





Traffic Impact Study

Residential Development

Lot 20 Con 3, Montague, Ontario

Prepared by EFI Engineering

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## **EXECUTIVE SUMMARY**

This Traffic Impact Study (TIS) evaluates the potential traffic implications of a proposed residential development at Lot 20 Concession 3, Montague, Ontario. The development, led by Smart Homes Ottawa Inc., includes 42 Single Family Detached dwellings.

## **Key Findings:**

- Traffic Generation: The development is projected to generate approximately 39 trips during the AM peak hour and 40 trips during the PM peak hour. The majority of these trips will impact Matheson Drive and Rosedale Road, with secondary effects Roger Stevens Drive and Rosedale Road.
- Intersection Performance: The study analyzed two key intersections surrounding the development. All intersections are expected to maintain acceptable levels of service (LOS) through 2039.

#### **Conclusion:**

The proposed development at Lot 20 Concession 3 is expected to integrate smoothly into Montague's existing transportation network, with minimal impact on the surrounding road infrastructure.



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#### 1.0 INTRODUCTION

EFI Engineering was commissioned to undertake a comprehensive Traffic Impact Study (TIS) to assess the potential impacts of a proposed subdivision at Lot 20 Concession 3, Montague. The development, spearheaded by Smart Homes Ottawa Inc., aims to introduce 42 single family detached housing units with an access points Matheson Drive and Rosedale Road. This TIS examines the implications of this development on the existing traffic network, evaluates the capacity of key intersections, and provides recommendations to mitigate any adverse impacts presented by newly generated traffic.

Located directly East of the intersection of Matheson Drive and Rosedale Road, the subject site is approximately 5 km from Smith Falls, 11km from Merrickville and 15km from the boundary of Ottawa. Figure 1 and Figure 2, illustrate the location of the subject site within the broader context of the region's road network.

#### Purpose of the Study

The primary objective of this TIS is to quantify the additional traffic generated by the proposed development and determine its impact on the surrounding road network. This includes assessing the capacity and level of service (LOS) of nearby intersections, evaluating the effectiveness of existing traffic control measures, and identifying necessary infrastructure improvements or adjustments to accommodate the projected traffic volumes.

#### Scope of the Study

This study encompasses an extensive analysis of the transportation infrastructure surrounding the subject site. The study area includes two key intersections that are critical to maintaining efficient traffic flow in the Montague region:

- Matheson Drive and Rosedale Road
- Roger Stevens Drive and Rosedale Road

Each intersection was analyzed under current conditions as well as under projected future scenarios.



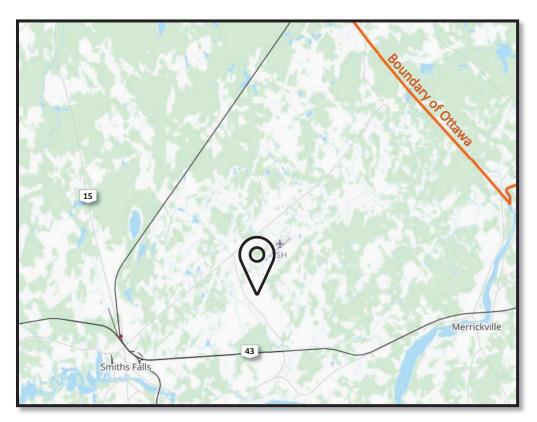


Figure 1: Subject Site Regional Location

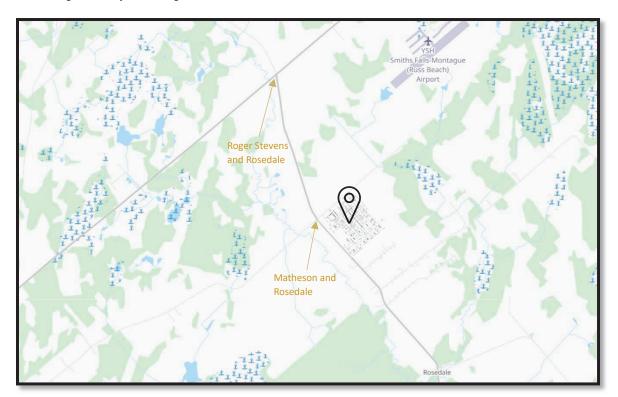


Figure 2: Subject Site and Key Intersections



#### 2.0 PROPOSED DEVELOPMENT

The proposed development at Lot 20 Concession 3 represents a significant addition to the Township of Montague. The development comprises 42 Single family detached dwelling units with space for future additions.



Figure 3. Overlay of Subdivision on Subject Site

## 2.1 Access and Circulation

Access points are located on both Matheson Drive and Rosedale Road, with room for a future access to Bower Road. The Matheson Road access is located approximately 420m from the Matheson and Rosedale Intersection while the Rosedale access is approximately 480m away.

## 2.2 Existing Conditions

The development is situated in the Southern portion of the Montague Township approximately 5km from Smith Falls, 11km form Merrickville and 15km from the boundary of Ottawa. Furthermore, access to Highway 15 and 43 can be achieved using Roger Stevens Drive and Rosedale Road respectively. Access to the aforementioned Points of Interest (POI) and Highways emphasizes the utility of the site location and the necessity for adequate operation of the intersections covered in this study. Summary of proximate intersections and roads is available in table 1 below.



Table 1: Nearby roads and intersections.

Intersection	Description
Matheson and	<ul> <li>Controlled by a Two Way Stop Control (TWSC)</li> </ul>
Rosedale	<ul> <li>Major Street (Rosedale) travels North and South with stop signs located on</li> </ul>
(Point 1)	East and Westbound approaches (Matheson)
	Matheson Drive facilitates access to the Northeast side of Smith Falls
	Rosedale Facilitates access to Highway 43 and subsequently Merrickville.
Roger Stevens	Regulated by Two Way Stop Control (TWSC)
and Rosedale	<ul> <li>Major Street (Roger Stevens) travels East and West with Stop signs located on</li> </ul>
(Point 2)	the North and Southbound approaches (Rosedale).
	Roger Stevens Drive Facilitates access to both Smith Falls and Ottawa.

#### **3.0 STUDY METHODOLOGY**

#### 3.1 Approach and Tools

This Traffic Impact Study (TIS) was conducted using a structured methodology designed to accurately assess the potential traffic impacts of the proposed Subdivision at Lot 20, Concession 3. The study utilized a combination of field data collection, predictive modeling, and analytical techniques. Key tools and methodologies employed in this study include:

 Highway Capacity Software (HCS): Version 8.3 was used to model the performance of the key intersections within the study area. HCS is based on the procedures outlined in the Highway Capacity Manual (HCM) and provides a robust framework for evaluating intersection capacity and Level of Service (LOS).





Figure 4: Nearby Roads and Intersections



• Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition: This manual was the primary reference for estimating the number of trips generated by the proposed development, ensuring that projections align with industry standards.

#### 3.2 Data Sources

The data used in this study was obtained from a variety of reliable sources to ensure accuracy and relevance:

- Traffic Counts: Manual traffic counts were conducted at the two key intersections during weekday peak AM and PM periods. These counts were taken at 15-minute intervals over a two-hour and 15-minute period, capturing the highest traffic volumes.
- Road Network Information: Details about the road network, including lane configurations, speed limits, and signage, were gathered through site visits and consultations with local authorities.

#### 3.3 Assumptions and Constraints

Several key assumptions and constraints were applied in the study to ensure that the analysis was grounded in realistic expectations:

- Traffic Growth Rate: Regional population growth trends as derived from Canadian Census data are 0.82%/year; a conservative annual traffic growth rate of 0.9%/year was applied across the study period.
- **Peak Hour Focus:** The analysis concentrated on peak hour conditions (AM and PM), which represent the worst-case scenario for traffic congestion. This approach ensures that the study captures the maximum potential impact of the development.

Table 2: Critical assumptions used in HCS Intersection Models.

	Critical Assumptions													
Category	Input	Reason												
Base Saturation Flow	1750 veh/hr	HCS suggests a base saturation flow of 1750 Passenger Cars, per Hour, Per Lane (pcphpl) for any region with a population less than 250,000.												
Analysis Duration	1hr	Used to establish the effects of the proposed development on the current peak hour traffic.												
Stored Passenger Car Length	7.6 meters	HCS default value												
Stored Heavy Vehicle Length	13.7 meters	HCS default value												



#### 4.0 TRIP GENERATION AND DISTRIBUTION ANALYSIS

#### **4.1 Detailed Trip Generation**

The projected trip generation for the proposed subdivision at Lot 20, Concession 3 was calculated using the ITE Trip Generation Manual, 11th Edition. The land use code ITE Code 210 (Single-Family Detached Housing) was applied based on the nature of the development.

