Kimley *Whorn*

MEMORANDUM

То:	City of Spring Lake Park
From:	Jacob Rojer, P.E., PTOE Kimley-Horn and Associates, Inc.
Date:	May 4, 2022
Subject:	Mister Car Wash – Trip Generation & Queuing Summary

INTRODUCTION

The proposed site is located on the west corner of the intersection of Highway 65 & Middletown Road in Spring Lake Park, Minnesota. The proposed approximately 0.81-acre site is currently occupied by other retail uses, and the proposed development includes a single car wash tunnel that is served by 4 inbound lanes and the site will also have 24 vacuum stalls. The proposed site plan is attached. The City has asked for a memorandum to document the anticipated trip generation of the proposed development, the anticipated queueing, and the peak operation times for the car wash.

TRIP GENERATION

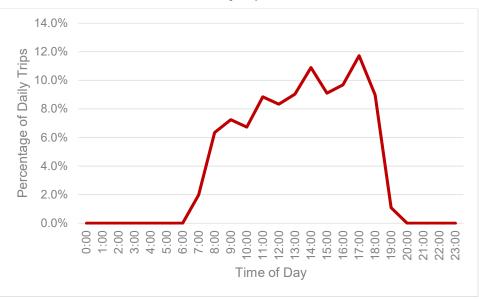
The trip generation for the development was calculated based on data collected at a comparable Mister Car Wash location in Columbia Heights, MN. The data was collected on Thursday, April 21st, 2022. The weather on the day of data collection was mid-50's and sunny, it is anticipated that trip generation and queuing data would be representative of a typical day. **Table 1** provides the daily, AM, and PM peak hour trips for the proposed development based on the local data. It is anticipated that the Spring Lake Park location will operate similarly to the Columbia Heights location even though it is anticipated to have more payment stations and vacuum stalls, this is because there is still only one car wash tunnel proposed on the site. The Spring Lake Park Mister Car Wash is expected to generate approximately 1,560 daily trips, 99 AM peak hour trips (8:00AM – 9:00AM), and 190 PM peak hour trips (4:45PM – 5:45PM). The trip generation counts are attached.

Land Use Description	Intensity /	Daily	AM Peak Hour			PM Peak Hour		
	Units		In	Out	Total	In	Out	Total
Mister Car Was – Columbia Heights	1 car wash tunnel	1,560	57	42	99	99	91	190

Table 1 – Trip Generation

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Chart 1 shows the hourly distribution for the Columbia Heights Mister Car Wash location. The daily trip distribution patterns for the car wash increased throughout the day during operating hours with the PM peak hour traffic accounting for the largest percentage of daily traffic at 11.7%.





CAR WASH VEHICLE QUEUE

As part of the data collection, a camera was set up to observe the queues entering the car wash. Video was observed during peak periods to determine the impacts of the queuing on site. The results of the observations are listed below.

