



TRAFFIC IMPACT ANALYSIS

KEYLAND RESIDENTIAL DEVELOPMENT

SHAKOPEE, MINNESOTA

Prepared for:

Keyland Homes

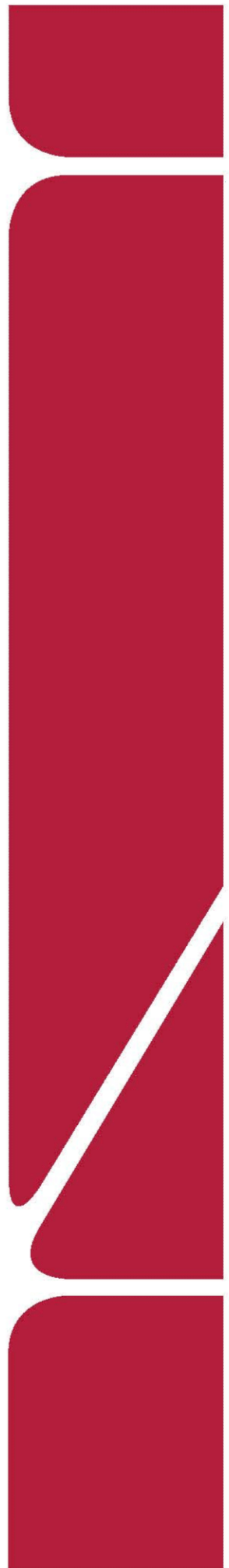
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DECEMBER 2020

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KEYLAND RESIDENTIAL DEVELOPMENT

SHAKOPEE, MINNESOTA

REPORT CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



Jacob Rojer, P.E.

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Date: 12/28/2020

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INTRODUCTION

Keyland Homes is proposing a residential development consisting of 138 single family homes south of Eagle Creek Boulevard, between Pike Lake Road and Foothill Trail in Shakopee, Minnesota. The site is currently undeveloped. **Exhibit 1** in **Appendix A** shows the proposed project location. The proposed site plan is included in **Appendix B**. The anticipated full buildout is 2024.

EXISTING ROADWAY CONDITIONS

The following study intersections are included in the traffic analysis.

- Eagle Creek Boulevard & Pike Lake Road
- Eagle Creek Boulevard & Foothill Trail
- Foothill Trail & 21st Avenue East

The study intersections geometry and intersection control are shown in **Exhibit 2** in **Appendix A**.

EXISTING ROADWAYS

The existing roadway network within the study area includes Eagle Creek Boulevard, Pike Lake Road, and Foothill Trail.

Eagle Creek Boulevard is an east-west roadway that is north of the site. Eagle Creek Boulevard is classified as an A-Minor Reliever. Within the study area, Eagle Creek Boulevard is a two-lane undivided roadway with dedicated left and right turn lanes at intersecting streets. The speed limit on Eagle Creek Boulevard is 55 miles per hour (mph).

Pike Lake Road is a north-south roadway that runs along the western boundary of the site. Pike Lake Road is classified as a collector roadway. Between Eagle Creek Boulevard and Woodward Avenue, Pike Lake Road has a 3-lane section with one through lane in each direction and a two-way left turn lane. North of Eagle Creek Boulevard Pike Lake Road is a 2-lane undivided roadway with dedicated left turn lanes at intersecting streets. South of Woodward Avenue Pike Lake Road tapers to a two-lane unpaved roadway. The speed limit on Pike Lake Road is 30 mph.

Foothill Trail is a north-south roadway that runs along the eastern border of the site. Foothill Trail is classified as a local street. Foothill Trail has a two-lane section and a speed limit of 30 mph.

EXISTING TRAFFIC VOLUMES

Turning movement counts were collected in November 2020. Traffic volumes collected were significantly lower than what would be expected during typical conditions due to the COVID-19 pandemic and Eagle Creek Elementary School was fully virtual at the time of the counts. To account for the lack of school traffic, trips were assigned to the network to account for when school operations are in person. The trips generated by the elementary school were determined using *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition*. ITE Appendix A was used to adjust the AM peak hour school trips to accurately reflect the number of school trips that will be on the roadway during the AM peak hour because the school has a later peak hour than the traditional AM peak hour. Trips were then distributed into the network based on population demographics, the school boundary, and the most efficient routes to the school. **Table 1** shows the trips generated by Eagle Creek Elementary School with peak hour breakdowns.

Table 1 – Elementary School Trip Generation

Land Use Description	Intensity	AM Peak Hour (adjusted)			PM Peak Hour		
		In	Out	Total	In	Out	Total
Elementary School (ITE 520)	830 Students	66	17	83	68	73	141
Total Site Generated Trips		66	17	83	68	73	141

After adding in the school trips to the counts, the volumes were compared to historic annual average daily traffic (AADT) of study roadways to determine if more adjustments were warranted. It was determined that the through volumes on Eagle Creek Boulevard were still 10% lower than typical conditions. These volumes were increased to account for the reduced traffic. No other volumes were adjusted.

The adjusted existing turning movement volumes for the AM peak hour (7:15 AM – 8:15 AM) and PM peak hour (4:15 PM – 5:15 PM) are shown on **Exhibit 3**. The turning movement count data is provided in **Appendix D**.

BACKGROUND GROWTH

The proposed development is anticipated to be fully built out by 2024. In order to account for background growth, The MnDOT historic AADT volumes were compared to the travel demand model 2040 volumes in the Scott County Comprehensive Plan. **Table 2** provides a summary of the AADT information and the resultant growth rate. These growth rates were applied to the existing traffic volumes to determine the no-build traffic volumes.

Table 2 – Annual Growth Rate Calculation

Street Segment	Most Recent AADT (MnDOT)		Projected 2040 AADT (Scott County)		Annual Growth Rate
	Year	Volume	Year	Volume	
Eagle Creek Boulevard east of Foothill Trail	2019	3700	2040	5600	2.0%
Pike Lake Road north of Eagle Creek Boulevard	2019	900	2040	1900	3.5%
Pike Lake Road south of Eagle Creek Boulevard	2015	1200	2040	3100	3.9%

A 2.0% growth rate was applied to Eagle Creek Boulevard and a 3.5% growth rate was applied to Pike Lake Road. Foothill Trail is mostly built out, so no growth factor was applied to it.

Exhibit 4 in **Appendix A** shows the Opening Year No-Build (2024) turning movement volumes.

PROPOSED DEVELOPMENT

The development consists of 138 single family housing units on a 59.60-acre lot in Shakopee, Minnesota, south of Eagle Creek Boulevard between Pike Lake Road and Foothill Trail.

SITE TRIP GENERATION

The trip-generating potential of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. Standard ITE trip rates were used to develop the total trips generated by the site. The proposed new land uses for the site are listed below.

- 138 Single-Family Detached Housing Units

ITE Land Use Code 210 was used to calculate the trip generation potential of the site. **Table 3** provides a summary of the number of daily trips, AM peak hour, and PM peak hour generated by the development. As shown, the site is anticipated to generate 1,304 daily trips, 102 new trips during the AM peak hour (26 entering, 76 exiting), and 137 new trips during the PM peak hour (86 entering, 51 exiting).

Table 3 – Site Trip Generation

Land Use Description	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing (ITE 210)	138 Units	1,304	26	76	102	86	51	137
Total Site Generated Trips		1,304	26	76	102	86	51	137

SITE TRIP DISTRIBUTION AND ACCESS

The site trips were distributed to adjacent roadways based on the current traffic patterns in the area and a general assessment of the major regional roadways surrounding the study area. The following global trip distribution was assumed for the development:

- 50% east on Eagle Creek Boulevard
- 20% west on Eagle Creek Boulevard
- 20% north on Pike Lake Road
- 5% south on Pike Lake Road
- 5% south on Foothill Trail

The proposed residential development will have a total of three (3) site accesses. Two accesses are proposed on Foothill Trail, and one access is proposed on Pike Lake Road. The trip distribution percentages and the trip assignment are shown in **Exhibits 5 & 6**, respectively.

CAPACITY ANALYSIS

A capacity analysis was performed to quantify the delay and level of service at the study intersections during the AM and PM peak hours. The capacity analysis was performed using Synchro/SimTraffic.

The capacity of an intersection quantifies its ability to accommodate traffic volumes and is measured in average delay per vehicle. It is expressed in terms of level of service (LOS) which ranges from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The LOS grades shown below, which are provided in the

Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 4**. The range of control delay for each rating (as detailed in the HCM) is also shown in **Table 4**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red signals, higher delays are tolerated for the corresponding LOS ratings. For unsignalized stop intersections, the intersection LOS is reported as the worst side street movement.

Table 4 – Level of Service Information

Level of Service	Average Control Delay (seconds/vehicle)	Description
A	0-10 (Unsignalized); 0-10 (Signalized)	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	>10-15 (Unsignalized); >10-20 (Signalized)	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	>15-25 (Unsignalized); >20-35 (Signalized)	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	>25-35 (Unsignalized); >35-55 (Signalized)	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	>35-50 (Unsignalized); >55-80 (Signalized)	High control delay; average travel speed no more than 33 percent of free flow speed.
F	>50 (Unsignalized); >80 (Signalized)	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

Traffic models for each scenario were developed using Synchro/SimTraffic, and the delay and queueing were evaluated for each scenario. The scenarios that were analyzed are as follows:

- Existing Conditions (2020)
- Opening Year No-Build (2024)
- Opening Year Build (2024)

EXISTING (2020) CONDITIONS

The traffic volumes shown in **Exhibit 3** in **Appendix A** were used in the Existing (2020) analysis. As previously discussed, these volumes were collected and then adjusted based on historic counts in the area to account for impacts due to the COVID-19 pandemic. **Tables 5 & 6** show the LOS and delay for the study intersections under Existing (2020) conditions during the AM & PM peak hours, respectively. This analysis assumed the existing geometry at all study intersections.

Table 5 – Existing (2020) AM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	0.5	A	0.5	A	0.1	A	6.9	A
		WB	1.0	A	1.9	A	0.2	A		
		NB	5.6	A	6.8	A	2.4	A		
		SB	-	-	6.9	A	3.0	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	0.7	A	1.8	A	0.6	A	6.8	A
		WB	-	-	0.3	A	0.1	A		
		NB	5.1	A	6.8	A	2.4	A		
		SB	5.9	A	5.9	A	2.6	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	2.3	A
		WB	-	-	-	-	2.3	A		
		NB	-	-	0.0	A	-	-		
		SB	1.5	A	0.0	A	-	-		

Table 6 – Existing (2020) PM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	0.9	A	1.0	A	0.3	A	8.4	A
		WB	1.5	A	2.4	A	0.4	A		
		NB	7.6	A	8.2	A	3.4	A		
		SB	8.4	A	8.4	A	3.5	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	1.4	A	2.5	A	0.6	A	7.5	A
		WB	1.3	A	0.5	A	0.1	A		
		NB	5.8	A	6.0	A	3.1	A		
		SB	7.5	A	6.9	A	2.9	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	2.3	A
		WB	-	-	-	-	2.3	A		
		NB	-	-	0.0	A	-	-		
		SB	-	-	0.0	A	-	-		

Based on the analysis, the study intersections are anticipated to operate at a LOS A during the AM and PM peak hours. All turn lane queues are within their storage capacity. The SimTraffic reports are provided in **Appendix C**.

OPENING YEAR NO-BUILD (2024) CONDITIONS

The traffic volumes shown in **Exhibit 6** in **Appendix A** were used in the Opening Year No-Build (2024) analysis. These volumes were adjusted based on growth rates determined in **Table 2**. **Tables 7 & 8** show the LOS and delay for the study intersections under Opening Year No-Build (2024) conditions during the AM & PM peak hours.

