity	0.81	0.82	0.49	0.26	0.00	0.29	0.13	0.00	0.01	0.00	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	D	D	B	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	8.36	9.01	2.76	1.03	0.01	1.21	0.43	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	209.12	225.20	69.06	25.84	0.22	30.22	10.70	0.00	0.74	0.00	0.00
Approach Delay [s/veh]	23.01			4.94			5.87			0.07	
Approach LOS	C			A			A			A	
Intersection Delay [s/veh]	14.33										
Intersection LOS	B										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	170.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.756

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	34	44	328	391	340	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	40	52	385	459	400	21
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]	11	14	105	125	109	6
Total Analysis Volume [veh/h]	43	57	418	499	435	23
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.76	0.09	0.38	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	170.03	11.38	10.24	0.00	0.00	0.00
Movement LOS	F	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	3.24	0.30	1.79	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	81.01	7.55	44.83	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	79.60		4.67		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	8.30					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	3.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	37	71	2	14	0	0	0	0	173	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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	30	0	0	0	0	0	0	18	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	43	113	2	16	0	0	0	0	221	0	12
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	31	1	4	0	0	0	0	60	0	3
Total Analysis Volume [veh/h]	0	47	123	2	17	0	0	0	0	240	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	2			245			264			48		
Exiting Flow Rate [veh/h]	262			61			0			128		
Demand Flow Rate [veh/h]	0	43	113	2	16	0	0	0	0	221	0	12
Adjusted Demand Flow Rate [veh/h]	0	47	123	2	17	0	0	0	0	240	0	13

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	174	20	0	245	14
Capacity of Entry and Bypass Lanes [veh/h]	1378	1076	1055	1360	1360
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1351	1054	1034	1333	1333
X, volume / capacity	0.13	0.02	0.00	0.18	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.43	0.06	0.00	0.66	0.03
95th-Percentile Queue Length [ft]	10.77	1.38	0.00	16.39	0.74
Approach Delay [s/veh]	3.68	3.57	3.48	4.12	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.93				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 15.1  
 Level Of Service: C  
 Volume to Capacity (v/c): 0.068

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	26	1045	9	2	395	5	16	0	13	10	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
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]	-31	50	2	-2	2	0	-19	0	19	-12	0	12
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
Total Hourly Volume [veh/h]	0	1278	13	0	466	6	0	0	34	0	0	24
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	347	4	0	127	2	0	0	9	0	0	7
Total Analysis Volume [veh/h]	0	1389	14	0	507	7	0	0	37	0	0	26
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.11	0.00	0.00	15.14
Movement LOS		A	A		A	A			B			C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.93	0.00	0.00	5.47
d_A, Approach Delay [s/veh]	0.00			0.00			10.11			15.14		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.39											
Intersection LOS	C											

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	421	844	92
2	408	819	89
3	400	802	87
4	375	751	82
5	333	667	73
6	328	658	72
7	324	650	71
8	295	591	64
9	290	582	63
10	286	574	63
11	248	498	54
12	232	464	51
13	227	456	50
14	168	338	37
15	168	338	37
16	118	236	26
17	67	135	15
18	67	135	15
19	38	76	8
20	21	42	5
21	13	25	3
22	4	8	1
23	4	8	1
24	4	8	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1265	2	92	No	No	No	No	No	Yes	Yes	Yes	No	No
2	2	1227	2	89	No	No	No	No	No	Yes	Yes	Yes	No	No
3	2	1202	2	87	No	No	No	No	No	Yes	Yes	Yes	No	No
4	2	1126	2	82	No	No	No	No	No	Yes	Yes	Yes	No	No
5	2	1000	2	73	No	No	No	No	No	No	Yes	Yes	No	No
6	2	986	2	72	No	No	No	No	No	No	Yes	Yes	No	No
7	2	974	2	71	No	No	No	No	No	No	Yes	Yes	No	No
8	2	886	2	64	No	No	No	No	No	No	No	Yes	No	No
9	2	872	2	63	No	No	No	No	No	No	No	Yes	No	No
10	2	860	2	63	No	No	No	No	No	No	No	Yes	No	No
11	2	746	2	54	No	No	No	No	No	No	No	No	No	No
12	2	696	2	51	No	No	No	No	No	No	No	No	No	No
13	2	683	2	50	No	No	No	No	No	No	No	No	No	No
14	2	506	2	37	No	No	No	No	No	No	No	No	No	No
15	2	506	2	37	No	No	No	No	No	No	No	No	No	No
16	2	354	2	26	No	No	No	No	No	No	No	No	No	No
17	2	202	2	15	No	No	No	No	No	No	No	No	No	No
18	2	202	2	15	No	No	No	No	No	No	No	No	No	No
19	2	114	2	8	No	No	No	No	No	No	No	No	No	No
20	2	63	2	5	No	No	No	No	No	No	No	No	No	No
21	2	38	2	3	No	No	No	No	No	No	No	No	No	No
22	2	12	2	1	No	No	No	No	No	No	No	No	No	No
23	2	12	2	1	No	No	No	No	No	No	No	No	No	No
24	2	12	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	4	7	10	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	79.6
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	2:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	92
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1357
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	472	1291	24	34
2	458	1252	23	33
3	448	1226	23	32
4	420	1149	21	30
5	373	1020	19	27
6	368	1007	19	27
7	363	994	18	26
8	330	904	17	24
9	326	891	17	23
10	321	878	16	23
11	278	762	14	20
12	260	710	13	19
13	255	697	13	18
14	189	516	10	14
15	189	516	10	14
16	132	361	7	10
17	76	207	4	5
18	76	207	4	5
19	42	116	2	3
20	24	65	1	2
21	14	39	1	1
22	5	13	0	0
23	5	13	0	0
24	5	13	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1763	1	34	No	No	No	No	No	No	No	No	No	No
2	2	1710	1	33	No	No	No	No	No	No	No	No	No	No
3	2	1674	1	32	No	No	No	No	No	No	No	No	No	No
4	2	1569	1	30	No	No	No	No	No	No	No	No	No	No
5	2	1393	1	27	No	No	No	No	No	No	No	No	No	No
6	2	1375	1	27	No	No	No	No	No	No	No	No	No	No
7	2	1357	1	26	No	No	No	No	No	No	No	No	No	No
8	2	1234	1	24	No	No	No	No	No	No	No	No	No	No
9	2	1217	1	23	No	No	No	No	No	No	No	No	No	No
10	2	1199	1	23	No	No	No	No	No	No	No	No	No	No
11	2	1040	1	20	No	No	No	No	No	No	No	No	No	No
12	2	970	1	19	No	No	No	No	No	No	No	No	No	No
13	2	952	1	18	No	No	No	No	No	No	No	No	No	No
14	2	705	1	14	No	No	No	No	No	No	No	No	No	No
15	2	705	1	14	No	No	No	No	No	No	No	No	No	No
16	2	493	1	10	No	No	No	No	No	No	No	No	No	No
17	2	283	1	5	No	No	No	No	No	No	No	No	No	No
18	2	283	1	5	No	No	No	No	No	No	No	No	No	No
19	2	158	1	3	No	No	No	No	No	No	No	No	No	No
20	2	89	1	2	No	No	No	No	No	No	No	No	No	No
21	2	53	1	1	No	No	No	No	No	No	No	No	No	No
22	2	18	1	0	No	No	No	No	No	No	No	No	No	No
23	2	18	1	0	No	No	No	No	No	No	No	No	No	No
24	2	18	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	15.1	10.1
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:06	0:05
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	24	34
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1821	1821
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.526

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	262	128	91	241	750	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	16	0	3	6	0
Diverted Trips [veh/h]	32	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
Right Turn on Red Volume [veh/h]	0	83	0	0	0	81
Total Hourly Volume [veh/h]	349	83	107	286	887	81
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]	95	23	29	78	241	22
Total Analysis Volume [veh/h]	379	90	116	311	964	88
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	15.0	15.0	24.1	24.1	16.9	16.9
g / C, Green / Cycle	0.28	0.28	0.45	0.45	0.32	0.32
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.10	0.09	0.28	0.06
s, saturation flow rate [veh/h]	1870	1589	1177	3560	3459	1589
c, Capacity [veh/h]	528	449	568	1617	1106	508
d1, Uniform Delay [s]	17.15	14.49	9.48	8.67	17.04	13.01
k, delay calibration	0.11	0.11	0.04	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.84	0.22	0.07	0.06	0.87	0.06
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.72	0.20	0.20	0.19	0.87	0.17
d, Delay for Lane Group [s/veh]	18.99	14.71	9.55	8.72	17.91	13.07
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.92	0.76	0.65	0.89	4.76	0.65
50th-Percentile Queue Length [ft/ln]	98.04	19.00	16.23	22.26	118.94	16.32
95th-Percentile Queue Length [veh/ln]	7.06	1.37	1.17	1.60	8.33	1.18
95th-Percentile Queue Length [ft/ln]	176.48	34.20	29.22	40.07	208.37	29.38

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	18.99	14.71	9.55	8.72	17.91	13.07
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	18.17		8.95		17.50	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	15.79					
Intersection LOS	B					
Intersection V/C	0.526					

**Emissions**

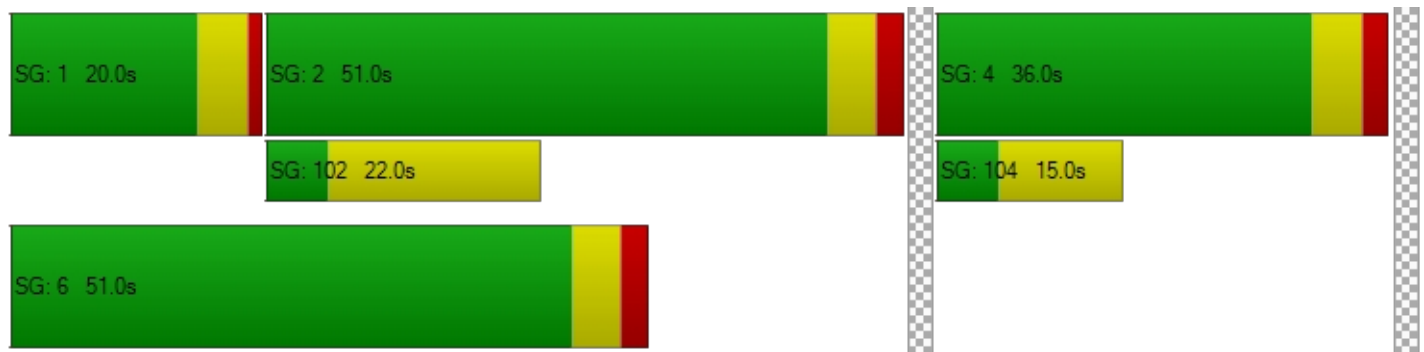
Vehicle Miles Traveled [mph]	53.77	12.77	11.50	30.82	181.69	16.59
Stops [stops/h]	266.21	51.58	44.08	120.89	645.90	44.32
Fuel consumption [US gal/h]	5.15	1.08	0.94	2.49	15.30	1.20
CO [g/h]	359.92	75.50	65.86	173.98	1069.22	83.85
NOx [g/h]	70.03	14.69	12.81	33.85	208.03	16.31
VOC [g/h]	83.42	17.50	15.26	40.32	247.80	19.43

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		18.28		18.28	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.343		2.765	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1697		1697		1131	
d_b, Bicycle Delay [s]	0.61		0.61		5.00	
I_b,int, Bicycle LOS Score for Intersection	2.470		1.912		1.560	
Bicycle LOS	B		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	45.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.846

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	800.00	100.00	800.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	250.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	441	42	2	13	24	179	156	681	599	8	1758	43
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	5	0	42	16	0	0	0	0	0	2	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]	420	53	0	28	55	302	295	137	315	0	0	27
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	1	0	0	256	0	0	510	0	0	45
Total Hourly Volume [veh/h]	939	107	1	85	99	256	478	937	509	9	2068	45
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	255	29	0	23	27	70	130	255	138	2	562	12
Total Analysis Volume [veh/h]	1021	116	1	92	108	278	520	1018	553	10	2248	49
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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	13.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	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
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	28.0	23.0	0.0	19.0	14.0	0.0	24.0	68.0	0.0	10.0	54.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**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	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120	120
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]	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	0.00	2.00	2.00
g_i, Effective Green Time [s]	24.0	27.6	27.6	5.0	8.6	19.9	69.6	75.4	51.5	51.5
g / C, Green / Cycle	0.20	0.23	0.23	0.04	0.07	0.17	0.58	0.63	0.43	0.43
(v / s)_i Volume / Saturation Flow Rate	0.20	0.06	0.00	0.03	0.06	0.15	0.20	0.02	0.44	0.03
s, saturation flow rate [veh/h]	5188	1870	1589	3459	1870	3459	5094	615	5094	1589
c, Capacity [veh/h]	1038	429	365	147	135	573	2954	416	2184	682
d1, Uniform Delay [s]	47.81	37.97	35.64	56.51	54.83	49.15	13.23	9.07	34.27	20.20
k, delay calibration	0.04	0.04	0.04	0.04	0.27	0.04	0.50	0.04	0.50	0.50
l, 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]	5.04	0.12	0.00	1.63	23.35	2.33	0.32	0.01	27.14	0.20
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	0.98	0.27	0.00	0.63	0.80	0.91	0.34	0.02	1.03	0.07
d, Delay for Lane Group [s/veh]	52.85	38.09	35.64	58.14	78.18	51.47	13.56	9.07	61.41	20.40
Lane Group LOS	D	D	D	E	E	D	B	A	F	C
Critical Lane Group	Yes	No	No	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	10.08	2.69	0.02	1.41	4.09	7.46	4.32	0.09	24.63	0.80
50th-Percentile Queue Length [ft/ln]	252.00	67.29	0.54	35.15	102.23	186.60	107.91	2.13	615.86	19.95
95th-Percentile Queue Length [veh/ln]	15.29	4.84	0.04	2.53	7.36	11.94	7.72	0.15	33.49	1.44
95th-Percentile Queue Length [ft/ln]	382.17	121.12	0.98	63.28	184.01	298.62	193.09	3.84	837.14	35.91

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	52.85	38.09	35.64	58.14	78.18	0.00	51.47	13.56	0.00	9.07	61.41	20.40
Movement LOS	D	D	D	E	E		D	B		A	F	C
d_A, Approach Delay [s/veh]	51.33			30.25			19.82			60.32		
Approach LOS	D			C			B			E		
d_I, Intersection Delay [s/veh]	45.16											
Intersection LOS	D											
Intersection V/C	0.846											

**Emissions**

Vehicle Miles Traveled [mph]	400.16	45.46	0.39	9.71	11.40	220.42	431.52	3.05	684.61	14.92
Stops [stops/h]	907.19	80.75	0.65	84.37	122.67	447.84	388.48	2.56	2217.11	23.94
Fuel consumption [US gal/h]	41.22	3.92	0.03	1.95	2.87	21.14	24.46	0.17	92.17	1.15
CO [g/h]	2881.03	274.00	2.27	136.60	200.27	1477.57	1709.68	11.73	6443.02	80.19
NOx [g/h]	560.54	53.31	0.44	26.58	38.96	287.48	332.64	2.28	1253.58	15.60
VOC [g/h]	667.71	63.50	0.53	31.66	46.41	342.44	396.23	2.72	1493.23	18.59

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000		0.000	
Crosswalk LOS	F		F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	317		167		1067		833	
d_b, Bicycle Delay [s]	42.50		50.42		13.07		20.42	
I_b,int, Bicycle LOS Score for Intersection	3.439		1.890		2.406		2.853	
Bicycle LOS	C		A		B		C	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	13.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							tr		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	306	326	0	0	0	716	285	0	0	0	303	0	66
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.1750	1.1750	1.1750	1.175	1.175	1.175	1.175	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	0	0	0	24	54	0	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	8	0	0	-13	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	360	409	0	8	0	865	376	0	0	0	356	0	81
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Total 15-Minute Volume [veh/h]	98	111	0	2	0	235	102	0	0	0	97	0	22
Total Analysis Volume [veh/h]	391	445	0	9	0	940	409	0	0	0	387	0	88
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2			
Circulating Flow Rate [veh/h]	9			794			1363			862			
Exiting Flow Rate [veh/h]	1354			553			399			0			
Demand Flow Rate [veh/h]	360	409	0	8	0	865	376	0	0	0	356	0	81
Adjusted Demand Flow Rate [veh/h]	391	445	0	9	0	940	409	0	0	0	387	0	88

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	401	452	455	514	0		395	90
Capacity of Entry and Bypass Lanes [veh/h]	1339	1409	651	724	1012		611	683
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1313	1382	638	710	992		599	670
X, volume / capacity	0.30	0.32	0.70	0.71	0.41		0.65	0.13

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	C	C	A		C	A
95th-Percentile Queue Length [veh]	1.27	1.40	5.65	5.95	2.05		4.66	0.45
95th-Percentile Queue Length [ft]	31.70	35.00	141.19	148.65	51.19		116.48	11.29
Approach Delay [s/veh]	5.42		16.85				0.00	17.20
Approach LOS	A		C				A	C
Intersection Delay [s/veh]	13.33							
Intersection LOS	B							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	6.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	147	67	160	856	0	66	163	374	96	0	419
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	0	9	9	6	20	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
Total Hourly Volume [veh/h]	0	176	79	197	1015	6	98	192	439	113	0	495
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	48	21	54	276	2	27	52	119	31	0	135
Total Analysis Volume [veh/h]	0	191	86	214	1103	7	107	209	477	123	0	538
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	541			125			1469			304		
Exiting Flow Rate [veh/h]	1251			304			0			431		
Demand Flow Rate [veh/h]	0	176	79	197	1015	0	98	192	439	113	0	495
Adjusted Demand Flow Rate [veh/h]	0	191	86	214	1103	0	107	209	477	123	0	538

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	1420.00	1350.00	1420.00	1350.00	1420.00	0.00	1420.00	0.00	0.00
B (coefficient)	0.00092	0.00085	0.00085	0.00092	0.00085	0.00092	0.00085	0.00000	0.00085	0.00000	0.00000
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	92	104	0	632	712	110	214	0	126	0	0
Capacity of Entry and Bypass Lanes [veh/h]	821	897	985	1203	1277	350	408	102000	1097	102000	102000
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	805	880	965	1180	1252	343	400	100000	1076	100000	100000
X, volume / capacity	0.11	0.12	0.09	0.52	0.56	0.31	0.52	0.00	0.11	0.01	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	C	C	A	A	A	
95th-Percentile Queue Length [veh]	0.38	0.39	0.29	3.17	3.60	1.30	2.93	0.00	0.39	0.00	
95th-Percentile Queue Length [ft]	9.38	9.72	7.32	79.27	89.93	32.61	73.28	0.00	9.66	0.00	
Approach Delay [s/veh]	5.12			9.12			7.82			0.81	
Approach LOS	A			A			A			A	
Intersection Delay [s/veh]	6.62										
Intersection LOS	A										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	57.9
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.537

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	58	10	135	255	505	37
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	9	3	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]	68	12	159	309	596	43
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]	18	3	43	84	162	12
Total Analysis Volume [veh/h]	74	13	173	336	648	47
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.54	0.03	0.19	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	57.94	12.87	9.94	0.00	0.00	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.62	0.09	0.71	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	65.46	2.13	17.69	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	51.20		3.38		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	4.78					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	4.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	16	109	3	41	0	0	0	0	151	0	3
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.1750	1.1750	1.1750	1.1750	1.0000	1.0000	1.0000	1.0000	1.1750	1.0000	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	0	0	0	1	5	58	0	1	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	9	0	0	0	0	0	0	27	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	19	137	4	48	0	1	5	58	204	1	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	5	37	1	13	0	0	1	16	55	0	1
Total Analysis Volume [veh/h]	18	21	149	4	52	0	1	5	63	222	1	4
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	10			246			284			41		
Exiting Flow Rate [veh/h]	344			27			19			161		
Demand Flow Rate [veh/h]	17	19	137	4	48	0	1	5	58	204	1	4
Adjusted Demand Flow Rate [veh/h]	18	21	149	4	52	0	1	5	63	222	1	4

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	192	58	71	228	5
Capacity of Entry and Bypass Lanes [veh/h]	1366	1074	1034	1369	1369
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1339	1053	1014	1342	1342
X, volume / capacity	0.14	0.05	0.07	0.17	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.49	0.17	0.22	0.60	0.01
95th-Percentile Queue Length [ft]	12.21	4.21	5.47	14.89	0.22
Approach Delay [s/veh]	3.83	3.88	4.15	4.03	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	3.96				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type: Two-way stop  
 Analysis Method: HCM 7th Edition  
 Analysis Period: 15 minutes

