





Traffic Impact Study
Residential Development
Lot 20 Con 3, Montague, Ontario
Prepared by EFI Engineering

August 2024



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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 on 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 below, illustrate the location of the subject site within the broader context of the region's road network.

1.1 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.

1.2 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.



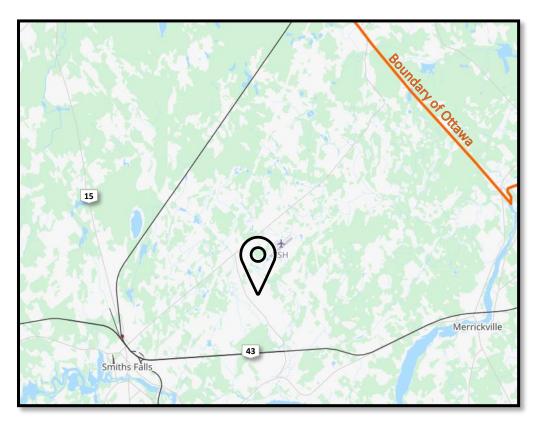


Figure 1: Subject Site Regional Location

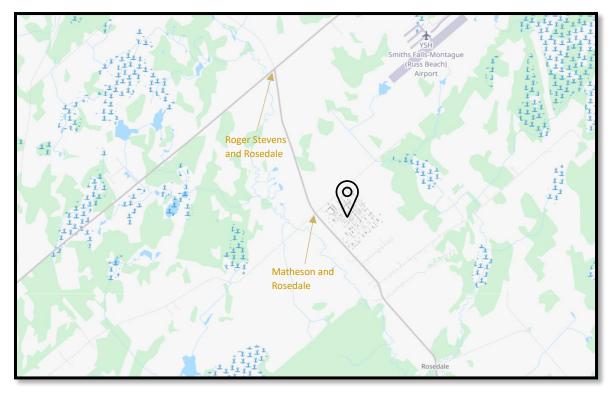


Figure 2: Subject Site and Key Intersections



2.0 ADJACENT ROADS AND INTERSECTIONS

2.1 Existing Conditions

The development is situated in the Southern portion of the Montague Township approximately 5km from Smith Falls, 11km from 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	Controlled by a Two Way Stop Control (TWSC)
Rosedale	Major Street (Rosedale) travels North and South with stop signs located on
(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.
	All approaches contain no designated turn lanes.
Roger Stevens	Regulated by Two Way Stop Control (TWSC)
and Rosedale	Major Street (Roger Stevens) travels East and West with Stop signs located on
(Point 2)	the North and Southbound approaches (Rosedale).
	Roger Stevens Drive Facilitates access to both Smith Falls and Ottawa.
	 Eastbound approach contains designated right turning lane.

Figure 3 below illustrates the location of the POI's with relation to the proposed development site.





Figure 3. Points of Interest (POI's) with respect to the proposed development site.



3.0 PROPOSED DEVELOPMENT

The proposed development is located at Lot 20 Concession 3 and represents a significant addition to the Township of Montague. The development will front both Rosedale Road South and Matheson Drive and thus include access point on both. In order to maintain smooth traffic flow, a right turn lane will be added to the Rosedale Road South access point, constructed on the development property. All parking is to be contained within the private residents with street and public parking not present or accounted for. The development comprises 42 Single family detached dwelling units with space for future additions. Currently, no future additions have been planned and thus are not included in this report.



Figure 4. Site Plan overlay of proposed subdivision.



3.1 Current Traffic Demand

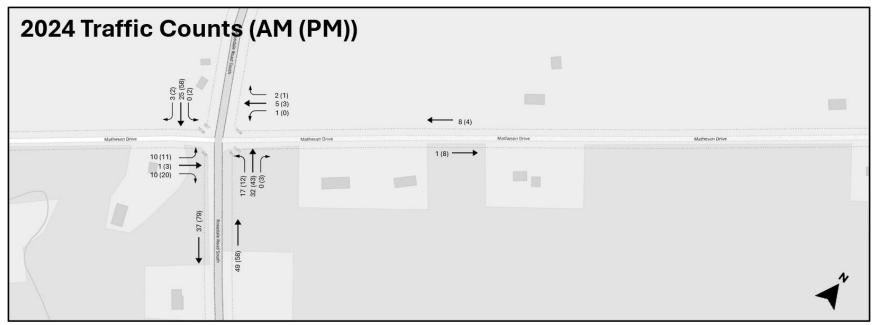


Figure 5. Current Traffic distribution and demand at point 1.



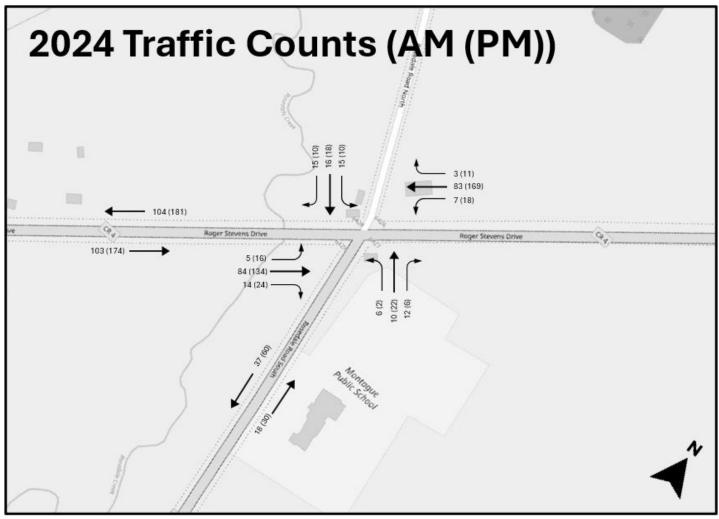


Figure 6. Current Traffic distribution and demand at point 2.



4.0 METHDOLOGY

4.1 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:

- 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.
- **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).

4.2 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.

4.3 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 (Statistics Canada) are 4.1% for the period of 2016 to 2021. Annualized, the data results in a growth of 0.82%/year; a conservative annual population growth rate of 0.9%/year was applied across the study period. When applied to a 10-year and 15-year growth period, the growth factors were determined to be 1.094 and 1.144 respectively.
- **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

4.4 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.

Table 3: Estimated Trip Generation.

	Estimated Trip Generation														
Calculation	Weekday A	M Peak Hour	Weekday PM Pe	eak 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/D	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											

4.5 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 were established using current and the likely travel
directions with respect to major thoroughfares, nearby Towns and other Points of Interest.
Instances related to erroneous events (exit and immediate re-entry, U-turns, etc.) were
exempt from this study.