Table 7 – Opening Year No-Build (2024) AM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	0.4	A	0.6	A	0.2	A	7.9	A
		WB	1.2	A	2.0	A	0.4	A		
		NB	6.2	A	6.6	A	2.5	A		
		SB	2.7	A	7.9	A	3.0	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	0.9	A	1.9	A	0.1	A	7.6	A
		WB	-	-	0.4	A	0.0	A		
		NB	4.8	A	7.2	A	2.9	A		
		SB	4.9	A	7.6	A	2.5	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	3.0	A
		WB	-	-	-	-	3.0	A		
		NB	-	-	0.0	A	-	-		
		SB	1.9	A	0.0	A	-	-		

Table 8 – Opening Year No-Build (2024) PM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	1.3	A	1.1	A	0.3	A	8.9	A
		WB	1.6	A	2.5	A	0.6	A		
		NB	8.6	A	8.9	A	3.7	A		
		SB	7.6	A	7.5	A	3.9	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	1.5	A	2.5	A	0.8	A	7.1	A
		WB	1.1	A	0.6	A	0.0	A		
		NB	7.1	A	6.3	A	3.2	A		
		SB	6.4	A	6.6	A	2.9	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	2.6	A
		WB	-	-	-	-	2.6	A		
		NB	-	-	0.0	A	-	-		
		SB	-	-	0.0	A	-	-		

Similar to the Existing Condition, the study intersections operate at LOS A in the Opening Year (2024) No-Build Conditions. All turn lane queues are within their storage capacity. The SimTraffic reports are provided in **Appendix C**.

OPENING YEAR BUILD (2024) CONDITIONS

The traffic volumes shown in **Exhibit 7** in **Appendix A** were used for the Opening Year Build (2024) analysis. This scenario assumed no geometric improvements. It was assumed that all site accesses would be side street stop controlled. **Tables 9 & 10** show the LOS and delay for the study intersections under Opening Year Build (2024) conditions during the AM and PM peak hours.

Table 9 – Opening Year Build (2024) AM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	0.8	A	0.7	A	0.2	A	7.9	A
		WB	1.4	A	2.2	A	0.4	A		
		NB	6.6	A	7.7	A	3.0	A		
		SB	6.4	A	7.9	A	3.0	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	0.8	A	2.0	A	0.1	A	8.3	A
		WB	0.9	A	0.6	A	0.2	A		
		NB	5.2	A	6.9	A	3.3	A		
		SB	6.7	A	8.3	A	2.6	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	3.8	A
		WB	-	-	-	-	3.8	A		
		NB	-	-	0.3	A	-	-		
		SB	1.9	A	0.0	A	-	-		
Foothill Trail & 20 th Avenue South	Side Street Stop	EB	4.2	A	-	-	-	-	4.2	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.1	A	-	-		
		SB	-	-	0.4	A	0.2	A		
Foothill Trail & 22 nd Avenue South	Side Street Stop	EB	4.0	A	-	-	3.0	A	4.0	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.0	A	-	-		
		SB	-	-	0.0	A	0.0	A		
Pike Lake Road & 22 nd Avenue South	Side Street Stop	EB	-	-	-	-	-	-	3.9	A
		WB	3.9	A	-	-	2.8	A		
		NB	-	-	0.1	A	0.0	A		
		SB	2.3	A	0.5	A	-	-		

Table 10 – Opening Year Build (2024) PM Peak Hour Intersection Analysis

Intersection	Control	Approach	Operations by Movement						Overall Intersection	
			Left		Through		Right			
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Eagle Creek Boulevard & Pike Lake Road	Side Street Stop	EB	1.5	A	1.1	A	0.3	A	9.0	A
		WB	1.2	A	2.6	A	0.6	A		
		NB	8.8	A	9.0	A	3.8	A		
		SB	7.8	A	8.8	A	4.6	A		
Eagle Creek Boulevard & Foothill Trail	Side Street Stop	EB	1.9	A	2.6	A	0.5	A	8.9	A
		WB	1.3	A	0.8	A	0.2	A		
		NB	7.1	A	8.0	A	6.5	A		
		SB	8.9	A	8.7	A	3.3	A		
Foothill Trail & 21 st Avenue East	Side Street Stop	EB	-	-	-	-	-	-	2.2	A
		WB	-	-	-	-	2.2	A		
		NB	-	-	0.2	A	-	-		
		SB	-	-	0.0	A	-	-		
Foothill Trail & 20 th Avenue South	Side Street Stop	EB	4.1	A	-	-	-	-	4.1	A
		WB	-	-	-	-	-	-		
		NB	-	-	0.1	A	-	-		
		SB	-	-	0.5	A	0.3	A		
Foothill Trail & 22 nd Avenue South	Side Street Stop	EB	3.7	A	-	-	2.9	A	3.7	A
		WB	-	-	-	-	-	-		
		NB	1.6	A	0.1	A	-	-		
		SB	-	-	0.2	A	0.0	A		
Pike Lake Road & 22 nd Avenue South	Side Street Stop	EB	-	-	-	-	-	-	4.5	A
		WB	4.5	A	-	-	2.8	A		
		NB	-	-	0.0	A	0.0	A		
		SB	2.6	A	0.7	A	-	-		

Based on the analysis, the study intersections are anticipated to operate at a LOS A during the Opening Year (2024) Build AM and PM peak hours. All turn lane queues are within their storage capacity. The additional trips generated by the development are not anticipated to significantly impact the surrounding network and no geometric mitigation is recommended. It is recommended to install side street stop control at the accesses. The SimTraffic reports are provided in **Appendix C**.

CONCLUSIONS AND RECOMMENDATIONS

Keyland Homes is proposing a residential development with 138 single-family homes south of Eagle Creek Boulevard between Pike Lake Road and Foothill Trail in Shakopee, Minnesota. The site is currently undeveloped. In the AM peak hour, the site is anticipated to generate 102 trips (26 entering and 76 exiting). In the PM peak hour, the site is anticipated to generate 137 trips (86 entering and 51 exiting). The residential development is anticipated to generate 1,304 daily trips.

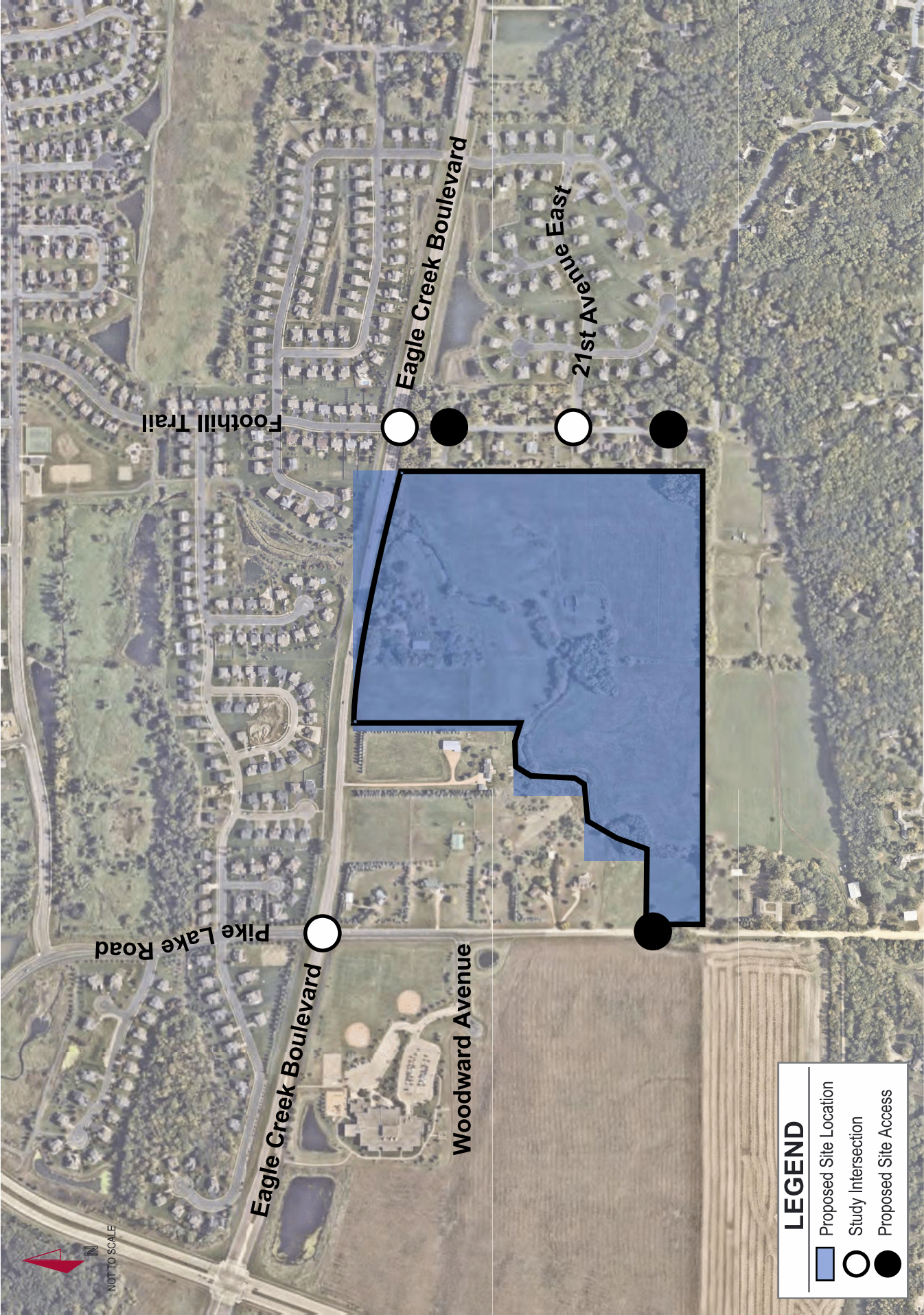
The proposed residential development will have a total of three (3) full movement site accesses, this includes an access point along Pike Lake Road, an access point on Foothill Trail at 20th Avenue, and an access point on Foothill Trail at 22nd Avenue.

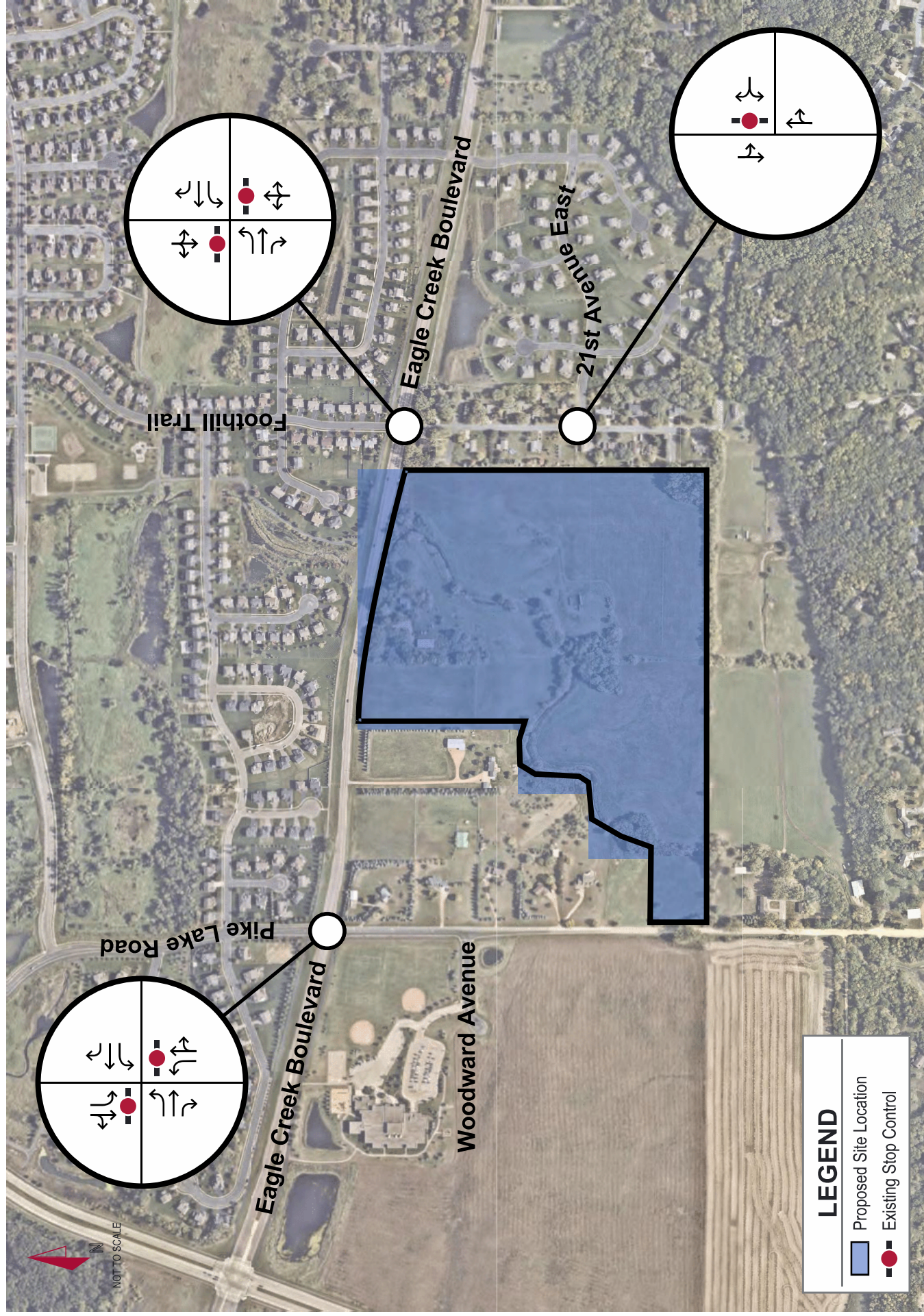
A capacity analysis was performed for the Existing (2020) and Opening Year (2024) Conditions.