Delay (sec / veh): 14.4  
 Level Of Service: B  
 Volume to Capacity (v/c): 0.033

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	11	383	10	4	984	3	2	1	8	11	3	18
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	10	0	78	0	0	0	0	0	0	10
Diverted Trips [veh/h]	-13	15	6	-5	5	0	-2	-1	3	-13	-4	17
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
Total Hourly Volume [veh/h]	0	484	28	0	1239	4	0	0	12	0	0	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	132	8	0	337	1	0	0	3	0	0	13
Total Analysis Volume [veh/h]	0	526	30	0	1347	4	0	0	13	0	0	52
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.07
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.39	0.00	0.00	10.39
Movement LOS		A	A		A	A			B			B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.23
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.54	0.00	0.00	5.83
d_A, Approach Delay [s/veh]	0.00			0.00			14.39			10.39		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.37											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 8: Peterson Rd/ Meadowbrook Pk**

Control Type:	Two-way stop	Delay (sec / veh):	42.9
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.481

**Intersection Setup**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
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 Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	235.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
Base Volume Input [veh/h]	390	0	0	991	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.0000	1.0000	1.1750	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	19	9	0	78	15
Diverted Trips [veh/h]	30	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]	498	19	9	1164	78	15
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]	135	5	2	316	21	4
Total Analysis Volume [veh/h]	541	21	10	1265	85	16
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.48	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.59	0.00	42.93	10.06
Movement LOS	A	A	A	A	E	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.01	2.31	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.42	0.21	57.84	1.69
d_A, Approach Delay [s/veh]	0.00		0.07		37.73	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	2.01					
Intersection LOS	E					

**Intersection Level Of Service Report**  
**Intersection 9: Meadowbrook Pk/Access 1**

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	72	0	52	6	0	11	4	4	20	14	11	2
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
Total Hourly Volume [veh/h]	72	0	52	6	0	11	4	4	20	14	11	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	0	14	2	0	3	1	1	5	4	3	1
Total Analysis Volume [veh/h]	78	0	57	7	0	12	4	4	22	15	12	2
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.09	0.00	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	9.39	0.00	8.57	9.41	9.55	8.45	7.25	0.00	0.00	7.29	0.00	0.00
Movement LOS	A		A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.28	0.00	0.17	0.06	0.06	0.06	0.01	0.01	0.01	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	7.12	0.00	4.24	1.50	1.50	1.50	0.20	0.20	0.20	0.72	0.00	0.00
d_A, Approach Delay [s/veh]	9.05			8.80			0.97			3.77		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.17											
Intersection LOS	A											

**Intersection Level Of Service Report**  
**Intersection 10: Meadowbrook Pk/ Access 2**

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	Meadowbrook Pk		Meadowbrook Pk		Access B	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↶		↷		↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Meadowbrook Pk		Meadowbrook Pk		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	58	16	2	6	11
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]	4	58	16	2	6	11
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]	1	16	4	1	2	3
Total Analysis Volume [veh/h]	4	63	17	2	7	12
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	0.01
d_M, Delay for Movement [s/veh]	7.26	0.00	0.00	0.00	9.03	8.46
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.06	0.06
95th-Percentile Queue Length [ft/ln]	0.17	0.17	0.00	0.00	1.45	1.45
d_A, Approach Delay [s/veh]	0.43		0.00		8.67	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.85					
Intersection LOS	A					

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	639	468	80
2	620	454	78
3	607	445	76
4	569	417	71
5	505	370	63
6	498	365	62
7	492	360	62
8	447	328	56
9	441	323	55
10	435	318	54
11	377	276	47
12	351	257	44
13	345	253	43
14	256	187	32
15	256	187	32
16	179	131	22
17	102	75	13
18	102	75	13
19	58	42	7
20	32	23	4
21	19	14	2
22	6	5	1
23	6	5	1
24	6	5	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B	
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%			
1	2	1107	2	80	No	No	No	No	No	Yes	Yes	Yes	No	No	
2	2	1074	2	78	No	No	No	No	No	No	Yes	Yes	No	No	
3	2	1052	2	76	No	No	No	No	No	No	Yes	Yes	No	No	
4	2	986	2	71	No	No	No	No	No	No	Yes	Yes	No	No	
5	2	875	2	63	No	No	No	No	No	No	No	Yes	No	No	
6	2	863	2	62	No	No	No	No	No	No	No	Yes	No	No	
7	2	852	2	62	No	No	No	No	No	No	No	Yes	No	No	
8	2	775	2	56	No	No	No	No	No	No	No	Yes	No	No	
9	2	764	2	55	No	No	No	No	No	No	No	No	No	No	
10	2	753	2	54	No	No	No	No	No	No	No	No	No	No	
11	2	653	2	47	No	No	No	No	No	No	No	No	No	No	
12	2	608	2	44	No	No	No	No	No	No	No	No	No	No	
13	2	598	2	43	No	No	No	No	No	No	No	No	No	No	
14	2	443	2	32	No	No	No	No	No	No	No	No	No	No	
15	2	443	2	32	No	No	No	No	No	No	No	No	No	No	
16	2	310	2	22	No	No	No	No	No	No	No	No	No	No	
17	2	177	2	13	No	No	No	No	No	No	No	No	No	No	
18	2	177	2	13	No	No	No	No	No	No	No	No	No	No	
19	2	100	2	7	No	No	No	No	No	No	No	No	No	No	
20	2	55	2	4	No	No	No	No	No	No	No	No	No	No	
21	2	33	2	2	No	No	No	No	No	No	No	No	No	No	
22	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
23	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
24	2	11	2	1	No	No	No	No	No	No	No	No	No	No	
Hours Met					0	0	0	0	0	0	1	4	8	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	51.2
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	1:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	80
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1187
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	512	1243	48	12
2	497	1206	47	12
3	486	1181	46	11
4	456	1106	43	11
5	404	982	38	9
6	399	970	37	9
7	394	957	37	9
8	358	870	34	8
9	353	858	33	8
10	348	845	33	8
11	302	733	28	7
12	282	684	26	7
13	276	671	26	6
14	205	497	19	5
15	205	497	19	5
16	143	348	13	3
17	82	199	8	2
18	82	199	8	2
19	46	112	4	1
20	26	62	2	1
21	15	37	1	0
22	5	12	0	0
23	5	12	0	0
24	5	12	0	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1755	1	48	No	No	No	No	No	No	No	Yes	No	No
2	2	1703	1	47	No	No	No	No	No	No	No	Yes	No	No
3	2	1667	1	46	No	No	No	No	No	No	No	Yes	No	No
4	2	1562	1	43	No	No	No	No	No	No	No	Yes	No	No
5	2	1386	1	38	No	No	No	No	No	No	No	No	No	No
6	2	1369	1	37	No	No	No	No	No	No	No	No	No	No
7	2	1351	1	37	No	No	No	No	No	No	No	No	No	No
8	2	1228	1	34	No	No	No	No	No	No	No	No	No	No
9	2	1211	1	33	No	No	No	No	No	No	No	No	No	No
10	2	1193	1	33	No	No	No	No	No	No	No	No	No	No
11	2	1035	1	28	No	No	No	No	No	No	No	No	No	No
12	2	966	1	26	No	No	No	No	No	No	No	No	No	No
13	2	947	1	26	No	No	No	No	No	No	No	No	No	No
14	2	702	1	19	No	No	No	No	No	No	No	No	No	No
15	2	702	1	19	No	No	No	No	No	No	No	No	No	No
16	2	491	1	13	No	No	No	No	No	No	No	No	No	No
17	2	281	1	8	No	No	No	No	No	No	No	No	No	No
18	2	281	1	8	No	No	No	No	No	No	No	No	No	No
19	2	158	1	4	No	No	No	No	No	No	No	No	No	No
20	2	88	1	2	No	No	No	No	No	No	No	No	No	No
21	2	52	1	1	No	No	No	No	No	No	No	No	No	No
22	2	17	1	0	No	No	No	No	No	No	No	No	No	No
23	2	17	1	0	No	No	No	No	No	No	No	No	No	No
24	2	17	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	4	0	0

### Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.4	14.4
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:08	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	48	12
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	1815	1815
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 8: Peterson Rd/ Meadowbrook Pk

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	517	1173	93
2	501	1138	90
3	491	1114	88
4	460	1044	83
5	408	927	73
6	403	915	73
7	398	903	72
8	362	821	65
9	357	809	64
10	352	798	63
11	305	692	55
12	284	645	51
13	279	633	50
14	207	469	37
15	207	469	37
16	145	328	26
17	83	188	15
18	83	188	15
19	47	106	8
20	26	59	5
21	16	35	3
22	5	12	1
23	5	12	1
24	5	12	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	1690	2	93	No	No	No	No	No	Yes	Yes	Yes	No	No
2	3	1639	2	90	No	No	No	No	No	Yes	Yes	Yes	No	No
3	3	1605	2	88	No	No	No	No	No	Yes	Yes	Yes	No	No
4	3	1504	2	83	No	No	No	No	No	Yes	Yes	Yes	No	No
5	3	1335	2	73	No	No	No	No	No	No	Yes	Yes	No	No
6	3	1318	2	73	No	No	No	No	No	No	Yes	Yes	No	No
7	3	1301	2	72	No	No	No	No	No	No	Yes	Yes	No	No
8	3	1183	2	65	No	No	No	No	No	No	No	Yes	No	No
9	3	1166	2	64	No	No	No	No	No	No	No	Yes	No	No
10	3	1150	2	63	No	No	No	No	No	No	No	Yes	No	No
11	3	997	2	55	No	No	No	No	No	No	No	No	No	No
12	3	929	2	51	No	No	No	No	No	No	No	No	No	No
13	3	912	2	50	No	No	No	No	No	No	No	No	No	No
14	3	676	2	37	No	No	No	No	No	No	No	No	No	No
15	3	676	2	37	No	No	No	No	No	No	No	No	No	No
16	3	473	2	26	No	No	No	No	No	No	No	No	No	No
17	3	271	2	15	No	No	No	No	No	No	No	No	No	No
18	3	271	2	15	No	No	No	No	No	No	No	No	No	No
19	3	153	2	8	No	No	No	No	No	No	No	No	No	No
20	3	85	2	5	No	No	No	No	No	No	No	No	No	No
21	3	51	2	3	No	No	No	No	No	No	No	No	No	No
22	3	17	2	1	No	No	No	No	No	No	No	No	No	No
23	3	17	2	1	No	No	No	No	No	No	No	No	No	No
24	3	17	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	4	7	10	0	0

### Warrant 3 Condition A

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	37.7
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:58
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	93
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1783
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 9: Meadowbrook Pk/Access 1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	27	28	124	17
2	26	27	120	16
3	26	27	118	16
4	24	25	110	15
5	21	22	98	13
6	21	22	97	13
7	21	22	95	13
8	19	20	87	12
9	19	19	86	12
10	18	19	84	12
11	16	17	73	10
12	15	15	68	9
13	15	15	67	9
14	11	11	50	7
15	11	11	50	7
16	8	8	35	5
17	4	4	20	3
18	4	4	20	3
19	2	3	11	2
20	1	1	6	1
21	1	1	4	1
22	0	0	1	0
23	0	0	1	0
24	0	0	1	0

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	55	2	124	No	No	No	No	No	No	No	No	No	No
2	2	53	2	120	No	No	No	No	No	No	No	No	No	No
3	2	53	2	118	No	No	No	No	No	No	No	No	No	No
4	2	49	2	110	No	No	No	No	No	No	No	No	No	No
5	2	43	2	98	No	No	No	No	No	No	No	No	No	No
6	2	43	2	97	No	No	No	No	No	No	No	No	No	No
7	2	43	2	95	No	No	No	No	No	No	No	No	No	No
8	2	39	2	87	No	No	No	No	No	No	No	No	No	No
9	2	38	2	86	No	No	No	No	No	No	No	No	No	No
10	2	37	2	84	No	No	No	No	No	No	No	No	No	No
11	2	33	2	73	No	No	No	No	No	No	No	No	No	No
12	2	30	2	68	No	No	No	No	No	No	No	No	No	No
13	2	30	2	67	No	No	No	No	No	No	No	No	No	No
14	2	22	2	50	No	No	No	No	No	No	No	No	No	No
15	2	22	2	50	No	No	No	No	No	No	No	No	No	No
16	2	16	2	35	No	No	No	No	No	No	No	No	No	No
17	2	8	2	20	No	No	No	No	No	No	No	No	No	No
18	2	8	2	20	No	No	No	No	No	No	No	No	No	No
19	2	5	2	11	No	No	No	No	No	No	No	No	No	No
20	2	2	2	6	No	No	No	No	No	No	No	No	No	No
21	2	2	2	4	No	No	No	No	No	No	No	No	No	No
22	2	0	2	1	No	No	No	No	No	No	No	No	No	No
23	2	0	2	1	No	No	No	No	No	No	No	No	No	No
24	2	0	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

**Warrant 3 Condition A**

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9	8.8
Number of Lanes on Minor Street Approach	2	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:18	0:02
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	124	17
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	196	196
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 10: Meadowbrook Pk/ Access 2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	18	62	17
2	17	60	16
3	17	59	16
4	16	55	15
5	14	49	13
6	14	48	13
7	14	48	13
8	13	43	12
9	12	43	12
10	12	42	12
11	11	37	10
12	10	34	9
13	10	33	9
14	7	25	7
15	7	25	7
16	5	17	5
17	3	10	3
18	3	10	3
19	2	6	2
20	1	3	1
21	1	2	1
22	0	1	0
23	0	1	0
24	0	1	0

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	1	80	1	17	No	No	No	No	No	No	No	No	No	No
2	1	77	1	16	No	No	No	No	No	No	No	No	No	No
3	1	76	1	16	No	No	No	No	No	No	No	No	No	No
4	1	71	1	15	No	No	No	No	No	No	No	No	No	No
5	1	63	1	13	No	No	No	No	No	No	No	No	No	No
6	1	62	1	13	No	No	No	No	No	No	No	No	No	No
7	1	62	1	13	No	No	No	No	No	No	No	No	No	No
8	1	56	1	12	No	No	No	No	No	No	No	No	No	No
9	1	55	1	12	No	No	No	No	No	No	No	No	No	No
10	1	54	1	12	No	No	No	No	No	No	No	No	No	No
11	1	48	1	10	No	No	No	No	No	No	No	No	No	No
12	1	44	1	9	No	No	No	No	No	No	No	No	No	No
13	1	43	1	9	No	No	No	No	No	No	No	No	No	No
14	1	32	1	7	No	No	No	No	No	No	No	No	No	No
15	1	32	1	7	No	No	No	No	No	No	No	No	No	No
16	1	22	1	5	No	No	No	No	No	No	No	No	No	No
17	1	13	1	3	No	No	No	No	No	No	No	No	No	No
18	1	13	1	3	No	No	No	No	No	No	No	No	No	No
19	1	8	1	2	No	No	No	No	No	No	No	No	No	No
20	1	4	1	1	No	No	No	No	No	No	No	No	No	No
21	1	3	1	1	No	No	No	No	No	No	No	No	No	No
22	1	1	1	0	No	No	No	No	No	No	No	No	No	No
23	1	1	1	0	No	No	No	No	No	No	No	No	No	No
24	1	1	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	17
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	97
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

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**Intersection Level Of Service Report**  
**Intersection 1: Peterson Rd/ Galley Rd**

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

**Intersection Setup**

Name	Peterson Rd		Galley Rd		Peterson 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 Entry Pocket	0	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	125.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		Yes	
Crosswalk	No		Yes		Yes	

**Volumes**

Name	Peterson Rd		Galley Rd		Peterson Rd	
Base Volume Input [veh/h]	273	798	191	169	233	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	11	0	10	18	0
Diverted Trips [veh/h]	43	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
Right Turn on Red Volume [veh/h]	0	475	0	0	0	47
Total Hourly Volume [veh/h]	370	474	224	209	292	46
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]	101	129	61	57	79	13
Total Analysis Volume [veh/h]	402	515	243	227	317	50
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	4	0
Auxiliary Signal Groups						
Maximum Green [s]	45	0	15	45	30	0
Amber [s]	4.0	0.0	4.0	4.0	4.0	0.0
All red [s]	2.0	0.0	1.0	2.0	2.0	0.0
Walk [s]	5.0	0.0	0.0	0.0	5.0	0.0
Pedestrian Clearance [s]	17.0	0.0	0.0	0.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	4.0	0.0	3.0	4.0	4.0	0.0
Detector Location [ft]	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
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	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

**Phasing & Timing: Free Running (No Pattern)**

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	15	0	5	15	8	0
Vehicle Extension [s]	3.0	0.0	0.5	3.0	1.5	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	C	R	L	C	L	R
C, Calculated Cycle Length [s]	49	49	49	49	49	49
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	0.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	19.1	19.1	29.1	29.1	8.0	8.0
g / C, Green / Cycle	0.39	0.39	0.59	0.59	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.21	0.32	0.26	0.06	0.09	0.03
s, saturation flow rate [veh/h]	1870	1589	931	3560	3459	1589
c, Capacity [veh/h]	729	619	673	2113	561	258
d1, Uniform Delay [s]	11.65	13.53	5.78	4.33	18.98	17.80
k, delay calibration	0.11	0.11	0.24	0.11	0.04	0.04
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.65	2.98	0.71	0.02	0.33	0.13
d3, Initial Queue Delay [s]	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
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.55	0.83	0.36	0.11	0.57	0.19
d, Delay for Lane Group [s/veh]	12.31	16.51	6.49	4.36	19.31	17.93
Lane Group LOS	B	B	A	A	B	B
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.92	4.65	0.88	0.33	1.47	0.44
50th-Percentile Queue Length [ft/ln]	72.89	116.32	22.02	8.22	36.82	10.94
95th-Percentile Queue Length [veh/ln]	5.25	8.19	1.59	0.59	2.65	0.79
95th-Percentile Queue Length [ft/ln]	131.19	204.76	39.64	14.80	66.28	19.70

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	12.31	16.51	6.49	4.36	19.31	17.93
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	14.67		5.46		19.12	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	13.13					
Intersection LOS	B					
Intersection V/C	0.493					

**Emissions**

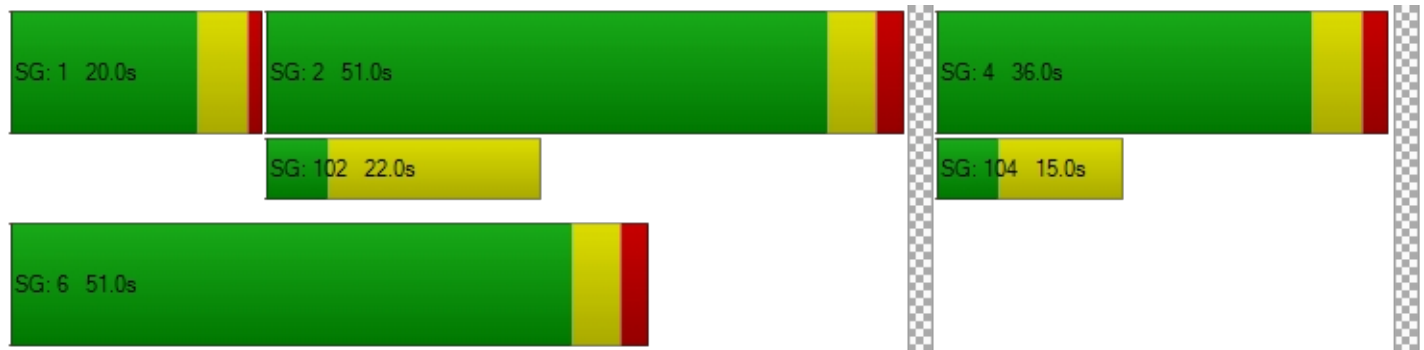
Vehicle Miles Traveled [mph]	57.03	73.06	24.08	22.50	59.75	9.42
Stops [stops/h]	214.17	341.80	64.71	48.31	216.40	32.15
Fuel consumption [US gal/h]	4.54	6.63	1.67	1.39	5.15	0.78
CO [g/h]	317.20	463.20	116.72	97.46	360.04	54.77
NOx [g/h]	61.72	90.12	22.71	18.96	70.05	10.66
VOC [g/h]	73.51	107.35	27.05	22.59	83.44	12.69