- **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
- Matheson Road (Westbound): 3.68% of trips
- Matheson Road (Eastbound): 2.02% of trips

Total distribution percentages reflect the anticipated flow of traffic in direct correlation to the proposed development and account for both the AM and PM peak traffic. Therefore, the traffic observed along Roger Stevens Drive was not taken into account. A majority of vehicles were observed utilizing Rosedale Road to access regional and local destinations with the remaining vehicles traveling along Matheson drive in minimal amounts.



5.0 TRAFFIC IMPACT

This section provides a detailed analysis of the generated traffic and the impact on each key intersection, combining both existing conditions and the projected future conditions. For each intersection, current traffic volumes, control measures, and Level of Service (LOS), were examined, followed by the anticipated changes with the development in place. Furthermore, 10- and 15-year outlooks were analyzed to ensure the subdivision positively impacts the surrounding area for the foreseeable future.

5.1 Generated Traffic Maps

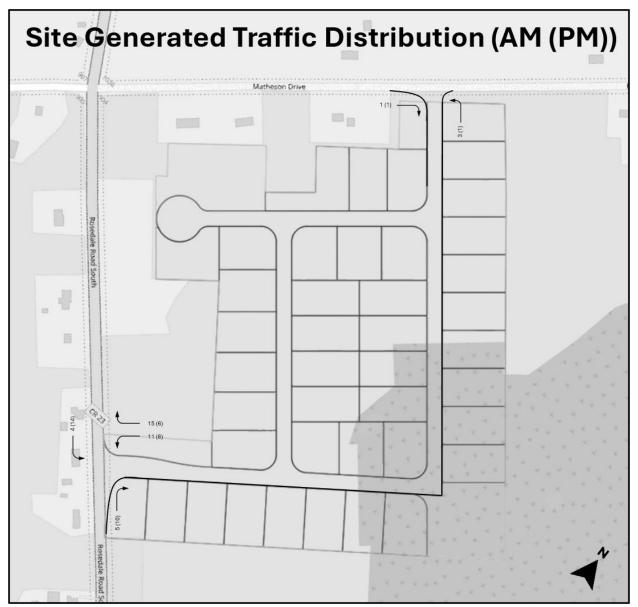


Figure 7. Peak AM and PM Site generated traffic distribution for Rosedale Road and Matheson Drive Access points.



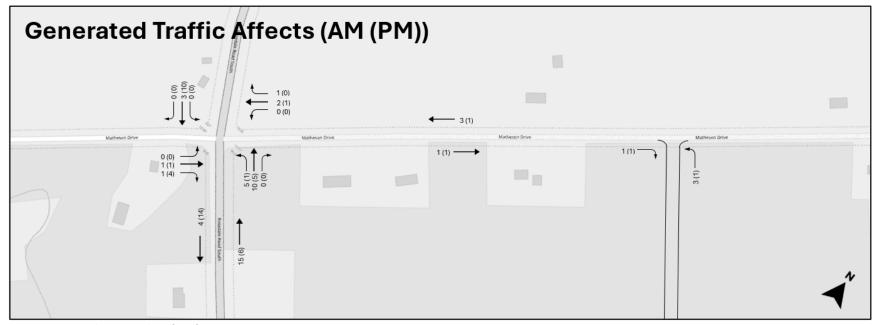


Figure 8. Expected generated traffic affects on point 1.



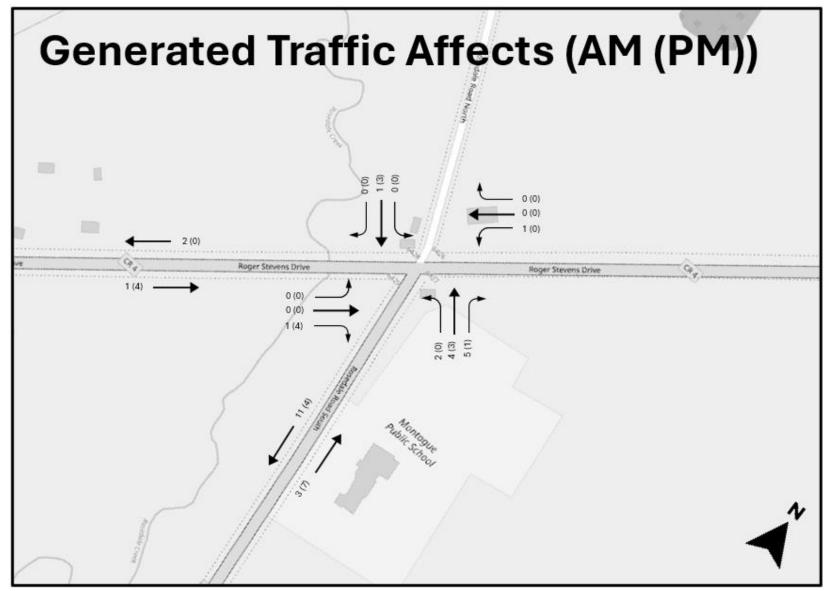


Figure 9. Expected generated traffic affects on point 2.



5.2 Total Traffic Counts (Point 1)

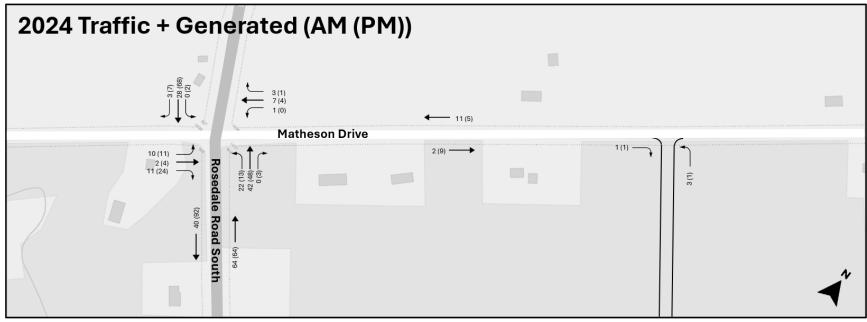


Figure 10. Expected traffic addition affects at the Matheson Drive access and Point 1.



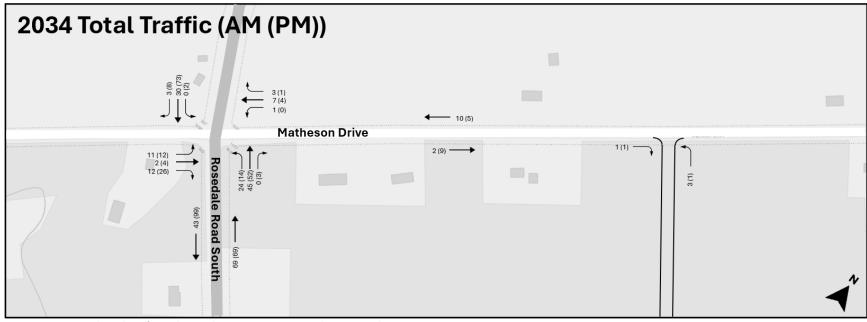


Figure 11. Expected total traffic at the Matheson Drive access and Point 1 in the year 2034.