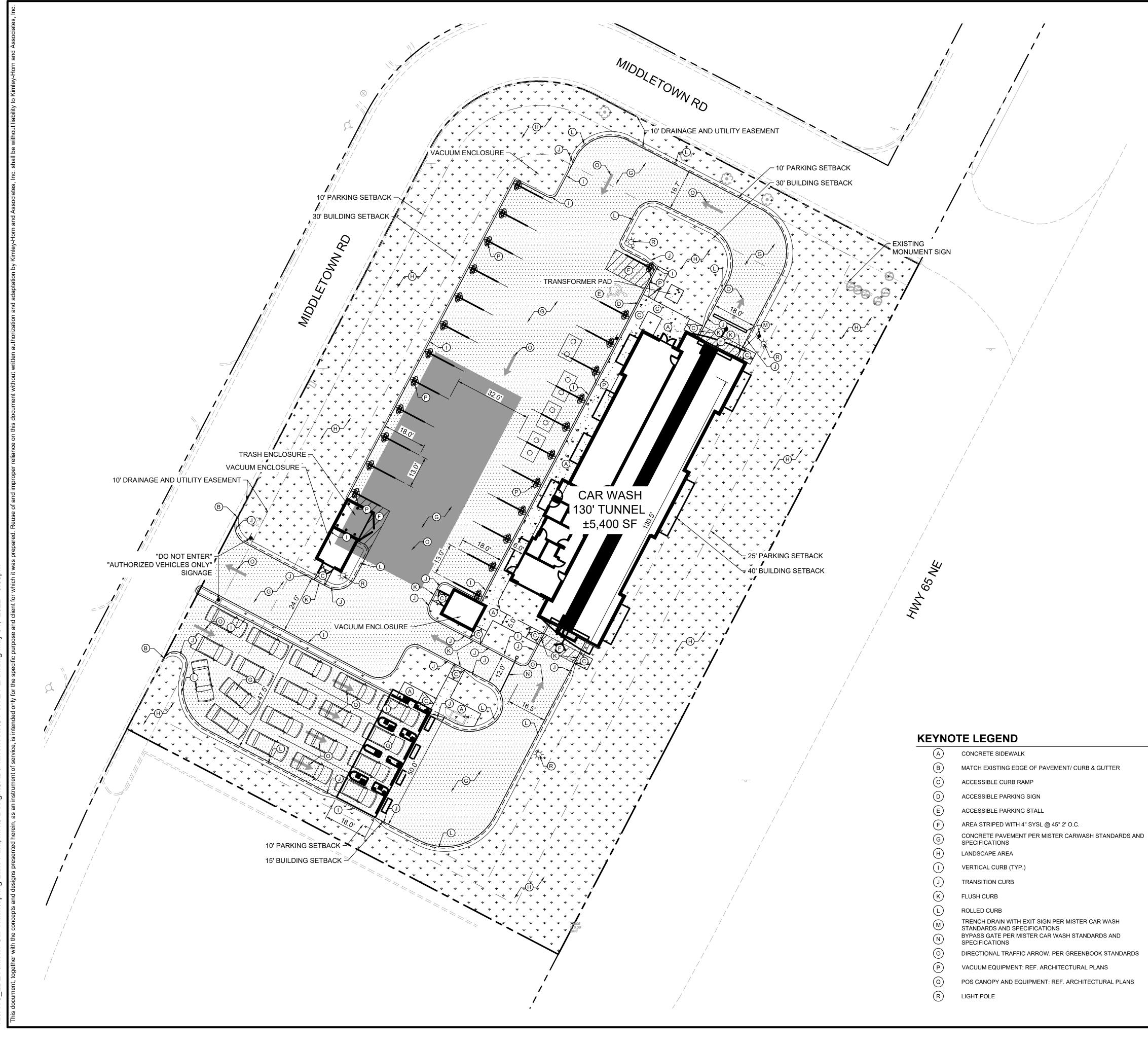
- The maximum observed queue was 7 vehicles during the PM peak hour (4 vehicles in front of the car wash payment and 3 vehicles behind the car wash payment).
- During the PM peak hour (highest traffic volumes), there were minimal queuing issues on site with typically no more than 1 vehicle at each of the two payment stations on site.
- It was observed that the majority of vehicles were part of the Wash Club and therefore had minimal to no wait at the payment stations.

Based on the site plan, the proposed Mister Car Wash in Spring Lake Park will have 4 payment stations. With each lane able to accommodate at least 4 vehicles before impacting Middletown Road and then an additional 5-6 vehicles in front of the payment stations. This results in a total stacking capacity of around 21 vehicles on site. Based on the observed queues and the proposed site plan, it is anticipated that all queues during typical operations can be accommodated on site without impacting Middletown Road.

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CONCLUSION

The proposed car wash is anticipated to generate 1,560 daily trips, with 190 trips generated during the car wash peak hour of 4:45 PM to 5:45 PM. The observed maximum queue analysis at the Columbia Heights Mister Car Wash was 7 vehicles. With the proposed site layout providing storage on-site for approximately 21 vehicles, the car wash queues are not anticipated to impact operations of adjacent land uses or public streets.