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0		9.0		9.0	
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		16.33		16.33	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		2.337		2.859	
Crosswalk LOS	F		B		C	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1836		1836		1224	
d_b, Bicycle Delay [s]	0.16		0.16		3.69	
I_b,int, Bicycle LOS Score for Intersection	3.856		1.947		1.560	
Bicycle LOS	D		A		A	

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 2: US-24/SH-94/ Newt Dr**

Control Type:	Signalized	Delay (sec / veh):	46.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.767

**Intersection Setup**

Name	SH-94			Newt Dr			US-24			US-24		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	[Diagram]			[Diagram]			[Diagram]			[Diagram]		
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 Entry Pocket	3	0	1	2	0	1	2	0	1	1	0	1
Entry Pocket Length [ft]	760.00	100.00	475.00	375.00	100.00	300.00	850.00	100.00	600.00	850.00	100.00	850.00
No. of Lanes in Exit Pocket	0	0	1	0	0	1	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	1700.00	0.00	0.00	920.00	0.00	0.00	960.00	0.00	0.00	0.00
Speed [mph]	55.00			30.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

**Volumes**

Name	SH-94			Newt Dr			US-24			US-24		
Base Volume Input [veh/h]	405	31	4	26	50	166	155	1723	394	7	851	24
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	16	0	29	11	0	0	0	0	0	7	40
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]	596	49	0	21	43	232	270	194	562	0	0	24
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	3	0	0	214	0	0	513	0	0	46
Total Hourly Volume [veh/h]	1075	101	2	81	113	213	452	2219	512	8	1007	46
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	292	27	1	22	31	58	123	603	139	2	274	13
Total Analysis Volume [veh/h]	1168	110	2	88	123	232	491	2412	557	9	1095	50
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]	120
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	19.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

**Phasing & Timing (Basic)**

Control Type	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	Protecte	Permiss	Unsigna	ProtPer	Permiss	Permiss
Flashing Yellow Arrow										No		
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Maximum Green [s]	15	15	0	5	7	0	8	65	0	7	65	0
Amber [s]	4.0	4.0	0.0	3.5	3.5	0.0	5.0	5.0	0.0	5.0	5.0	0.0
All red [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
Walk [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pedestrian Clearance [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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]	4.0	4.0	0.0	3.5	5.5	0.0	5.0	5.0	0.0	8.0	5.0	0.0
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
Advanced 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
Advanced 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

**Phasing & Timing: Pattern 1**

Split [s]	32.0	27.0	0.0	22.0	17.0	0.0	33.0	58.0	0.0	13.0	38.0	0.0
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	0	4	5	0	6	22	0	6	22	0
Vehicle Extension [s]	2.0	2.0	0.0	2.0	5.0	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	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	C	L	C	L	C	L	C	R
C, Calculated Cycle Length [s]	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	6.00	6.00	5.50	7.50	7.00	7.00	7.00	7.00	7.00
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
l2, Clearance Lost Time [s]	4.00	4.00	3.50	5.50	5.00	5.00	0.00	5.00	5.00
g_i, Effective Green Time [s]	26.0	30.9	4.9	7.8	19.2	57.1	64.7	39.5	39.5
g / C, Green / Cycle	0.22	0.26	0.04	0.06	0.16	0.48	0.54	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.23	0.06	0.03	0.07	0.14	0.47	0.03	0.21	0.03
s, saturation flow rate [veh/h]	5188	1870	3459	1870	3459	5094	286	5094	1589
c, Capacity [veh/h]	1124	481	143	122	554	2423	191	1675	523
d1, Uniform Delay [s]	47.00	35.19	56.58	56.10	49.30	31.34	26.51	34.43	27.91
k, delay calibration	0.04	0.04	0.04	0.23	0.04	0.50	0.04	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	20.53	0.09	1.60	58.37	1.94	17.30	0.04	2.00	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
Rp, platoon ratio	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

**Lane Group Results**

X, volume / capacity	1.04	0.23	0.62	1.01	0.89	1.00	0.05	0.65	0.10
d, Delay for Lane Group [s/veh]	67.53	35.28	58.18	114.47	51.25	48.64	26.55	36.44	28.27
Lane Group LOS	F	D	E	F	D	D	C	D	C
Critical Lane Group	Yes	No	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	12.70	2.44	1.35	5.65	7.01	24.40	0.10	8.84	1.00
50th-Percentile Queue Length [ft/ln]	317.56	60.88	33.63	141.33	175.23	610.05	2.55	220.89	24.98
95th-Percentile Queue Length [veh/ln]	18.94	4.38	2.42	9.59	11.35	32.50	0.18	13.71	1.80
95th-Percentile Queue Length [ft/ln]	473.44	109.58	60.54	239.67	283.77	812.59	4.59	342.77	44.97

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	67.53	35.28	0.00	58.18	114.47	0.00	51.25	48.64	0.00	26.55	36.44	28.27
Movement LOS	F	D		E	F		D	D		C	D	C
d_A, Approach Delay [s/veh]	64.65			45.28			41.72			36.00		
Approach LOS	E			D			D			D		
d_I, Intersection Delay [s/veh]	45.95											
Intersection LOS	D											
Intersection V/C	0.767											

**Emissions**

Vehicle Miles Traveled [mph]	457.77	43.11	9.29	12.98	208.13	1022.42	2.74	333.47	15.23
Stops [stops/h]	1143.23	73.05	80.72	169.60	420.55	2196.19	3.06	795.22	29.98
Fuel consumption [US gal/h]	52.60	3.59	1.87	4.34	19.89	98.87	0.20	34.04	1.35
CO [g/h]	3676.52	250.85	130.72	303.10	1390.57	6910.75	13.78	2379.72	94.64
NOx [g/h]	715.32	48.81	25.43	58.97	270.55	1344.58	2.68	463.01	18.41
VOC [g/h]	852.07	58.14	30.30	70.25	322.28	1601.63	3.19	551.52	21.93

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	350	192	850	517
d_b, Bicycle Delay [s]	40.84	49.05	19.84	33.00
I_b,int, Bicycle LOS Score for Intersection	3.668	1.908	3.156	2.220
Bicycle LOS	D	A	C	B

**Sequence**

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



**Intersection Level Of Service Report**  
**Intersection 3: US-24 WB Ramps/Peterson Rd**

Control Type:	Roundabout	Delay (sec / veh):	13.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Approach	Northbound			Southbound				Eastbound			Westbound		
Lane Configuration				tr							tr		
Turning Movement	Left	Thru	Right	U-tu	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	12.00	12.00	12.00	14.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.0	100.0	100.0	1.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00				30.00			30.00		
Grade [%]	0.00			0.00				0.00			0.00		
Crosswalk	No			Yes				No			Yes		

**Volumes**

Name	Peterson Rd			Peterson Rd				US-24 WB Ramps					
Base Volume Input [veh/h]	476	1010	0	0	0	250	168	0	0	0	24	0	70
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00												
Growth Factor	1.1750	1.1750	1.1750	1.175	1.175	1.175	1.175	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	85	0	0	0	17	33	0	0	0	0	0	9
Diverted Trips [veh/h]	0	0	0	21	0	0	-12	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	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	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	559	1272	0	21	0	311	218	0	0	0	28	0	91
Peak Hour Factor	0.9200	0.9200	0.9200	0.920	0.920	0.920	0.920	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.000	1.000	1.000	1.000	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000
Total 15-Minute Volume [veh/h]	152	346	0	6	0	85	59	0	0	0	8	0	25
Total Analysis Volume [veh/h]	608	1383	0	23	0	338	237	0	0	0	30	0	99
Pedestrian Volume [ped/h]	0			0				0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2			
Circulating Flow Rate [veh/h]	23			651			399			2054			
Exiting Flow Rate [veh/h]	375			1535			620			0			
Demand Flow Rate [veh/h]	559	1272	0	21	0	311	218	0	0	0	28	0	91
Adjusted Demand Flow Rate [veh/h]	608	1383	0	23	0	338	237	0	0	0	30	0	99

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No		No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00		4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No		No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00		3.00	3.00
A (intercept)	1350.00	1420.00	1350.00	1420.00	1420.00		1350.00	1420.00
B (coefficient)	0.00092	0.00085	0.00092	0.00085	0.00085		0.00092	0.00085
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98		0.98	0.98
Entry Flow Rate [veh/h]	955	1077	174	196	0		31	101
Capacity of Entry and Bypass Lanes [veh/h]	1322	1392	742	817	839		204	248
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00		1.00	1.00
Capacity per Entry Lane [veh/h]	1296	1365	728	801	822		200	243
X, volume / capacity	0.72	0.77	0.23	0.24	0.29		0.15	0.41

**Movement, Approach, & Intersection Results**

Lane LOS	B	B	A	A	A		C	D
95th-Percentile Queue Length [veh]	6.78	8.40	0.90	0.93	1.20		0.52	1.87
95th-Percentile Queue Length [ft]	169.62	210.11	22.53	23.26	29.91		12.92	46.75
Approach Delay [s/veh]	14.08		7.44				0.00	25.59
Approach LOS	B		A				A	D
Intersection Delay [s/veh]	13.17							
Intersection LOS	B							

**Intersection Level Of Service Report**  
**Intersection 4: Peterson Bl/ Space Village Av**

Control Type:	Roundabout	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
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 Entry Pocket	0	0	1	0	0	0	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	286.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			Yes		

**Volumes**

Name	Peterson Bl			Peterson Rd			Space Village Av			Space Village Av		
Base Volume Input [veh/h]	0	888	357	266	3	0	217	101	11	3	0	381
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	0	6	6	5	65	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
Total Hourly Volume [veh/h]	0	1053	419	319	10	5	320	119	13	4	0	458
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	286	114	87	3	1	87	32	4	1	0	124
Total Analysis Volume [veh/h]	0	1145	455	347	11	5	348	129	14	4	0	498
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	2			2			2			2		
Circulating Flow Rate [veh/h]	840			4			369			1523		
Exiting Flow Rate [veh/h]	15			1523			0			486		
Demand Flow Rate [veh/h]	0	1053	419	319	10	0	320	119	13	4	0	458
Adjusted Demand Flow Rate [veh/h]	0	1145	455	347	11	0	348	129	14	4	0	498

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1350.00	1420.00	0.00	1350.00	1420.00	1350.00	1420.00	0.00	1420.00	0.00	0.00
B (coefficient)	0.00092	0.00085	0.00000	0.00092	0.00085	0.00092	0.00085	0.00000	0.00085	0.00000	0.00000
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	549	619	0	354	12	355	132	0	5	0	0
Capacity of Entry and Bypass Lanes [veh/h]	624	696	102000	1345	1416	962	1038	102000	390	102000	102000
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	611	682	100000	1319	1388	943	1018	100000	382	100000	100000
X, volume / capacity	0.88	0.89	0.00	0.26	0.01	0.37	0.13	0.00	0.01	0.00	0.00

**Movement, Approach, & Intersection Results**

Lane LOS	E	E	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	10.37	11.13	0.00	1.06	0.02	1.72	0.43	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft]	259.30	278.19	0.00	26.55	0.60	42.92	10.85	0.00	0.79	0.00	0.00
Approach Delay [s/veh]	27.19			4.95			6.82			0.08	
Approach LOS	D			A			A			A	
Intersection Delay [s/veh]	16.49										
Intersection LOS	C										

**Intersection Level Of Service Report**  
**Intersection 5: US 24 EB Ramps/Space Village Av**

Control Type:	Two-way stop	Delay (sec / veh):	179.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

**Intersection Setup**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
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 Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	290.00	400.00	100.00	100.00	485.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 24 EB Ramps		Space Village Av		Space Village Av	
Base Volume Input [veh/h]	34	44	328	391	340	18
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	6	10	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]	40	52	385	465	410	21
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]	11	14	105	126	111	6
Total Analysis Volume [veh/h]	43	57	418	505	446	23
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
Flared Lane			
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	0.78	0.09	0.38	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	179.66	11.48	10.32	0.00	0.00	0.00
Movement LOS	F	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	3.32	0.31	1.82	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	83.12	7.66	45.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	83.80		4.67		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	8.51					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 6: Meadowbrook Pkwy/ Newt Dr.**

Control Type:	Roundabout	Delay (sec / veh):	4.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Newt Dr			Newt Dr			Meadowbrook Pk			Meadowbrook Pkwy		
Base Volume Input [veh/h]	0	37	71	2	14	0	0	0	0	173	0	10
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.1750	1.1750	1.1750	1.1750	1.0000	1.0000	1.0000	1.0000	1.1750	1.0000	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	0	0	0	0	2	1	4	40	0	6	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	30	0	0	0	0	0	0	18	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	43	113	2	16	2	1	4	40	221	6	12
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	12	31	1	4	1	0	1	11	60	2	3
Total Analysis Volume [veh/h]	60	47	123	2	17	2	1	4	43	240	7	13
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	7			313			264			110		
Exiting Flow Rate [veh/h]	306			62			70			132		
Demand Flow Rate [veh/h]	55	43	113	2	16	2	1	4	40	221	6	12
Adjusted Demand Flow Rate [veh/h]	60	47	123	2	17	2	1	4	43	240	7	13

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00102	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	235	22	49	252	14
Capacity of Entry and Bypass Lanes [veh/h]	1370	1003	1055	1285	1285
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	1344	984	1034	1260	1260
X, volume / capacity	0.17	0.02	0.05	0.20	0.01

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.62	0.07	0.15	0.73	0.03
95th-Percentile Queue Length [ft]	15.43	1.64	3.65	18.19	0.78
Approach Delay [s/veh]	4.09	3.85	3.89	4.46	
Approach LOS	A	A	A	A	
Intersection Delay [s/veh]	4.23				
Intersection LOS	A				

**Intersection Level Of Service Report**  
**Intersection 7: Peterson Rd/ Panamint Ct**

Control Type:	Two-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

**Intersection Setup**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Peterson Rd			Peterson Rd			Panamint Ct			Panamint Ct		
Base Volume Input [veh/h]	26	1045	9	2	395	5	16	0	29	10	0	20
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750	1.1750
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	60	34	0	49	0	0	0	0	0	0	7
Diverted Trips [veh/h]	-31	50	2	-2	2	0	-19	0	19	-12	0	12
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
Total Hourly Volume [veh/h]	0	1338	47	0	515	6	0	0	53	0	0	43
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	364	13	0	140	2	0	0	14	0	0	12
Total Analysis Volume [veh/h]	0	1454	51	0	560	7	0	0	58	0	0	47
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.08	0.00	0.00	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.49	0.00	0.00	16.78
Movement LOS		A	A		A	A			B			C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.46
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.62	0.00	0.00	11.40
d_A, Approach Delay [s/veh]	0.00			0.00			10.49			16.78		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.64											
Intersection LOS	C											

**Intersection Level Of Service Report**  
**Intersection 8: Peterson Rd/ Meadowbrook Pk**

Control Type:	Two-way stop	Delay (sec / veh):	137.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

**Intersection Setup**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
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 Entry Pocket	0	1	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	235.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Peterson Rd		Peterson Rd		Meadowbrook Pk	
Base Volume Input [veh/h]	1071	0	0	402	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1750	1.0000	1.0000	1.1750	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	60	28	0	49	10
Diverted Trips [veh/h]	43	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]	1308	60	28	472	49	10
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]	355	16	8	128	13	3
Total Analysis Volume [veh/h]	1422	65	30	513	53	11
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Free	Free	Stop
Flared Lane			
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	0.07	0.01	0.74	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	13.07	0.00	136.99	14.88
Movement LOS	A	A	B	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.03	3.42	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.27	0.64	85.53	2.26
d_A, Approach Delay [s/veh]	0.00		0.72		116.00	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	3.73					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 9: Meadowbrook Pk/Access 1**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.068

**Intersection Setup**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
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 Entry Pocket	0	0	0	0	0	0	0	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Access A			Access A			Meadowbrook Pk			Meadowbrook Pk		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
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 [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth 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
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	36	5	0	7	12	12	65	49	7	7
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
Total Hourly Volume [veh/h]	45	0	36	5	0	7	12	12	65	49	7	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	10	1	0	2	3	3	18	13	2	2
Total Analysis Volume [veh/h]	49	0	39	5	0	8	13	13	71	53	8	8
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.07	0.00	0.04	0.01	0.00	0.01	0.01	0.00	0.00	0.04	0.00	0.00
d_M, Delay for Movement [s/veh]	10.33	0.00	8.67	10.31	10.67	8.43	7.27	0.00	0.00	7.47	0.00	0.00
Movement LOS	B		A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.00	0.12	0.04	0.04	0.04	0.03	0.03	0.03	0.11	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.43	0.00	2.98	1.12	1.12	1.12	0.64	0.64	0.64	2.72	0.00	0.00
d_A, Approach Delay [s/veh]	9.60			9.15			0.97			5.73		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.44											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 10: Meadowbrook Pk/ Access 2**

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

**Intersection Setup**

Name	Meadowbrook Pk		Meadowbrook Pk		Access B	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration	↶		↷		↷	
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Meadowbrook Pk		Meadowbrook Pk		Access B	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	41	56	7	5	7
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]	12	41	56	7	5	7
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]	3	11	15	2	1	2
Total Analysis Volume [veh/h]	13	45	61	8	5	8
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	0.01	0.01
d_M, Delay for Movement [s/veh]	7.36	0.00	0.00	0.00	9.29	8.66
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.55	0.55	0.00	0.00	1.06	1.06
d_A, Approach Delay [s/veh]	1.65		0.00		8.90	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.51					
Intersection LOS	A					

Signal Warrants Report For Intersection 5: US 24 EB Ramps/Space Village Av

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	431	850	92
2	418	825	89
3	409	808	87
4	384	757	82
5	340	672	73
6	336	663	72
7	332	655	71
8	302	595	64
9	297	587	63
10	293	578	63
11	254	502	54
12	237	468	51
13	233	459	50
14	172	340	37
15	172	340	37
16	121	238	26
17	69	136	15
18	69	136	15
19	39	77	8
20	22	43	5
21	13	26	3
22	4	9	1
23	4	9	1
24	4	9	1

### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B	
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%			
1	2	1281	2	92	No	No	No	No	No	Yes	Yes	Yes	No	No	
2	2	1243	2	89	No	No	No	No	No	Yes	Yes	Yes	No	No	
3	2	1217	2	87	No	No	No	No	No	Yes	Yes	Yes	No	No	
4	2	1141	2	82	No	No	No	No	No	Yes	Yes	Yes	No	No	
5	2	1012	2	73	No	No	No	No	No	No	Yes	Yes	No	No	
6	2	999	2	72	No	No	No	No	No	No	Yes	Yes	No	No	
7	2	987	2	71	No	No	No	No	No	No	Yes	Yes	No	No	
8	2	897	2	64	No	No	No	No	No	No	No	Yes	No	No	
9	2	884	2	63	No	No	No	No	No	No	No	Yes	No	No	
10	2	871	2	63	No	No	No	No	No	No	No	Yes	No	No	
11	2	756	2	54	No	No	No	No	No	No	No	No	No	No	
12	2	705	2	51	No	No	No	No	No	No	No	No	No	No	
13	2	692	2	50	No	No	No	No	No	No	No	No	No	No	
14	2	512	2	37	No	No	No	No	No	No	No	No	No	No	
15	2	512	2	37	No	No	No	No	No	No	No	No	No	No	
16	2	359	2	26	No	No	No	No	No	No	No	No	No	No	
17	2	205	2	15	No	No	No	No	No	No	No	No	No	No	
18	2	205	2	15	No	No	No	No	No	No	No	No	No	No	
19	2	116	2	8	No	No	No	No	No	No	No	No	No	No	
20	2	65	2	5	No	No	No	No	No	No	No	No	No	No	
21	2	39	2	3	No	No	No	No	No	No	No	No	No	No	
22	2	13	2	1	No	No	No	No	No	No	No	No	No	No	
23	2	13	2	1	No	No	No	No	No	No	No	No	No	No	
24	2	13	2	1	No	No	No	No	No	No	No	No	No	No	
Hours Met					0	0	0	0	0	0	4	7	10	0	0

### Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	83.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	2:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	92
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1373
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 7: Peterson Rd/ Panamint Ct