These estimates reflect the expected vehicle movements generated by the development during peak traffic periods. The trip generation figures take into account the of the development, which may lead to some internal trip capture (e.g., residents patronizing on-site commercial establishments).

Table 3: Estimated Trip Generation.

Estimated Trip Generation											
Calculation	Weekday A	M Peak Hour	Weekday PM Peak Hour								
Directional Distribution	26% Entering	74% Exiting	63% Entering	37% Exiting							
Fitted Curve Equation per ITE	Ln(T)=0.91	Ln(x) + 0.12	Ln(T)=0.94Ln(x) + 0.27								
Calculated Trip Rate	0.93 Trips/E	Owelling Unit	0.95 Trips/Dwelling Unit								
Peak Hour Trips/Hour	39 Trip	s/Hour	40 Trips/h	our							
Site Trips	Enter	Exit	Enter	Exit							
·	10	29	25	15							

#### 4.2 Trip Distribution and Assignment

The trips generated by the proposed development were distributed across the surrounding road network based on existing traffic patterns, anticipated travel routes, and proximity to key destinations. The following considerations were central to the trip distribution analysis:

- **Directionality:** The distribution of trips was based on the likely directions that residents and visitors would travel to reach major thoroughfares, nearby Towns and other Points of Interest.
- Road Hierarchy: The distribution took into account the hierarchy of roads within the study
  area, with arterial street like Rosedale Road expected to carry the majority of the
  development's traffic.
- Intersection Analysis: The impact of the distributed trips was analyzed at each key intersection to determine how the additional traffic would affect overall performance.

#### **Distribution Results:**

- Rosedale Road (Southbound): 47.32% of trips
- Rosedale Road (Northbound): 46.99% of trips



These distribution percentages reflect the anticipated flow of traffic from the development, with the majority of vehicles utilizing Rosedale Road to access regional and local destinations.

#### **5.0 TRAFFIC ANALYSIS & RESULTS**

This section provides a detailed analysis of each key intersection in the study area, combining both the existing conditions and the projected impacts of the proposed development. For each intersection, we examine the current traffic volumes, control measures, and Level of Service (LOS), followed by the anticipated changes with the development in place.

#### **5.1 Matheson Drive and Rosedale Road (Point 1)**

## **Existing Conditions:**

#### • Intersection Overview:

The intersection of Matheson Drive and Rosedale Road is a Two-Way Stop-Controlled (TWSC) junction, with Rosedale Road acting as the primary street and Matheson Drive providing access to Smith Falls.

#### Traffic Control Measures:

The intersection is currently managed by two stop signs on Matheson Drive. Rosedale Road has no traffic controls at this intersection, allowing for free-flowing traffic. The existing setup is adequate for current traffic volumes.



Figure 5: Matheson Drive (East/West) and Rosedale Road (North/South)



# **Projected Impact with Development:**

# • Anticipated LOS Change:

No change from current LOS is anticipated in Point 1 in the years 2024 and 2034, and 2039 (AM). A minimal change of LOS to "B" was observed in the 2039 PM peak, all other LOS for the PM Point 1 remained the same.



Figure 6. Expected traffic generation at the Rosedale Road access.





Figure 7. Expected generated traffic at the Matheson Drive access and Point 1.

Table 4. Operational metrics from the Analysis of the Matheson Drive and Rosedale Road Intersection (Point 1).

Level of Service – Matheson Drive and Rosedale Road Intersection - Analysis Point 1											
Intersection	ν	eak AM Veekday , 2034, 2039	Peak PM Weekday 2024, 2034, 2039								
Approach	LOS	Control Delay (s)	LOS	Control Delay (s)							
Northbound (All)	A, A, A	2.6, 2.6, 2.6	A, A, A	1.6, 1.6, 1.6							
Southbound (All)	A, A, A	0.0, 0.0, 0.0	A, A, A	0.2,0.2, 0.2							
Eastbound (All)	A, A, A	9.1, 9.2, 9.2	A, A, A	9.4, 9.5, 9.5							
Westbound (All)	A, A, A	9.5, 9.6, 9.6	A, A, B	9.9, 10.0, 10.0							

# Recommended Mitigation:

No recommended changes are required as the determining LOS of the intersection has not exceeded an LOS "D".



#### Conclusion:

Point 1 is anticipated to maintain adequate functionality throughout the duration explored in this study.

## **5.2 Roger Stevens Drive and Rosedale Road (Point 2)**

## **Existing Conditions:**

#### • Intersection Overview:

Roger Stevens Drive and Rosedale Road intersect at a Two-Way Stop-Controlled (TWSC) junction with Roger Stevens offering access to both Smith Falls and Ottawa.

#### • Traffic Control Measures:

The TWSC system effectively manages traffic allowing for free flow of traffic in the East and West bound directions while mitigating the approach delay experienced by Rosedale approaches.



Figure 6: Roger Stevens Drive (East/West) and Rosedale Road (North/South)

## **Projected Impact with Development:**

#### Anticipated LOS:

The only change to LOS can be observed in the Northbound approach in the years 2034 (AM) and 2039 (AM) from LOS "A" to "B".



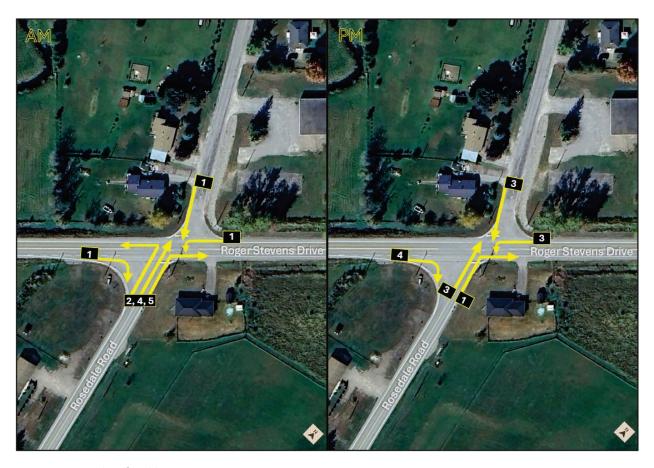


Figure 8. Expected traffic addition to Point 2.

Table 5. Operational metrics from the Analysis of the Roger Stevens Drive and Rosedale Road Intersection (Point 2).

Level of Service – Roger Stevens Drive and Rosedale Road Intersection – Analysis Point 2										
Intersection	Wee	k AM ekday 034, 2039	Peak PM Weekday 2024, 2034, 2039							
Approach	LOS	Control Delay (s)	LOS	Control Delay (s)						
Northbound (All)	A, B, B	9.9, 10.0, 10.1	B, B, B	12.1, 12.6, 12.9						
Southbound (All)	B, B, B	10.1, 10.3, 10.4	B, B, B	12.9, 13.6, 14.1						
Eastbound (All)	A, A, A	0.4, 0.3, 0.4	A, A, A	0.8, 0.7, 0.8						
Westbound (All)	A, A, A	0.7, 0.7, 0.7	A, A, A	0.9, 0.9, 1.0						

# Recommended Mitigation:

No recommended changes are required as the determining LOS of the intersection has not exceeded an LOS "D".



#### • Conclusion:

Point 2 is anticipated to maintain adequate functionality throughout the duration explored in this study.

#### **6.0 CONCLUSION AND RECOMMENDATIONS**

#### **6.1 Summary of Findings**

The Traffic Impact Study for the proposed development at Lot 20 Concession 3 has provided a thorough assessment of the potential effects on the surrounding road network. The study's key findings are as follows:

- Trip Generation: The proposed development is expected to generate a manageable increase in traffic, with 39 trips per hour during the AM peak and 40 trips per hour during the PM peak. These trips will primarily impact Rosedale, with minimal secondary effects on Matheson Drive.
- Intersection Performance: All intersections within the study area are projected to continue operating within acceptable levels of service (LOS) through 2039.

#### 6.2 Conclusion

The proposed development at Lot 20 Concession 3 is expected to have a minimal impact on the surrounding road network. Furthermore, infrastructure changes will not be required to effectively accommodate the generated traffic of Lot 20 Concession 3.

This Traffic Impact Study concludes that the proposed development can be integrated into the Montague Township transportation network with minimal disruptions ensuring that the development will contribute positively to the Rural environment.