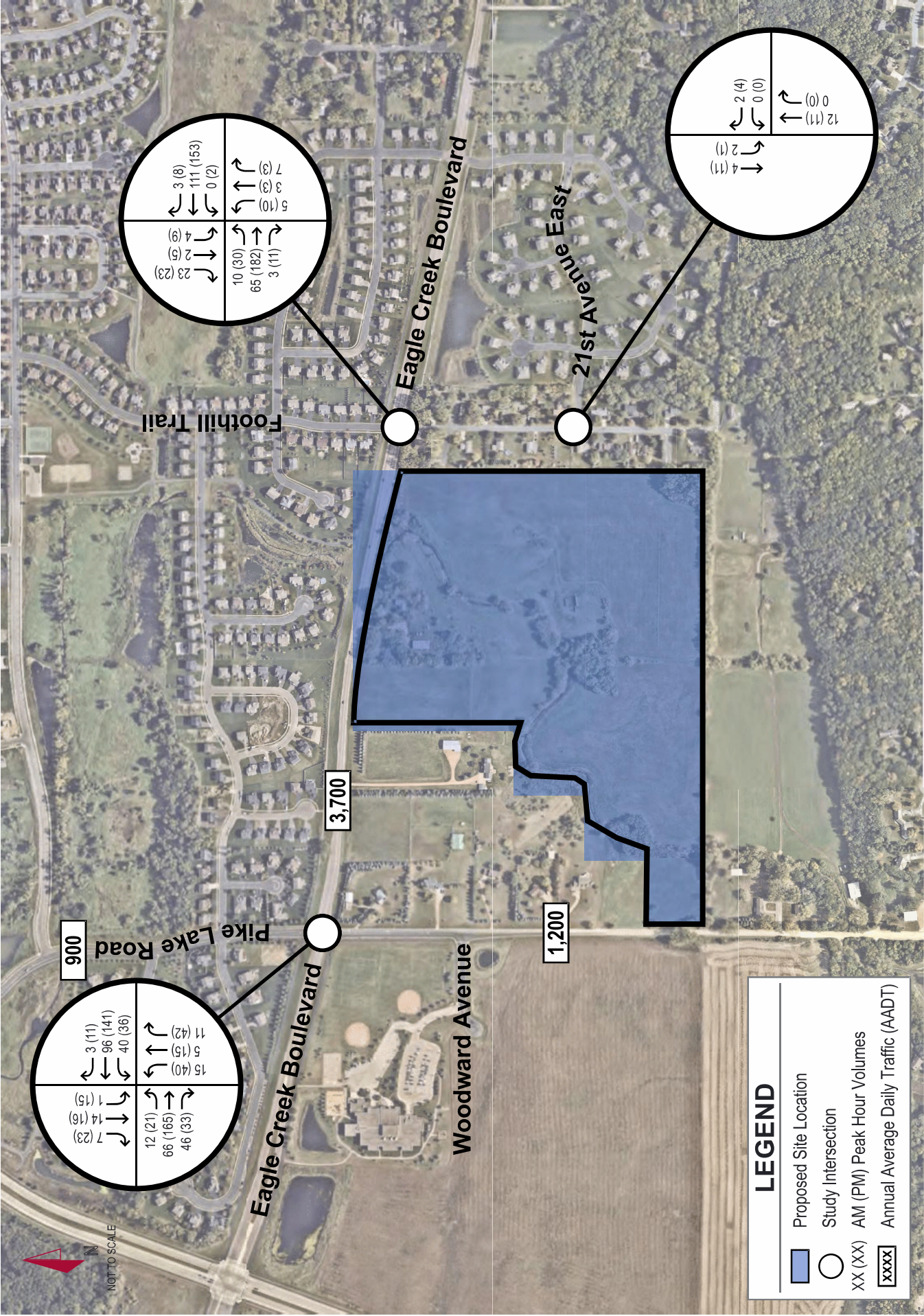
The operations at the study intersections in the Existing (2020), Opening Year (2024) No-Build, and Opening Year (2024) Build Conditions are acceptable in all analysis scenarios with all study intersections and individual movements in all conditions operating at LOS A. In addition, the site accesses will operate at LOS A in the Opening Year (2024) Build scenarios. There are no queueing issues in the Existing (2020), Opening Year (2024) No-Build, or Opening Year (2024) Build Conditions. The Opening Year (2024) Build Condition is not anticipated to have any operation problems. No geometric mitigation is required as a result of the development. It is recommended to install side street stop control at all site accesses.

APPENDIX

- A. Exhibits**
- B. Site Plan**
- C. SimTraffic Analysis Results**
- D. Turning Movement Counts**







**EXISTING YEAR (2020) PEAK HOUR TRAFFIC VOLUMES
KEYLAND RESIDENTIAL DEVELOPMENT, SHAKOPEE MN**

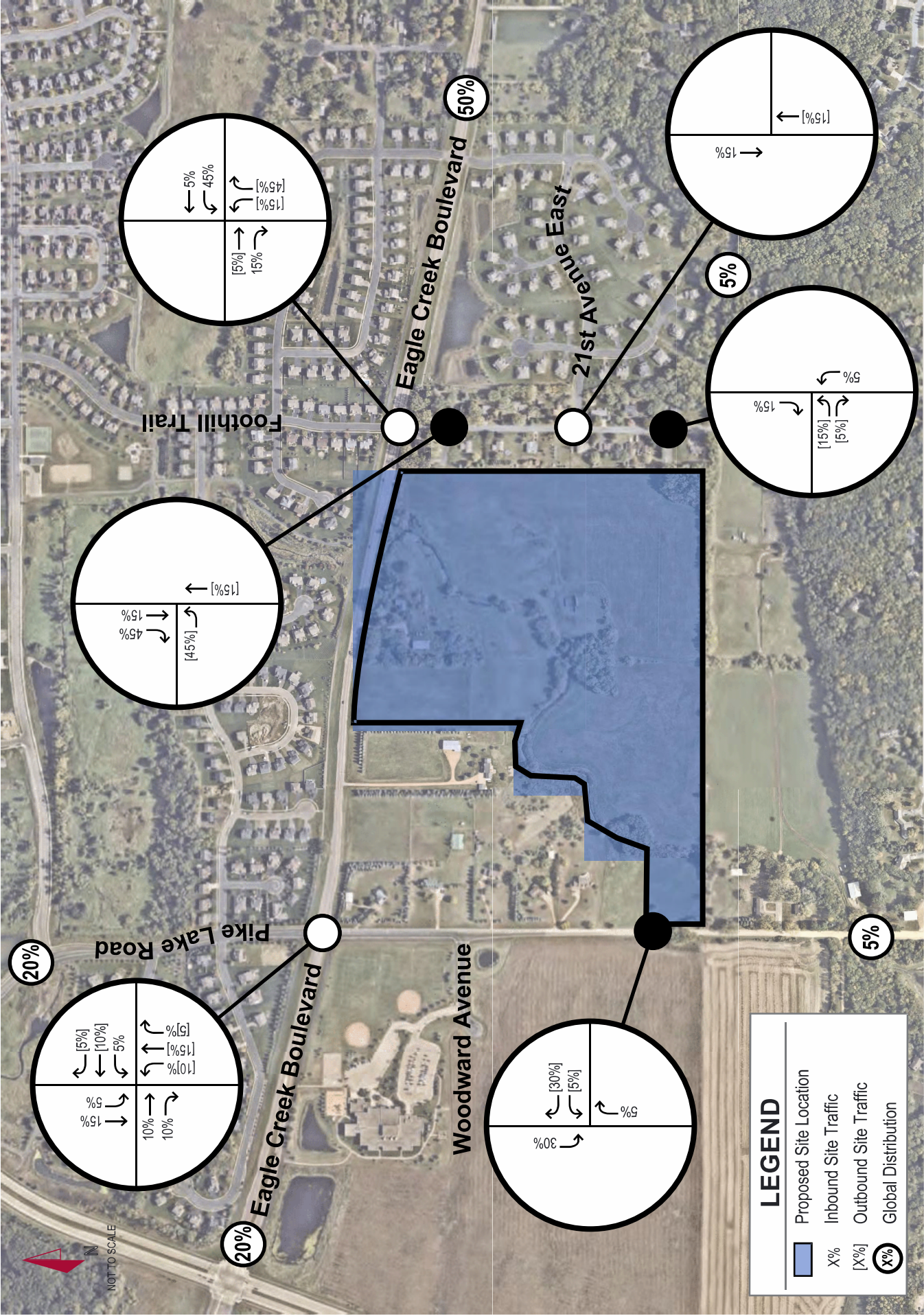
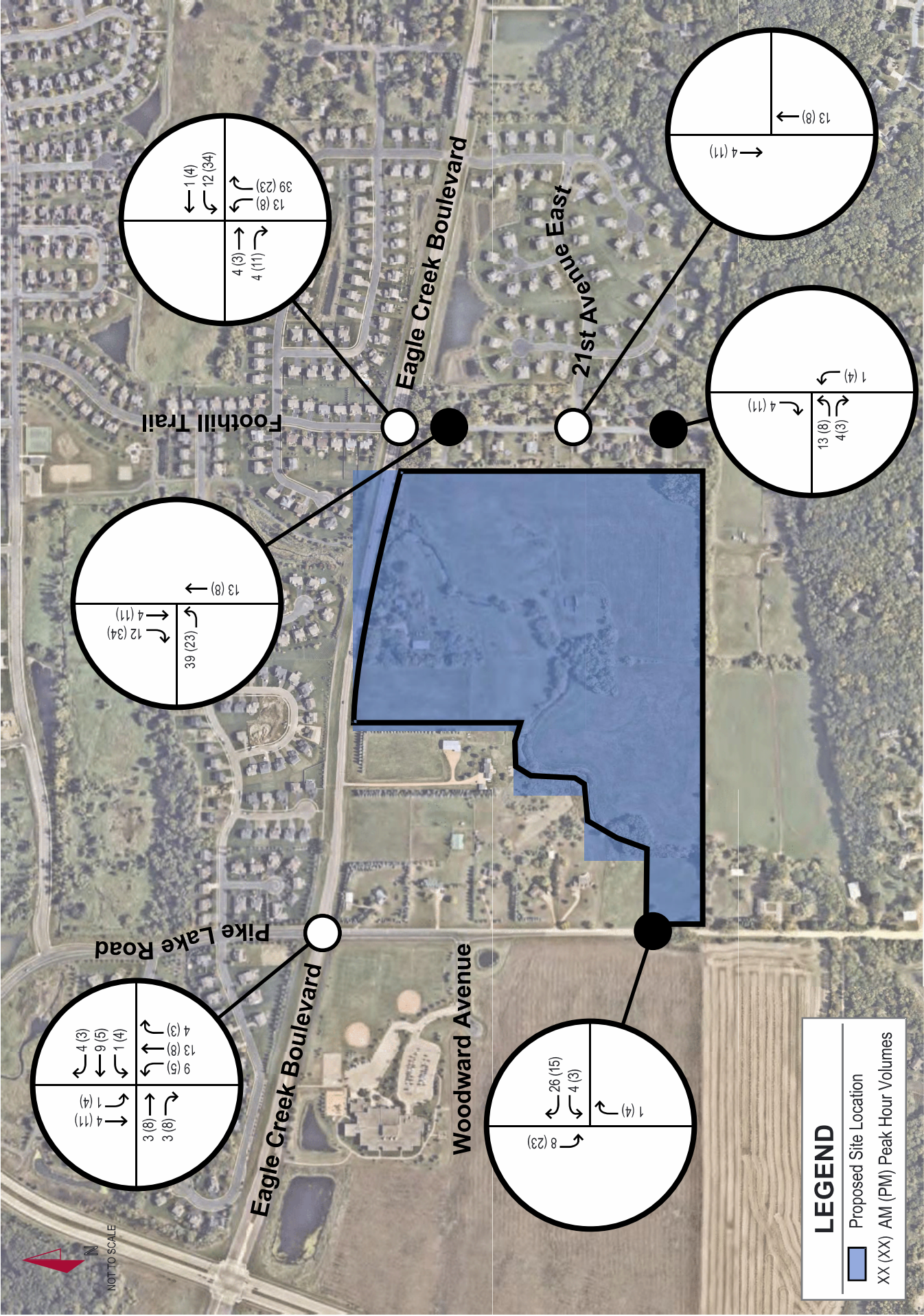