LEGEND

_____x_____x_____ _____

PROPERTY LINE

PROPOSED FENCE SETBACK LINE

PROPOSED CURB AND GUTTER

PROPOSED CONCRETE PAVEMENT

PROPOSED CONCRETE SIDEWALK

PROPERTY SUMMARY				
SPRING LAKE PARK, MN MISTER CAR WASH				
TOTAL PROPERTY AREA 1.46 AC				
ZONING SUMMARY				
EXISTING ZONING	C-1			
PROPOSED ZONING	C-1			
PARKING SETBACKS	FRONT: 25' SIDE: 10' REAR: 10'			
BUILDING SETBACKS	FRONT: 40' SIDE: 15' REAR: 30'			

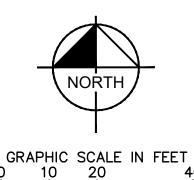
BUILDING DATA SUMMARY				
AREAS				
PROPOSED PROPERTY	1.46 AC			
BUILDING AREA	±5,400 SF			
PARKING				
REQUIRED PARKING	4 SPACES PER 1,000 SF			
PROPOSED PARKING	22 SPACES			
ADA STALLS REQ'D / PROVIDED	1 STALLS / 1 STALLS			

SITE PLAN NOTES

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
- 2. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
- 3. ALL INNER CURBED RADII ARE TO BE 2' AND OUTER CURBED RADII ARE TO BE <10'> UNLESS OTHERWISE NOTED. STRIPED RADII ARE TO BE 5'.
- 4. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- 5. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BID
- 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
- SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY EGAN, FIELD & NOWAK, INC.

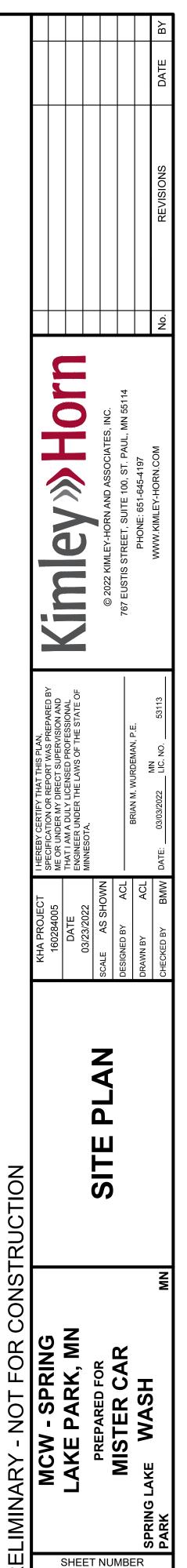
KIMLEY-HORN ASSUMES NO LIABILITY FOR ANY ERRORS, INACCURACIES, OR OMISSIONS CONTAINED THEREIN.

- 8. TOTAL LAND AREA IS 1.12 ACRES.
- PYLON / MONUMENT SIGNS SHALL BE CONSTRUCTED BY OTHERS. SIGNS ARE SHOWN FOR GRAPHICAL & INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO VERIFY SIZE, LOCATION AND ANY REQUIRED PERMITS NECESSARY FOR THE CONSTRUCTION OF THE PYLON / MONUMENT SIGN.
- 10. CONTRACTOR SHALL REFERENCE ARCH / MEP PLANS FOR SITE LIGHTING AND ELECTRICAL PLAN.
- 11. NO PROPOSED LANDSCAPING SUCH AS TREES OR SHRUBS, ABOVE AND UNDERGROUND STRUCTURES, OR OTHER OBSTRUCTIONS SHALL BE LOCATED WITHIN EXISTING OR PROPOSED UTILITY EASEMENTS AND RIGHTS OF WAY UNLESS SPECIFICALLY NOTED ON PLANS OTHERWISE.
- 12. REFERENCE ARCHITECTURAL PLANS FOR DUMPSTER ENCLOSURE DETAILS.
- 13. REFER TO FINAL PLAT OR ALTA SURVEY FOR EXACT LOT AND PROPERTY BOUNDARY DIMENSIONS.
- 14. ALL AREAS ARE ROUNDED TO THE NEAREST SQUARE FOOT.
- 15. ALL DIMENSIONS ARE ROUNDED TO THE NEAREST TENTH FOOT.
- 16. ALL PARKING STALLS TO BE 13' IN WIDTH AND 18' IN LENGTH UNLESS OTHERWISE INDICATED.