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Mario Castillo

APPENDIX A: TRAFFIC COUNTS

Matheson Drive and Rosedale (Point 1) Traffic Counts

				Total All	23	26	28	22	15	24	21	23	13	195																																
				Total	2	2	1	က	1	1	က	2	2	17																																
		Matheson Drive	Westbound	Right	1	0	0	1	1	0	0	1	0	4																																
		Mathes	West	Thru	1	2	7	7	0	1	7	7	1	6																																
				Left	0	0	0	7	0	0	2	0	1	4																																
			Eastbound	Total	9	9	4	2	2	4	2	4	4	40																																
		Matheson Drive		Right	3	4	1	2	1	4	1	2	1	19																																
		Mathes		Thru	0	0	0	1	0	0	2	0	1	4																																
				Left	3	2	က	2	1	0	2	2	2	17																																
ΑM	Cars			Total	5	10	2	4	0	8	9	9	2	46																																
		Rosedale Road	Southbound	Southbound	Right	1	1	0	1	0	1	1	1	1	7																															
					Thru	4	6	5	က	0	7	4	Ŋ	1	38																															
					Left	0	0	0	0	0	0	_	0	0	-																															
			punoqu	punoqu	punoqu	Total	10	8	18	10	12	11	7	11	2	92																														
		Rosedale Road				punoqu	punoqu	punoqu	punoqu	punoqu	punoqu	thbound	thbound	thbound	punoqy	punoqu	punoqy	punoqu:	thbound	punoqu	punoqu	punoqu	punoqu	thbound	thbound	rthbound	rthbound	Northbound	thbound	punoqu:	punoqu	punoqu	punoqu	punoqu:	:hbound	punoqu:	punoqu	punoqu	Right	0	0	0	0	1	0	0
		Rosed	Nort	Thru	8	ဗ	12	7	9	6	ო	10	ဗ	61																																
				Left	2	5	9	3	5	2	4	1	1	29																																
		Streets	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total																																

		Total All	0	0	0	0	0	0	0	0	0	0		
		Total	0	0	0	0	0	0	0	0	0	0		
	p	Right	0	0	0	0	0	0	0	0	0	0		
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0		
	<b>×</b>	Left	0	0	0	0	0	0	0	0	0	0		
	þ	Total	0	0	0	0	0	0	0	0	0	0		
		Right	0	0	0	0	0	0	0	0	0	0		
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0		
S		Left	0	0	0	0	0	0	0	0	0	0		
Bicycles	Southbound	Total	0	0	0	0	0	0	0	0	0	0		
		Right	0	0	0	0	0	0	0	0	0	0		
	nos	Thru	0	0	0	0	0	0	0	0	0	0		
		Left	0	0	0	0	0	0	0	0	0	0		
				Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Right	0	0	0	0	0	0	0	0	0	0		
	Nort	Thru	0	0	0	0	0	0	0	0	0	0		
		Left	0	0	0	0	0	0	0	0	0	0		
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total		

				_	_			_	_					
		Total All	2	2	3	0	2	0	1	0	1	11		
		Total	0	0	0	0	0	0	0	0	0	0		
	рı	Right	0	0	0	0	0	0	0	0	0	0		
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0		
	>	Left	0	0	0	0	0	0	0	0	0	0		
		Total	0	0	0	0	1	0	1	0	0	2		
	p	Right	0	0	0	0	1	0	1	0	0	2		
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0		
s)		Left	0	0	0	0	0	0	0	0	0	0		
Light Trucks	Southbound	Total	1	1	2	0	0	0	0	0	0	4		
_		Right	0	0	0	0	0	0	0	0	0	0		
	Sout	Thru	1	1	2	0	0	0	0	0	0	4		
		Left	0	0	0	0	0	0	0	0	0	0		
				Total	1	1	1	0	1	0	0	0	1	2
	Northbound	Right	0	0	0	0	0	0	0	0	0	0		
	Nort	Thru	0	1	1	0	1	0	0	0	1	4		
		Left	1	0	0	0	0	0	0	0	0	1		
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total		

		Total All										
		To	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0
	pu	Right	0	0	0	0	0	0	0	0	0	0
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0
	þ	Right	0	0	0	0	0	0	0	0	0	0
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0
sks	3	Left	0	0	0	0	0	0	0	0	0	0
Heavy Trucks	Southbound	Total	0	0	0	0	0	0	0	0	0	0
Ī		Right	0	0	0	0	0	0	0	0	0	0
	Sout	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	Nort	Thru	0	0	0	0	0	0	0	0	0	0
		Left Thru	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total

		Total All	0	0	0	0	0	0	1	0	0	1
	Westbound	Total	0	0	0	0	0	0	0	0	0	0
	Eastbound	Total	0	0	0	0	0	0	0	0	0	0
<b>Pedestrians</b>	Southbound	Total	0	0	0	0	0	0	1	0	0	1
	Northbound	Total	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15-8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15-9:30	9:30 - 9:45	Total

				Total All	27	42	22	46	41	31	23	33	36	301												
				Total	0	0	1	0	3	1	0	0	0	5												
		Matheson Drive	Westbound	Right	0	0	1	0	0	0	0	0	0	1												
		Mathes	West	Thru	0	0	0	0	3	1	0	0	0	4												
				Left	0	0	0	0	0	0	0	0	0	0												
				Total	10	13	4	80	7	9	10	2	6	72												
		Matheson Drive	Eastbound	Right	5	8	3	9	3	2	9	3	9	45												
		Mathes		Thru	2	1	0	0	2	1	1	2	0	6												
				Left	ဗ	4	1	2	2	0	3	0	3	18												
PM	Cars	Rosedale Road	Southbound	Total	8	16	10	17	19	15	7	17	14	123												
				Right	3	1	2	_	2	2	0	4	3	21												
		Rosec		Thru	4	15	8	14	17	6	7	13	6	96												
					Left	1	0	0	7	0	1	0	0	2	9											
		_		Total	6	13	7	21	12	6	9	11	13	101												
		Rosedale Road	Northbound	punoqu	punoqu	punoqu	punoqu	punoqu	thbound	thbound	punoqu;	punoqu:	punoqu:	thbound	thbound	Right	0	1	1	0	1	0	0	0	1	4
		Rosed		Thru	9	8	5	15	11	4	2	9	8	65												
				Left	က	4	1	9	0	2	4	2	4	32												
		Streets	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total												

		Total All	3	0	0	0	0	0	1	0	0	4
		Total	0	0	0	0	0	0	0	0	0	0
	ρι	Right	0	0	0	0	0	0	0	0	0	0
	Nestbound	Thru	0	0	0	0	0	0	0	0	0	0
	1	Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	1	0	0	1
	p	Right	0	0	0	0	0	0	0	0	0	0
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0
	<b>.</b>	Left	0	0	0	0	0	0	1	0	0	1
Bicycles		Total	0	0	0	0	0	0	0	0	0	0
	Southbound	Right	0	0	0	0	0	0	0	0	0	0
	Sout	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Right Total Left	က	0	0	0	0	0	0	0	0	ဗ
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	Nort	Left Thru	ဗ	0	0	0	0	0	0	0	0	3
		Left	0	0	0	0	0	0	0	0	0	0
	<b>Direction</b>	Start Time	3:45 - 4:00	1:00 - 4:15	1:15 - 4:30	1:30 - 4:45	1:45 - 5:00	::00 - 5:15	:15 - 5:30	:30 - 5:45	:45 - 6:00	<b>Total</b>

		Total All	3	2	4	3	3	0	1	1	0	17
		Total	0	0	0	0	0	0	0	0	0	0
	þ	Right	0	0	0	0	0	0	0	0	0	0
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0
	7	Left	0	0	0	0	0	0	0	0	0	0
		Total	2	0	1	0	1	0	1	1	0	9
	þ	Right	2	0	0	0	0	0	0	1	0	က
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0
ks		Left	0	0	1	0	1	0	1	0	0	3
Light Trucks		Total	0	0	1	2	2	0	0	0	0	2
_	Southbound	Right	0	0	0	0	1	0	0	0	0	1
	Sout	Thru	0	0	1	2	1	0	0	0	0	4
		Left	0	0	0	0	0	0	0	0	0	0
		Total	-	2	2	1	0	0	0	0	0	9
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	Nort	Thru	-	2	1	1	0	0	0	0	0	5
		Left Thru	0	0	1	0	0	0	0	0	0	1
	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

							I	Heavy Trucks	sks								
Direction		North	Northbound			Sout	Southbound		Ш	Eastbound	р		^	Westbound	ρι		
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 - 4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 - 4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 - 5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Fotal</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