EXHIBIT 4
SITE TRAFFIC DISTRIBUTION
KEYLAND RESIDENTIAL DEVELOPMENT, SHAKOPEE MN



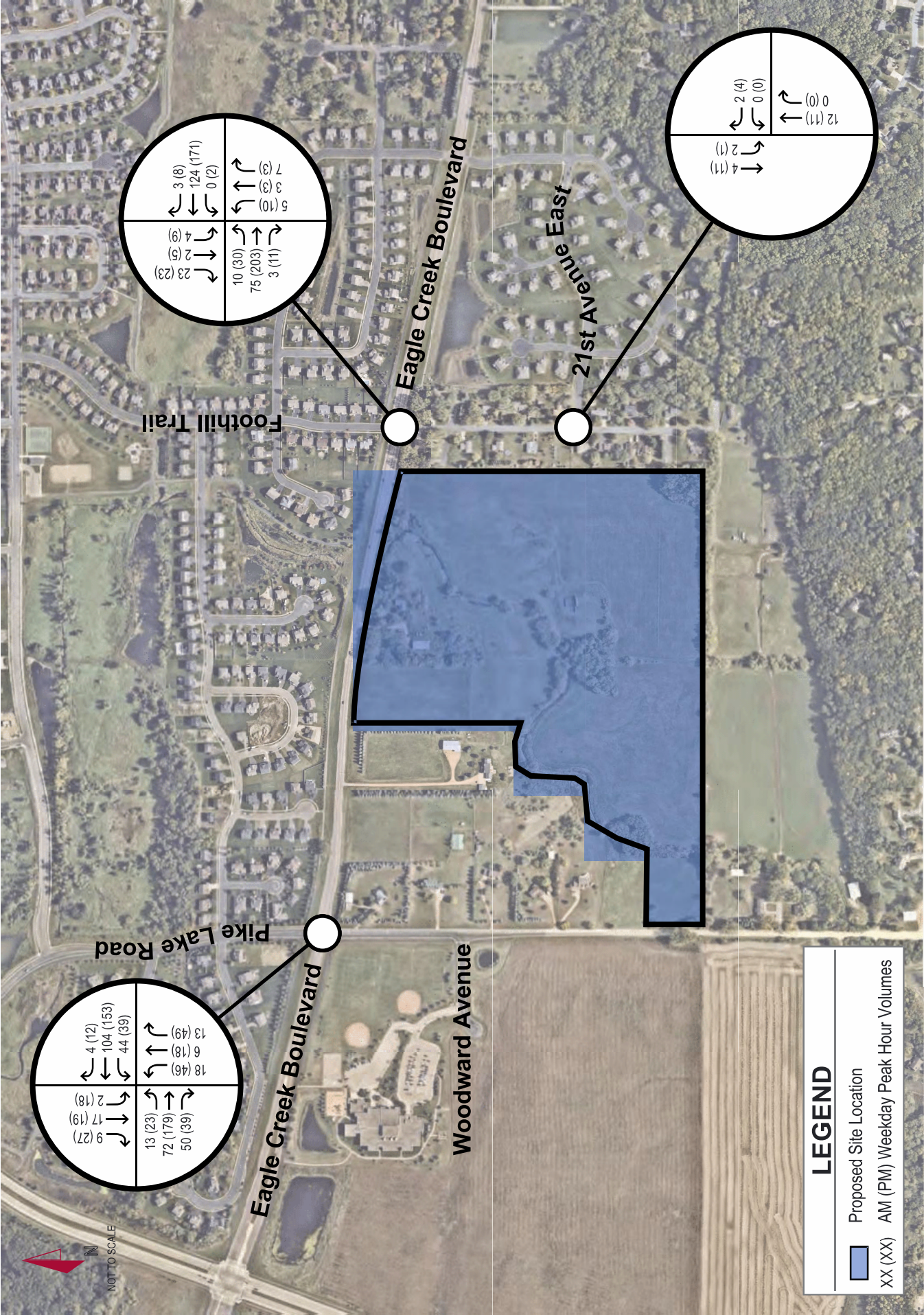
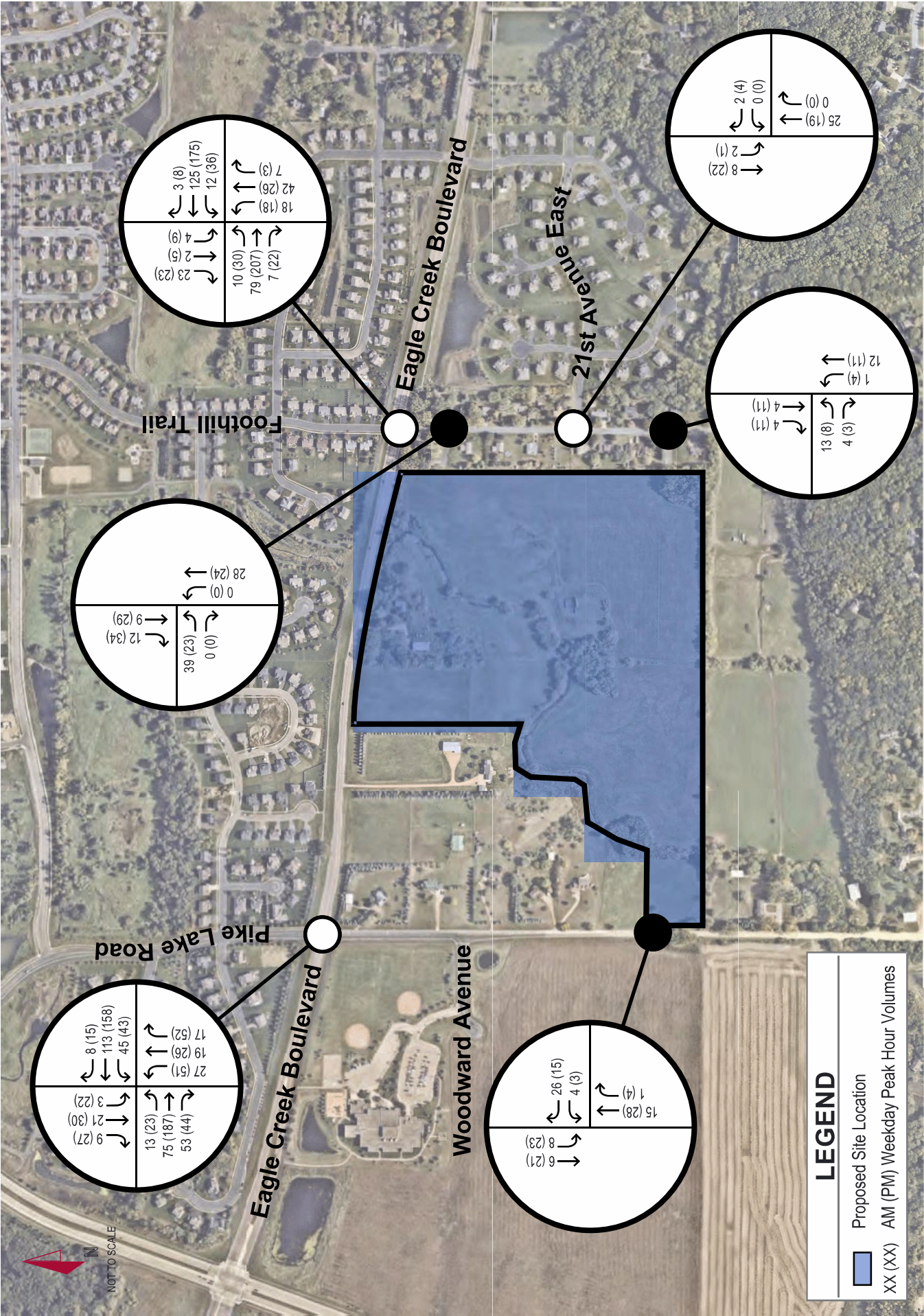


EXHIBIT 6

OPENING YEAR (2024) NO-BUILD PEAK HOUR TRAFFIC VOLUMES

KEYLAND RESIDENTIAL DEVELOPMENT, SHAKOPEE MN



2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.8	0.2	3.7	0.0	0.0	0.2	2.5	0.1	0.1		0.1	0.1
Total Del/Veh (s)	0.5	0.5	0.1	1.0	1.9	0.2	5.6	6.8	2.4		6.9	3.0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1.7

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	3.8	0.0	0.0	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	0.7	1.8	0.6	0.3	0.1	5.1	6.8	2.4	5.9	5.9	2.6	1.3

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.3	0.0	1.5	0.0	0.4

Total Zone Performance

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	77.1

Queuing and Blocking Report
Existing (2020) AM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	WB	NB	NB	SB	SB
Directions Served	L	L	L	TR	L	TR
Maximum Queue (ft)	8	22	30	29	12	35
Average Queue (ft)	1	2	11	13	0	15
95th Queue (ft)	7	12	33	35	6	40
Link Distance (ft)				1588		494
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	250	250	350		125	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	9	36	30
Average Queue (ft)	1	11	15
95th Queue (ft)	6	33	36
Link Distance (ft)		180	564
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	2
95th Queue (ft)	13
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.3	0.3	3.4	0.0	0.0	0.1	2.9	0.1	0.2	4.2	0.2	0.1
Total Del/Veh (s)	0.9	1.0	0.3	1.5	2.4	0.4	7.6	8.2	3.4	8.4	8.4	3.5

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	2.7

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.3	3.1	0.2	3.7	0.0	0.0	0.0	0.1	0.2	0.1
Total Del/Veh (s)	1.4	2.5	0.6	1.3	0.5	0.1	5.8	6.0	3.1	7.5	6.9	2.9

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	1.9

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0		0.0	0.0
Total Del/Veh (s)	2.3	0.0		0.0	0.3

Total Zone Performance

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	93.9

Queuing and Blocking Report
Existing (2020) PM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	WB	NB	NB	SB	SB
Directions Served	L	L	L	TR	L	TR
Maximum Queue (ft)	15	29	55	54	34	54
Average Queue (ft)	1	4	23	26	13	24
95th Queue (ft)	9	20	49	47	38	49
Link Distance (ft)				1588		494
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	250	250	350		125	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	26	12	27	39
Average Queue (ft)	3	0	11	17
95th Queue (ft)	17	5	33	38
Link Distance (ft)			180	564
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250	225		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	3
95th Queue (ft)	18
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.8	0.3	3.6	0.1	0.0	0.2	2.6	0.1	0.1	2.5	0.1	0.1
Total Del/Veh (s)	0.4	0.6	0.2	1.2	2.0	0.4	6.2	6.6	2.5	2.7	7.9	3.0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	1.9

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	4.2	0.0	0.0	0.0	0.1	0.1	0.1	0.2
Total Del/Veh (s)	0.9	1.9	0.1	0.4	0.0	4.8	7.2	2.9	4.9	7.6	2.5	1.4

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.0	0.0	1.9	0.0	0.4

Total Zone Performance

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	136.3

Queuing and Blocking Report
Opening Year (2024) No-Build AM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	R	L	L	TR	L	TR
Maximum Queue (ft)	11	1	29	35	33	17	44
Average Queue (ft)	1	0	3	15	14	1	19
95th Queue (ft)	6	0	15	39	37	8	46
Link Distance (ft)					1588		494
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250	350		125	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	13	32	30
Average Queue (ft)	1	13	15
95th Queue (ft)	7	35	35
Link Distance (ft)		180	564
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	250		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	23	6
Average Queue (ft)	2	0
95th Queue (ft)	16	4
Link Distance (ft)	343	576
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.5	0.3	3.3	0.1	0.0	0.0	3.1	0.1	0.1	4.1	0.2	0.1
Total Del/Veh (s)	1.3	1.1	0.3	1.6	2.5	0.6	8.6	8.9	3.7	7.6	7.5	3.9