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C400

Direction Eastbound Time T 2022-04-21 6:00 AM 0 1 0 6:15 AM 0 6:30 AM 0 6:45 AM 0 1 0 1 0 1 0 1 0	App 0 0 0 0	0
2022-04-21 6:00AM 0 6:15AM 0 6:30AM 0 6:45AM 0 Hourly Total 0	0 0 0	0
6:15AM 0 6:30AM 0 6:45AM 0 Hourly Total 0	0	
6:30AM 0 6:45AM 0 Hourly Total 0	0	
6:45AM 0 Hourly Total 0		
Hourly Total 0	0	
7·00ΔΜΙ 1	0	
	1	
7:15AM 2	2	
7:30AM 5	5	
7:45AM 8	8	
Hourly Total 16	16	
8:00AM 11	11	11
8:15AM 13	13	
8:30AM 14	14	
8:45AM 19	19	19
Hourly Total 57	57	57
9:00AM 15	15	
9:15AM 13	13	
9:30AM 20	20	
9:45AM 10	10	
Hourly Total 58	58	
10:00AM 13	13	13
10:15AM 13	13	
10:30AM 15	15	
10:45AM 15	15	
Hourly Total 56	56	
11:00AM 17	17	17
11:15AM 18	18	
11:30AM 18	18	
11:45AM 19	19	
Hourly Total 72	72	
12:00PM 17	17	
12:15PM 13	13	
12:30PM 18	18	
12:45PM 22	22	22
Hourly Total 70	70	
1:00PM 16	16	
1:15PM 15	15	
1:30PM 18	18	
1:45PM 24	24	
Hourly Total 73	73	
2:00PM 20	20	
2:15PM 28	28	
2:30PM 21	21	
2:45PM 23	23	
Hourly Total 92	92	
3:00PM 23	23	23
3:15PM 20	20	
3:30PM 12	12	
3:45PM 17	17	
Hourly Total 72	72	
4:00PM 23	23	
4:15PM 16	16	
4:30PM 18	18	
4:45PM 20	20	20

		West	Leg
		Eastbound	Direction
p Int	Арр	Т	Time
	77	77	Hourly Total
1 31	31	31	5:00PM
	28	28	5:15PM
0 20	20	20	5:30PM
1 21	21	21	5:45PM
0 100	100	100	Hourly Total
	21	21	6:00PM
	15	15	6:15PM
5 15	15	15	6:30PM
	21	21	6:45PM
2 72	72	72	Hourly Total
3 3	3	3	7:00PM
9 9	9	9	7:15PM
0 0	0	0	7:30PM
	0	0	7:45PM
2 12	12	12	Hourly Total
7 827	827	827	Total
	-	100%	% Approach
	100%	100%	% Total
7 827	827	827	Lights
6 100%	100%	100%	% Lights
0 0	0	0	Articulated Trucks and Single-Unit Trucks
% 0%	0%	0%	% Articulated Trucks and Single-Unit Trucks
0 0	0	0	Buses
% 0%	0%	0%	% Buses

Thu Apr 21, 2022 Full Length (6 AM-8 PM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269



Thu Apr 21, 2022 AM Peak (8:45 AM - 9:45 AM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269

Leg	West		
Direction	Eastbound		
Time	Т	Арр	Int
2022-04-21 8:45AM	19	19	19
9:00AM	15	15	15
9:15AM	13	13	13
9:30AM	20	20	20
Total	67	67	67
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.838	0.838	0.838
Lights	67	67	67
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%

Thu Apr 21, 2022 AM Peak (8:45 AM - 9:45 AM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269