		Total All	0	0	0	0	0	0	0	0	0	0
	Westbound	Total	0	0	0	0	0	0	0	0	0	0
	Eastbound	Total	0	0	0	0	0	0	0	0	0	0
Pedestrians	Southbound	Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Total	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

pg. 22

တ Total **Matheson Drive** Right Westbound က Thru က Left Total Matheson Drive Right Eastbound က Thru ဝ တ Left ~ Cars Total ^ စ  $\infty$ Rosedale Road Southbound Right က က Thru ~ က Left က က Total  $\infty$ က က Rosedale Road Right Northbound က က က Thru က က ~ Left က ∞ Start Time 8:00 - 8:15 7:30 - 7:45 8:30 - 8:45 9:00 - 9:15 7:45 - 8:00 8:15 -8:30 8:45 - 9:00 9:15 - 9:30 9:30 - 9:45 rection eets **Total** 

Roger Stevens Drive and Rosedale Road (Point 2) Traffic Counts

		Total All	0	0	1	1	0	0	0	2	1	5
		Total	0	0	0	0	0	0	0	0	0	0
	pı	Right	0	0	0	0	0	0	0	0	0	0
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	1	0	1
	pι	Right	0	0	0	0	0	0	0	0	0	0
	Eastbound	Thru	0	0	0	0	0	0	0	1	0	1
S		Left	0	0	0	0	0	0	0	0	0	0
Bicycles		Total	0	0	0	0	0	0	0	1	1	2
	Southbound	Right	0	0	0	0	0	0	0	0	0	0
	Sou	Thru	0	0	0	0	0	0	0	1	1	2
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	7	1	0	0	0	0	0	2
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	Nort	Left Thru	0	0	7	1	0	0	0	0	0	2
			0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total

								Light Trucks	(S								
<b>Direction</b>		North	Northbound			Sout	Southbound			Eastbound	р		>	Westbound	pı		
start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
7:30 - 7:45	0	2	2	4	3	2	1	9	0	6	2	11	0	7	0	7	28
7:45 - 8:00	0	1	0	-	က	0	1	4	3	6	1	13	2	10	0	12	30
3:00 - 8:15	0	0	1	1	1	2	0	3	0	2	1	3	1	5	1	7	14
3:15 -8:30	1	0	1	2	0	2	1	3	0	6	0	9	1	9	0	10	21
3:30 - 8:45	0	0	0	0	1	1	0	2	1	7	0	8	0	6	0	9	16
3:45 - 9:00	0	0	2	2	1	0	1	2	1	5	0	9	0	4	0	4	14
3:00 - 9:15	0	1	2	3	1	0	0	1	1	8	0	9	1	11	0	12	25
115 - 9:30	0	2	1	3	1	1	0	2	2	8	1	11	0	13	0	13	29
30 - 9:45	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
otal	_	9	6	16	1	œ	4	23	œ	55	5	89	5	65	_	71	178

		Fotal All										
		ř	0	0	0	0	0	0	0	-	0	_
		Total	0	0	0	0	0	0	0	0	0	0
	p	Right	0	0	0	0	0	0	0	0	0	0
	<b>Nestbound</b>	Thru	0	0	0	0	0	0	0	0	0	0
	8	Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	_	0	1
		Right .										
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0
	East	<u></u>	0	0	0	0	0	0	0	_	0	_
sks		Left	0	0	0	0	0	0	0	0	0	0
Heavy Trucks		Total	0	0	0	0	0	0	0	0	0	0
Ĭ	Southbound	Right	0	0	0	0	0	0	0	0	0	0
	Sout	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	North	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
	uc	_										
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15 -8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total

		Total All	0	0	0	0	0	0	0	0	0	0
	Westbound	Total	0	0	0	0	0	0	0	0	0	0
	Eastbound	Total	0	0	0	0	0	0	0	0	0	0
Pedestrians	Southbound	Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Total	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	7:30 - 7:45	7:45 - 8:00	8:00 - 8:15	8:15-8:30	8:30 - 8:45	8:45 - 9:00	9:00 - 9:15	9:15 - 9:30	9:30 - 9:45	Total

				Total All	57	67	81	93	86	70	99	70	42	206
				Total	31	33	34	36	42	35	29	26	23	323
		Matheson Drive	Westbound	Right	1	1	0	0	9	1	0	1	3	14
		Mathes	West	Thru	29	30	30	29	35	30	26	23	18	280
				Left	1	2	4	7	1	4	3	2	2	29
				Total	14	22	28	41	27	32	26	29	11	253
		Matheson Drive	Eastbound	Right	4	2	2	8	1	1	1	1	1	26
		Mathes	East	Thru	10	17	23	29	23	30	24	26	10	212
				Left	0	3	0	4	3	1	1	2	0	15
PM	Cars	q		Total	8	8	14	10	12	2	6	10	4	88
		Rosedale Road	Southbound	Right	0	1	3	3	1	2	1	4	1	18
		Rosec	Sout	Thru	3	9	5	2	0	0	4	9	1	31
				Left	2	1	9	2	11	0	4	0	2	39
		_		Total	4	4	2	9	2	1	2	2	4	42
		Rosedale Road	Northbound	Right	1	0	1	1	1	0	1	1	2	10
		Rosed	Nort	Left Thru	3	4	4	2	3	1	1	3	1	29
				Left	0	0	0	0	_	0	0	_	1	က
		Streets	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

		Total All	0	0	1	0	0	0	1	0	0	2
		Total	0	0	1	0	0	0	0	0	0	1
	рı	Right	0	0	0	0	0	0	0	0	0	0
	Westbound	Thru	0	0	0	0	0	0	0	0	0	0
	Λ	Left	0	0	1	0	0	0	0	0	0	1
		Total	0	0	0	0	0	0	0	0	0	0
	p	Right	0	0	0	0	0	0	0	0	0	0
	Eastbound	Thru	0	0	0	0	0	0	0	0	0	0
	Ш	Left	0	0	0	0	0	0	0	0	0	0
Bicycles		Total	0	0	0	0	0	0	0	0	0	0
	Southbound	Right	0	0	0	0	0	0	0	0	0	0
	Sout	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
		Right Total Left	0	0	0	0	0	0	1	0	0	1
	Northbound	Right	0	0	0	0	0	0	1	0	0	1
	North	Left Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

<b>Light Trucks</b>																	
Direction	North	Northbound			Southb	punoc			Eastbound	pun		Westbound	pun				
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
3:45 - 4:00	0	1	0	1	1	2	1	4	1	9	1	11	2	11	0	13	29
4:00 - 4:15	0	3	3	9	0	2	2	4	1	10	3	14	3	12	1	16	40
4:15 - 4:30	-	7	7	ဗ	0	_	0	1	2	14	1	17	1	10	0	11	32
4:30 - 4:45	0	2	1	3	1	2	1	4	1	10	3	14	1	12	1	14	35
4:45 - 5:00	0	1	1	2	-	_	0	2	2	8	1	11	2	14	2	18	33
5:00 - 5:15	0	2	0	2	0	_	7	2	7	10	3	14	0	6	1	10	28
5:15 - 5:30	0	7	0	1	2	0	7	3	3	10	3	16	က	6	1	13	33
5:30 - 5:45	0	0	0	0	_	0	0	1	0	11	0	11	1	10	0	11	23
5:45 - 6:00	0	0	2	2	0	0	0	0	0	7	0	7	က	9	0	6	18
Total	_	11	8	20	9	6	9	21	11	89	15	115	16	93	9	115	271

		Total All	0	2	0	0	3	1	0	1	0	6
		Total	0	0	0	0	2	1	0	0	0	2
	pι	Right	0	0	0	0	1	0	0	0	0	1
	Westbound	Thru	0	0	0	0	1	1	0	0	0	ဗ
		Left	0	0	0	0	0	0	0	0	0	1
		Total	0	1	0	0	1	0	0	1	0	က
	ρι	Right	0	0	0	0	0	0	0	0	0	0
	Eastbound	Thru	0	1	0	0	1	0	0	1	0	ဗ
cks		Left	0	0	0	0	0	0	0	0	0	0
Heavy Trucks		Total	0	1	0	0	0	0	0	0	0	1
_	Southbound	Right	0	0	0	0	0	0	0	0	0	0
	Sou	Thru	0	1	0	0	0	0	0	0	0	1
		Left	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Right	0	0	0	0	0	0	0	0	0	0
	Nort	Thru	0	0	0	0	0	0	0	0	0	0
		Left	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

		Total All	0	0	0	0	0	0	0	0	0	0
	Westbound	Total	0	0	0	0	0	0	0	0	0	0
	Eastbound	Total	0	0	0	0	0	0	0	0	0	0
Pedestrians	Southbound	Total	0	0	0	0	0	0	0	0	0	0
	Northbound	Total	0	0	0	0	0	0	0	0	0	0
	Direction	Start Time	3:45 - 4:00	4:00 - 4:15	4:15 - 4:30	4:30 - 4:45	4:45 - 5:00	5:00 - 5:15	5:15 - 5:30	5:30 - 5:45	5:45 - 6:00	Total