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	1385	521	43	53
2	1343	505	42	51
3	1316	495	41	50
4	1233	464	38	47
5	1094	412	34	42
6	1080	406	34	41
7	1066	401	33	41
8	969	365	30	37
9	956	359	30	37
10	942	354	29	36
11	817	307	25	31
12	762	287	24	29
13	748	281	23	29
14	554	208	17	21
15	554	208	17	21
16	388	146	12	15
17	222	83	7	8
18	222	83	7	8
19	125	47	4	5
20	69	26	2	3
21	42	16	1	2
22	14	5	0	1
23	14	5	0	1
24	14	5	0	1

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	1906	1	53	No	No	No	No	No	No	Yes	Yes	No	No
2	2	1848	1	51	No	No	No	No	No	No	No	Yes	No	No
3	2	1811	1	50	No	No	No	No	No	No	No	Yes	No	No
4	2	1697	1	47	No	No	No	No	No	No	No	Yes	No	No
5	2	1506	1	42	No	No	No	No	No	No	No	Yes	No	No
6	2	1486	1	41	No	No	No	No	No	No	No	No	No	No
7	2	1467	1	41	No	No	No	No	No	No	No	No	No	No
8	2	1334	1	37	No	No	No	No	No	No	No	No	No	No
9	2	1315	1	37	No	No	No	No	No	No	No	No	No	No
10	2	1296	1	36	No	No	No	No	No	No	No	No	No	No
11	2	1124	1	31	No	No	No	No	No	No	No	No	No	No
12	2	1049	1	29	No	No	No	No	No	No	No	No	No	No
13	2	1029	1	29	No	No	No	No	No	No	No	No	No	No
14	2	762	1	21	No	No	No	No	No	No	No	No	No	No
15	2	762	1	21	No	No	No	No	No	No	No	No	No	No
16	2	534	1	15	No	No	No	No	No	No	No	No	No	No
17	2	305	1	8	No	No	No	No	No	No	No	No	No	No
18	2	305	1	8	No	No	No	No	No	No	No	No	No	No
19	2	172	1	5	No	No	No	No	No	No	No	No	No	No
20	2	95	1	3	No	No	No	No	No	No	No	No	No	No
21	2	58	1	2	No	No	No	No	No	No	No	No	No	No
22	2	19	1	1	No	No	No	No	No	No	No	No	No	No
23	2	19	1	1	No	No	No	No	No	No	No	No	No	No
24	2	19	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	1	5	0	0

**Warrant 3 Condition A**

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	16.8	10.5
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:12	0:09
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	43	53
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	2002	2002
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 8: Peterson Rd/ Meadowbrook Pk

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	E
1	1368	500	59
2	1327	485	57
3	1300	475	56
4	1218	445	53
5	1081	395	47
6	1067	390	46
7	1053	385	45
8	958	350	41
9	944	345	41
10	930	340	40
11	807	295	35
12	752	275	32
13	739	270	32
14	547	200	24
15	547	200	24
16	383	140	17
17	219	80	9
18	219	80	9
19	123	45	5
20	68	25	3
21	41	15	2
22	14	5	1
23	14	5	1
24	14	5	1

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	3	1868	2	59	No	No	No	No	No	No	No	Yes	No	No
2	3	1812	2	57	No	No	No	No	No	No	No	Yes	No	No
3	3	1775	2	56	No	No	No	No	No	No	No	Yes	No	No
4	3	1663	2	53	No	No	No	No	No	No	No	No	No	No
5	3	1476	2	47	No	No	No	No	No	No	No	No	No	No
6	3	1457	2	46	No	No	No	No	No	No	No	No	No	No
7	3	1438	2	45	No	No	No	No	No	No	No	No	No	No
8	3	1308	2	41	No	No	No	No	No	No	No	No	No	No
9	3	1289	2	41	No	No	No	No	No	No	No	No	No	No
10	3	1270	2	40	No	No	No	No	No	No	No	No	No	No
11	3	1102	2	35	No	No	No	No	No	No	No	No	No	No
12	3	1027	2	32	No	No	No	No	No	No	No	No	No	No
13	3	1009	2	32	No	No	No	No	No	No	No	No	No	No
14	3	747	2	24	No	No	No	No	No	No	No	No	No	No
15	3	747	2	24	No	No	No	No	No	No	No	No	No	No
16	3	523	2	17	No	No	No	No	No	No	No	No	No	No
17	3	299	2	9	No	No	No	No	No	No	No	No	No	No
18	3	299	2	9	No	No	No	No	No	No	No	No	No	No
19	3	168	2	5	No	No	No	No	No	No	No	No	No	No
20	3	93	2	3	No	No	No	No	No	No	No	No	No	No
21	3	56	2	2	No	No	No	No	No	No	No	No	No	No
22	3	19	2	1	No	No	No	No	No	No	No	No	No	No
23	3	19	2	1	No	No	No	No	No	No	No	No	No	No
24	3	19	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	3	0	0

**Warrant 3 Condition A**

Orientation	E
Total Stopped Delay Per Vehicle on Minor Approach (s)	116
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]:mm)	1:54
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	59
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	1927
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

Signal Warrants Report For Intersection 9: Meadowbrook Pk/Access 1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S, N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	E	W	S	N
1	63	89	81	12
2	61	86	79	12
3	60	85	77	11
4	56	79	72	11
5	50	70	64	9
6	49	69	63	9
7	49	69	62	9
8	44	62	57	8
9	43	61	56	8
10	43	61	55	8
11	37	53	48	7
12	35	49	45	7
13	34	48	44	6
14	25	36	32	5
15	25	36	32	5
16	18	25	23	3
17	10	14	13	2
18	10	14	13	2
19	6	8	7	1
20	3	4	4	1
21	2	3	2	0
22	1	1	1	0
23	1	1	1	0
24	1	1	1	0

**Warrant Analysis by Hour**

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	2	152	2	81	No	No	No	No	No	No	No	No	No	No
2	2	147	2	79	No	No	No	No	No	No	No	No	No	No
3	2	145	2	77	No	No	No	No	No	No	No	No	No	No
4	2	135	2	72	No	No	No	No	No	No	No	No	No	No
5	2	120	2	64	No	No	No	No	No	No	No	No	No	No
6	2	118	2	63	No	No	No	No	No	No	No	No	No	No
7	2	118	2	62	No	No	No	No	No	No	No	No	No	No
8	2	106	2	57	No	No	No	No	No	No	No	No	No	No
9	2	104	2	56	No	No	No	No	No	No	No	No	No	No
10	2	104	2	55	No	No	No	No	No	No	No	No	No	No
11	2	90	2	48	No	No	No	No	No	No	No	No	No	No
12	2	84	2	45	No	No	No	No	No	No	No	No	No	No
13	2	82	2	44	No	No	No	No	No	No	No	No	No	No
14	2	61	2	32	No	No	No	No	No	No	No	No	No	No
15	2	61	2	32	No	No	No	No	No	No	No	No	No	No
16	2	43	2	23	No	No	No	No	No	No	No	No	No	No
17	2	24	2	13	No	No	No	No	No	No	No	No	No	No
18	2	24	2	13	No	No	No	No	No	No	No	No	No	No
19	2	14	2	7	No	No	No	No	No	No	No	No	No	No
20	2	7	2	4	No	No	No	No	No	No	No	No	No	No
21	2	5	2	2	No	No	No	No	No	No	No	No	No	No
22	2	2	2	1	No	No	No	No	No	No	No	No	No	No
23	2	2	2	1	No	No	No	No	No	No	No	No	No	No
24	2	2	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

**Warrant 3 Condition A**

Orientation	S	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.6	9.2
Number of Lanes on Minor Street Approach	2	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:12	0:01
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	81	12
High Minor Volume Condition Met	No	No
Total Entering Volume on All Approaches During Same Hour	245	245
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
<b>Warrant Met for Intersection</b>	<b>No</b>	

Signal Warrants Report For Intersection 10: Meadowbrook Pk/ Access 2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	63	53	12
2	61	51	12
3	60	50	11
4	56	47	11
5	50	42	9
6	49	41	9
7	49	41	9
8	44	37	8
9	43	37	8
10	43	36	8
11	37	31	7
12	35	29	7
13	34	29	6
14	25	21	5
15	25	21	5
16	18	15	3
17	10	8	2
18	10	8	2
19	6	5	1
20	3	3	1
21	2	2	0
22	1	1	0
23	1	1	0
24	1	1	0

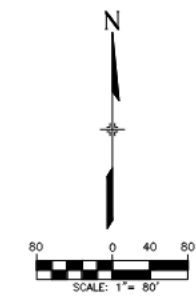
### Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3 Condition B
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		
1	1	116	1	12	No	No	No	No	No	No	No	No	No	No
2	1	112	1	12	No	No	No	No	No	No	No	No	No	No
3	1	110	1	11	No	No	No	No	No	No	No	No	No	No
4	1	103	1	11	No	No	No	No	No	No	No	No	No	No
5	1	92	1	9	No	No	No	No	No	No	No	No	No	No
6	1	90	1	9	No	No	No	No	No	No	No	No	No	No
7	1	90	1	9	No	No	No	No	No	No	No	No	No	No
8	1	81	1	8	No	No	No	No	No	No	No	No	No	No
9	1	80	1	8	No	No	No	No	No	No	No	No	No	No
10	1	79	1	8	No	No	No	No	No	No	No	No	No	No
11	1	68	1	7	No	No	No	No	No	No	No	No	No	No
12	1	64	1	7	No	No	No	No	No	No	No	No	No	No
13	1	63	1	6	No	No	No	No	No	No	No	No	No	No
14	1	46	1	5	No	No	No	No	No	No	No	No	No	No
15	1	46	1	5	No	No	No	No	No	No	No	No	No	No
16	1	33	1	3	No	No	No	No	No	No	No	No	No	No
17	1	18	1	2	No	No	No	No	No	No	No	No	No	No
18	1	18	1	2	No	No	No	No	No	No	No	No	No	No
19	1	11	1	1	No	No	No	No	No	No	No	No	No	No
20	1	6	1	1	No	No	No	No	No	No	No	No	No	No
21	1	4	1	0	No	No	No	No	No	No	No	No	No	No
22	1	2	1	0	No	No	No	No	No	No	No	No	No	No
23	1	2	1	0	No	No	No	No	No	No	No	No	No	No
24	1	2	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

### Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach (h:mm)	0:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	12
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	128
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
<b>Warrant Met for Intersection</b>	<b>No</b>

## **Appendix F- Supporting Documents**



SUBDIVISION CONCEPT PLAN

**Matrix**  
Excellence by Design

2435 Research Parkway, Suite 300  
Colorado Springs, CO 80920  
Contact: DREW A. DEFENDORF, PE  
Phone: (719) 575-0100

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2026-04-20 Subdivision Concept Plan

CIMARRON HILLS SOUTHEAST  
MIXED USE FILING NO.1

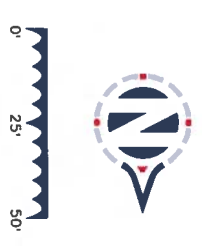
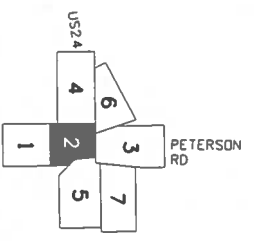
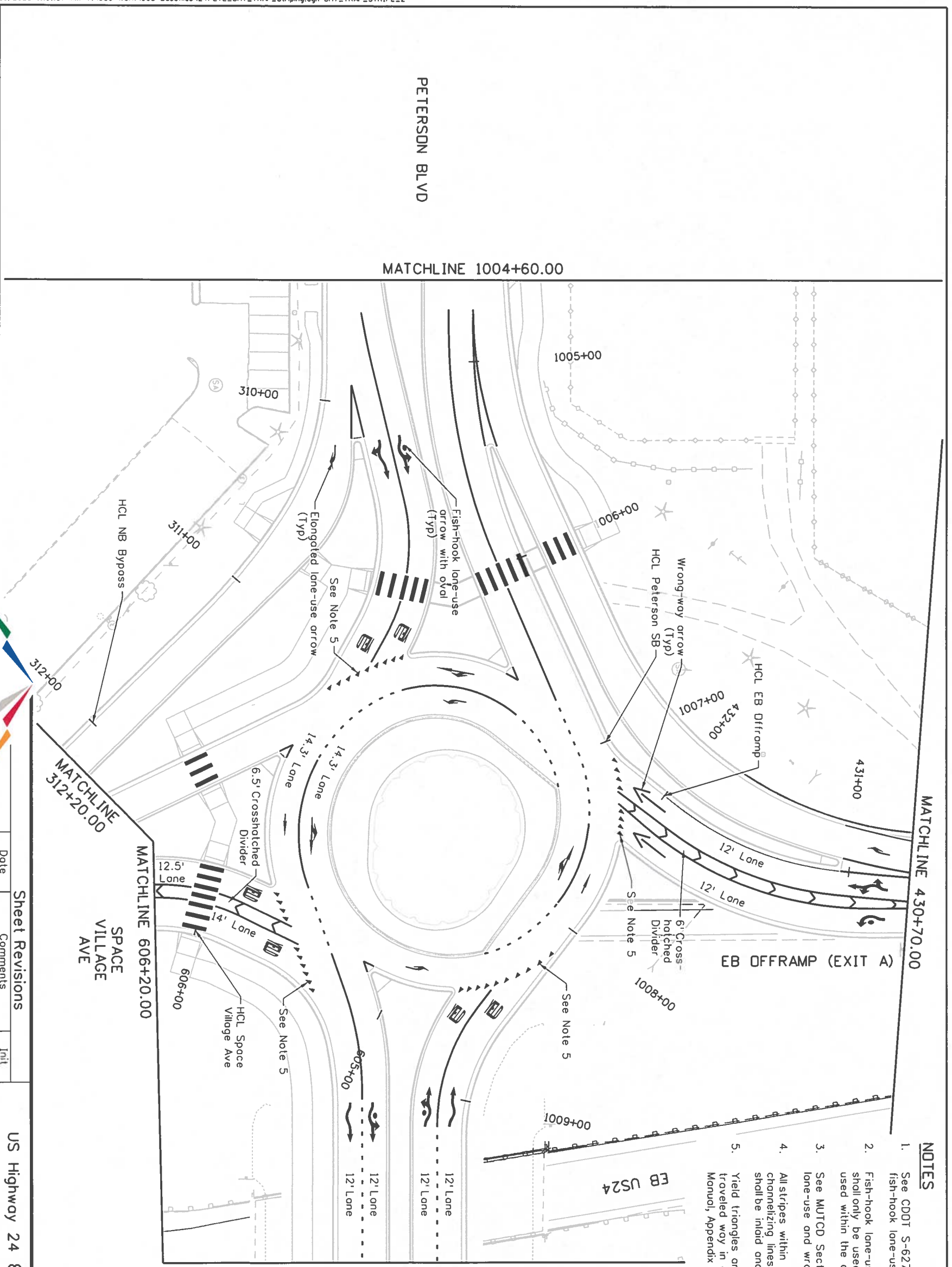
**BASIS**  
PARTNERS  
Basis Partners  
25 N Spruce Street, Suite 310  
Colorado Springs, CO 80905  
Tel: 719-299-5077, basisp.com

Detailer: STV  
Designer: STV  
Reviewer: GB  
Print Date: 12/20/2023  
Horiz. Scale: 1"=50'  
Vert. Scale: N/A

**COLORADO**  
SPRINGS

Date	Comments	Init

US Highway 24 & Peterson Blvd/Rd Roundabouts  
STRIPING PLAN  
SOUTH ROUNDABOUT  
Sheet Number 97



MATCHLINE 430+70.00

MATCHLINE 1004+60.00

MATCHLINE 1009+80.00

PETERSON BLVD

PETERSON RD

- NOTES**
1. See CDDT S-627-1 for detailed illustrations and dimensions of fish-hook lane-use arrow and oval pavement markings.
  2. Fish-hook lane-use arrow pavement markings and left turn ovals shall only be used on roundabout approaches and shall not be used within the circulatory roadway of a roundabout.
  3. See MUTCD Section 3B.20 for more information on elongated lane-use and wrong-way arrow pavement markings.
  4. All stripes within the circulatory roadway shall be inlaid. All solid channelizing lines within the circulatory roadway and approaches shall be inlaid and supplemented with rumble strips.
  5. Yield triangles are shown along the edge of the circulatory traveled way in accordance with the City of COS Traffic Criteria Manual, Appendix C, Section 3.

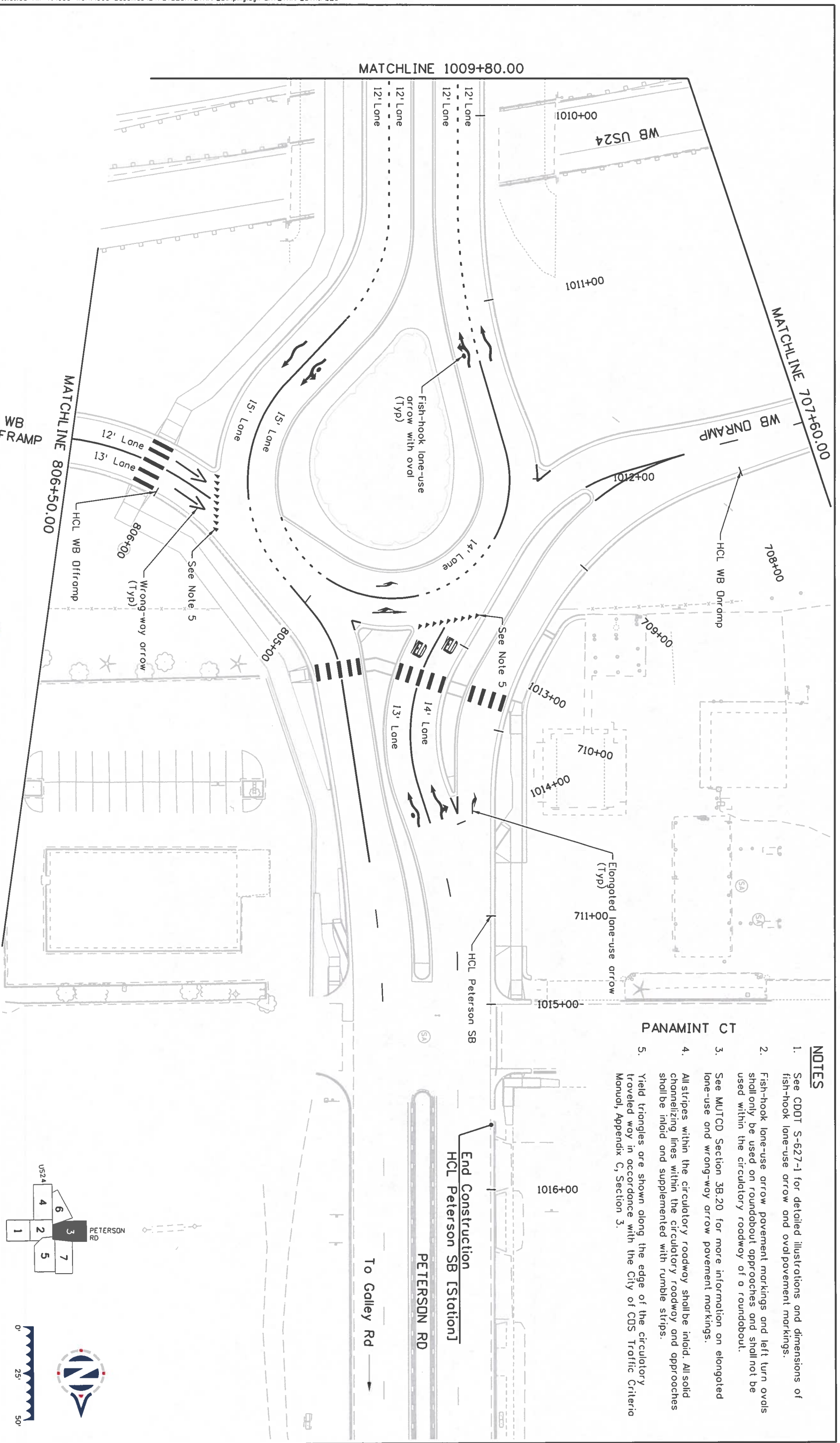
**BASIS PARTNERS**  
 Basis Partners  
 25 N Spruce Street, Suite 310  
 Colorado Springs, CO 80905  
 Tel: 719-299-5077, basisp.com

Detailer: STV  
 Designer: STV  
 Reviewer: GB  
 Print Date: 12/20/2023  
 Horiz. Scale: 1"=50'  
 Vert. Scale: N/A