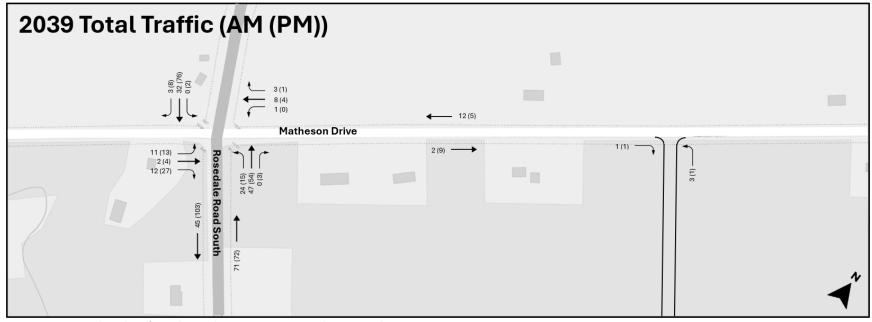


Figure 12. Expected total traffic at the Matheson Drive access and Point 1 in the year 2039.



5.3 Total Traffic Counts (Point 2)

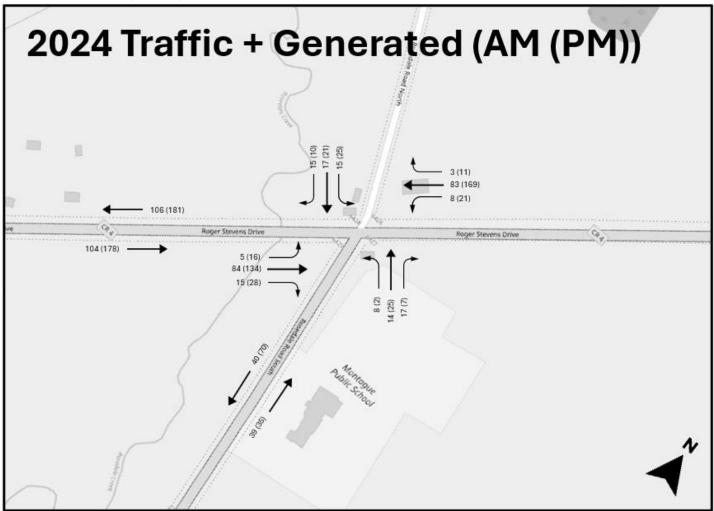


Figure 13. Expected traffic addition affects at Point 2.



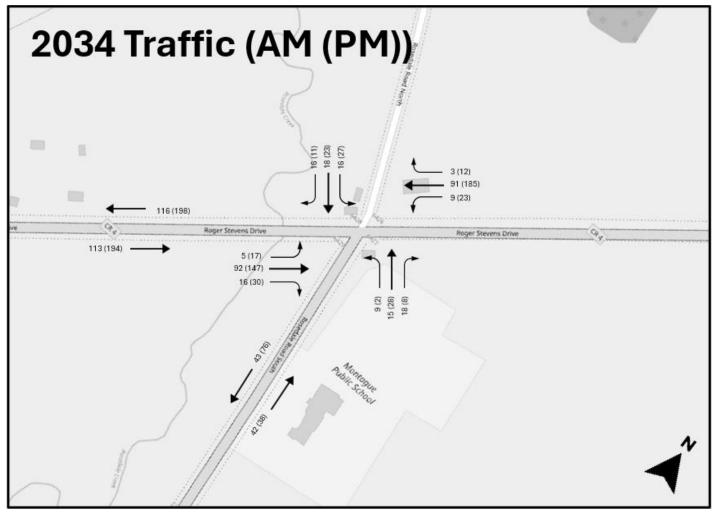


Figure 14. Expected total traffic at Point 2 in the year 2034.



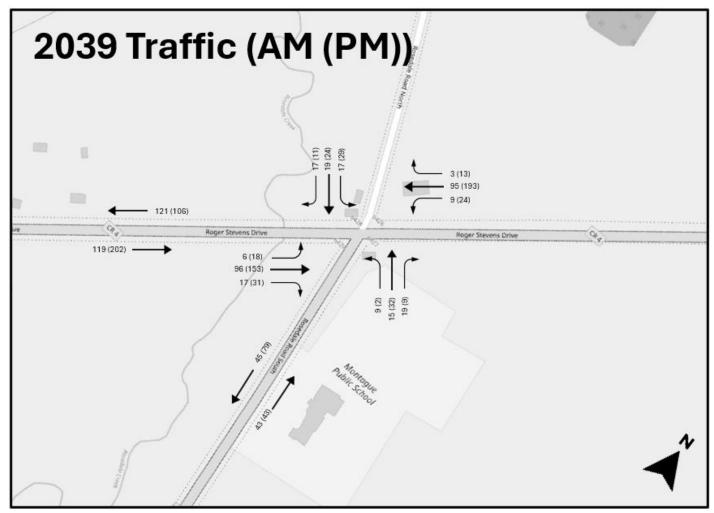


Figure 15. Expected total traffic at Point 2 in the year 2039.



5.4 Analysis of 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.



Figure 16: Matheson Drive (East/West) and Rosedale Road (North/South) (Point 1).

• 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 and presents no major delays at any approach.

9.7, 9.9, 10.0, 10.0



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

Level of Serv	vice – Mathesc	on Drive and Rosedale R	load Intersecti	on - Analysis Point 1										
Peak AM Peak PM														
Intersection Approach		Weekday 2024, 2034, 2039	Weekday Current, 2024, 2034, 2039											
	LOS	Control Delay (s)	LOS	Control Delay (s)										
Northbound (All)	A, A, A, A	2.6, 2.6, 2.6, 2.6	A, A, A, A	1.6, 1.6, 1.6, 1.6										
Southbound (All)	A, A, A, A	0.0, 0.0, 0.0, 0.0	A, A, A, A	0.2, 0.2,0.2, 0.2										
Eastbound (All)	A, A, A, A	9.0, 9.1, 9.2, 9.2	A, A, A, A	9.3, 9.4, 9.5, 9.5										

9.4, 9.5, 9.6, 9.6

Projected Impact with Development:

A, A, A, A

• 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" in the westbound approach was observed in the 2039 PM peak.

A, A, A, B

• Recommended Mitigation:

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

Conclusion:

Westbound (All)

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

5.5 Analysis of 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.





Figure 17: Intersection of Roger Stevens Drive (East/West) and Rosedale Road (North/South) (point 2).

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.