# **APPENDIX B: OPERATIONAL ANALYSIS WORK SHEETS**

Matheson Drive and Rosedale Road (Point 1)
Existing 2024 Weekday AM Peak Hour Analysis

Existing 2024 Weekday	AM P	eak F	lour	Analy	sis'											
		F	HCS T	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Land	on Kyle					Inters	ection			Math	eson and	d Rosedi	ale		
Agency/Co.	_	ngineerir	ng				Juriso	liction			Mont	tague				
Date Performed	8/19/	_					East/	West Stre	eet		_	eson Dri	ive			_
Analysis Year	2024						North	/South S	Street		Rose	dale Roa	d			
Time Analyzed	7:30a	m - 8:30	am				Peak	Hour Fac	ctor		0.85					
Intersection Orientation	North	n-South					Analy	sis Time	Period I	(hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	on		-			3						
Lanes																
				1447176	ดก	4 4 4 Y	110	14 474 47								
Vehicle Volumes and Ad	justme	nts			Major	Street No	th-South									
Approach			ound			-	bound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Priority	_	10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		10	1	10		1	5	2		17	32	0		0	25	3
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)			0				0									
Right Turn Channelized																
Median Type   Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	$\top$	7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		Г
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		$\Box$
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	T		25				9			20				0		г
Capacity, c (veh/h)			929				836			1592				1586		
v/c Ratio			0.03				0.01			0.01				0.00		
95% Queue Length, Q <sub>ss</sub> (veh)			0.1				0.0			0.0				0.0		
95% Queue Length, Q <sub>95</sub> (m)			0.76				0.00									
Control Delay (s/veh)			9.0				9.4			7.3	0.1	0.1		7.3	0.0	0.
Level of Service (LOS)			Α				Α			Α	A	А		A	Α	Д
Approach Delay (s/veh)		9	0.0			9	.4			2	.6			0	.0	
Approach LOS			Д				Д				Д				Д	

Existing 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS T	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Lando	on Kyle					Inters	ection		100	Math	eson and	d Roseda	ale		
Agency/Co.	EFI Er	ngineerir	ng				Juriso	liction			Mont	ague				
Date Performed	8/19/	2024	-				East/	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2024						North	/South !	Street	í	Rose	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	ion											
Lanes	-															
				1447176	A h	ቀ ተቀጥ Street No	† † ſ	\$ \$ \$ F.C								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			Westi	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		11	3	20		0	3	1		12	43	3		2	58	2
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)			0			19	0									
Right Turn Channelized																
Median Type   Storage				Undi	vided								22			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	of Se	ervice			-0	4.0				5 11		li k			
Flow Rate, v (veh/h)			43				5			15				3		
Capacity, c (veh/h)			889				778			1537				1560		
v/c Ratio			0.05				0.01			0.01				0.00		
95% Queue Length, Qas (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q <sub>25</sub> (m)			1.52				0.00									
Control Delay (s/veh)			9.3				9.7			7.4	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)	3		Α			9	Α			Α	Α	Α		A	Α	А
Approach Delay (s/veh)	1	9	.3			9	.7			1	.6			0	.2	
Approach LOS			Д			-	A			9	А				Д	

Existing + Generated 2024 Weekday AM Peak Hour Traffic Analysis

		ŀ	HCS 1	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Land	on Kyle					Inters	ection			Math	eson and	d Roseda	ale		
Agency/Co.	EFI Er	ngineerir	ng				Juriso	fiction			Mont	ague				
Date Performed	_	2024					East/	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2024						North	/South S	Street		Rose	dale Roa	d			
Time Analyzed	7:30a	m - 8:30	am				Peak	Hour Fac	tor		0.85					
Intersection Orientation	North	h-South					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	ion		177									
Lanes																
				1447176		† † † Y	111	*								
Vehicle Volumes and Ad	justme	nts														
Approach		East	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)	_	10	2	11		1	7	3		22	42	0		0	28	3
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	_		0			[0]	0					- 4				
Right Turn Channelized																
Median Type   Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)	1	7.10	6.50	6.20		7.10	6.50	6.20		4.10			9	4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2			Ĺ.	2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	l of S	ervice	6												
Flow Rate, v (veh/h)			27				13			26				0		
Capacity, c (veh/h)			898				810			1587				1570		
v/c Ratio			0.03				0.02			0.02				0.00		
95% Queue Length, Q <sub>95</sub> (veh)			0.1				0.0	9		0.0				0.0		
95% Queue Length, Q <sub>25</sub> (m)			0.76				0.00						î			
Control Delay (s/veh)			9.1				9.5			7.3	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)			A				Α			Α	Α	Α		Α	A	Д
Approach Delay (s/veh)		9	.1			9	.5			2	.6		1.5	0	.0	
Approach LOS			A			5)	Д			0	Д	1.1	T		A	

Existing + Generated 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS 1	آwo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information		_					Site	Inforr	natio	n					_	_
Analyst	Lando	on Kyle					Inters	ection			Math	eson and	d Roseda	ale		
Agency/Co.	EFI Er	gineerir	19				Juriso	liction			Mont	tague				
Date Performed	8/19/						East/	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2024						North	/South	Street	1	Rose	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	-South	1				Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	on											
Lanes																
				4 4 7 1 4 7		† T † Y Street No		\$ \$ \$ \$ C								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		11	4	24		0	4	1		13	48	3		2	68	7
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)			0	- 8			0									
Right Turn Channelized																
Median Type   Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1		-		4.1		
Critical Headway (sec)		7.10	6.50	6.20	9	7.10	6.50	6.20		4.10	9			4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	of S	ervice													
Flow Rate, v (veh/h)			49				6			16				3		
Capacity, c (veh/h)			868		1		743			1513				1552		
v/c Ratio			0.06				0.01			0.01		1		0.00		
95% Queue Length, Q <sub>25</sub> (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q <sub>as</sub> (m)			1.52				0.00									
Control Delay (s/veh)			9.4				9.9			7.4	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)		9	.4	Ī		9	.9			1	.6		1	0	.2	
	_															

# Projected 2034 Weekday AM Peak Hour Traffic Analysis

		ŀ	HCS 1	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	1						
Analyst	Lando	on Kyle					Inters	ection			Math	eson and	d Roseda	ale		
Agency/Co.	EFI En	gineerir	ng				Jurisd	liction			Mont	ague				
Date Performed	8/19/	2024					East/	West Stre	eet		Math	eson Dri	ive			
Analysis Year	2034						North	/South S	Street	j	Rose	dale Roa	d			
Time Analyzed	7:30a	m - 8:30	am				Peak	Hour Fac	tor		0.85					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	on					- 5						
Lanes																
				1447176		† † † Y Street Nor		4 + 7								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		11	2	12		1	7	3		24	45	0		0	30	3
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	-		0			- (	0									
Right Turn Channelized	+			11-d	vided											
Median Type   Storage		192		Unai	videa											
Critical and Follow-up H	eadwa	ys											_			
Base Critical Headway (sec)	-	7.1	6.5	6.2		7.1	6.5	6.2		4.1			_	4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	of Se					- 12			20						
Flow Rate, v (veh/h)			29				13			28				0		
Capacity, c (veh/h)			889				800			1584				1566		
v/c Ratio 95% Queue Length, Q <sub>95</sub> (veh)			0.03				0.02			0.02				0.00	-	
95% Queue Length, Q <sub>85</sub> (veh) 95% Queue Length, Q <sub>95</sub> (m)			0.76		-		0.00			0.1		0		0.0		
5376 Queue Length, Cas (m)			9.2				9.6			7.3	0.1	0.1		7.3	0.0	0.0
Control Dalay (e/yah)			216				3.0			1,13	W. I.	W. I.		110	U.U	0.0
Control Delay (s/veh)			Δ				Δ			Δ	Δ	Δ		Δ	Δ	Δ
Control Delay (s/veh) Level of Service (LOS) Approach Delay (s/veh)			A				A			Α 2	A	A		A	Α.0	A