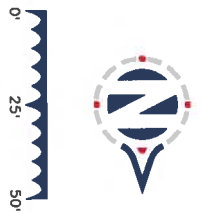
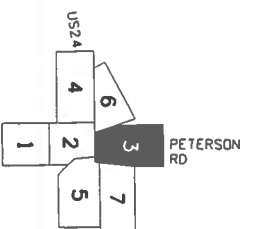


Sheet Revisions	
Date	Comments

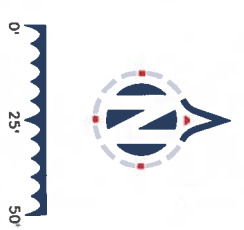
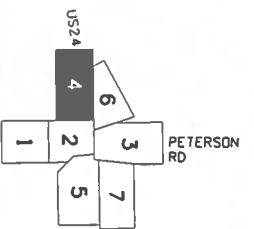
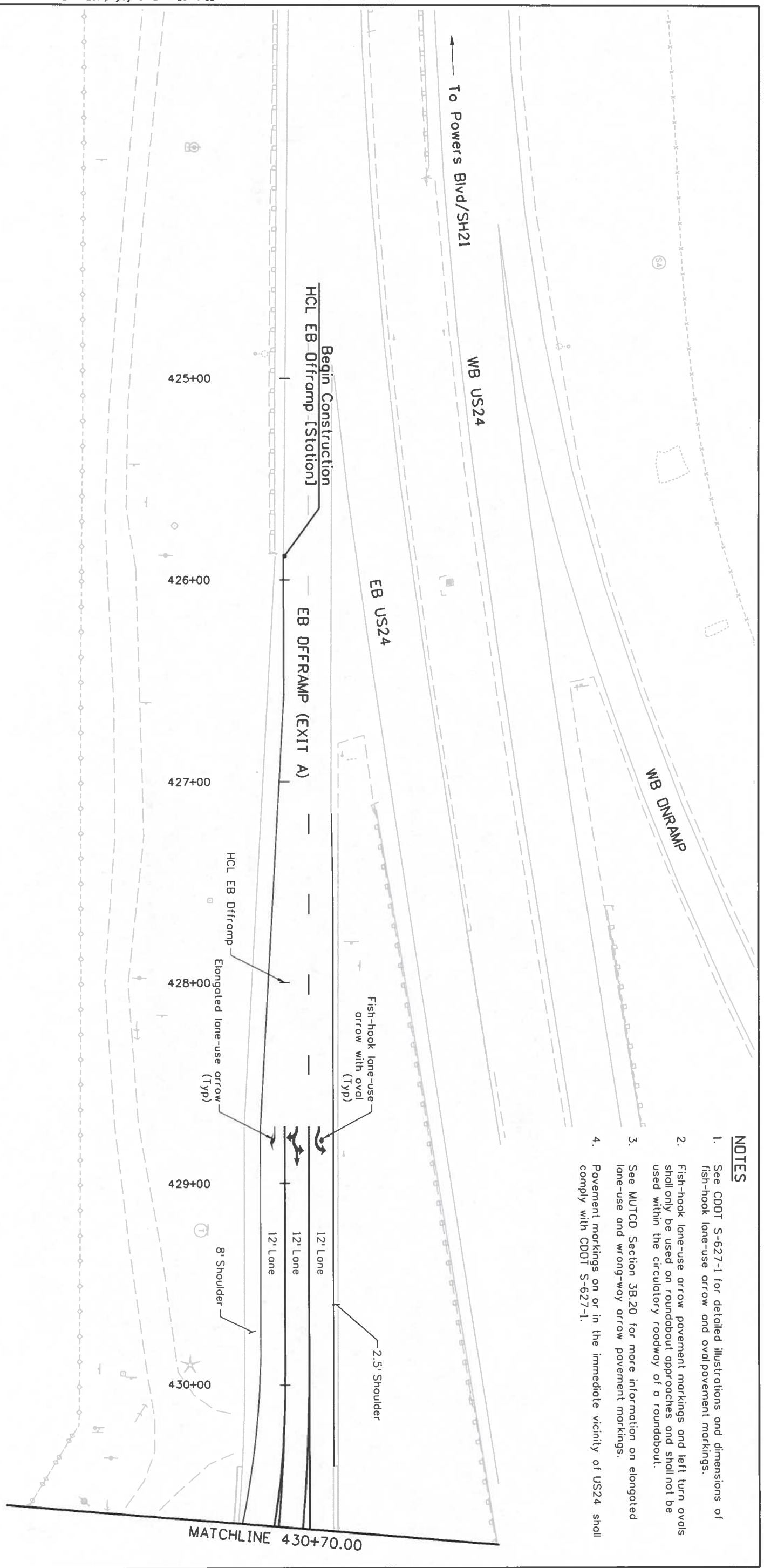
US Highway 24 & Peterson Blvd/Rd Roundabouts  
 STRIPING PLAN  
 NORTH ROUNDABOUT  
 Striping 3 of 7  
 Sheet Number 98



- NOTES**
- See CDDT S-627-1 for detailed illustrations and dimensions of fish-hook lane-use arrow and oval pavement markings.
  - Fish-hook lane-use arrow pavement markings and left turn ovals shall only be used on roundabout approaches and shall not be used within the circulatory roadway of a roundabout.
  - See MUTCD Section 3B.20 for more information on elongated lane-use and wrong-way arrow pavement markings.
  - All stripes within the circulatory roadway shall be inlaid. All solid channelizing lines within the circulatory roadway and approaches shall be inlaid and supplemented with rumble strips.
  - Yield triangles are shown along the edge of the circulatory traveled way in accordance with the City of COS Traffic Criteria Manual, Appendix C, Section 3.



- NOTES**
1. See CDDT S-627-1 for detailed illustrations and dimensions of fish-hook lane-use arrow and oval pavement markings.
  2. Fish-hook lane-use arrow pavement markings and left turn ovals shall only be used on roundabout approaches and shall not be used within the circulatory roadway of a roundabout.
  3. See MUTCD Section 3B.20 for more information on elongated lane-use and wrong-way arrow pavement markings.
  4. Pavement markings on or in the immediate vicinity of US24 shall comply with CDDT S-627-1.



**BASIS PARTNERS**  
 Basis Partners  
 25 N Spruce Street, Suite 310  
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 Tel: 719-299-5077, basisp.com

Detailer: STV  
 Designer: STV  
 Reviewer: GB

Print Date: 12/20/2023  
 Horiz. Scale: 1"=50'  
 Vert. Scale: N/A



Sheet Revisions		
Date	Comments	Init

US Highway 24 & Peterson Blvd/Rd Roundabouts  
**STRIPING PLAN**  
 EASTBOUND OFFRAMP (EXIT A)

Striping 4 of 7  
 Sheet Number 99

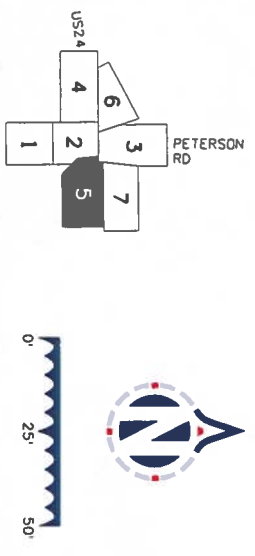
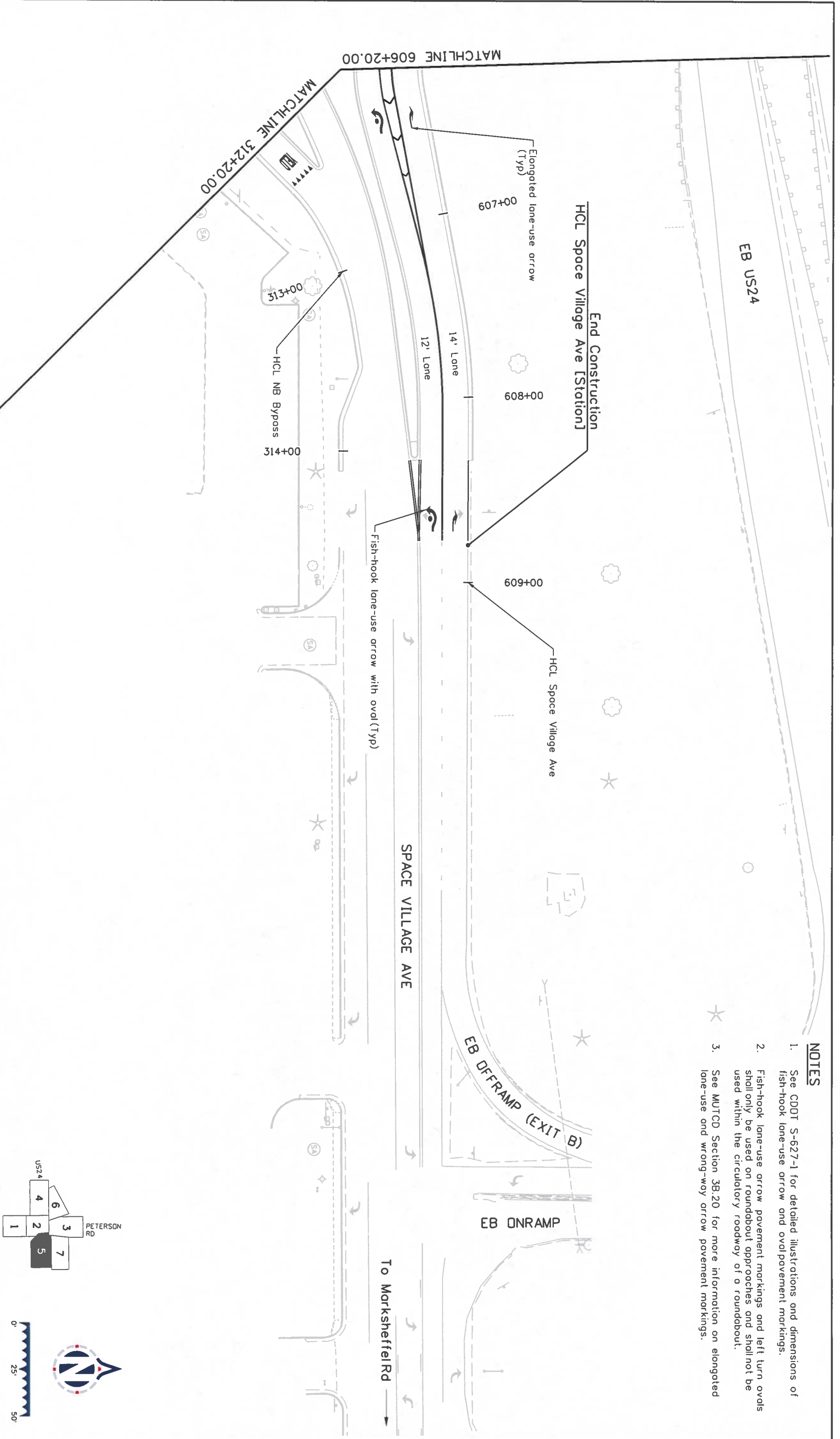
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Colorado Springs, CO 80905  
Tel: 719-299-5077, bosisp.com

Detailer: STV  
Designer: STV  
Reviewer: GB  
Print Date: 12/20/2023  
Horiz. Scale: 1"=50'  
Vert. Scale: N/A



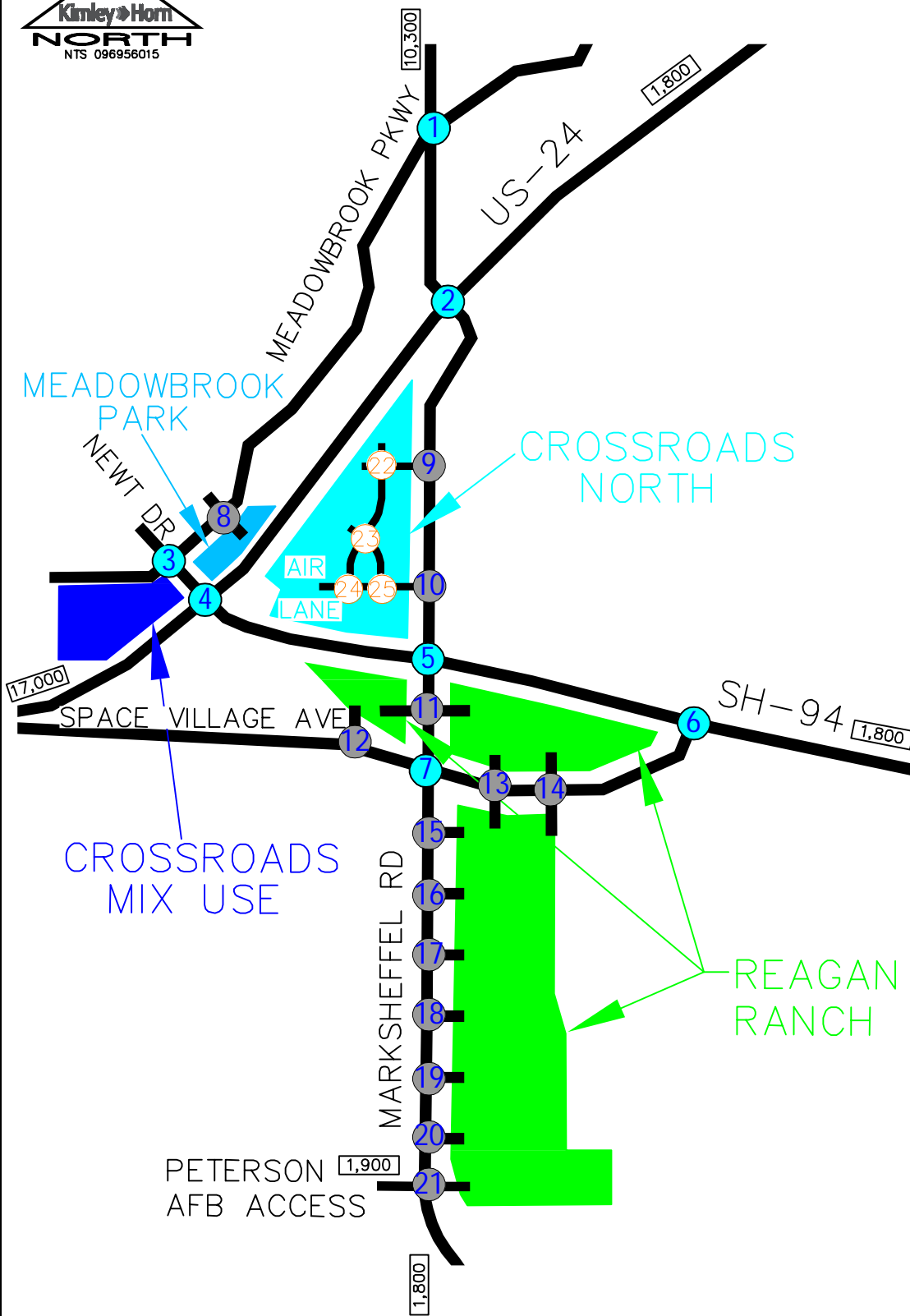
Sheet Revisions		
Date	Comments	Init

US Highway 24 & Peterson Blvd/Rd Roundabouts  
STRIPING PLAN  
SPACE VILLAGE AVE  
Striping 5 of 7  
Sheet Number 100



**NOTES**

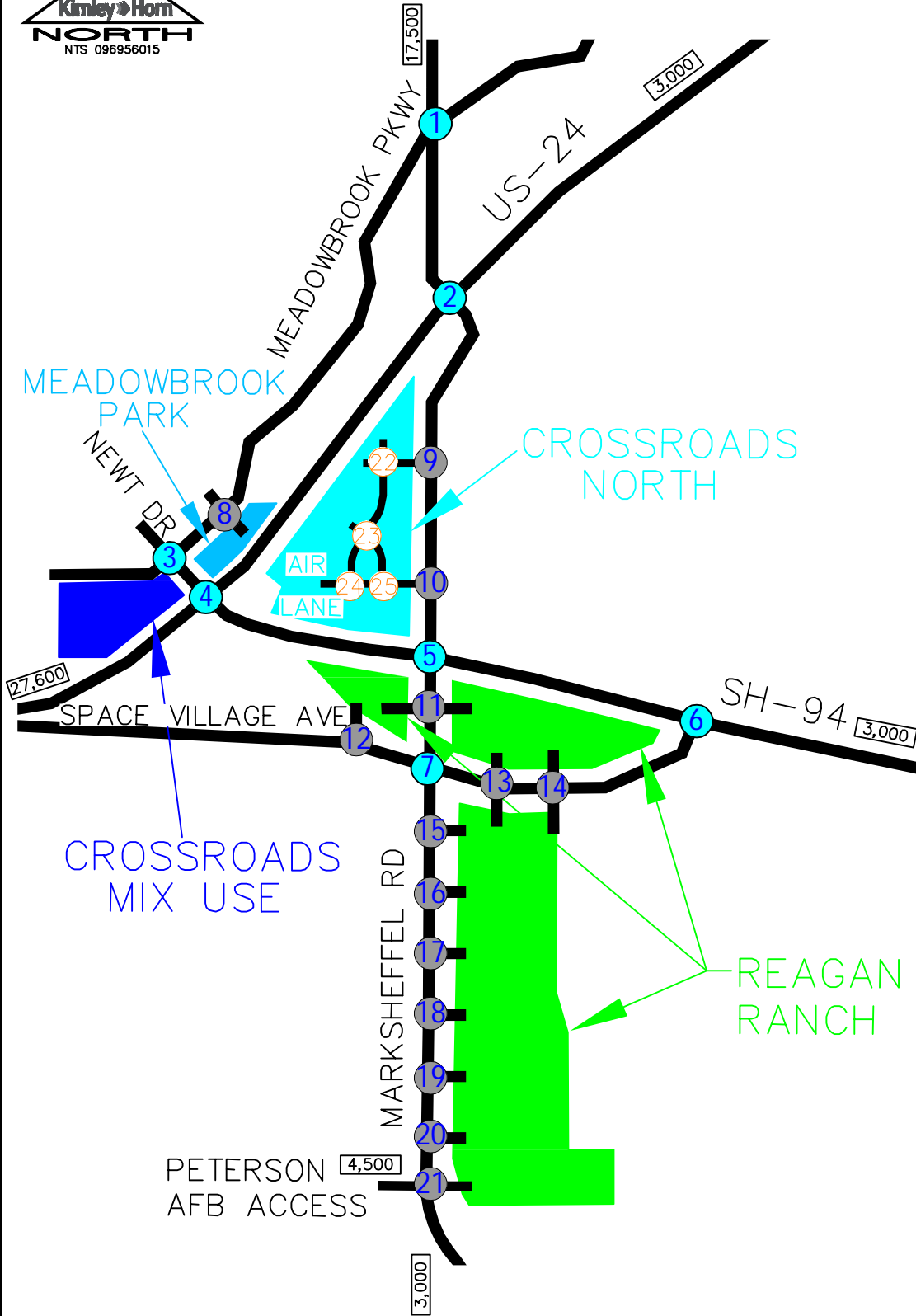
1. See CDDT S-627-1 for detailed illustrations and dimensions of fish-hook lane-use arrow and oval pavement markings.
2. Fish-hook lane-use arrow pavement markings and left turn ovals shall only be used on roundabout approaches and shall not be used within the circulatory roadway of a roundabout.
3. See MUTCD Section 3B.20 for more information on elongated lane-use and wrong-way arrow pavement markings.