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

Level of Servi	ce – Roger Ste	vens Drive and Rosedale Ro	oad Intersection -	- Analysis Point 2				
		Peak AM		Peak PM				
		Weekday		Weekday				
Intersection Approach	Curren	t, 2024, 2034, 2039	Current, 2024, 2034, 2039					
	LOS	Control Delay (s)	LOS	Control Delay (s)				
Northbound (All)	A, A, B, B	9.8, 9.9, 10.0, 10.1	B, B, B, B	11.9, 12.0, 12.5, 12.8				
Southbound (All)	B, B, B, B 10.1, 10.1, 10.3, 10.4		B, B, B, B	12.8, 13.0, 13.8, 14.3				
Eastbound (All)	A, A, A, A	0.4, 0.4, 0.3, 0.4	A, A, A, A	0.8, 0.8, 0.7, 0.8				
Westbound (All)	A, A, A, A	0.6, 0.7, 0.7, 0.7	A, A, A, A	0.9, 1.0, 1.0, 1.0				

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".



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, and tertiary affects to Roger Stevens Drive.
- Intersection Performance: All intersections within the study area are projected to continue operating within acceptable levels of service (LOS) through 2039 with minimal to non-existent changes to current LOS ratings.

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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Junior Engineer

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CEO & President

APPENDIX A: TRAFFIC COUNTS

Matheson Drive and Rosedale (Point 1) Traffic Counts

								AM									
	Cars reets Rosedale Road Rosedale Road Matheson Drive Matheson Drive																
Streets		Rosed	ale Road			Rose	dale Road	d		Mathes	son Drive						
Direction		Nortl	nbound			Sout	thbound		Eastbound				Westbound				
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
7:30 - 7:45	2	8	0	10	0	4	1	5	3	0	3	6	0	1	1	2	23
7:45 - 8:00	5	3	0	8	0	9	1	10	2	0	4	6	0	2	0	2	26
8:00 - 8:15	6	12	0	18	0	5	0	5	3	0	1	4	0	1	0	1	28
8:15 -8:30	3	7	0	10	0	3	1	4	2	1	2	5	1	1	1	3	22
8:30 - 8:45	5	6	1	12	0	0	0	0	1	0	1	2	0	0	1	1	15
8:45 - 9:00	2	9	0	11	0	7	1	8	0	0	4	4	0	1	0	1	24
9:00 - 9:15	4	3	0	7	1	4	1	6	2	2	1	5	2	1	0	3	21
9:15 - 9:30	1	10	0	11	0	5	1	6	2	0	2	4	0	1	1	2	23
9:30 - 9:45	1	3	1	5	0	1	1	2	2	1	1	4	1	1	0	2	13
Total	29	61	2	92	1	38	7	46	17	4	19	40	4	9	4	17	195

								Bicycles									
Direction		North	bound			Sout	hbound		ı	Eastboun	ıd		\	Nestbou	nd		
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 -8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Light Trucks																
Direction		Nort	hbound			Sou	thbound			Eastbour	nd		,	Westbou	nd		
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
7:30 - 7:45	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
7:45 - 8:00	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
8:00 - 8:15	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
8:15 -8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	4	0	5	0	4	0	4	0	0	2	2	0	0	0	0	11

	Heavy Trucks															1	
Direction		Nort	hbound			Sou	thbound		Eastbound								
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 -8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

								PM									
								Cars									Ī
Streets		Rosed	ale Road			Rosec	dale Roa	d	Matheson Drive)			
Direction		North	nbound			Sout	thbound		Eastbound				Westbound				
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
3:45 - 4:00	3	6	0	9	1	4	3	8	3	2	5	10	0	0	0	0	27
4:00 - 4:15	4	8	1	13	0	15	1	16	4	1	8	13	0	0	0	0	42
4:15 - 4:30	1	5	1	7	0	8	2	10	1	0	3	4	0	0	1	1	22
4:30 - 4:45	6	15	0	21	2	14	1	17	2	0	6	8	0	0	0	0	46
4:45 - 5:00	0	11	1	12	0	17	2	19	2	2	3	7	0	3	0	3	41
5:00 - 5:15	5	4	0	9	1	9	5	15	0	1	5	6	0	1	0	1	31
5:15 - 5:30	4	2	0	6	0	7	0	7	3	1	6	10	0	0	0	0	23
5:30 - 5:45	5	6	0	11	0	13	4	17	0	2	3	5	0	0	0	0	33
5:45 - 6:00	4	8	1	13	2	9	3	14	3	0	6	9	0	0	0	0	36
Total	32	65	4	101	6	96	21	123	18	9	45	72	0	4	1	5	301

								Bicycles	5								I
Direction		North	nbound			Sout	hbound		l l	Eastbour	nd		\	Vestbou	nd		İ
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	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
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	1	0	0	1	0	0	0	0	1
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
Total	0	3	0	3	0	0	0	0	1	0	0	1	0	0	0	0	4

							L	ight Trucl	KS								
Direction		North	nbound			Sout	hbound		E	Eastboun	ıd		\	Vestboui	nd		
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	0	0	0	0	0	0	2	2	0	0	0	0	3
4:00 - 4:15	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 - 4:30	1	1	0	2	0	1	0	1	1	0	0	1	0	0	0	0	4
4:30 - 4:45	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
4:45 - 5:00	0	0	0	0	0	1	1	2	1	0	0	1	0	0	0	0	3
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	1	0	0	1	0	0	0	0	1
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	5	0	6	0	4	1	5	3	0	3	6	0	0	0	0	17

							Н	leavy Truc	ks								1
Direction		Nortl	nbound			Sout	hbound			Eastbour	ıd		,	Westbou	nd		
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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

								AM									1
								Cars									
Streets		Rosed	ale Road			Rosec	dale Road	d		Mathes	on Drive			Mathe	son Drive		İ
Direction		North	nbound			Sout	hbound			Eastl	bound			West	bound		
Start Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Total All
7:30 - 7:45	1	0	1	2	1	1	4	6	0	14	4	18	1	10	1	12	38
7:45 - 8:00	1	2	3	6	3	1	3	7	0	20	2	22	0	10	0	10	45
8:00 - 8:15	0	3	1	4	3	2	0	5	1	9	2	12	2	16	0	18	39
8:15 -8:30	3	2	3	8	1	6	5	12	1	15	2	18	0	16	1	17	55
8:30 - 8:45	1	2	0	3	4	3	2	9	0	9	4	13	2	20	0	22	47
8:45 - 9:00	0	2	3	5	4	1	1	6	1	24	1	26	0	18	0	18	55
9:00 - 9:15	0	3	1	4	1	6	1	8	0	14	3	17	1	20	0	21	50
9:15 - 9:30	2	1	0	3	5	4	3	12	1	10	1	12	0	13	1	14	41
9:30 - 9:45	0	0	0	0	0	0	0	0	0	4	1	5	1	3	0	4	9
Total	8	15	12	35	22	24	19	65	4	119	20	143	7	126	3	136	379