# Projected 2034 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS T	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Lando	on Kyle					Inters	ection			Math	eson an	d Roseda	ale		
Agency/Co.	EFI En	gineerir	ng				Juriso	fiction			Mont	ague				
Date Performed	8/19/	2024					East/	West Str	eet		Math	eson Dri	ive			
Analysis Year	2034	3					North	/South	Street		Rose	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	ctor		0.80					
Intersection Orientation	North	-South					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	on											
Lanes																
				1447176		† † † Y r Street Nor		<b>♦</b>								
Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	bound	_		North	bound			South	bound	_
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		12	4	26		0	4	1		14	52	3		2	73	8
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	_		0				0									
Right Turn Channelized	-															
Median Type   Storage				Undi	vided											_
Critical and Follow-up H	eadwa	ys						SS 11								
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10		1		4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	of Se	ervice				6 1									
Flow Rate, v (veh/h)			53				6			18				3		
Capacity, c (veh/h)			857				729			1504				1545		
v/c Ratio			0.06				0.01			0.01				0.00		
95% Queue Length, Q <sub>95</sub> (veh)			0.2	-			0.0			0.0				0.0		
95% Queue Length, Q <sub>ss</sub> (m)			1.52				0.00									
Control Delay (s/veh)			9.5				10.0			7.4	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)			A		4		A			A	A	A		A	A	Α
Approach Delay (s/veh)		9	1.5		1	10	0.0			1	.6		1	0	.2	
Approach LOS		1	A		1	7.4	A			1	A				A	

# Projected 2039 Weekday AM Peak Hour Traffic Analysis

		ŀ	HCS T	lwo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Lando	on Kyle					Inters	ection			Math	eson and	d Roseda	ale		
Agency/Co.	-	ngineerir	ng				Juriso	fiction			Mont	ague				
Date Performed	-	2024					East/	West Stre	eet			eson Dri	ve			
Analysis Year	2039	G.					North	/South !	Street		Rosec	dale Roa	d			
Time Analyzed	7:30a	m - 8:30	am				Peak	Hour Fac	ctor		0.85					
Intersection Orientation	North	n-South	-				Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathe	ion											
Lanes																
				1447176	A h	† † † Y r Street Nor	1 1 C	4 4 4 4								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR			Ĺ	LTR				LTR				LTR	
Volume (veh/h)		11	2	12		1	8	3		24	47	0		0	32	3
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)			0				0									
Right Turn Channelized																
Median Type   Storage				Undi	vided								27			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10		1		4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)			29				14			28				0		
Capacity, c (veh/h)			883			-	789			1581				1563		
v/c Ratio			0.03				0.02			0.02				0.00		
95% Queue Length, Q <sub>95</sub> (veh)			0.1	-			0.1			0.1		-		0.0	, ,	
95% Queue Length, Q <sub>25</sub> (m)			0.76				0.76									
Control Delay (s/veh)			9.2				9.6			7.3	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)	1		A				A			A	A	A		A	A	Α
Approach Delay (s/veh)		9	1.2		1	9	.6			2	.6			0	.0	
Approach LOS		)	A		î	79	A			1)	A			,	A	

# Projected 2039 Weekday PM Peak Hour Traffic Analysis

		4	HCS 1	wo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Lando	on Kyle					Inters	ection			Math	eson and	d Roseda	ale		
Agency/Co.	EFI Er	ngineerir	ng				Juriso	fiction			Mont	ague				
Date Performed	8/19/	2024					East/	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2039					10	North	/South !	Street		Rose	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	n-South				- 0	Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	ion											
Lanes																
				7447176	n n	† † † Y	th South	14471								
Vehicle Volumes and Ad	justme	nts														
Approach		Easth	ound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	Т	R
Priority		10	11	12		7	8	9	10	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		13	4	27		0	4	1		15	54	3		2	76	8
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)			0			0	0									
Right Turn Channelized																
Median Type   Storage				Undi	vided								-717			
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)	1	7.10	6.50	6.20		7.10	6.50	6.20		4.10			9	4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2			į.	2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
Delay, Queue Length, an	d Leve	l of S	ervice	0												
Flow Rate, v (veh/h)			55				6			19				3		
Capacity, c (veh/h)			849				721			1499				1542		
v/c Ratio			0.06				0.01			0.01				0.00		
95% Queue Length, Q <sub>95</sub> (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q <sub>ss</sub> (m)			1.52				0.00						î			
Control Delay (s/veh)			9.5				10.0			7.4	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)			Α				В			Α	Α	А		Α	A	Д
Approach Delay (s/veh)		9	.5			10	0.0			1	.6		10	0	.2	
Approach LOS			A			0	В				A				A	

# Roger Stevens Drive and Rosedale Road (Point 2) Existing 2024 Weekday AM Peak Hour Analysis

		ŀ	ICS T	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						_
Analyst	Land	on Kyle					Inters	ection			Roge	r Stevens	s and Ro	sedale		
Agency/Co.	_	ngineerir	ıq				Juriso	fiction			-	tague				
Date Performed	_	2024					East/	West Stre	eet			r Stevens	5			_
Analysis Year	2024						North	/South	Street		Rose	dale Roa	d			
Time Analyzed	8:15a	m - 9:15	am				Peak	Hour Fac	ctor		0.93					
Intersection Orientation	East-	West					Analy	sis Time	Period	(hrs)	1.00					
Project Description	1222	Matheso	on Drive	g												
Lanes																
				11447176	Maj	† † † Y or Street. Ea	at-West	** * 4 0								
Vehicle Volumes and Adj	justme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	_
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	T	F
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	_1	0
Configuration	_	LT		R			LTR				LTR				LTR	_
Volume (veh/h)	_	5	84	14		7	83	3		6	10	12		15	16	1
Percent Heavy Vehicles (%)	-	0				0				0	0	0		0	0	(
Proportion Time Blocked	-															
Percent Grade (%)										- 8	0				0	
Right Turn Channelized	1	١	lo													
Median Type   Storage				Undi	vided											_
Critical and Follow-up H	eadwa	ys				7.5	or :		2 0		555 155	207	66			0
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.2
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.3
Delay, Queue Length, an	d Leve	l of Se	ervice	į.												
Flow Rate, v (veh/h)		5				8					30				49	
Capacity, c (veh/h)		1515				1499					781				761	
v/c Ratio		0.00				0.01					0.04	9			0.06	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0					0.1				0.2	
95% Queue Length, Q <sub>95</sub> (m)		0.00									0.76				1.52	
Control Delay (s/veh)		7.4	0.0			7.4	0.0	0.0			9.8				10.1	
Level of Service (LOS)		A	A			Α	A	A			A				В	
Approach Delay (s/veh)		0	4			0	.6			9	.8			10	0.1	
Approach LOS		-	Α				4			0	A:				В	

Existing 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS T	ſwo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information	_						Site	Inform	natio	n	_			_		
Analyst	Lando	on Kyle					The state of	ection		1866	Roge	r Stevens	s and Ro	sedale		
Agency/Co.	_	ngineerir	ng					liction			Mont					
Date Performed	8/19/	_	· ·				East/\	West Stre	eet			r Stevens	s			
Analysis Year	2024						North	/South !	Street		-	dale Roa				
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	ctor		0.91					
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathe	son											
Lanes																
Valida Valorra and Ad				シュー・	Maj	† • Y I or Street Ea	st-West	4 4 4 6								
Vehicle Volumes and Ad	justme	22322			_											
Approach		Eastb	ound	-			bound				bound	-	-	South	bound	-
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority  Number of Lanes	10	0	1	3	4U 0	0	5	6		7	8	9		10	11	12
Configuration	-	LT	-1	R	0	0	LTR	U		U	LTR	0		U	LTR	U
Volume (veh/h)	+	16	134	24		18	169	11		2	22	6		25	18	10
Percent Heavy Vehicles (%)	+	2	154	24		1	103	- "		0	0	0		0	7	0
Proportion Time Blocked		-				- 1				-	-	-		9		-
Percent Grade (%)	+			_						_	0			_	0	_
Right Turn Channelized		٨	lo													
Median Type   Storage			20120	Undi	ivided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	T	4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.11				7.10	6.50	6.20		7.10	6.57	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.21				3.50	4.00	3.30		3.50	4.06	3.30
Delay, Queue Length, an	d Leve	l of Se	ervice													
Flow Rate, v (veh/h)	T	18				20					33				58	
Capacity, c (veh/h)		1375				1409					550				530	
v/c Ratio		0.01				0.01					0.06				0.11	
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0					0.2			-	0.4	
95% Queue Length, Q <sub>35</sub> (m)		0.00									1.52				3.11	
		7.7	0.1			7.6	0.1	0.1			12.0			1	12.6	
Control Delay (s/veh)			91.4													-
Level of Service (LOS)		A	A			А	Α	A			В			,	В	
		Α					A .8	A		12	B 2.0		9	12	B 2.6	