<b>1</b> 146(121) ← 261(318) 152(103) → 264(300) →	<b>2</b> MARKSHEFFEL ← 261(318) 25(17) → 123(115) ↘ 264(300) → 45(50) ↘	<b>3</b> MEADOWBROOK ← 142(108) ↘ 27(18) 9(30) ↗ 332(251) ↗	<b>4</b> US-24 ← 25(20) 25(17) → 51(35) → 278(188) ↘ 268(221) ↗ 123(115) ↗ 222(280) ↗	<b>5</b> SH-94 ← 48(40) 342(360) ↗ 147(137) ↗ 25(17) → 100(160) ↘ 127(137) ↗ 176(217) ↗ 3(5) ↗	<b>6</b> ← 50(43) 19(31) ↘ 50(44) → 1(4) ↘ 4(2) ↘ 20(23) ↘
MEADOWBROOK PKWY/MARKSHEFFEL RD	US-24/MARKSHEFFEL ROAD	NEWT DR/MEADOWBROOK PKWY	SH-94/US-24	SH-94/MARKSHEFFEL RD	SH-94/SPACE VILLAGE AVENUE
<b>7</b> 168(312) ↘ 58(83) 34(23) ↗ 58(63) ↗ 32(42) ↗ 27(45) ↘ 26(55) ↘ 9(22) ↘	<b>8</b> MEADOWBROOK ← 208(259) ↘ 4(13) 12(8) ↗ 27(18) ↗ 243(214) ↗ 9(30) ↗	<b>9</b> ACCESS 196(183) ↗ 232(303) ↗ 87(88) ↗ 87(88) ↗ 49(46) ↗ 221(262) ↗	<b>10</b> 98(92) ↗ 221(299) ↗ 66(66) ↗ 197(198) ↗ 147(137) ↗ 204(242) ↗	<b>11</b> 32(8) ↗ 223(381) ↗ 3(14) ↗ 276(305) ↗ 41(40) ↗	<b>12</b> 7(28) ↗ 7(28) ↗ 18(5) ↗ 69(79) ↗ 21(5) ↗ 56(93) ↗
SPACE VILLAGE AVE/MARKSHEFFEL RD	MEADOWBROOK PARKWAY ACCESS	MARKSHEFFEL RD NORTH ACCESS	MARKSHEFFEL RD/AIR LANE ACCESS	MARKSHEFFEL ROAD RIRO ACCESS	SPACE VILLAGE AVE FULL ACCESS
<b>13</b> 31(55) ↗ 2(2) ↗ 5(5) ↗ 80(57) ↗ 2(4) ↗ 57(54) ↗ 33(87) ↗ 9(21) ↗	<b>14</b> 64(37) ↗ 7(4) ↗ 2(7) ↗ 17(23) ↗ 2(4) ↗ 19(65) ↗ 13(18) ↗ 4(8) ↗	<b>15</b> 209(376) ↗ 18(20) ↗ 281(302) ↗ 2(4) ↗	<b>16</b> 178(306) ↗ 32(70) ↗ 30(34) ↗ 253(272) ↗ 6(7) ↗	<b>17</b> 178(306) ↗ 38(44) ↗ 219(236) ↗ 6(12) ↗	<b>18</b> 142(228) ↗ 36(78) ↗ 27(31) ↗ 27(31) ↗ 197(218) ↗ 6(12) ↗
SPACE VILLAGE AVE W FULL ACCESS	SPACE VILLAGE AVE E FULL ACCESS	MARKSHEFFEL ROAD RIRO ACCESS	MARKSHEFFEL ROAD 3/4 ACCESS	MARKSHEFFEL ROAD RIRO ACCESS	MARKSHEFFEL ROAD FULL ACCESS
<b>19</b> 169(259) ↗ 18(20) ↗ 186(210) ↗ 6(12) ↗	<b>20</b> 133(180) ↗ 36(78) ↗ 35(41) ↗ 156(182) ↗ 4(8) ↗	<b>21</b> 44(57) ↗ 61(57) ↗ 30(66) ↗ 44(51) ↗ 24(27) ↗ 9(10) ↗ 48(70) ↗ 9(21) ↗	<b>22</b> 2(2) ↗ 2(2) ↗ 44(44) ↗ 2(2) ↗ 2(2) ↗ 87(88) ↗ 49(46) ↗ 49(46) ↗ 147(137) ↗	<b>23</b> 49(46) ↗ 69(67) ↗ 25(23) ↗ 22(22) ↗ 4(4) ↗ 44(44) ↗ 25(23) ↗ 47(45) ↗ 2(2) ↗	<b>24</b> 2(2) ↗ 109(110) ↗ 98(92) ↗ 49(46) ↗ 2(2) ↗ 44(44) ↗
MARKSHEFFEL ROAD RIRO ACCESS	MARKSHEFFEL ROAD 3/4 ACCESS	MARKSHEFFEL RD FULL ACCESS	CROSSROADS NORTH INT #22	CROSSROADS NORTH INT #23	AIR LANE WEST INTERSECTION
<b>25</b> 2(2) ↗ 109(110) ↗ 98(92) ↗ 147(137) ↗ 2(2) ↗ 153(154) ↗	<b>LEGEND</b> (X) Existing Key Intersection (X) Proposed Access Intersection (X) Proposed Internal Intersection XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes [XX,X00] Estimated Daily Traffic Volume				
AIR LANE EAST INTERSECTION					

CROSSROADS-MEADOWBROOK & REAGAN RANCH  
 COLORADO SPRINGS, CO  
 2026 PROJECT TRAFFIC ASSIGNMENT

FIGURE 9



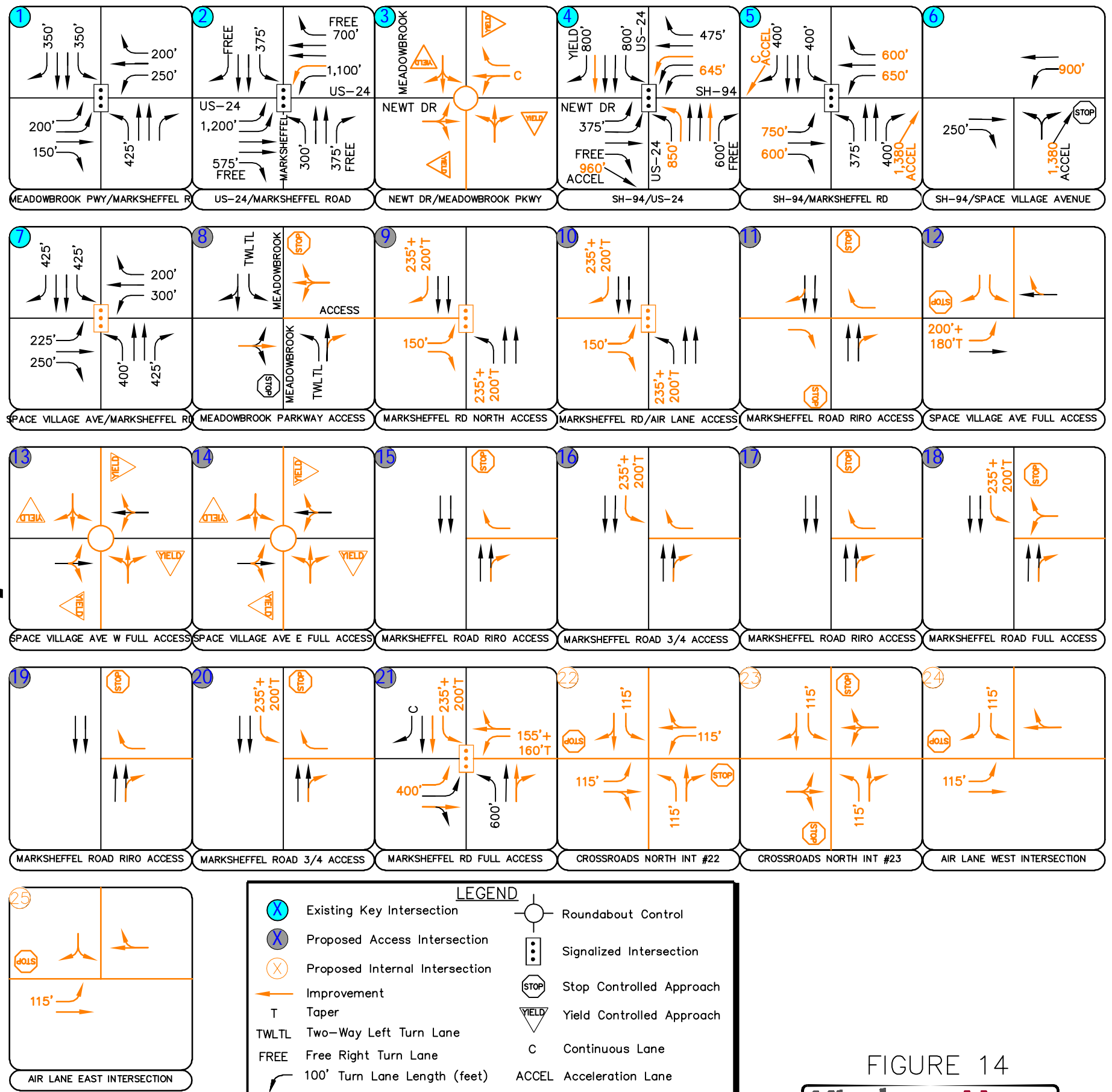
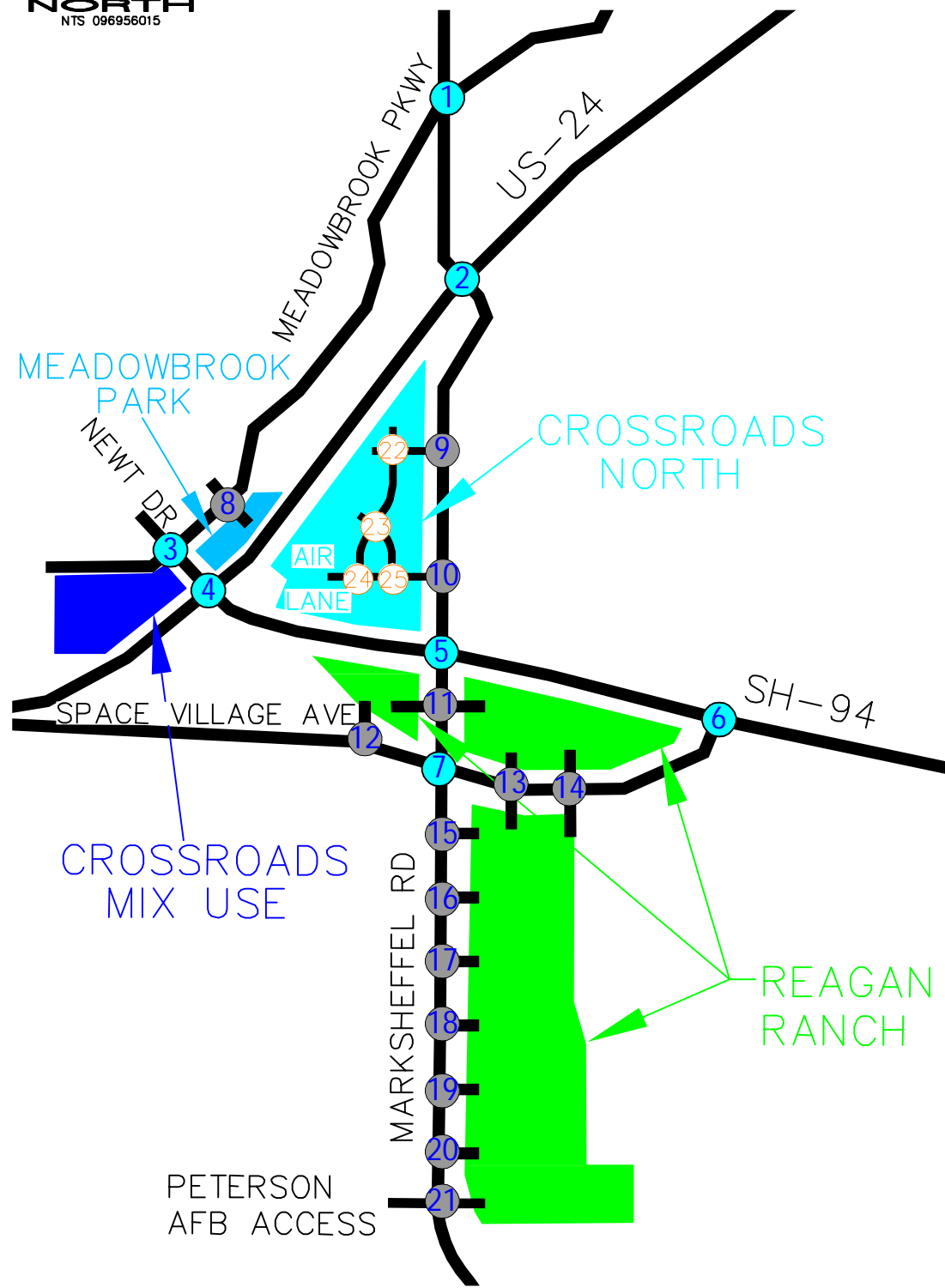
<p>1</p> <table border="1"> <tr><td>161(147)</td><td></td></tr> <tr><td>374(664)</td><td></td></tr> <tr><td>165(127)</td><td>344(599)</td></tr> </table> <p>MEADOWBROOK PWY/MARKSHEFFEL R</p>	161(147)		374(664)		165(127)	344(599)	<p>2</p> <table border="1"> <tr><td>MARKSHEFFEL</td><td></td></tr> <tr><td>374(664)</td><td>27(24)</td></tr> <tr><td>62(111)</td><td>62(111)</td></tr> <tr><td>28(21)</td><td>344(599)</td></tr> <tr><td>137(194)</td><td>57(100)</td></tr> </table> <p>US-24/MARKSHEFFEL ROAD</p>	MARKSHEFFEL		374(664)	27(24)	62(111)	62(111)	28(21)	344(599)	137(194)	57(100)	<p>3</p> <table border="1"> <tr><td>MEADOWBROOK</td><td></td></tr> <tr><td>157(134)</td><td>9(30)</td></tr> <tr><td>27(18)</td><td>366(314)</td></tr> <tr><td>153(119)</td><td>358(277)</td></tr> <tr><td>358(277)</td><td></td></tr> </table> <p>NEWT DR/MEADOWBROOK PKWY</p>	MEADOWBROOK		157(134)	9(30)	27(18)	366(314)	153(119)	358(277)	358(277)		<p>4</p> <table border="1"> <tr><td>US-24</td><td></td></tr> <tr><td>27(24)</td><td>53(49)</td></tr> <tr><td>27(24)</td><td>420(596)</td></tr> <tr><td>28(21)</td><td>295(270)</td></tr> <tr><td>55(43)</td><td>137(194)</td></tr> <tr><td>302(232)</td><td>315(562)</td></tr> </table> <p>SH-94/US-24</p>	US-24		27(24)	53(49)	27(24)	420(596)	28(21)	295(270)	55(43)	137(194)	302(232)	315(562)	<p>5</p> <table border="1"> <tr><td>SH-94</td><td></td></tr> <tr><td>270(272)</td><td>32(42)</td></tr> <tr><td>268(524)</td><td>27(24)</td></tr> <tr><td>27(30)</td><td>27(30)</td></tr> <tr><td>164(233)</td><td>177(348)</td></tr> <tr><td>28(21)</td><td>252(562)</td></tr> <tr><td>179(350)</td><td>4(20)</td></tr> </table> <p>SH-94/MARKSHEFFEL RD</p>	SH-94		270(272)	32(42)	268(524)	27(24)	27(30)	27(30)	164(233)	177(348)	28(21)	252(562)	179(350)	4(20)	<p>6</p> <table border="1"> <tr><td></td><td></td></tr> <tr><td></td><td>54(63)</td></tr> <tr><td></td><td>35(72)</td></tr> <tr><td>57(66)</td><td>5(3)</td></tr> <tr><td>2(5)</td><td>28(55)</td></tr> </table> <p>SH-94/SPACE VILLAGE AVENUE</p>				54(63)		35(72)	57(66)	5(3)	2(5)	28(55)
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CROSSROADS-MEADOWBROOK & REAGAN RANCH  
 COLORADO SPRINGS, CO  
 2040 PROJECT TRAFFIC ASSIGNMENT

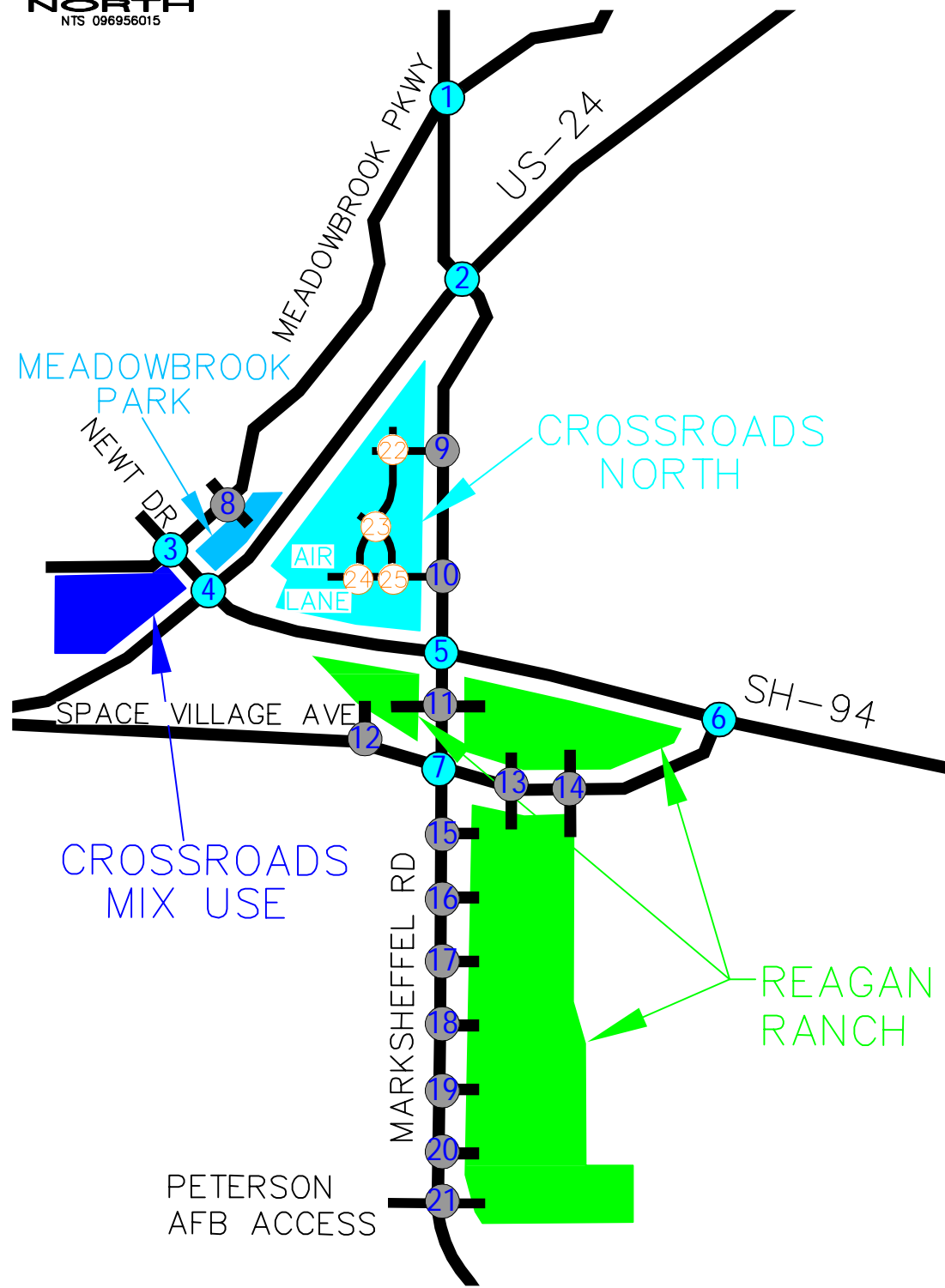
**LEGEND**

- X Existing Key Intersection
- X Proposed Access Intersection
- X Proposed Internal Intersection
- XXX(XXX) Weekday AM(PM)  
Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