								Bicycles									
Direction		North	bound			Sout	hbound		I	astboun	ıd		\	Vestboui	nd		
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 -8:30	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
9:30 - 9:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	2	0	2	0	2	0	2	0	1	0	1	0	0	0	0	5

								ight Truc	ks								I
Direction		Nort	hbound			Sou	thbound			Eastbour	nd		\	Westbou	nd		
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	6	0	9	2	11	0	7	0	7	28
7:45 - 8:00	0	1	0	1	3	0	1	4	3	9	1	13	2	10	0	12	30
8:00 - 8:15	0	0	1	1	1	2	0	3	0	2	1	3	1	5	1	7	14
8:15 -8:30	1	0	1	2	0	2	1	3	0	6	0	6	1	9	0	10	21
8:30 - 8:45	0	0	0	0	1	1	0	2	1	7	0	8	0	6	0	6	16
8:45 - 9:00	0	0	2	2	1	0	1	2	1	5	0	6	0	4	0	4	14
9:00 - 9:15	0	1	2	3	1	0	0	1	1	8	0	9	1	11	0	12	25
9:15 - 9:30	0	2	1	3	1	1	0	2	2	8	1	11	0	13	0	13	29
9:30 - 9:45	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	6	9	16	11	8	4	23	8	55	5	68	5	65	1	71	178

							Н	leavy Truc	ks								
Direction		Nortl	hbound			Sout	thbound			Eastboun	ıd		,	Westbou	nd		
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 -8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1

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

								PM									l
								Cars									İ
Streets		Rosed	ale Road			Rosec	dale Roa	d		Mathes	on Drive			Mathes	on Drive)	İ
Direction		North	bound			Sout	thbound			East	bound			West	bound		ĺ
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	3	1	4	5	3	0	8	0	10	4	14	1	29	1	31	57
4:00 - 4:15	0	4	0	4	1	6	1	8	3	17	2	22	2	30	1	33	67
4:15 - 4:30	0	4	1	5	6	5	3	14	0	23	5	28	4	30	0	34	81
4:30 - 4:45	0	5	1	6	5	2	3	10	4	29	8	41	7	29	0	36	93
4:45 - 5:00	1	3	1	5	11	0	1	12	3	23	1	27	1	35	6	42	86
5:00 - 5:15	0	1	0	1	0	0	2	2	1	30	1	32	4	30	1	35	70
5:15 - 5:30	0	1	1	2	4	4	1	9	1	24	1	26	3	26	0	29	66
5:30 - 5:45	1	3	1	5	0	6	4	10	2	26	1	29	2	23	1	26	70
5:45 - 6:00	1	1	2	4	2	1	1	4	0	10	1	11	2	18	3	23	42
Total	3	29	10	42	39	31	18	88	15	212	26	253	29	280	14	323	706

								Bicycles	5								
Direction		North	nbound			Sout	hbound		ı	Eastbour	nd		١	Nestbou	nd		ĺ
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	1	0	0	1	1
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	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
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
Total	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2

Light Trucks																	
Direction	North	bound			South	bound			Eastbo	und		Westbo	ound				
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	6	0	2	2	4	1	10	3	14	3	12	1	16	40
4:15 - 4:30	1	1	1	3	0	1	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	1	1	0	2	2	8	1	11	2	14	2	18	33
5:00 - 5:15	0	2	0	2	0	1	1	2	1	10	3	14	0	9	1	10	28
5:15 - 5:30	0	1	0	1	2	0	1	3	3	10	3	16	3	9	1	13	33
5:30 - 5:45	0	0	0	0	1	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	3	6	0	9	18
Total	1	11	8	20	6	9	6	21	11	89	15	115	16	93	6	115	271

	Heavy Trucks																
Direction		Nort	hbound		Southbound				Eastbound			Westbound					
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	1	0	1	0	1	0	1	0	0	0	0	2
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	1	0	1	0	1	1	2	3
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
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	1	0	1	0	0	0	0	1
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	3	0	3	1	3	1	5	9

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

APPENDIX B: OPERATIONAL ANALYSIS WORK SHEETS

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

		ŀ	HCS T	ا-ow	Way	Stop	-Cor	itrol	Repo	ort						
General Information		_	_	_			Site	Inform	natio	1	_	_			_	
Analyst	Lando	on Kyle						ection			Math	eson and	d Roseda	ale		
Agency/Co.	_	ngineerir	na					liction			Mont					
Date Performed	8/19/	_	-3				East/\	West Stre	eet		_	eson Dri	ve			
Analysis Year	2024							/South !				dale Roa				
Time Analyzed	7:30a	m - 8:30	am					Hour Fac			0.85					
Intersection Orientation	North	n-South					-	sis Time		hrs)	1.00					
Project Description			dale and	Mathes	on		,			,,						
Lanes																
				1447127	n h	ቀ ተቀጥ Street Nor	ተት ሶ th-South	14471								
Vehicle Volumes and Adj	ustme	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)		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 He	adwa	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, and	Leve	l of S	_													
Flow Rate, v (veh/h)			25				9			20				0		
Capacity, c (veh/h)			929				836			1592				1586		
v/c Ratio			0.03				0.01			0.01				0.00		
95% Queue Length, Q ₉₅ (veh)			0.1				0.0			0.0				0.0		
95% Queue Length, Q ₉₅ (m)			0.76				0.00									
Control Delay (s/veh)			9.0				9.4			7.3	0.1	0.1		7.3	0.0	0.0
Level of Service (LOS)			Α				Α			Α	Α	Α		Α	Α	А
Approach Delay (s/veh)			.0				.4				.6				.0	
Approach LOS			Д			,	Д				Д			,	Д	

Existing 2024 Weekday PM Peak Hour Traffic Analysis

		H	ICS T	آwo-	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	ıg				Jurisd	liction			Mont	ague				
Date Performed	8/19/	2024	-				East/\	West Stre	eet		Math	eson Dri	ive			
Analysis Year	2024						North	/South S	Street		Rosec	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	13 Rose	dale and	Mathes	on											
Lanes																
				14471		† † † Y Street Nor		14471								
Vehicle Volumes and Adju	ustme	nts														
Approach		Eastb	ound			West	oound			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	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			(0									
Right Turn Channelized	-															
Median Type Storage	<u> </u>			Undi	vided											
Critical and Follow-up He	adwa	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, and	Leve	l of Se	ervice													
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, Q ₉₅ (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q ₉₅ (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)			Α			L	A	L		Α	Α	Α		A	Α	A
Approach Delay (s/veh)			.3				.7				.6				.2	
Approach LOS		,	Д			,	4			,	Д			,	Д	