Existing + Generated 2024 Weekday AM Peak Hour Traffic Analysis

General Information							Site	Inform	natio							
	T	- 21					Section 1		natioi	W		-	- 15			
Analyst	_	on Kyle	877					ection		_	-	r Stevens	s and Ro	sedale		
Agency/Co.	-	gineerir	19					liction	-	-	Mont	-				
Date Performed	8/19/	2024					10000	West Stre	2001			r Stevens				_
Analysis Year	2024		97.0					/South				dale Roa	d			
Time Analyzed		m - 9:15	am					Hour Fac			0.93					
Intersection Orientation	East-\	0.000					Analy	sis Time	Period (	hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	ion					_						
Vehicle Volumes and Adj	iustmo	nte		カンスキャイマン	111	† † † † † †	111	0 4 + 4 + 4 C C								
	ustme															
Approach		-	ound				bound				bound	_		_	bound	
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
		1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority	10	_		-			- 1			-	-	-				-
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	-
Number of Lanes Configuration	-	0 LT	1	R	0		LTR				LTR				LTR	0
Number of Lanes Configuration Volume (veh/h)	-	0 LT 5		- 1	0	8	. 10	3		8	LTR 14	17		15	LTR 17	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%)	-	0 LT	1	R	0		LTR				LTR				LTR	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	-	0 LT 5	1	R	0	8	LTR			8	14 0	17		15	17 0	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	-	0 LT 5 0	84	R	0	8	LTR			8	LTR 14	17		15	LTR 17	0 15 0
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	-	0 LT 5 0	1	R 15		8	LTR			8	14 0	17		15	17 0	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage	0	0 LT 5 0	84	R 15	0 vided	8	LTR			8	14 0	17		15	17 0	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	0	0 LT 5 0	84	R 15		8	LTR			8	14 0	17		15	17 0	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage	0	0 LT 5 0	84	R 15		8	LTR			8	14 0	17 0		15	17 0	0 15 0
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	0	0 LT 5 0	84	R 15		4.1 4.10	LTR			8 0	LTR 14 0	17 0		15 0	LTR 17 0	0 15 0 6.2
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up Ho	0	0 LT 5 0	84	R 15		8 0	LTR			7.1	LTR 14 0	17 0		7.1	LTR 17 0	0 15 0 6.2
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	0	0 LT 5 0 <b>ys</b> 4.1 4.10	84	R 15		4.1 4.10	LTR			7.1 7.10	LTR 14 0 0 6.5 6.50	17 0		7.1 7.10	LTR 17 0 0 6.5 6.50	15
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	eadwa	0 LT 5 0 <b>ys</b> 4.1 4.10 2.2 2.20	1 84 No	R 15 Undi		4.1 4.10 2.2	LTR			7.1 7.10 3.5	LTR 14 0 0 0 6.5 6.50 4.0	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 6.5 6.50 4.0	0 15 0 6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	eadwa	0 LT 5 0 <b>ys</b> 4.1 4.10 2.2 2.20	1 84 No	R 15 Undi		4.1 4.10 2.2	LTR			7.1 7.10 3.5	LTR 14 0 0 0 6.5 6.50 4.0	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 6.5 6.50 4.0	0 15 0 6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up Homeonic Storage Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an	eadwa	0 LT 5 0 N ys 4.1 4.10 2.2 2.20	1 84 No	R 15 Undi		4.1 4.10 2.2 2.20	LTR			7.1 7.10 3.5	LTR 14 0 0 6.5 6.50 4.0 4.00	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 0 6.5 6.50 4.0 4.00	0 15 0 6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage  Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h)	eadwa	0 LT 5 0 <b>ys</b> 4.1 4.10 2.2 2.20	1 84 No	R 15 Undi		4.1 4.10 2.2 2.20	LTR			7.1 7.10 3.5	LTR 14 0 0 6.5 6.50 4.0 4.00	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 0 6.5 6.50 4.0 4.00	0 15 0 6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)	eadwa	0 LT 5 0 ys 4.1 4.10 2.2 2.20 I of Sc	1 84 No	R 15 Undi		4.1 4.10 2.2 2.20	LTR			7.1 7.10 3.5	LTR 14 0 0 6.5 6.50 4.00 4.00	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 0 6.5 6.50 4.0 4.00 51 751	6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Pollow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio	eadwa	0 LT 5 0 9 4.1 4.10 2.2 2.20 1 of Se 5 1515 0.00	1 84 No	R 15 Undi		8 0 4.1 4.10 2.2 2.20 9 1497 0.01	LTR			7.1 7.10 3.5	LTR 14 0 0 6.5 6.50 4.00 4.00 42 780 0.05	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 0 6.5 6.50 4.00 4.00 51 751 0.07	0 15 0 6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up Home Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qas (veh)	eadwa	0 LT 5 0 4.1 4.10 2.2 2.20 I of Se 5 1515 0.00	1 84 No	R 15 Undi		8 0 4.1 4.10 2.2 2.20 9 1497 0.01	LTR			7.1 7.10 3.5	LTR 14 0 0 6.5 6.50 4.0 4.00 42 780 0.05 0.2	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 6.5 6.50 4.0 4.00 51 751 0.07	6.2 6.2 3.3
Number of Lanes Configuration Volume (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type   Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec)  Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Qas (veh) 95% Queue Length, Qas (m)	eadwa	0 LT 5 0  4.1 4.10 2.2 2.20 1 of Sc 5 1515 0.00 0.00	1 84 No	R 15 Undi		8 0 4.1 4.10 2.2 2.20 9 1497 0.01	LTR 83	3		7.1 7.10 3.5	6.5 6.50 4.0 4.00 4.00 0.05 0.2	6.2 6.2 6.20 3.3		7.1 7.10 3.5	LTR 17 0 0 6.5 6.50 4.0 4.00 51 751 0.07 0.2	6.3 6.2 3.3

Existing + Generated 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS 1	wo-	Way	Stop	-Cor	itrol	Repo	ort									
General Information							Site	Inform	natio	n									
Analyst	Land	on Kyle					Inters	ection			Roger Stevens and Rosedale								
Agency/Co.	EFI Er	ngineerir	ng				Jurisd	fiction			Montague								
Date Performed	8/19/					East/West Street						Roger Stevens							
Analysis Year	2024	58				North/South Street						Rosedale Road							
Time Analyzed	4:00p	m - 5:00	pm			Peak Hour Factor													
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	1.00								
Project Description	23-72	213 Rose	dale and	Mathe	Constitution ( Constitution of Constitution ( Const														
Lanes																			
				コントサイナマー	h M	† † † Y	at-West	4 4 6 6 0											
Vehicle Volumes and Adj	justme	nts																	
Approach		Eastbound				Westbound				North	bound		Southbound						
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R			
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12			
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0			
Configuration		LT		R		<u></u>	LTR				LTR				LTR				
Volume (veh/h)		16	134	28		21	169	11		2	26	7		25	21	10			
Percent Heavy Vehicles (%)		2				1				0	0	0		0	7	0			
Proportion Time Blocked																			
Percent Grade (%)										- 0	0		0						
Right Turn Channelized	1	١	lo																
Median Type   Storage				Undi	vided														
Critical and Follow-up H	eadwa	ys																	
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2			
Critical Headway (sec)		4.12				4.11				7.10	6.50	6.20		7.10	6.57	6.2			
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3			
Follow-Up Headway (sec)		2.22				2.21				3.50	4.00	3.30		3.50	4.06	3.3			
Delay, Queue Length, an	d Leve	l of S	ervice																
Flow Rate, v (veh/h)		18				23					38				62				
Capacity, c (veh/h)		1375				1404					543				516				
v/c Ratio		0.01				0.02					0.07	19			0.12				
95% Queue Length, Q <sub>25</sub> (veh)		0.0				0.1					0.2				0.4				
95% Queue Length, Q <sub>ss</sub> (m)		0.00									1.52				3.11				
Control Delay (s/veh)		7.7	0.1			7.6	0.1	0.1			12.1				12.9				
Level of Service (LOS)		A	A			A	A	A			В				В				
Approach Delay (s/veh)		0	1.8		0.9					1.	2.1		12.9						
Approach LOS			A				A				В		В						