FIGURE 10



CROSSROADS-MEADOWBROOK & REAGAN RANCH  
 COLORADO SPRINGS, CO  
 2026 RECOMMENDED LANE CONFIGURATIONS



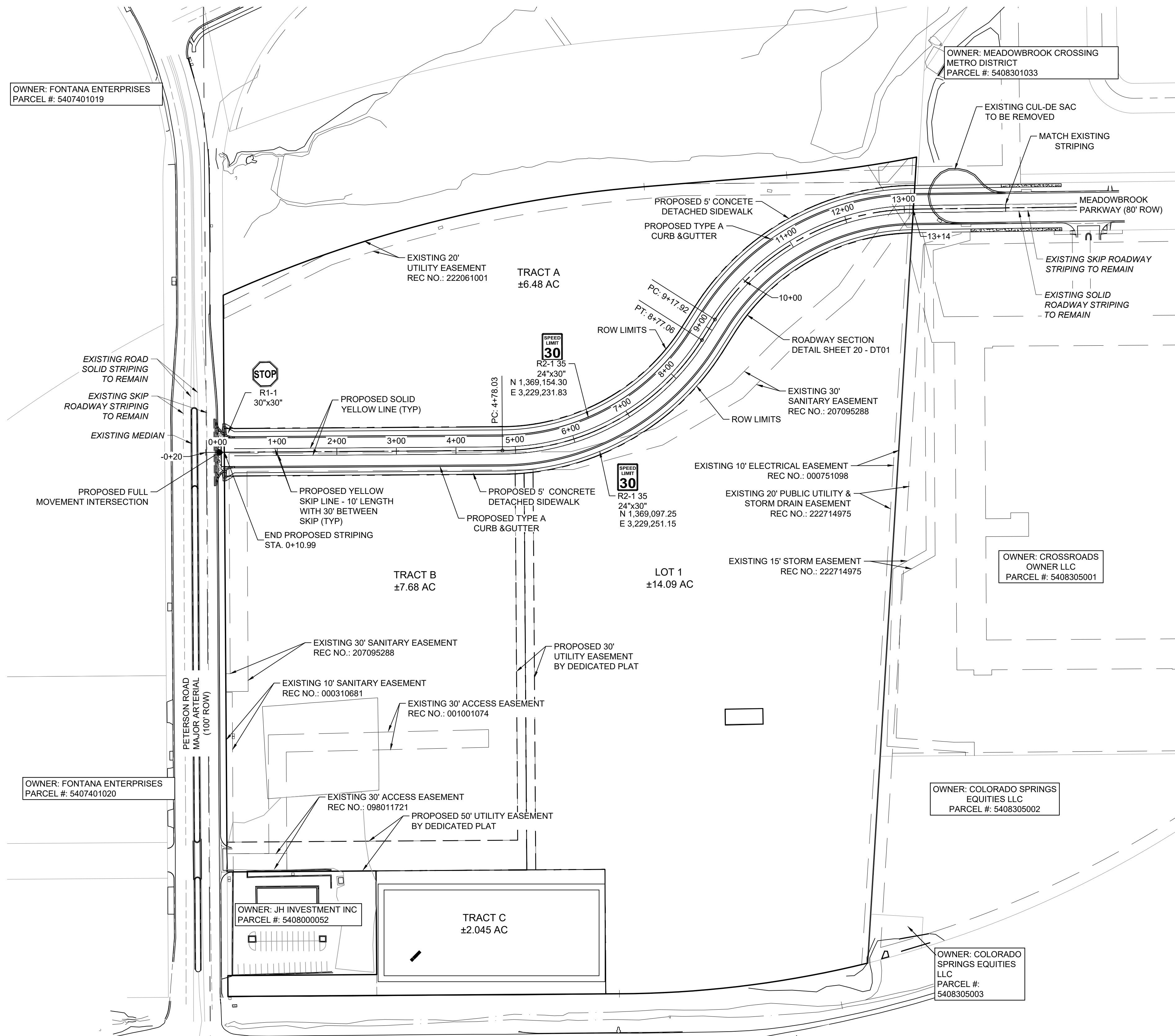
<p>1</p> <p>MEADOWBROOK PKWY/MARKSHEFFEL RD</p>	<p>2</p> <p>US-24/MARKSHEFFEL RD</p>	<p>3</p> <p>NEWT DR/MEADOWBROOK PKWY</p>	<p>4</p> <p>SH-94/US-24</p>	<p>5</p> <p>SH-94/MARKSHEFFEL RD</p>	<p>6</p> <p>SH-94/SPACE VILLAGE AVENUE</p>
<p>7</p> <p>SPACE VILLAGE AVE/MARKSHEFFEL RD</p>	<p>8</p> <p>MEADOWBROOK PARKWAY ACCESS</p>	<p>9</p> <p>MARKSHEFFEL RD NORTH ACCESS</p>	<p>10</p> <p>MARKSHEFFEL RD/AIR LANE ACCESS</p>	<p>11</p> <p>MARKSHEFFEL ROAD RIRO ACCESS</p>	<p>12</p> <p>SPACE VILLAGE AVE FULL ACCESS</p>
<p>13</p> <p>SPACE VILLAGE AVE W FULL ACCESS</p>	<p>14</p> <p>SPACE VILLAGE AVE E FULL ACCESS</p>	<p>15</p> <p>MARKSHEFFEL ROAD RIRO ACCESS</p>	<p>16</p> <p>MARKSHEFFEL ROAD 3/4 ACCESS</p>	<p>17</p> <p>MARKSHEFFEL ROAD RIRO ACCESS</p>	<p>18</p> <p>MARKSHEFFEL ROAD FULL ACCESS</p>
<p>19</p> <p>MARKSHEFFEL ROAD RIRO ACCESS</p>	<p>20</p> <p>MARKSHEFFEL ROAD 3/4 ACCESS</p>	<p>21</p> <p>MARKSHEFFEL RD FULL ACCESS</p>	<p>22</p> <p>CROSSROADS NORTH INT #22</p>	<p>23</p> <p>CROSSROADS NORTH INT #23</p>	<p>24</p> <p>AIR LANE WEST INTERSECTION</p>
<p>25</p> <p>AIR LANE EAST INTERSECTION</p>	<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> Existing Key Intersection</li> <li> Proposed Access Intersection</li> <li> Proposed Internal Intersection</li> <li> Improvement</li> <li> Taper</li> <li> Two-Way Left Turn Lane</li> <li> Free Right Turn Lane</li> <li> 100' Turn Lane Length (feet)</li> <li> Roundabout Control</li> <li> Signalized Intersection</li> <li> Stop Controlled Approach</li> <li> Yield Controlled Approach</li> <li> Continuous Lane</li> <li> Acceleration Lane</li> </ul>				

CROSSROADS-MEADOWBROOK & REAGAN RANCH  
 COLORADO SPRINGS, CO  
 2040 RECOMMENDED LANE CONFIGURATIONS

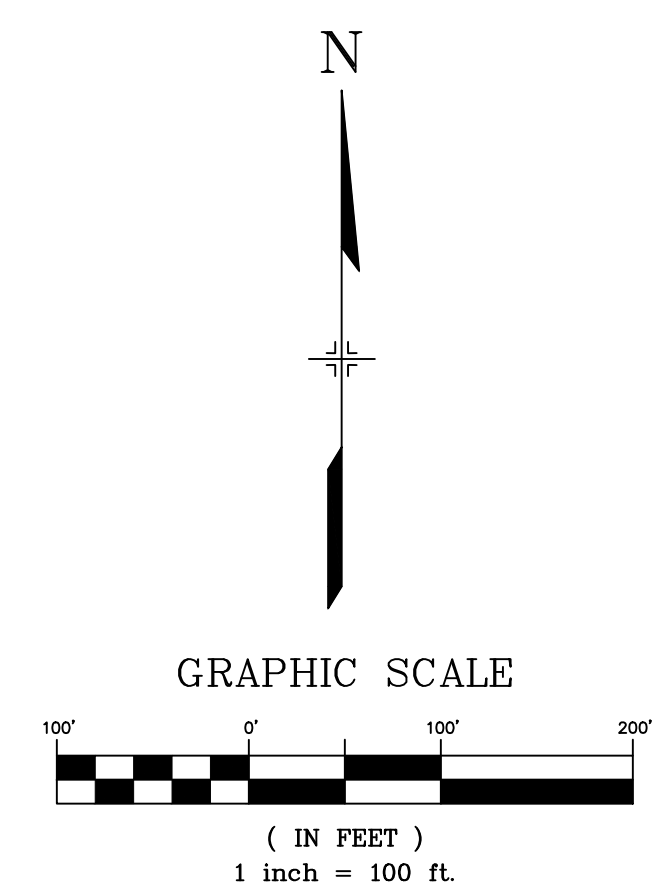
FIGURE 15



Know what's below.  
Call before you dig.



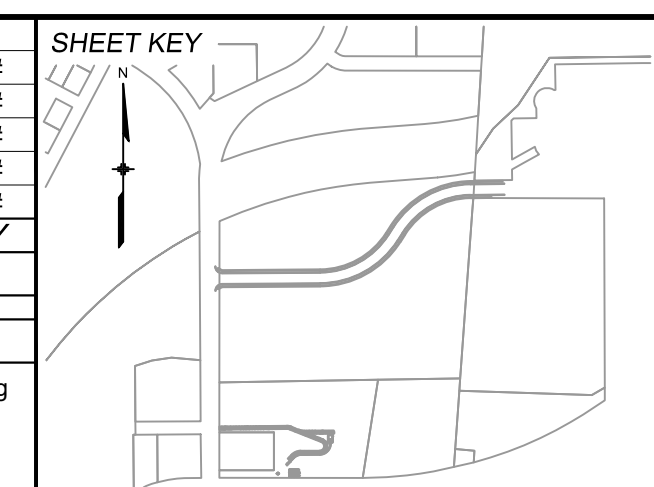
- SIGNING & STRIPING NOTES:**
- ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
  - REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
  - ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT.
  - ALL SIGNS SHOWN ON THE SIGNING AND STRIPING PLAN SHALL BE NEW SIGNS. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
  - STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
  - ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
  - ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 35 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 12" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS". SIGNAL POLE MOUNTED AND OVERHEAD STREET NAME SIGNS SHALL BE PER MUTCD SIZE STANDARDS.
  - ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
  - ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
  - ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
  - ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 24" WIDE AND A MINIMUM OF 9' LONG.
  - WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE.
  - ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
  - THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
  - THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS (DPW) PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.



REFERENCE DRAWINGS	No.	DATE	DESCRIPTION	BY
X-MDG22-34	##	##	##	##
X-1382-PR-SITE	##	##	##	##
X-1382-EK-MAP	##	##	##	##
X-1382-EX-UTIL	##	##	##	##
X-1382-PR-UTIL	##	##	##	##
X-1382-EK-SITE	##	##	##	##
X-1382-PR-MAP	##	##	##	##

COMPUTER FILE MANAGEMENT	
FILE NAME:	S:\24.1382.003 Peterson Road and Meadowbrook Parkway Overall Development\500 CADD\504 Plan Sets\Construction Plans\Road and Storm\SN01.dwg
CTB FILE:	Matrix.ctb
PLOT DATE:	April 14, 2026 9:49:15 AM
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.	



**BENCHMARK:**  
NGS MONUMENT R76, BEING MONUMENTED BY A STANDARD U.S. COAST AND GEODETIC SURVEY BENCHMARK DISK SET IN THE TOP OF CONCRETE POST, STAMPED R 76 1935. ELEVATION WAS ESTABLISHED BY G.P.S OBSERVATIONS AND IS REFERENCED TO NAVD88. ELEVATION = 6,289.86 FEET.

**BASIS OF BEARING:**  
REFERENCED TO THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 14 SOUTH, RANGE 65 WEST, BEING MONUMENTED AT THE SOUTHWEST CORNER OF SECTION 8 BY A 3-1/4" ALUMINUM CAP IN RANGEBOX "LS 22573", AND AT THE WEST QUARTER CORNER OF SECTION 8 BY A 3-1/4" BRASS CAP STAMPED "BLM US DEPT INTERIOR", ASSUMED TO BEAR NORTH 00°23'14" WEST, A DISTANCE OF 2,641.77 FEET.

PREPARED BY:

Excellence by Design

SEAL

**PRELIMINARY**  
THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF  
MATRIX DESIGN GROUP, INC.  
PROJECT No. 24.1382.003

**CIMARRON HILLS SOUTHEAST FILING NO. 1**

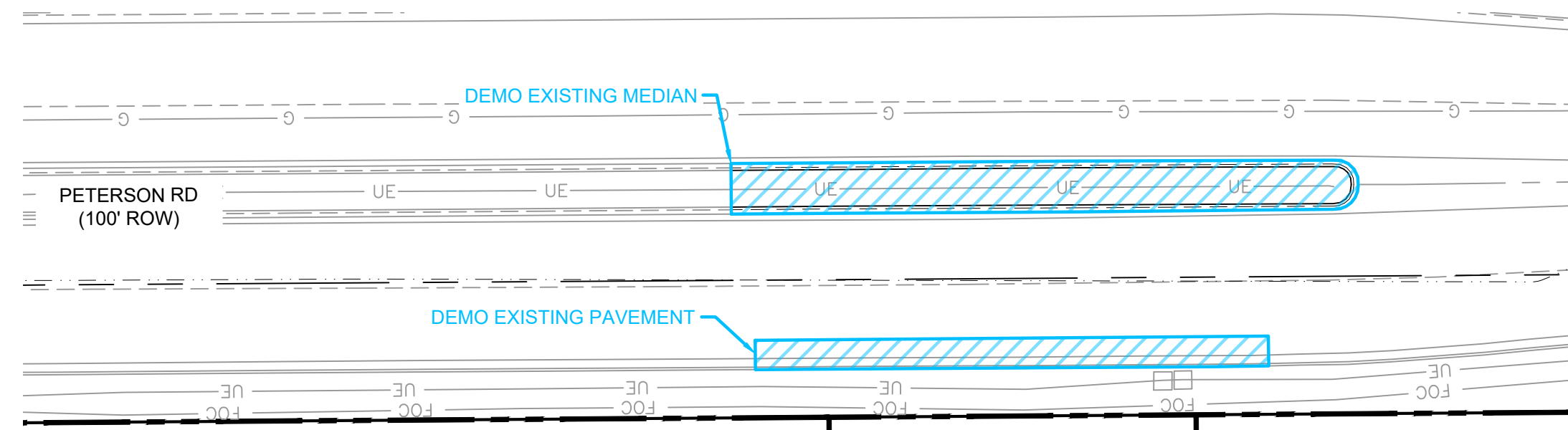
EL PASO COUNTY, COLORADO SPRINGS

**PAVEMENT MARKING & SIGNING PLAN**

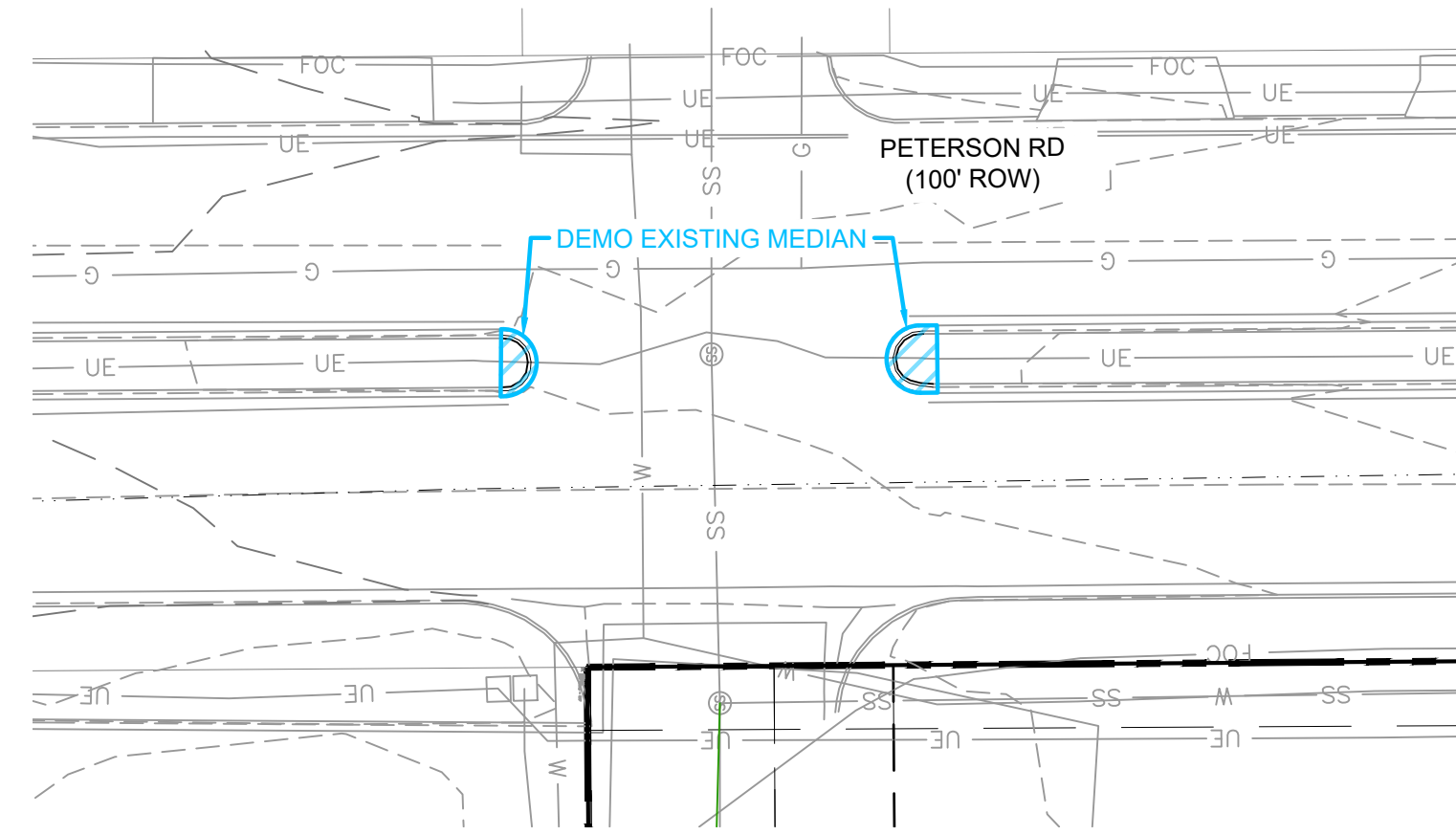
DESIGNED BY:	MDP	SCALE	DATE ISSUED:	APRIL 2026	DRAWING No.
DRAWN BY:	WCG	HORIZ 1" = 100'	SHEET	18 OF 20	SN01
CHECKED BY:	DAD	VERT. N/A			



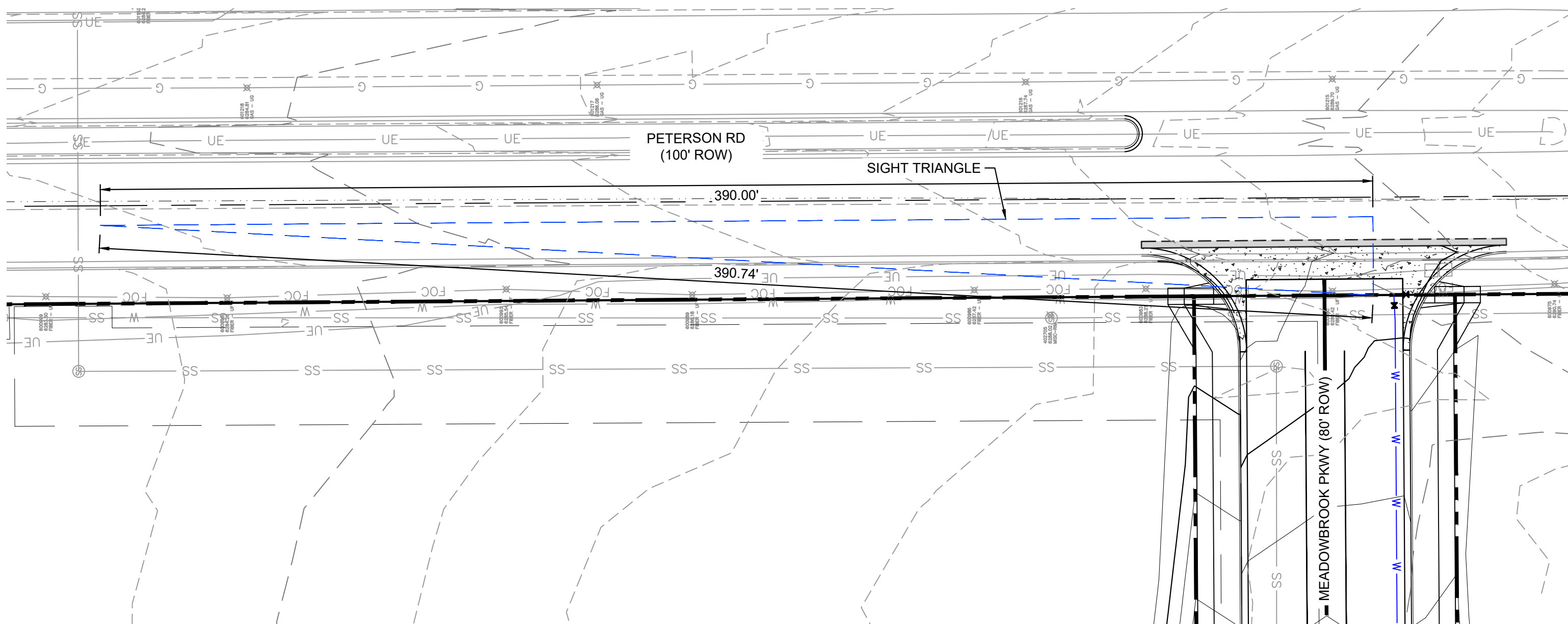
Know what's below.  
Call before you dig.