Existing + Generated 2024 Weekday AM Peak Hour Traffic Analysis

		ŀ	ICS 1	ſwo-	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	ng				Jurisd	liction			Mont	ague				
Date Performed	8/19/	2024					East/\	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2024						North	/South	Street		Rosec	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											
Lanes																
				1447177		ቀ ተቀጥ Street Nor		÷ + + 1								
Vehicle Volumes and Adj	ustme	nts														
Approach	_	Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	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)		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									
Right Turn Channelized	-															
Median Type Storage				Undi	vided											
Critical and Follow-up He	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, and	Leve	of Se	_													
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 ₉₅ (veh)			0.1				0.0			0.0				0.0		
95% Queue Length, Q ₂₅ (m)			0.76				0.00									
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				A			A	A	A		A	A	A
Approach Delay (s/veh)			.1				.5				.6				.0	
Approach LOS			A			,	A			/	4			,	4	

Existing + Generated 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	ICS 1	ľwo-	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				Jurisd	liction			Mont	ague				
Date Performed	8/19/	_					East/\	West Stre	eet		-	eson Dri	ve			
Analysis Year	2024						North	/South !	Street		Rosec	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	ctor		0.80					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	ion											
Lanes																
				1447171		† † † Y Street No	1 1 C	7447								
Vehicle Volumes and Adj	ustme	nts														
Approach	\perp	Eastb	ound			West	oound			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)		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			-	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		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	l of Se	ervice													
Flow Rate, v (veh/h)			49				6			16				3		
Capacity, c (veh/h)			868				743			1513				1552		
v/c Ratio			0.06				0.01			0.01				0.00		
95% Queue Length, Q ₉₅ (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q _{ss} (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)			Α				Α			Α	Α	Α		Α	Α	Α
Approach Delay (s/veh)		9	.4			9	.9			1	.6			0	.2	
Approach LOS			Ą				Д				Ą			-	Д	

Projected 2034 Weekday AM Peak Hour Traffic Analysis

		ŀ	ICS 1	wo-	Way	Stop	-Cor	itrol	Repo	ort						
General Information							Site	Inforn	natio	1						
Analyst	Lando	on Kyle					Inters	ection			Math	eson an	d Roseda	ale		
Agency/Co.	-	ngineerir	ng				Jurisd	iction			Mont	ague				
Date Performed	8/19/	2024					East/\	West Stre	eet		Math	eson Dri	ive			
Analysis Year	2034						North	/South S	Street		Rosec	dale Roa	d			
Time Analyzed	7:30a	m - 8:30	am				Peak	Hour Fac	tor		0.85					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	ion											
Lanes																
				144717		† † † Y Street Nor	th-South	14471								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			West	oound			North	bound			South	bound	
Movement	U	L	T	R	U	L	Т	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	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	-			Hadi	vided											
Median Type Storage				Unai	vided											
Critical and Follow-up He	eadwa	_											_			_
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) Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		
	d Level					3.30	4.00	5.50		2.20				2.20		
Delay, Queue Length, and	Leve	of Se	_				13			20						
Flow Rate, v (veh/h)			29				13			28				1566		
Capacity, c (veh/h)			0.03				0.02			1584				1566		
v/c Ratio			0.03				0.02			0.02				0.00		
95% Queue Length, Q ₉₅ (veh) 95% Queue Length, Q ₉₅ (m)			0.76				0.00			0.1				0.0		
5576 Queue Length, Cas (m)			9.2				9.6			7.3	0.1	0.1		7.3	0.0	0.0
Control Delay (s/yeh)										110						010
Control Delay (s/veh) Level of Service (LOS)							_					-				Α
Control Delay (s/veh) Level of Service (LOS) Approach Delay (s/veh)			A .2				A .6			Α	A	A		Α	Α.0	A

Projected 2034 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS T	Гwo-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inform	natio	n						
Analyst	Lande	on Kyle					Inters	ection			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	ive			
Analysis Year	2034						North	/South !	Street		Rosec	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.80					
Intersection Orientation	North	n-South					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathes	on											
Lanes																
				144711	ภา	† † † Y Street Nor		7 4 4 7 1								
Vehicle Volumes and Adj	ustme	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														
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	l of Se	ervice													
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 ₉₅ (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Qas (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				Α			A	Α	Α		Α	A	Α
Approach Delay (s/veh)			.5				0.0				.6				.2	
Approach LOS			Д			,	Д			,	4			,	4	

Projected 2039 Weekday AM Peak Hour Traffic Analysis

		ŀ	HCS 1	ا-owo	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	8/19/	2024					East/	West Stre	eet		Math	eson Dri	ve			
Analysis Year	2039						North	/South !	Street		Rosec	dale Roa	d			
Time Analyzed	7:30a	ım - 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											
Lanes																
				1447111		ተ ተቀጥ Street Nor		1 4 4 7								
Vehicle Volumes and Adj	ustme	nts														
Approach			ound			West	bound				bound				bound	_
Movement	U	L	Т	R	U	L	T	R	U	L	Т	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	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	\perp			Undi	vided											
Critical and Follow-up He	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, and	d Leve	l of Se	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 ₉₅ (veh)			0.1				0.1			0.1				0.0		
95% Queue Length, Q ₃₅ (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)			Α				Α			Α	Α	Α		Α	Α	А
Approach Delay (s/veh)		9	.2			9	.6			2	.6			0	.0	
Approach LOS			A				Ą				Д			,	A	

Projected 2039 Weekday PM Peak Hour Traffic Analysis

		ŀ	HCS 1	ľwo-	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 Er	ngineerir	ng				Jurisd	liction			Mont	ague				
Date Performed	8/19/	2024					East/\	West Stre	eet		Math	eson Dri	ive			
Analysis Year	2039						North	/South !	Street		Rosec	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																
				1447177		† † † Y Street Nor		14471								
Vehicle Volumes and Adju	ustme	nts														
Approach		Eastb	ound			West	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)		13	4	27		0	4	1		15	54	3		2	76	8
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		<u> </u>
Proportion Time Blocked																
Percent Grade (%)	-		0				0									
Right Turn Channelized	-															
Median Type Storage	٠.			Undi	vided											
Critical and Follow-up He	adwa	_														
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		<u> </u>
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, and	Leve	l of S	_							40						
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 ₉₅ (veh)			0.2				0.0			0.0				0.0		
95% Queue Length, Q ₂₅ (m)			1.52 9.5				10.0			7.4	0.1	0.1		73	0.0	0.0
Control Delay (s/veh)							10.0 B			-	0.1 A	0.1 A		7.3	0.0 A	0.0 A
Level of Service (LOS)			.5			1/	0.0			A 1	.6	_ A		A	.2	A
Approach LOS																
Approach LOS		-	A.				В				Д				Д	