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	2.9

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	4.2	0.2	4.0	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	1.5	2.5	0.8	1.1	0.6	0.0	7.1	6.3	3.2	6.4	6.6	2.9

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	2.0

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.0		0.0	0.0
Total Del/Veh (s)	2.6	0.0		0.0	0.3

Total Zone Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	99.6

Queuing and Blocking Report
Opening Year (2024) No-Build PM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	WB	NB	NB	SB	SB
Directions Served	L	L	L	TR	L	TR
Maximum Queue (ft)	20	36	72	68	30	54
Average Queue (ft)	3	6	28	30	12	25
95th Queue (ft)	14	24	55	52	37	48
Link Distance (ft)				1588		494
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	250	250	350		125	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	29	8	39	49
Average Queue (ft)	3	0	12	21
95th Queue (ft)	16	4	35	40
Link Distance (ft)			180	564
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250	225		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	4
95th Queue (ft)	21
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.3	3.7	0.1	0.0	0.0	1.2	0.1	0.0	3.5	0.1	0.1
Total Del/Veh (s)	0.8	0.7	0.2	1.4	2.2	0.4	6.6	7.7	3.0	6.4	7.9	3.0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	2.4

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	3.8	0.2	4.2	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	0.8	2.0	0.1	0.9	0.6	0.2	5.2	6.9	3.3	6.7	8.3	2.6

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	2.3

5: Pike Lake Road & 22nd Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.9	2.8	0.1	0.0	2.3	0.5	1.1

11: Foothill Trail & 20th Avenue Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.2	0.1	0.4	0.2	2.0

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBL	SBT	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.8	0.3	1.9	0.0	0.5

13: Foothill Trail & 22nd Avenue Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1		0.1	0.0	0.0	0.1
Total Del/Veh (s)	4.0	3.0		0.0	0.0	0.0	1.6

Total Network Performance

Denied Del/Veh (s)	0.9
Total Del/Veh (s)	4.9

Queuing and Blocking Report
Opening Year (2024) Build AM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	R	L	L	TR	L	TR
Maximum Queue (ft)	17	3	23	51	47	30	44
Average Queue (ft)	1	0	3	19	21	3	20
95th Queue (ft)	7	1	16	45	44	18	45
Link Distance (ft)					1588		494
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250	350		125	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	18	17	59	30
Average Queue (ft)	1	1	27	17
95th Queue (ft)	8	10	48	36
Link Distance (ft)			180	564
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250	225		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Pike Lake Road & 22nd Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	53
Average Queue (ft)	23
95th Queue (ft)	49
Link Distance (ft)	488
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 11: Foothill Trail & 20th Avenue

Movement	EB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	23
95th Queue (ft)	52
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	34
Average Queue (ft)	2
95th Queue (ft)	16
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: Foothill Trail & 22nd Avenue

Movement	EB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	11
95th Queue (ft)	36
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	3.6	0.3	3.3	0.1	0.0	0.1	2.8	0.1	0.2	4.2	0.2	0.2
Total Del/Veh (s)	1.5	1.1	0.3	1.2	2.6	0.6	8.8	9.0	3.8	7.8	8.8	4.6

2: Pike Lake Road & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	3.2

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	3.9	0.3	3.8	0.0	0.0	0.0	0.1	0.2	0.1
Total Del/Veh (s)	1.9	2.6	0.5	1.3	0.8	0.2	7.1	8.0	6.5	8.9	8.7	3.3

3: Foothill Trail & Eagle Creek Boulevard Performance by movement

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	2.4

5: Pike Lake Road & 22nd Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.5	2.8	0.0	0.0	2.6	0.7	1.1

11: Foothill Trail & 20th Avenue Performance by movement

Movement	EBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.1	0.1	0.5	0.3	1.0

12: Foothill Trail & 21st Avenue Performance by movement

Movement	WBR	NBT	SBT	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.2	0.2	0.0	0.2

13: Foothill Trail & 22nd Avenue Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.0	0.0	0.1
Total Del/Veh (s)	3.7	2.9	1.6	0.1	0.2	0.0	0.9

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	5.5

Queuing and Blocking Report
Opening Year (2024) Build PM Peak Hour

12/01/2020

Intersection: 2: Pike Lake Road & Eagle Creek Boulevard

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	L	R	L	TR	L	TR
Maximum Queue (ft)	24	34	3	59	70	39	73
Average Queue (ft)	4	4	0	29	33	16	30
95th Queue (ft)	16	20	2	55	55	41	58
Link Distance (ft)					1588		494
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250	250	250	350		125	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 3: Foothill Trail & Eagle Creek Boulevard

Movement	EB	EB	WB	NB	SB
Directions Served	L	R	L	LTR	LTR
Maximum Queue (ft)	33	3	24	50	47
Average Queue (ft)	4	0	6	24	20
95th Queue (ft)	20	2	21	47	41
Link Distance (ft)				180	564
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	250	250	225		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Pike Lake Road & 22nd Avenue

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	31	19
Average Queue (ft)	15	1
95th Queue (ft)	41	11
Link Distance (ft)	488	1588
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Foothill Trail & 20th Avenue

Movement	EB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	384
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 12: Foothill Trail & 21st Avenue

Movement	WB
Directions Served	LR
Maximum Queue (ft)	29
Average Queue (ft)	2
95th Queue (ft)	14
Link Distance (ft)	343
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 13: Foothill Trail & 22nd Avenue

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	32	6
Average Queue (ft)	11	0
95th Queue (ft)	35	4
Link Distance (ft)	287	276
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

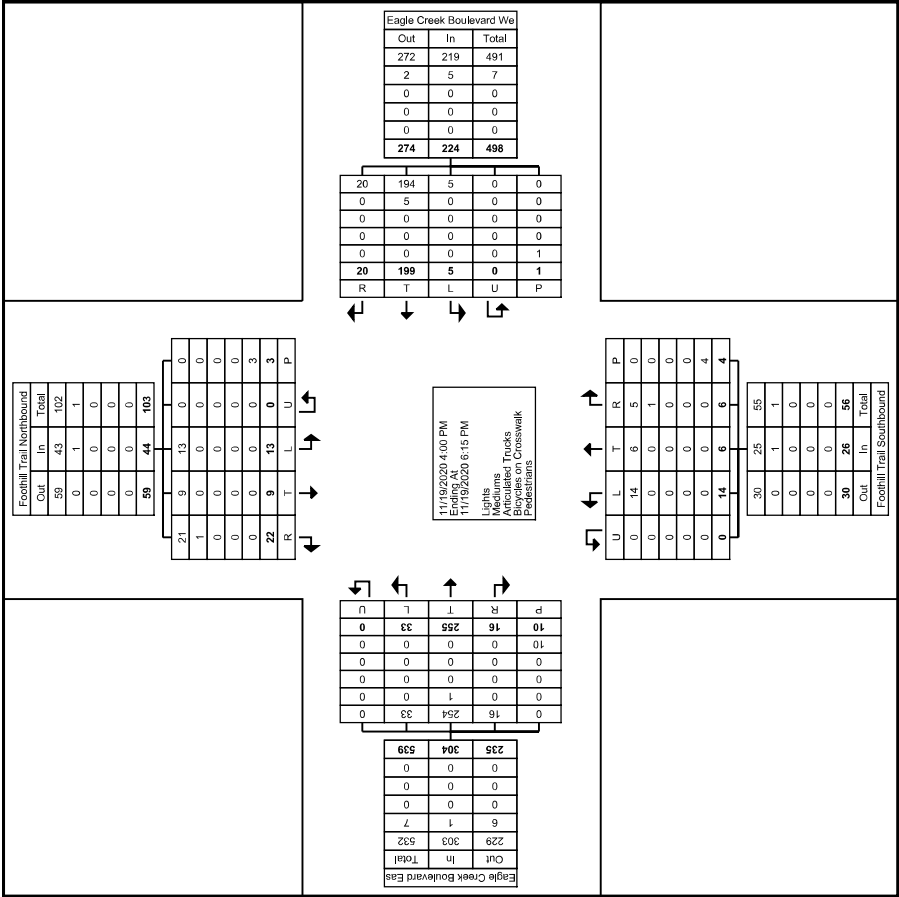
Count Name: Eagle Creek Boulevard & Foothill Trail
Site Code:
Start Date: 11/19/2020
Page No: 1

Turning Movement Data

Start Time	Foothill Trail Northbound						Eagle Creek Boulevard Westbound						Foothill Trail Southbound						Eagle Creek Boulevard Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:00 PM	1	2	2	0	0	5	2	27	0	0	0	29	2	1	1	0	4	4	2	38	6	0	4	46	84
4:15 PM	4	1	1	0	0	6	2	18	0	0	1	20	1	1	4	0	0	6	1	31	4	0	0	36	68
4:30 PM	5	1	1	0	1	7	1	30	0	0	0	31	0	0	1	0	0	1	3	39	6	0	4	48	87
4:45 PM	1	3	3	0	2	7	3	30	1	0	0	34	1	0	3	0	0	4	4	33	4	0	0	41	86
Hourly Total	11	7	7	0	3	25	8	105	1	0	1	114	4	2	9	0	4	15	10	141	20	0	8	171	325
5:00 PM	3	0	4	0	0	7	2	39	1	0	0	42	1	2	2	0	0	5	3	39	5	0	2	47	101
5:15 PM	1	2	1	0	0	4	3	16	2	0	0	21	1	1	0	0	0	2	1	34	3	0	0	38	65
5:30 PM	2	0	1	0	0	3	4	18	0	0	0	22	0	0	2	0	0	2	0	25	4	0	0	29	56
5:45 PM	5	0	0	0	0	5	3	21	1	0	0	25	0	1	1	0	0	2	2	16	1	0	0	19	51
Hourly Total	11	2	6	0	0	19	12	94	4	0	0	110	2	4	5	0	0	11	6	114	13	0	2	133	273
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	22	9	13	0	3	44	20	199	5	0	1	224	6	6	14	0	4	26	16	255	33	0	10	304	598
Approach %	50.0	20.5	29.5	0.0	-	-	8.9	88.8	2.2	0.0	-	-	23.1	23.1	53.8	0.0	-	-	5.3	83.9	10.9	0.0	-	-	-
Total %	3.7	1.5	2.2	0.0	-	7.4	3.3	33.3	0.8	0.0	-	37.5	1.0	1.0	2.3	0.0	-	4.3	2.7	42.6	5.5	0.0	-	50.8	-
Lights	21	9	13	0	-	43	20	194	5	0	-	219	5	6	14	0	-	25	16	254	33	0	-	303	590
% Lights	95.5	100.0	100.0	-	-	97.7	100.0	97.5	100.0	-	-	97.8	83.3	100.0	100.0	-	-	96.2	100.0	99.6	100.0	-	-	99.7	98.7
Mediums	1	0	0	0	-	1	0	5	0	0	-	5	1	0	0	0	-	1	0	1	0	0	-	1	8
% Mediums	4.5	0.0	0.0	-	-	2.3	0.0	2.5	0.0	-	-	2.2	16.7	0.0	0.0	-	-	3.8	0.0	0.4	0.0	-	-	0.3	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	4	-	-	-	-	-	10	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Count Name: Eagle Creek Boulevard & Foothill
Trail
Site Code:
Start Date: 11/19/2020
Page No.: 2



Turning Movement Data Plot

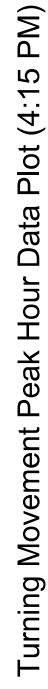
Count Name: Eagle Creek Boulevard & Foothill Trail
Site Code:
Start Date: 11/19/2020
Page No: 3

4:15 PM

[illegible]

Count Name: Eagle Creek Boulevard & Foothill Trail
Site Code:
Start Date: 11/19/2020
Page No: 4

Site Code:
Start Date: 11/19/2020
Page No: 4



Count Name: Eagle Creek Boulevard & Foothill Trail
Site Code:
Start Date: 11/20/2020
Page No: 1