# Projected 2034 Weekday AM Peak Hour Traffic Analysis

		H	ICS	Iwo-	Way	Stop	-Cor	ntrol	Repo	ort							
General Information							Site	Inform	natio	n						_	
Analyst	Lando	on Kyle					Inters	ection			Roger Stevens and Rosedale						
Agency/Co.	-	gineerin	q				Jurisd	fiction		Montague							
Date Performed	8/19/		-				East/	West Stre	eet		Roger Stevens Drive						
Analysis Year	2034						North	/South	Street		_	dale Roa					
Time Analyzed	8:15a	m - 9:15	am				Peak	Hour Fac	ctor	0.93							
Intersection Orientation	East-	West				- 5	Analy	sis Time	Period (	hrs)	1.00						
Project Description	23-72	13 Rose	dale and	Mathe	eson												
Lanes																	
				コントサイナマト		† †Y I or Street Ea		4 + 10									
Vehicle Volumes and Adj	ustme	nts															
Approach		Eastb	ound			West	oound			North	thbound		Southbound				
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0	a E	0	1	0	
Configuration		LT		R			LTR				LTR				LTR		
Volume (veh/h)		5	92	16		9	91	3		9	15	18		16	18	16	
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0	
Proportion Time Blocked																	
Percent Grade (%)											0		0				
Right Turn Channelized		N	lo														
Median Type   Storage				Undi	vided												
Critical and Follow-up H	eadwa	ys															
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2	
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.10	6.50	6.20	
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3	
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30	
Delay, Queue Length, an	d Leve	of Se	rvice		, .								36			y,	
Flow Rate, v (veh/h)		5				10					45				54		
Capacity, c (veh/h)		1504				1485					760				732		
v/c Ratio		0.00				0.01					0.06				0.07		
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0	0	-			0.2				0.2		
95% Queue Length, Q <sub>25</sub> (m)		0.00									1,52				1.52		
Control Delay (s/veh)		7.4	0.0			7.4	0.1	0.1			10.0				10.3		
Level of Service (LOS)		A	A			A	A	A			В				В		
Level of Service (LOS)													10.3				
Approach Delay (s/veh)		0	3			0	.7			10	0.0	- 1	-	10	0.3		

# Projected 2034 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS T	آwo-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information							Site	Inform	natio	n	_			_				
Analyst	Lando	on Kyle					Inters	ection			Roger Stevens and Rosedale							
Agency/Co.	EFI Er	ngineerir	ng				Jurisdiction					Montague						
Date Performed	8/19/	2024					East/\	West Str	eet		Roger Stevens							
Analysis Year	2034						North	/South	Street		Rosec	dale Roa	d					
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	ctor		0.91							
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	1.00							
Project Description	23-72	213 Rose	dale and	Mathes	son													
Lanes																		
				11447176	n a	† † Street fa		4 4 6 0										
Vehicle Volumes and Ad	ustme	nts																
Approach		Eastb	ound			Westbound				North	bound			South	bound			
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	T	R		
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12		
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0		
Configuration		LT		R			LTR				LTR				LTR			
Volume (veh/h)		17	147	30		23	185	12		2	28	8		27	23	11		
Percent Heavy Vehicles (%)		2				1				0	0	0		0	7	0		
Proportion Time Blocked																		
Percent Grade (%)	1										0		0					
Right Turn Channelized		١	lo															
Median Type   Storage				Undi	ivided													
Critical and Follow-up H	eadwa	ys					100			0 0			100	e1				
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6,5	6.2		
Critical Headway (sec)		4.12				4.11				7.10	6.50	6.20		7.10	6.57	6.20		
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3		
Follow-Up Headway (sec)		2.22				2.21				3.50	4.00	3.30		3.50	4.06	3.30		
Delay, Queue Length, an	d Leve	_	ervice															
Flow Rate, v (veh/h)		19				25					42				67			
Capacity, c (veh/h)		1353				1385					518				485			
v/c Ratio		0.01				0.02					0.08				0.14			
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.1					0.3				0.5			
95% Queue Length, Q <sub>55</sub> (m)		0.00									2.29				3.89			
Control Delay (s/veh)		7.7	0.1			7.6	0.2	0.2			12.6				13.6			
Level of Service (LOS)		A	A			A	A	A			В				В	$\bot$		
Approach Delay (s/veh)		1245	.7				.9				2.6		13.6					
Approach LOS			A			11	4				В		В					

# Projected 2039 Weekday AM Peak Hour Traffic Analysis

		ŀ	ICS T	Two-	Way	Stop	-Cor	ntrol	Repo	ort									
General Information							Site	Inform	natio	n						_			
Analyst	Lande	on Kyle					Inters	ection		17.12	Roger Stevens and Rosedale								
Agency/Co.	_	ngineerir	q			Jurisdiction						Montague							
Date Performed	8/19/					East/West Street						Roger Stevens							
Analysis Year	2039						North	/South	Street			dale Roa							
Time Analyzed	8:15a	m - 9:15	am			Peak Hour Factor						0.93							
Intersection Orientation	East-	West					Analy	sis Time	Period (	hrs)	1.00								
Project Description	23-72	13 Rose	dale and	Mathe	on														
Lanes																			
				11441176	n M	† • Y or Street Ea	st-West	4440											
Vehicle Volumes and Ad	justme	nts																	
Approach		Eastb	ound			West	stbound			North	thbound		Southbound						
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	Т	R			
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12			
Number of Lanes	0	0	1	1	0	0	1.	0		0	1	0		0	1	0			
Configuration		LT		R			LTR				LTR				LTR				
Volume (veh/h)		6	96	17		9	95	3		9	15	19		17	19	17			
Percent Heavy Vehicles (%)		0				0				0	0	0		0	0	0			
Proportion Time Blocked																			
Percent Grade (%)											0		0						
Right Turn Channelized		١	lo																
Median Type   Storage				Undi	vided														
Critical and Follow-up H	eadwa	ys																	
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6,5	6.2			
Critical Headway (sec)		4.10			1	4.10				7.10	6.50	6.20		7.10	6.50	6.20			
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3			
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.50	4.00	3.30			
Delay, Queue Length, an	d Leve	l of Se	ervice	Ð															
Flow Rate, v (veh/h)		6				10					46				57				
Capacity, c (veh/h)		1499				1478					753				722				
v/c Ratio		0.00				0.01					0.06				0.08				
95% Queue Length, Q <sub>95</sub> (veh)		0.0				0.0					0.2				0.3				
95% Queue Length, Q <sub>st</sub> (m)		0.00									1.52				2.29				
Control Delay (s/veh)		7.4	0.0			7.5	0.1	0.1			10.1				10.4				
Level of Service (LOS)		A	Α			A	A	A			В				В				
Approach Delay (s/veh)		0	4		0.7					10	0.1		10.4						
Approach LOS		,	A			9	4				В		В						

# Projected 2039 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS 1	Two-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information	_	_		_			Site	Inforr	natio	n			_		_	_		
Analyst	Lando	on Kyle					Inters	ection			Rogerstevens and Rosedale							
Agency/Co.	_	gineerir	ng			Jurisdiction						Montague						
Date Performed	8/19/	2024				East/West Street						Roger Stevens						
Analysis Year	2039						North	/South	Street		Rosec	dale Roa	d					
Time Analyzed	4:00p	m - 5:00	)pm				Peak	Hour Fac	ctor		0.91							
Intersection Orientation	East-	West				- 5	Analy	sis Time	Period (	(hrs)	1.00	<u> </u>						
Project Description	23-72	13 Rose	dale and	Mathe	son													
Lanes																		
				コントサイナマン	n d Maji	† † Y or Street La	st-West	4 4 4 7										
Vehicle Volumes and Ad	justme	nts																
Approach	Eastbound					Westbound				North	bound		Southbound					
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	T	R		
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12		
Number of Lanes	0	0	1	1	0	0	1	0		0	1	0		0	1	0		
Configuration		LT		R			LTR				LTR				LTR			
Volume (veh/h)		18	153	31		24	193	13		2	32	9		29	24	11		
Percent Heavy Vehicles (%)		2				1				0	0	0		0	7	0		
Proportion Time Blocked																		
Percent Grade (%)											0		0					
Right Turn Channelized		1	Vo															
Median Type   Storage				Und	vided													
Critical and Follow-up H	eadwa	ys																
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2		
Critical Headway (sec)		4.12				4.11				7.10	6.50	6.20		7.10	6.57	6.20		
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3		
Follow-Up Headway (sec)		2.22				2.21				3.50	4.00	3.30		3.50	4.06	3.30		
Delay, Queue Length, an	d Leve	of S	ervice		× -						2							
Flow Rate, v (veh/h)		20				26					47				70			
Capacity, c (veh/h)		1342				1376					503				464			
v/c Ratio		0.01				0.02					0.09				0.15			
95% Queue Length, Q <sub>25</sub> (veh)		0.0				0.1	0	0			0.3		3		0.5			
95% Queue Length, Q <sub>ss</sub> (m)		0.00									2.29				3.89			
Control Delay (s/veh)		7.7	0.1			7.7	0.2	0.2			12.9				14.1			
Level of Service (LOS)		A	Α			A	Α	Α			В				В			
Approach Delay (s/veh)		0	0.8					1	2.9	18	14.1							
CONTRACTOR OF THE PROPERTY OF													В					