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

		ŀ	ICS T	ا-owo	Way	Stop	-Cor	ntrol	Repo	ort						
General Information			_					Inforr						_		_
Analyst	Lando	on Kyle					Inters	ection			Roge	r Stevens	s and Ro	sedale		
Agency/Co.	-	gineerin	ıa				_	liction			Mont					
Date Performed	8/19/		- 5				_	Nest Stre	eet			r Stevens				
Analysis Year	2024						_	/South S				dale Roa				
Time Analyzed	-	m - 9:15	am				_	Hour Fac			0.93					
Intersection Orientation	East-						-	sis Time		hrs)	1.00					
Project Description	-	13 Rose	dale and	Mathes	on					,						
Lanes																
				17447+C		ヤ ヤヤ 1 or Street: Ea		01744V								
Vehicle Volumes and Adju	ıstme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	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)		5	84	14		7	83	3		6	10	12		15	16	15
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 He	adwa	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, and	Leve	l of Se	ervice													
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				0.06	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.1				0.2	
95% Queue Length, Q ₉₅ (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)		А	Α			А	А	Α			Α				В	
Approach Delay (s/veh)		0	.4			0	.6			9	.8			10	0.1	
Approach LOS			Δ.				Δ.				Д				В	

Existing 2024 Weekday PM Peak Hour Traffic Analysis

		ŀ	ICS T	「wo−	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						
Analyst	Lando	on Kyle					Inters	ection			Roge	r Stevens	s and Ro	sedale		
Agency/Co.	EFI Er	ngineerir	ng				Juriso	liction			Mont	ague				
Date Performed	8/19/	2024					East/	Nest Str	eet		Roge	r Stevens	5			
Analysis Year	2024						North	/South	Street		Rose	dale Roa	d			
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.91					
Intersection Orientation	East-\	West					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathe	on											
Lanes																
				5		수 수 Y 1 or Street: Ea		** * F U								
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastb	ound			Westl	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	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)		16	134	24		21	172	11		2	23	9		25	19	11
Percent Heavy Vehicles (%)		2				1				0	0	0		0	7	0
Proportion Time Blocked																
Percent Grade (%)											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)		4.12				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)		18				23					37				60	
Capacity, c (veh/h)		1371				1409					560				522	
v/c Ratio		0.01				0.02					0.07				0.12	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.2				0.4	
95% Queue Length, Q ₉₅ (m)		0.00									1.52				3.11	
Control Delay (s/veh)		7.7	0.1			7.6	0.1	0.1			11.9				12.8	
Level of Service (LOS)		Α	Α			Α	Α	Α			В				В	
Approach Delay (s/veh)		0	.8			0	.9			11	1.9			12	2.8	
Approach LOS		,	Δ.			,	Δ				В				3	

Existing + Generated 2024 Weekday AM Peak Hour Traffic Analysis

		H	HCS 1	Two-	Way	Stop	-Cor	ntrol	Repo	ort						
General Information							Site	Inforr	natio	n						
Analyst	Lando	on Kyle					Inters	ection			Roge	r Steven	s and Ro	sedale		
Agency/Co.	EFI Er	ngineerin	ng				Juriso	fiction			Mont	ague				
Date Performed	8/19/	2024					East/	West Stre	eet		Roge	r Steven	s			
Analysis Year	2024						North	n/South !	Street		Rosec	dale Roa	d			
Time Analyzed	8:15a	m - 9:15	am				Peak	Hour Fac	tor		0.93					
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	1.00					
Project Description	23-72	213 Rose	dale and	Mathe	ion											
Lanes				ח ה	n s	*	K K U	J.K.								
Vehicle Volumes and Adj	ustme	nts		1144717		† † Y T or Street Ea		4 1 7 4 4 7 0								
Approach	T		ound			Month	oound			North	bound			Cauth	bound	
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	<u> </u>	R	Ť	<u> </u>	LTR	Ů		Ť	LTR	Ť		Ť	LTR	Ť
Volume (veh/h)		5	84	15		8	83	3		8	14	17		15	17	15
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)	Т	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	_	ervice													
Flow Rate, v (veh/h)	T	5				9					42				51	
Capacity, c (veh/h)		1515				1497					780				751	
v/c Ratio		0.00				0.01					0.05				0.07	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.2				0.2	
95% Queue Length, Q ₂₅ (m)		0.00									1.52				1.52	
Control Delay (s/veh)		7.4	0.0			7.4	0.0	0.0			9.9				10.1	
Level of Service (LOS)		Α	Α			Α	Α	Α			Α				В	
Approach Delay (s/veh)		0	.4			0	.7			9	.9			10).1	
Approach LOS			A				Δ.				A				В	

Existing + Generated 2024 Weekday PM Peak Hour Traffic Analysis

		H	HCS T	Two-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information			Site Information															
Analyst	Lando	on Kyle					Inters	ection			Roger Stevens and Rosedale							
Agency/Co.	EFI Er	ngineerin	ng				Jurisd	liction			Montague							
Date Performed	8/19/	2024					East/\	West Stre	eet		Roger Stevens							
Analysis Year	2024						North	/South S	Street		Rosedale Road							
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.91							
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	1.00							
Project Description	23-72	13 Rose	dale and	Mathe	on													
Lanes																		
				5 7 4 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Î1 Ħ Maj	す すて1 or Street: Ea		0 7 4 4 7										
Vehicle Volumes and Adj																		
Approach	_		ound			Westbound			Northbound			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	42.4	R			LTR	- 44			LTR	- 10		25	LTR	- 11		
Volume (veh/h)	-	16	134	28		24	172	11		2	26	10		25	19	11		
Percent Heavy Vehicles (%)		2				1				0	0	0		0	7	0		
Proportion Time Blocked																		
Percent Grade (%)	-									-)		0					
Right Turn Channelized	-	IN	lo	11-40	vided													
Median Type Storage	<u> </u>			Ondi	vided													
Critical and Follow-up He	adwa	_																
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, and	Leve	l of Se	ervice															
Flow Rate, v (veh/h)		18				26					42				60	_		
Capacity, c (veh/h)		1371				1404					553				512			
v/c Ratio		0.01				0.02					0.08				0.12			
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.2				0.4			
95% Queue Length, Q ₉₅ (m)	_	0.00									1.52				3.11			
Control Delay (s/veh)		7.7	0.1			7.6	0.2	0.2			12.0				13.0			
Level of Service (LOS)		А	Α			A	А	А			В				В			
Approach Delay (s/veh)			.8				.0				2.0		13.0					
Approach LOS		- 1	Д			,	Д				В		В					