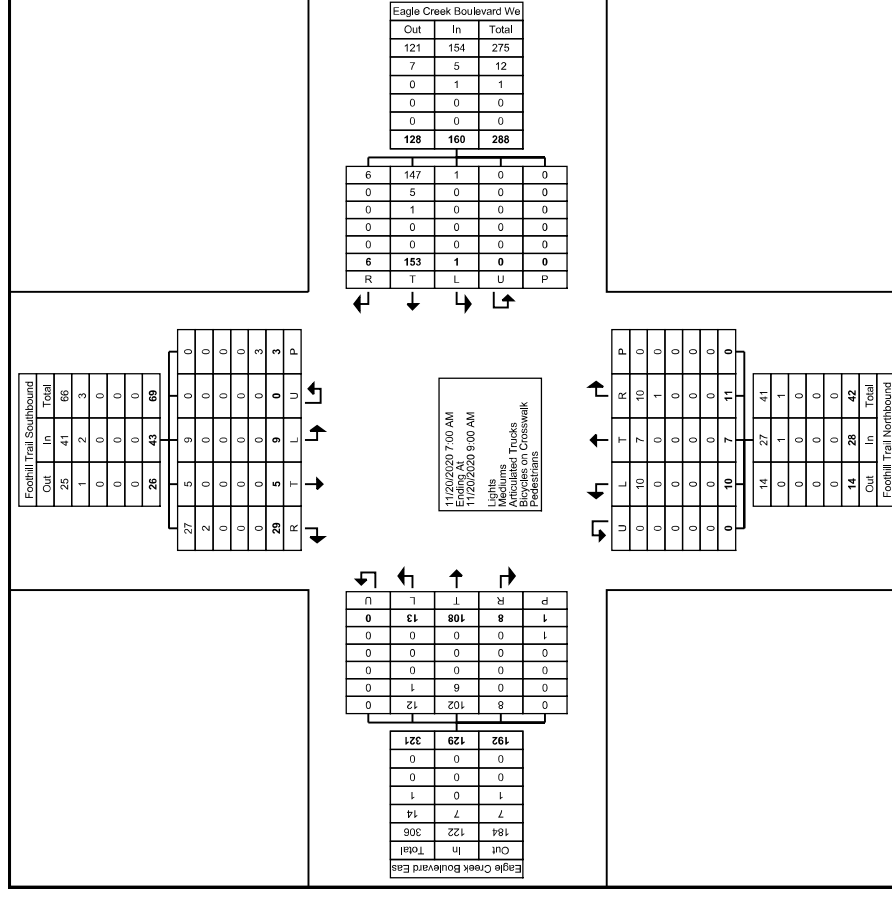
Turning Movement Data

[illegible]

Count Name: Eagle Creek Boulevard & Foothill Trail

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Site Code: _____
Start Date: 11/20/2020
Page No: 2



Turning Movement Data Plot

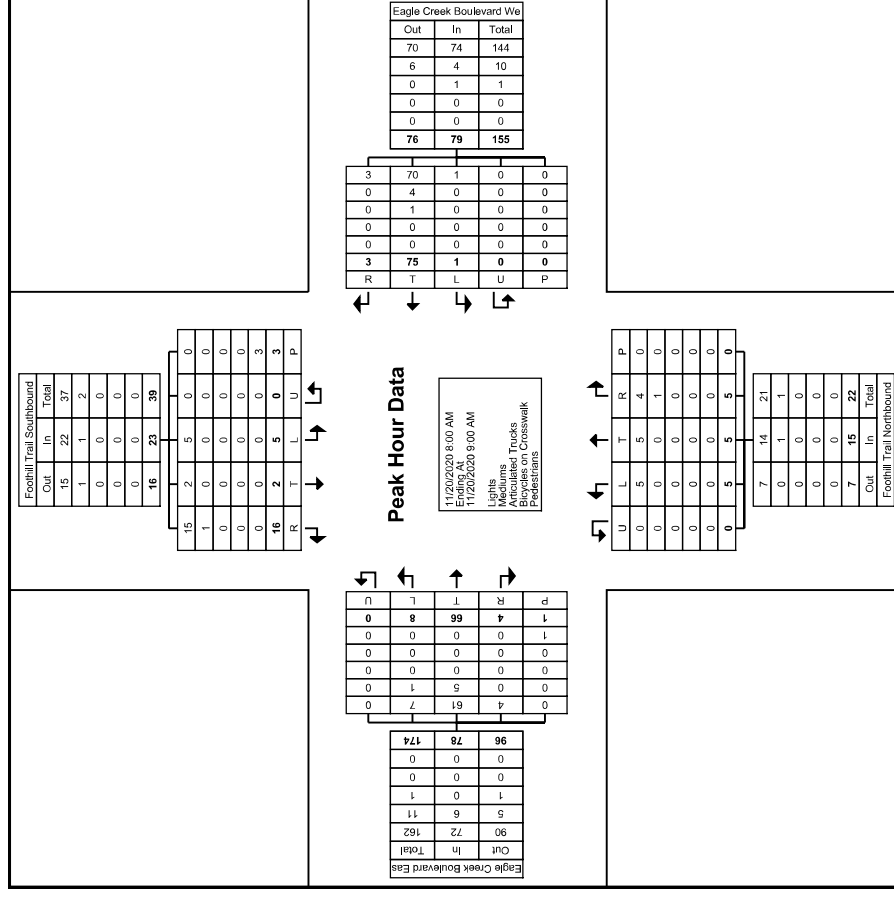
Count Name: Eagle Creek Boulevard & Foothill Trail
Site Code:
Start Date: 11/20/2020
Page No: 3

8:00 AM
Foothill Trail Northbound

Start Time	Foothill Trail Southbound						Eagle Creek Boulevard Westbound						Foothill Trail Northbound						Eagle Creek Boulevard Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Int. Total
8:00 AM	2	1	1	0	0	4	0	13	0	0	0	13	2	2	1	0	0	5	1	14	2	0	0	17	39
8:15 AM	3	0	2	0	3	5	2	16	0	0	0	18	0	2	1	0	0	3	1	7	0	0	0	8	34
8:30 AM	5	1	2	0	0	8	0	31	0	0	0	31	1	1	2	0	0	4	0	21	4	0	1	25	68
8:45 AM	6	0	0	0	0	6	1	15	1	0	0	17	2	0	1	0	0	3	2	24	2	0	0	28	54
Total	16	2	5	0	3	23	3	75	1	0	0	79	5	5	5	0	0	15	4	66	8	0	1	78	195
Approach %	69.6	8.7	21.7	0.0	-	-	3.8	94.9	1.3	0.0	-	-	33.3	33.3	33.3	0.0	-	-	5.1	84.6	10.3	0.0	-	-	-
Total %	8.2	1.0	2.6	0.0	-	11.8	1.5	38.5	0.5	0.0	-	40.5	2.6	2.6	2.6	0.0	-	7.7	2.1	33.8	4.1	0.0	-	40.0	-
PHF	0.667	0.500	0.625	0.000	-	0.719	0.375	0.605	0.250	0.000	-	0.637	0.625	0.625	0.625	0.000	-	0.750	0.500	0.688	0.500	0.000	-	0.686	0.717
Lights	15	2	5	0	-	22	3	70	1	0	-	74	4	5	5	0	-	14	4	61	7	0	-	72	182
% Lights	93.8	100.0	100.0	-	-	95.7	100.0	93.3	100.0	-	-	93.7	80.0	100.0	100.0	-	-	93.3	100.0	92.4	87.5	-	-	92.3	93.3
Medians	1	0	0	0	-	1	0	4	0	0	-	4	1	0	0	0	-	1	0	5	1	0	-	6	12
% Medians	6.3	0.0	0.0	-	-	4.3	0.0	5.3	0.0	-	-	5.1	20.0	0.0	0.0	-	-	6.7	0.0	7.6	12.5	-	-	7.7	6.2
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	1.3	0.0	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Count Name: Eagle Creek Boulevard & Foothill Trail

Site Code:
Start Date: 11/20/2020
Page No: 4

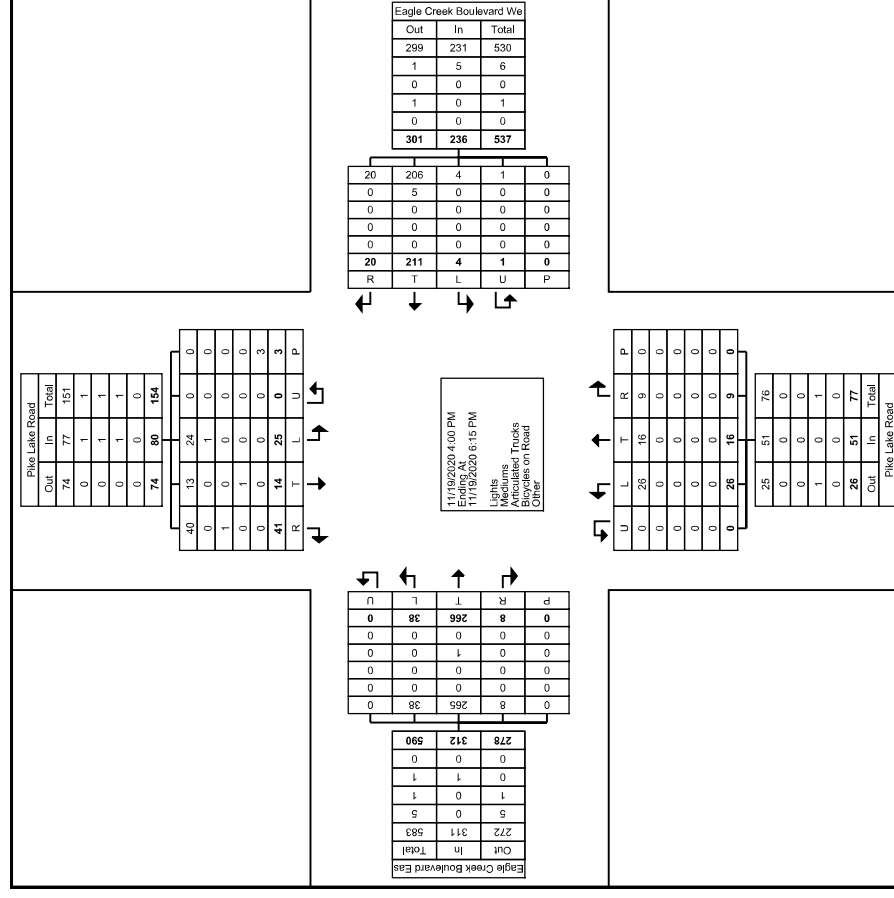


Turning Movement Peak Hour Data Plot (8:00 AM)

Turning Movement Data

Start Time	Pike Lake Road Southbound						Eagle Creek Boulevard Westbound						Pike Lake Road Northbound						Eagle Creek Boulevard Eastbound						
	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	Right	Thru	Left	U-Turn	Peds	App. Total	
4:00 PM	4	2	2	0	1	8	2	24	1	0	0	27	2	4	15	0	0	21	0	42	6	0	0	48	104
4:15 PM	8	2	3	0	0	13	2	23	2	0	0	27	1	4	7	0	0	12	4	36	3	0	0	43	95
4:30 PM	9	3	3	0	0	15	4	31	0	1	0	36	3	2	2	0	0	7	1	42	5	0	0	48	106
4:45 PM	1	2	3	0	1	6	4	31	0	0	0	35	0	0	1	0	0	1	0	33	7	0	0	40	82
Hourly Total	22	9	11	0	2	42	12	109	3	1	0	125	6	10	25	0	0	41	5	153	21	0	0	179	387
5:00 PM	5	2	6	0	1	13	1	43	0	0	0	44	1	2	1	0	0	4	1	39	6	0	0	46	107
5:15 PM	7	2	2	0	0	11	2	16	0	0	0	18	1	0	0	0	0	1	1	37	4	0	0	42	72
5:30 PM	6	1	2	0	0	9	2	19	0	0	0	21	1	4	0	0	0	5	1	23	1	0	0	25	60
5:45 PM	1	0	4	0	0	5	3	24	1	0	0	28	0	0	0	0	0	0	0	14	6	0	0	20	53
Hourly Total	19	5	14	0	1	38	8	102	1	0	0	111	3	6	1	0	0	10	3	113	17	0	0	133	292
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	41	14	25	0	3	80	20	211	4	1	0	236	9	16	26	0	0	51	8	266	38	0	0	312	679
Approach %	51.3	17.5	31.3	0.0	-	-	8.5	89.4	1.7	0.4	-	-	17.6	31.4	51.0	0.0	-	-	2.6	85.3	12.2	0.0	-	-	-
Total %	6.0	2.1	3.7	0.0	-	11.8	2.9	31.1	0.6	0.1	-	34.8	1.3	2.4	3.8	0.0	-	7.5	1.2	39.2	5.6	0.0	-	45.9	-
Lights	40	13	24	0	-	77	20	206	4	1	-	231	9	16	26	0	-	51	8	265	38	0	-	311	670
% Lights	97.6	92.9	96.0	-	-	96.3	100.0	97.6	100.0	100.0	-	97.9	100.0	100.0	100.0	-	-	100.0	100.0	99.6	100.0	-	-	99.7	98.7
Mediums	0	0	1	0	-	1	0	5	0	0	-	5	0	0	0	0	-	0	0	0	0	0	-	0	6
% Mediums	0.0	0.0	4.0	-	-	1.3	0.0	2.4	0.0	0.0	-	2.1	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.9
Articulated Trucks	1	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Articulated Trucks	2.4	0.0	0.0	-	-	1.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Bicycles on Road	0	1	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	2
% Bicycles on Road	0.0	7.1	0.0	-	-	1.3	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.3	0.3
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