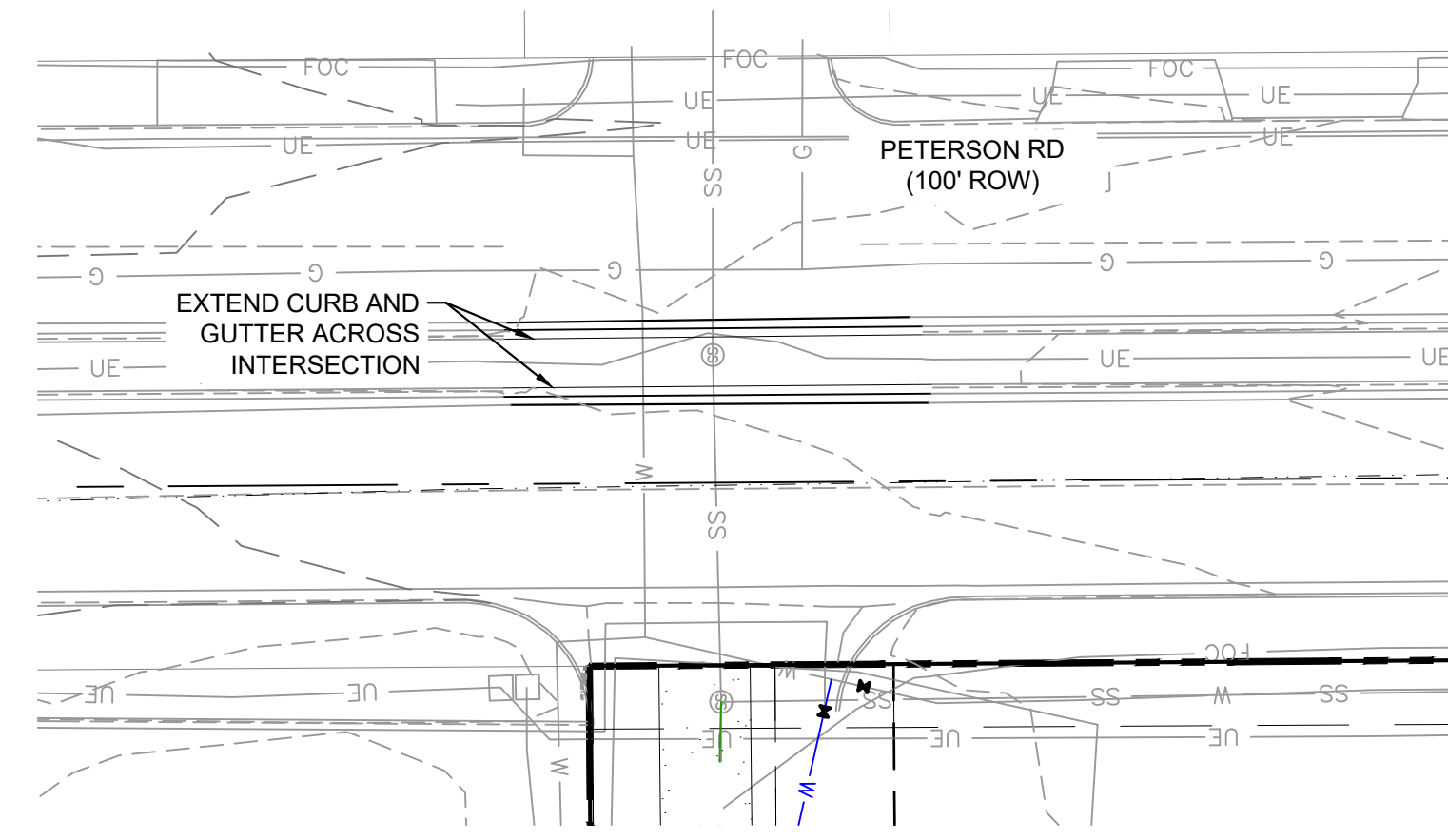
PETERSON ROAD DEMO AT MEADOWBROOK PKWY



PETERSON ROAD DEMO AT ACCESS ROAD



PETERSON ROAD IMPROVEMENTS AT MEADOWBROOK PKWY



PETERSON ROAD IMPROVEMENTS AT ACCESS ROAD

LEGEND

- PROPOSED CENTERLINE
- EXISTING PAVED ROAD
- RIGHT OF WAY
- EASEMENT
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPERTY LINE
- 100 YEAR HGL
- 5 YEAR HGL
- PROPOSED LOT/TRACT LINE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- FLOODPLAIN BOUNDARY
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER MAIN
- EXISTING UNDERGROUND ELECTRIC
- EXISTING GAS
- EXISTING FIBER OPTICS
- PROPOSED MANHOLE
- PROPOSED INLETS
- FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING STORM INLET
- PROPOSED SIGN
- EXISTING SIGN
- EXISTING SANITARY SEWER MANHOLE
- EXIST. CONCRETE OR ASPHALT TO BE REMOVED



GRAPHIC SCALE



( IN FEET )  
1 inch = 30 ft.

REFERENCE DRAWINGS

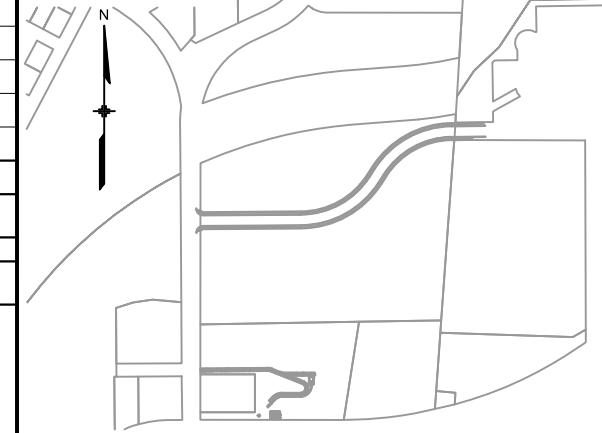
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X-1382-PR-UTIL	##	##
X-1382-EK-SITE	##	##
X-1382-EX-FEMA MAP	##	##
X-1382-PR-MAP	##	##

No.	DATE	DESCRIPTION	BY

COMPUTER FILE MANAGEMENT

FILE NAME: S:\24.1382.003 Peterson Road and Meadowbrook Parkway Overall Development\500 CADD\504 Plan Sets\Construction Plans\Road and Storm\ST01.dwg  
 CTB FILE: Matrix.ctb  
 PLOT DATE: April 14, 2026 9:48:56 AM  
 THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY



BENCHMARK:  
 NGS MONUMENT R76, BEING MONUMENTED BY A STANDARD U.S. COAST AND GEODETIC SURVEY BENCHMARK DISK SET IN THE TOP OF CONCRETE POST, STAMPED R 76 1935. ELEVATION WAS ESTABLISHED BY G.P.S OBSERVATIONS AND IS REFERENCED TO NAVD88. ELEVATION = 6,289.86 FEET.

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SEAL

PRELIMINARY

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FOR AND ON BEHALF OF  
 MATRIX DESIGN GROUP, INC.  
 PROJECT No. 24.1382.003

CIMARRON HILLS SOUTHEAST FILING NO. 1

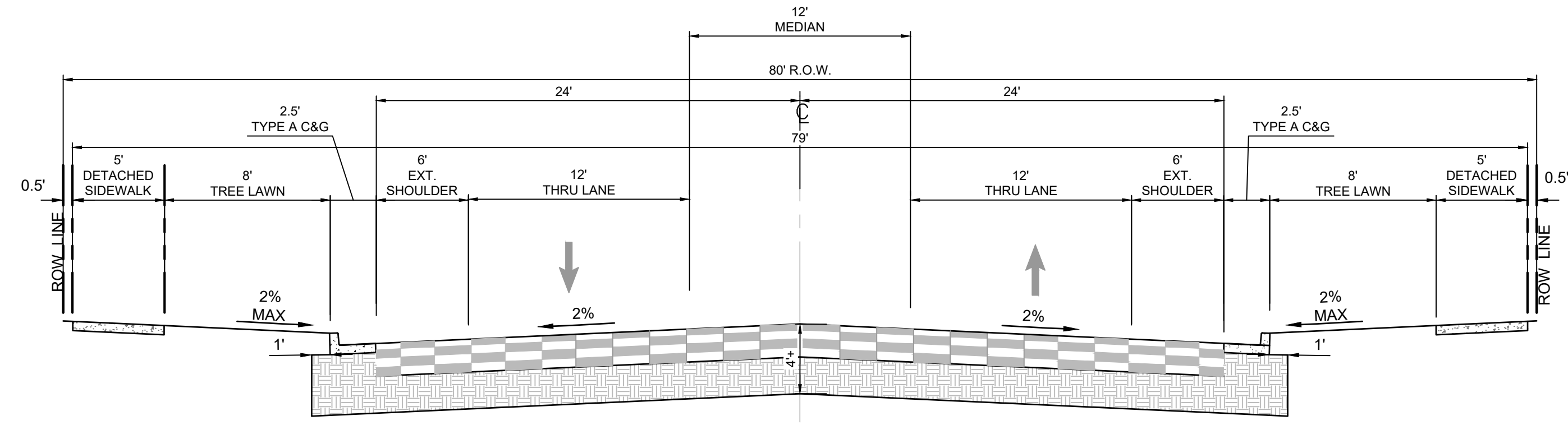
EL PASO COUNTY, COLORADO SPRINGS

PETERSON ROAD IMPROVEMENTS

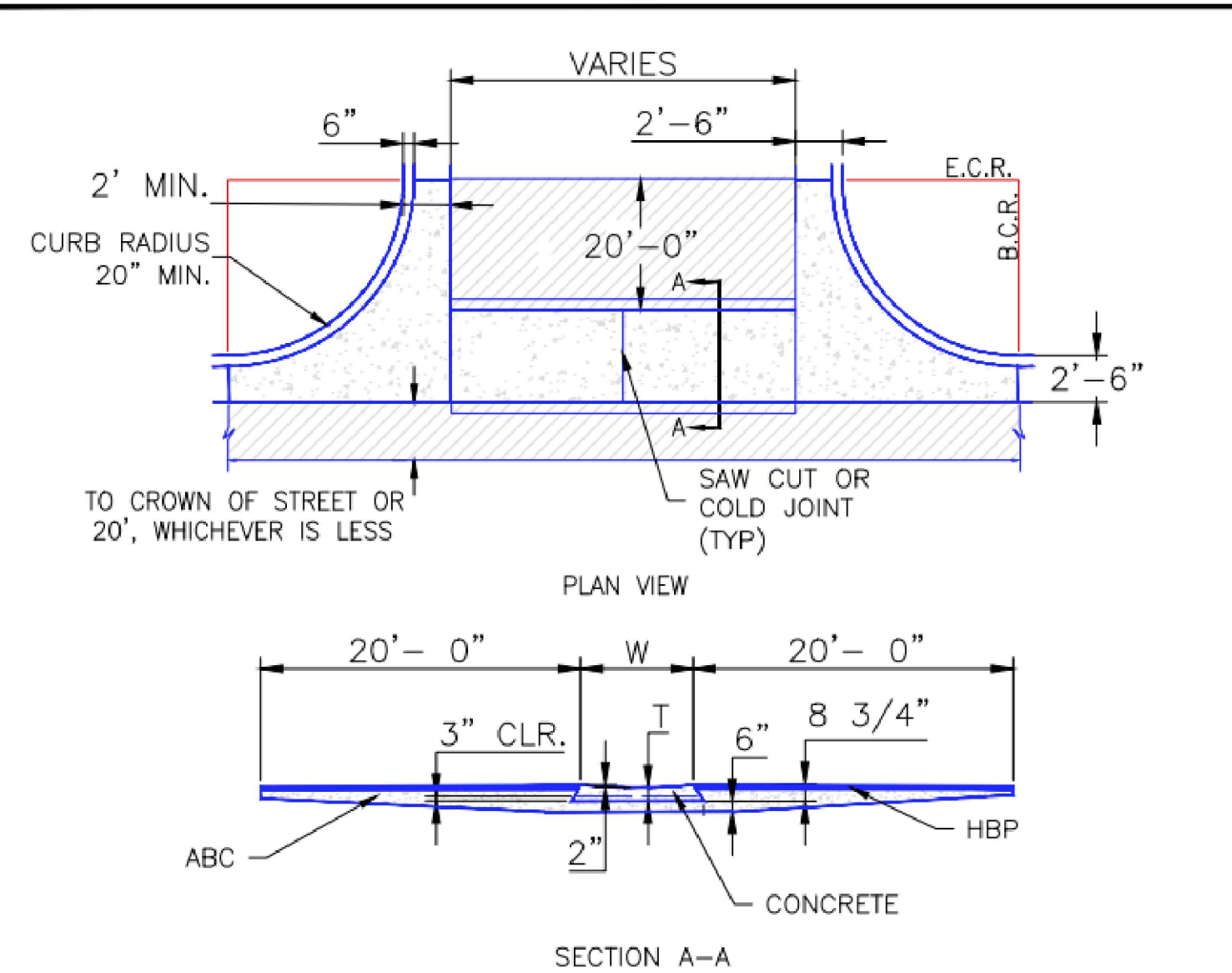
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DRAWN BY: KGI	VERT. 1" = 5'	19 OF 20	
CHECKED BY: NMS			



Know what's below.  
Call before you dig.



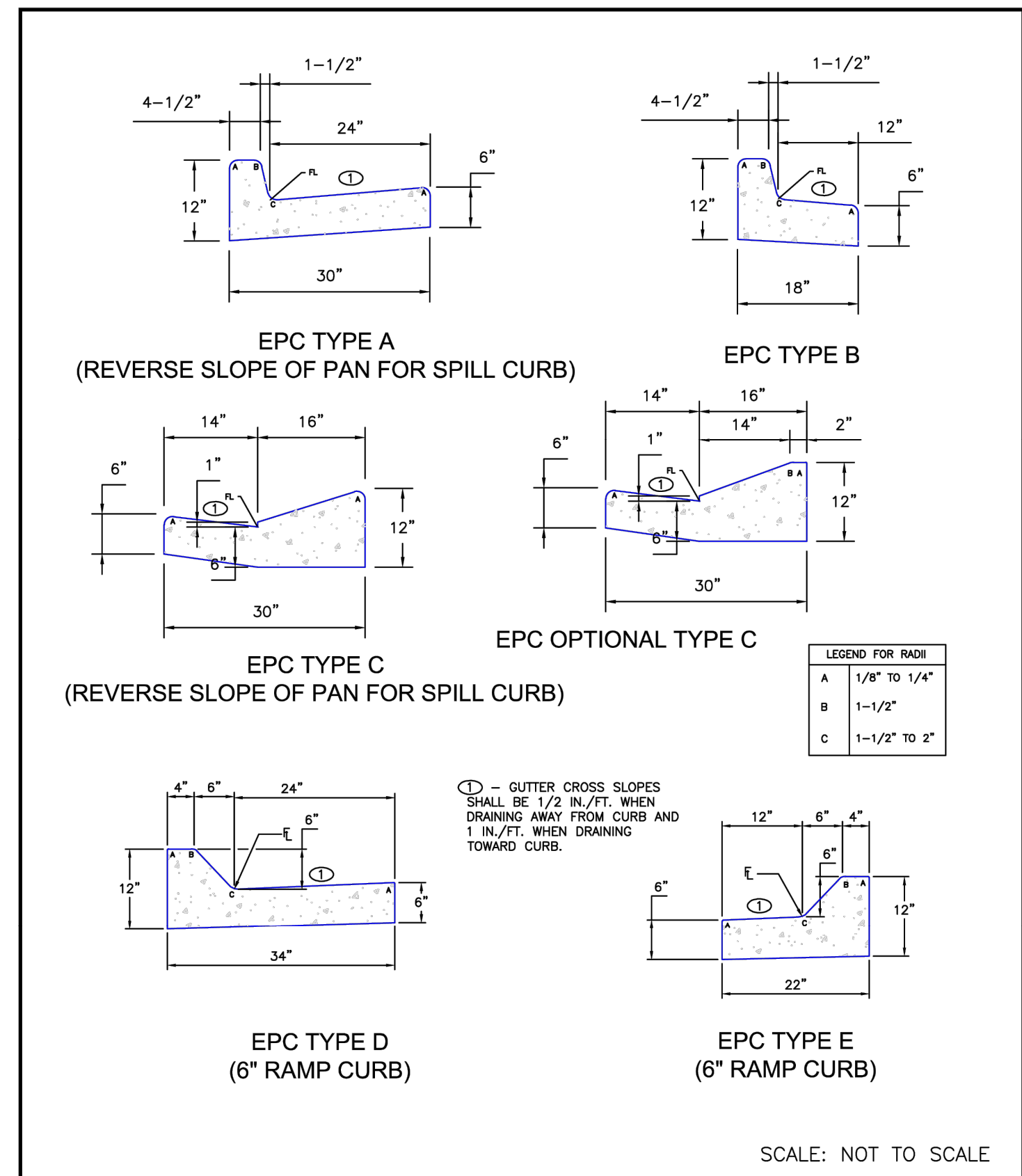
**COLLECTOR WITH NO PARKING**  
30 MPH POSTED; 40 MPH DESIGN  
NOT TO SCALE  
MEADOWBROOK PKWY



- NOTES
1. W - WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS.
  2. T - SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 - 4.4 W.W.F. OR #4 REINFORCING BAR @ 18" EACH WAY.
  3. [Hatched Area] = 3" MINIMUM ASPHALT DEPTH (2 LIFTS).
  4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

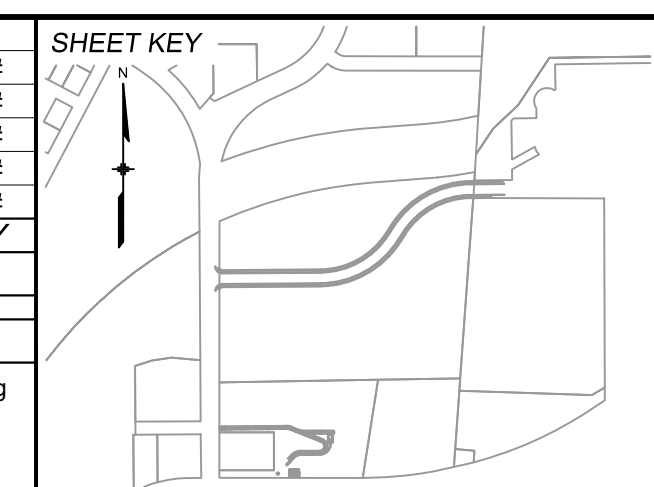
SCALE: NOT TO SCALE

8/11/11	Typical Cross Pan Layout Detail Standard Drawing		
DATE APPROVED:	REVISION DATE:	FILE NAME:	
André P. Brackin	12/8/15	SD_2-26	
DEPARTMENT OF TRANSPORTATION			



8/11/11	Typical Curb and Gutter Details Standard Drawing		
DATE APPROVED:	REVISION DATE:	FILE NAME:	
André P. Brackin	12/8/15	SD_2-20	
DEPARTMENT OF TRANSPORTATION			

REFERENCE DRAWINGS	No.	DATE	DESCRIPTION	BY
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	##	##	##	##
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	##	##	##	##
<b>COMPUTER FILE MANAGEMENT</b>				
FILE NAME: S:\24.1382.003 Peterson Road and Meadowbrook Parkway Overall Development\500 CADD\504 Plan Sets\Construction Plans\Road and Storm\DT01.dwg				
CTB FILE: Matrix.ctb				
PLOT DATE: April 14, 2026 9:48:39 AM				
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PREPARED BY:

SEAL

**PRELIMINARY**  
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<b>CIMARRON HILLS SOUTHEAST FILING NO. 1</b>			
EL PASO COUNTY, COLORADO SPRINGS			
<b>DETAILS</b>			
DESIGNED BY:	MDF	SCALE:	DATE ISSUED:
DRAWN BY:	WCG	HORIZ	APRIL 2026
CHECKED BY:	DAD	VERT.	20 OF 20
		N/A	DRAWING No. DT01