Projected 2034 Weekday AM Peak Hour Traffic Analysis

		ŀ	ICS T	Гwo-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information	_	_			_		Site	Inform	natio	1	_		_			_		
Analyst	Lando	on Kyle					Inters	ection			Roge	Roger Stevens and Rosedale						
Agency/Co.	-	ngineerin	ng				Jurisd	fiction			Montague							
Date Performed	8/19/	2024	-				East/\	West Stre	eet		Roger Stevens Drive							
Analysis Year	2034						North	/South S	Street		Rosedale Road							
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	23-72	13 Rose	dale and	Mathes	ion													
Lanes																		
				27447170		† †Y 1 or Street Ea		11444										
Vehicle Volumes and Adj	ustme	nts																
Approach		Eastb	ound			Westbound			Northbound			Southbound						
Movement	U	L	T	R	U	L	T	R	U	L	Т	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)	-	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 (%)	-		lo				0						0					
Right Turn Channelized Median Type Storage		N	10	Hadi	vided													
Critical and Follow-up He	an elevan			Ondi	vided													
	eauwa	_																
Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2		
Critical Headway (sec) Base Follow-Up Headway (sec)		4.10				4.10 2.2				7.10	6.50 4.0	6.20 3.3		7.10	6.50 4.0	6.20 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, and	d Leve		ruisa			2.20				3.30	4.00	3.30	_	3.30	4.00	3.30		
	Leve	5	vice			10					45				54			
Flow Rate, v (veh/h) Capacity, c (veh/h)		1504				1485					760				732			
v/c Ratio		0.00				0.01					0.06				0.07			
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.2				0.07			
95% Queue Length, Q ₂₅ (m)		0.00				5.10					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			
			.3		0.7					10	0.0		10.3					
Approach Delay (s/veh)		~	100			¥	**				010		B					

Projected 2034 Weekday PM Peak Hour Traffic Analysis

		ŀ	ICS T	آwo-	Way	Stop	-Cor	ntrol	Repo	ort							
General Information			Site Information														
Analyst	Lando	on Kyle					Inters	ection			Roger Stevens and Rosedale						
Agency/Co.	EFI Er	ngineerir	ng				Jurisd	liction			Montague						
Date Performed	8/19/	2024					East/\	West Stre	et		Roger Stevens						
Analysis Year	2034						North	/South S	Street		Rosed	dale Roa	d				
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.91						
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	1.00						
Project Description	23-72	13 Rose	dale and	Mathes	on												
Lanes																	
				9 7 4 4 Y 7 Y 7		후 후 Y 1 or Street Ea	IF ↑ st-West	* * * *									
Vehicle Volumes and Adj	ustme	nts															
Approach	Eastbound W						oound			North	bound			South	bound		
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	<u> </u>	LT		R			LTR				LTR				LTR		
Volume (veh/h)	_	17	147	30		26	188	12		2	28	11		27	24	12	
Percent Heavy Vehicles (%)	_	2				1				0	0	0		0	7	0	
Proportion Time Blocked	-																
Percent Grade (%)	-										0 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)		4.12				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)		19				29					45				69		
Capacity, c (veh/h)		1350				1385					526				479		
v/c Ratio		0.01				0.02					0.09				0.14		
95% Queue Length, Q ₉₅ (veh)		0.0				0.1					0.3				0.5		
95% Queue Length, Q ₉₅ (m)		0.00									2.29				3.89		
Control Delay (s/veh)		7.7	0.1			7.7	0.2	0.2			12.5				13.8		
Level of Service (LOS)	1	Α	А			А	Α	А		L	В	<u> </u>		L	В		
Approach Delay (s/veh)			.7		1.0						2.5				3.8		
Approach LOS		,	4		А						В		В				

Projected 2039 Weekday AM Peak Hour Traffic Analysis

		ŀ	ICS 1	Two-	Way	Stop	-Cor	ntrol	Repo	ort							
General Information					Site Information												
Analyst	Analyst Landon Kyle									s and Rosedale							
Agency/Co.	-	ngineerin	na					ection			Montague						
Date Performed	8/19/	_	-5				East/	West Stre	eet		Roger Stevens						
Analysis Year	2039						North	/South !	Street		Rosedale Road						
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	23-72	213 Rose	dale and	Mathe	on												
Lanes																	
				1144746	□ 4 Maj	† † † Street Ea	st-West	ONS PY									
Vehicle Volumes and Adj	ustme	nts															
Approach		Eastb	ound			West	oound			North	bound		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		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	l of Se	ervice														
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 ₉₅ (veh)		0.0				0.0					0.2				0.3		
95% Queue Length, Q ₉₅ (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)		Α	Α			Α	Α	A			В				В		
Approach Delay (s/veh)		0	.4			0	.7			1	0.1		10.4				
Approach LOS		,	Ą			,	4				В		В				

Projected 2039 Weekday PM Peak Hour Traffic Analysis

		ŀ	ICS T	Two-	Way	Stop	-Cor	ntrol	Repo	ort								
General Information							Site Information											
Analyst	Lando	on Kyle					Inters	ection			Rogerstevens and Rosedale							
Agency/Co.	EFI Er	ngineerir	ng				Juriso	liction			Montague							
Date Performed	8/19/	2024					East/\	West Stre	eet		Roger Stevens							
Analysis Year	2039						North	n/South S	Street		Rosedale Road							
Time Analyzed	4:00p	m - 5:00	pm				Peak	Hour Fac	tor		0.91							
Intersection Orientation	East-	West					Analy	sis Time	Period (hrs)	1.00							
Project Description	23-72	13 Rose	dale and	Mathe	on													
Lanes																		
				1 1 4 4 X 4 X C	↑ ↑ Maj	약 약 약 1		4 1 4 4 4 4 1 1										
Vehicle Volumes and Adj	justme	nts																
Approach	_	Eastbound				_	oound				bound		Southbound					
Movement	U	L	Т	R	U	L	T	R	U	L	T	R	U	L	Т	R		
Priority	10	1	2	3	40	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	450	R		27	LTR	42			LTR	12		20	LTR	12		
Volume (veh/h)	+	18	153	31		27	197	13		3	30	0		29	25	13		
Percent Heavy Vehicles (%) Proportion Time Blocked	+	2				1				0	0	0		0	7	0		
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)	Т	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)		20				30					49				74			
Capacity, c (veh/h)		1337				1376					510				462			
v/c Ratio		0.01				0.02					0.10				0.16			
95% Queue Length, Q₃₅ (veh)		0.0				0.1					0.3				0.6			
95% Queue Length, Q ₉₅ (m)		0.00									2.29				4.67			
Control Delay (s/veh)		7.7	0.1			7.7	0.2	0.2			12.8				14.3			
Level of Service (LOS)		Α	Α			А	Α	Α			В				В			
Approach Delay (s/veh)			.8		1.0 A						2.8		14.3					
Approach LOS		,	Д					В		В								