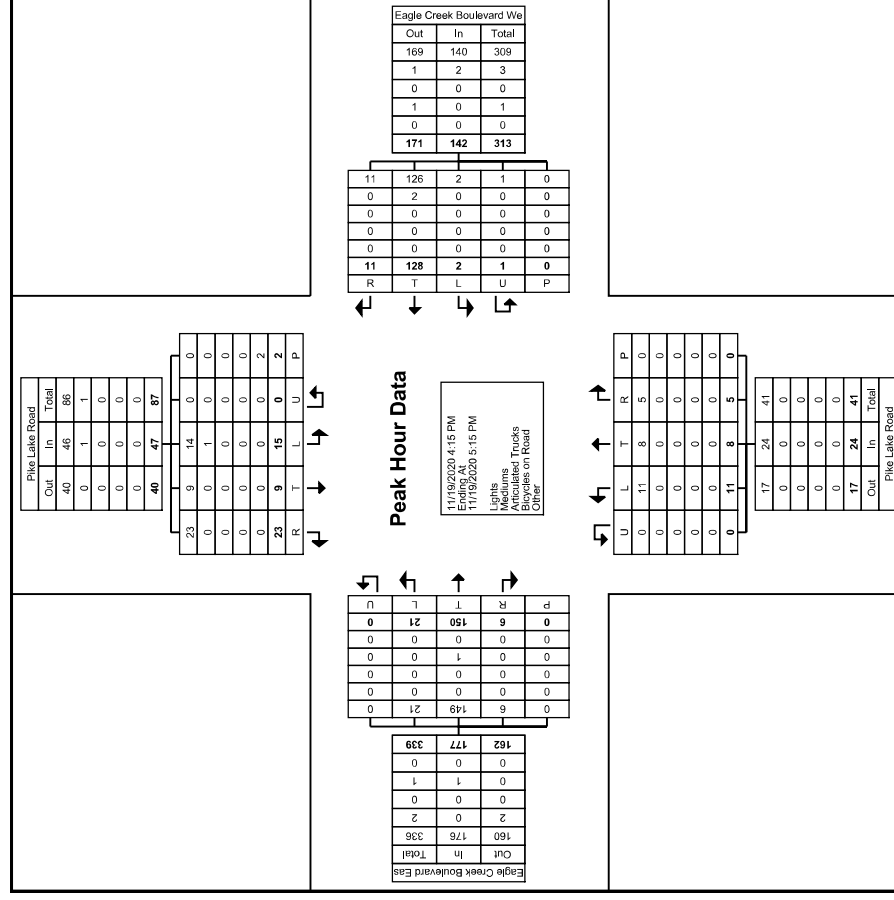
Count Name: Eagle Creek Boulevard & Pike
Lake Road
Site Code:
Start Date: 11/19/2020
Page No: 2



Count Name: Eagle Creek Boulevard & Pike
Lake Road
Site Code:
Start Date: 11/19/2020
Page No: 3

Turning Movement Peak Hour Data (4:15 PM)

[illegible]

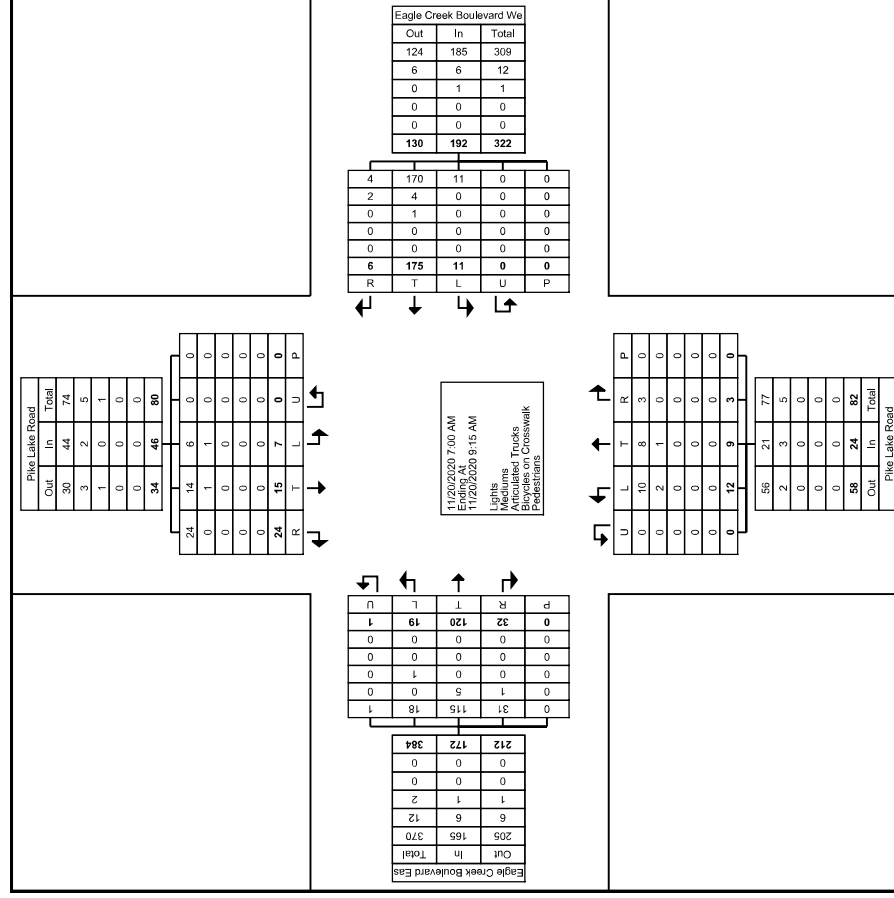


Turning Movement Peak Hour Data Plot (4:15 PM)

Count Name: Eagle Creek Boulevard & Pike
Lake Road
Site Code:
Start Date: 11/20/2020
Page No: 1

Turning Movement Data

[illegible]

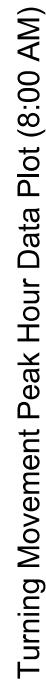


Turning Movement Data Plot

Count Name: Eagle Creek Boulevard & Pike
Lake Road
Site Code:
Start Date: 11/20/2020
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Turning Movement Peak Hour Data (8:00 AM)

[illegible]



Kimley-Horn : Lisle (IL)
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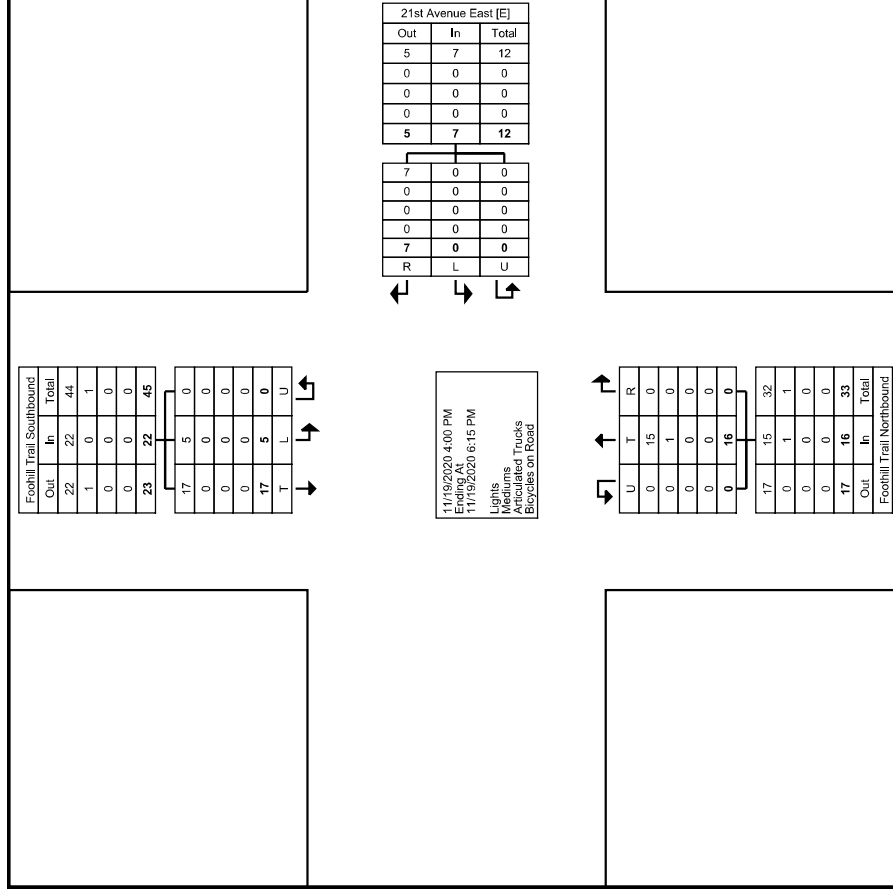
Count Name: Foothill Trail & 21st Avenue East
 Site Code:
 Start Date: 11/19/2020
 Page No: 1

Turning Movement Data

Start Time	Foothill Trail Southbound				21st Avenue East				Foothill Trail Northbound			
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total
4:00 PM	3	0	0	3	1	0	0	1	0	1	0	1
4:15 PM	2	0	0	2	2	0	0	2	0	6	0	6
4:30 PM	2	0	0	2	0	0	0	0	0	0	0	0
4:45 PM	5	1	0	6	1	0	0	1	0	3	0	3
Hourly Total	12	1	0	13	4	0	0	4	0	10	0	10
5:00 PM	2	0	0	2	1	0	0	1	0	2	0	2
5:15 PM	0	3	0	3	1	0	0	1	0	0	0	0
5:30 PM	1	0	0	1	0	0	0	0	0	3	0	3
5:45 PM	2	1	0	3	1	0	0	1	0	1	0	1
Hourly Total	5	4	0	9	3	0	0	3	0	6	0	6
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	17	5	0	22	7	0	0	7	0	16	0	16
Approach %	77.3	22.7	0.0	-	100.0	0.0	0.0	-	0.0	100.0	0.0	-
Total %	37.8	11.1	0.0	48.9	15.6	0.0	0.0	15.6	0.0	35.6	0.0	35.6
Lights	17	5	0	22	7	0	0	7	0	15	0	15
% Lights	100.0	100.0	-	100.0	100.0	-	-	100.0	-	93.8	-	93.8
Mediums	0	0	0	0	0	0	0	0	0	1	0	1
% Mediums	0.0	0.0	-	0.0	0.0	-	-	0.0	-	6.3	-	6.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0

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Count Name: Foothill Trail & 21st Avenue East
Site Code:
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Turning Movement Data Plot

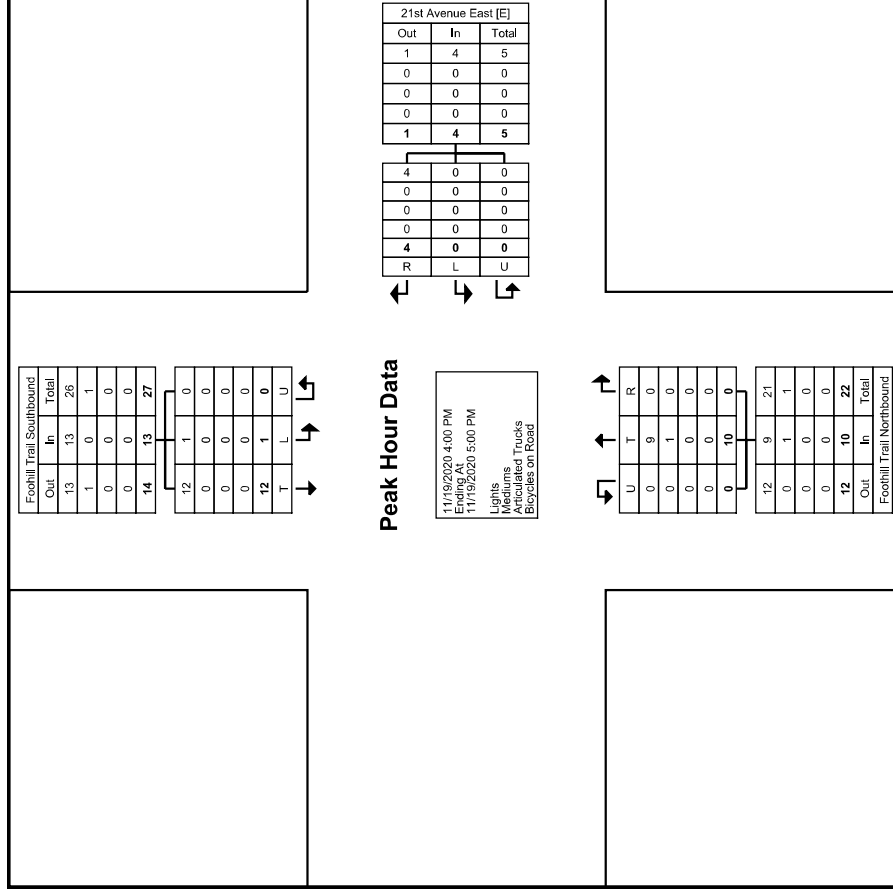
Count Name: Foothill Trail & 21st Avenue East
Site Code:
Start Date: 11/19/2020
Page No: 3

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Foothill Trail Southbound				21st Avenue East				Foothill Trail Northbound				
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
4:00 PM	3	0	0	3	1	0	0	1	0	1	0	1	5
4:15 PM	2	0	0	2	2	0	0	2	0	6	0	6	10
4:30 PM	2	0	0	2	0	0	0	0	0	0	0	0	2
4:45 PM	5	1	0	6	1	0	0	1	0	3	0	3	10
Total	12	1	0	13	4	0	0	4	0	10	0	10	27
Approach %	92.3	7.7	0.0	-	100.0	0.0	0.0	-	0.0	100.0	0.0	-	-
Total %	44.4	3.7	0.0	48.1	14.8	0.0	0.0	14.8	0.0	37.0	0.0	37.0	-
PHF	0.600	0.250	0.000	0.542	0.500	0.000	0.000	0.500	0.000	0.417	0.000	0.417	0.675
Lights	12	1	0	13	4	0	0	4	0	9	0	9	26
% Lights	100.0	100.0	-	100.0	100.0	-	-	100.0	-	90.0	-	90.0	96.3
Mediums	0	0	0	0	0	0	0	0	0	1	0	1	1
% Mediums	0.0	0.0	-	0.0	0.0	-	-	0.0	-	10.0	-	10.0	3.7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0	0.0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0	0.0

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Count Name: Foothill Trail & 21st Avenue East
Site Code:
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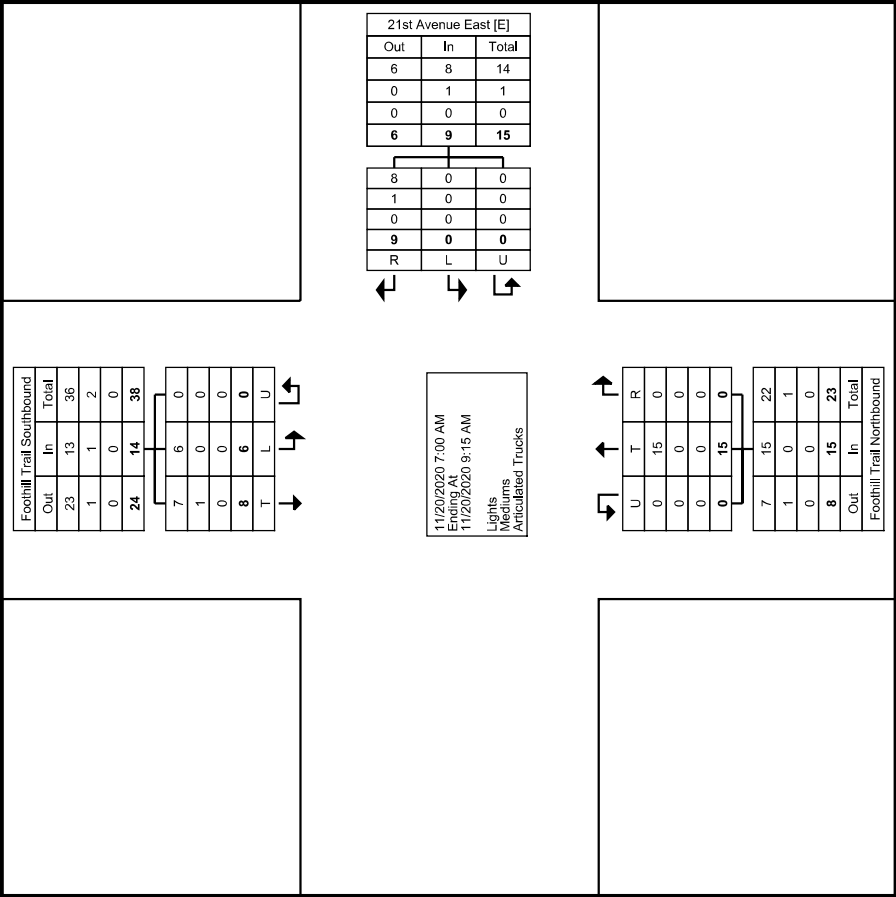
Turning Movement Peak Hour Data Plot (4:00 PM)

Turning Movement Data

Start Time	Foothill Trail Southbound					21st Avenue East			Foothill Trail Northbound				
	Thru	Left	U-Turn	App. Total		Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total
7:00 AM	3	1	0	4		1	0	0	1	0	1	0	1
7:15 AM	0	0	0	0		0	0	0	0	0	5	0	5
7:30 AM	2	0	0	2		0	0	0	0	0	3	0	3
7:45 AM	1	1	0	2		0	0	0	0	0	1	0	1
Hourly Total	6	2	0	8		1	0	0	1	0	10	0	10
8:00 AM	1	1	0	2		2	0	0	2	0	3	0	3
8:15 AM	0	1	0	1		0	0	0	0	0	2	0	2
8:30 AM	0	0	0	0		4	0	0	4	0	0	0	0
8:45 AM	1	2	0	3		2	0	0	2	0	0	0	0
Hourly Total	2	4	0	6		8	0	0	8	0	5	0	5
9:00 AM	0	0	0	0		0	0	0	0	0	0	0	0
Grand Total	8	6	0	14		9	0	0	9	0	15	0	15
Approach %	57.1	42.9	0.0	-		100.0	0.0	0.0	-	0.0	100.0	0.0	-
Total %	21.1	15.8	0.0	36.8		23.7	0.0	0.0	23.7	0.0	39.5	0.0	39.5
Lights	7	6	0	13		8	0	0	8	0	15	0	15
% Lights	87.5	100.0	-	92.9		88.9	-	-	88.9	-	100.0	-	100.0
Mediums	1	0	0	1		1	0	0	1	0	0	0	0
% Mediums	12.5	0.0	-	7.1		11.1	-	-	11.1	-	0.0	-	0.0
Articulated Trucks	0	0	0	0		0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	0.0	-	0.0		0.0	-	-	0.0	-	0.0	-	0.0

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Count Name: Foothill Trail & 21st Avenue East
Site Code:
Start Date: 11/20/2020
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Turning Movement Data Plot

Kimley-Horn : Lisle (IL)
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Count Name: Foothill Trail & 21st Avenue East
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Page No: 3

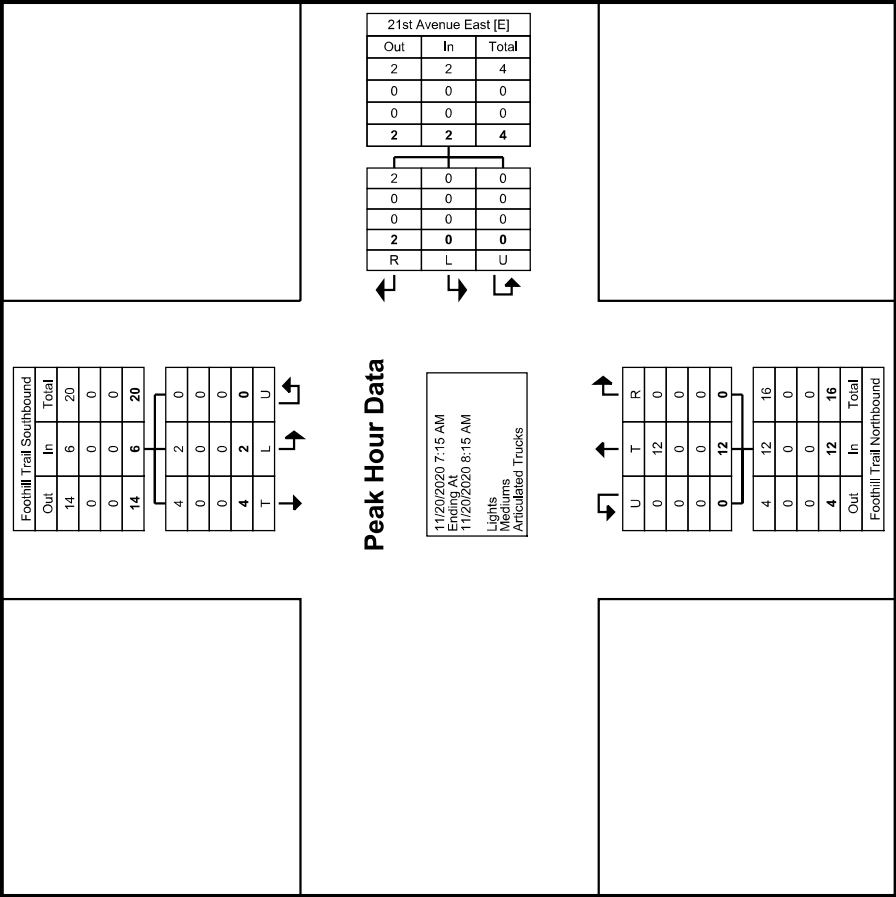
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Turning Movement Peak Hour Data (7:15 AM)

Start Time	Foothill Trail Southbound				21st Avenue East Westbound				Foothill Trail Northbound			
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total
7:15 AM	0	0	0	0	0	0	0	0	0	5	0	5
7:30 AM	2	0	0	2	0	0	0	0	0	3	0	3
7:45 AM	1	1	0	2	0	0	0	0	0	1	0	1
8:00 AM	1	1	0	2	2	0	0	2	0	3	0	3
Total	4	2	0	6	2	0	0	2	0	12	0	12
Approach %	66.7	33.3	0.0	-	100.0	0.0	0.0	-	0.0	100.0	0.0	-
Total %	20.0	10.0	0.0	30.0	10.0	0.0	0.0	10.0	0.0	60.0	0.0	60.0
PHF	0.500	0.500	0.000	0.750	0.250	0.000	0.000	0.250	0.000	0.600	0.000	0.600
Lights	4	2	0	6	2	0	0	2	0	12	0	12
% Lights	100.0	100.0	-	100.0	100.0	-	-	100.0	-	100.0	-	100.0
Mediums	0	0	0	0	0	0	0	0	0	0	0	0
% Mediums	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	-	-	0.0	-	0.0	-	0.0

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Count Name: Foothill Trail & 21st Avenue East
Site Code:
Start Date: 11/20/2020
Page No.: 4



Turning Movement Peak Hour Data Plot (7:15 AM)