Thu Apr 21, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269

Leg	West		
Direction	Eastbound		
Time	Т	Арр	Int
2022-04-21 1:00PM	16	16	16
1:15PM	15	15	15
1:30PM	18	18	18
1:45PM	24	24	24
Total	73	73	73
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.760	0.760	0.760
Lights	73	73	73
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%

*T: Thru

Thu Apr 21, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269



Thu Apr 21, 2022 PM Peak (5 PM - 6 PM) - Overall Peak Hour All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940571, Location: 45.048842, -93.247269

Leg	West		
Direction	Eastbound		
Time	Т	Арр	Int
2022-04-21 5:00PM	31	31	31
5:15PM	28	28	28
5:30PM	20	20	20
5:45PM	21	21	21
Total	100	100	100
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.806	0.806	0.806
Lights	100	100	100
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%



Leg	East		
Direction	Westbound		
Time		Т Арр	Int
2022-04-21 6:00AN	ſ	0 0	0
6:15AN	[0 0	0
6:30AN	I	0 0	
6:45AN	[0 0	0
Hourly Tota	1	0 0	0
7:00AN	(0 0	0
7:15AN	(0 0	0
7:30AN	(6 6	6
	[9 9	9
Hourly Tota	l 1	5 15	15
8:00AN	[9 9	
8:15AN		0 10	
8:30AN			
Hourly Tota			
9:00AN			
9:15AN			
9:30AN			
9:45AN			
Hourly Tota		5 55	
10:00AN		9 9 9	
10:15AN			
10:13AN 10:30AN		0 10	
10.50AN 10:45AN			1
Hourly Tota 11:00AN			
11:00AN 11:15AN			
11:30AN			
11:45AN			
Hourly Tota			
12:00PM			
12:15PM			
12:30PM			
12:45PM			
Hourly Tota		0 60	
1:00PM		0 20	
1:15PN			
1:30PN			
1:45PM			
Hourly Tota			
2:00PN			
2:15PN			
2:30PN			
2:45PM			
Hourly Tota			
3:00PN			
3:15PN			
3:30PN			
3:45PN			
Hourly Tota			
4:00PN			
4:15PN	I 1	7 17	
4:30PN	I 1		
4:45PN	1 2	4 24	

		East	Leg
		Westbound	Direction
nt	Арр	Т	Time
74	74	74	Hourly Total
25	25	25	5:00PM
21	21	21	5:15PM
21	21	21	5:30PM
16	16	16	5:45PM
83	83	83	Hourly Total
18	18	18	6:00PM
17	17	17	6:15PM
16	16	16	6:30PM
17	17	17	6:45PM
68	68	68	Hourly Total
5	5	5	7:00PM
0	0	0	7:15PM
0	0	0	7:30PM
0	0	0	7:45PM
5	5	5	Hourly Total
733	733	733	Total
-	-	100%	% Approach
-	100%	100%	% Total
733	733	733	Lights
100%	100%	100%	% Lights
0	0	0	Articulated Trucks and Single-Unit Trucks
0%	0%	0%	% Articulated Trucks and Single-Unit Trucks
0	0	0	Buses
0%	0%	0%	% Buses

Thu Apr 21, 2022 Full Length (6 AM-8 PM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269



Thu Apr 21, 2022 AM Peak (8:45 AM - 9:45 AM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269

Leg	East		
Direction	Westbound		
Time	Т	Арр	Int
2022-04-21 8:45AM	12	12	12
9:00AM	16	16	16
9:15AM	14	14	14
9:30AM	13	13	13
Total	55	55	55
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.859	0.859	0.859
Lights	55	55	55
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%

Car Wash Exit - ATR Thu Apr 21, 2022 AM Peak (8:45 AM - 9:45 AM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269



Leg	East		
	Westbound		
Time	Т	Арр	Int
2022-04-21 1:00PM	20	20	20
1:15PM	11	11	11
1:30PM	17	17	17
1:45PM	20	20	20
Total	68	68	68
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.850	0.850	0.850
Lights	68	68	68
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%

Car Wash Exit - ATR Thu Apr 21, 2022 Midday Peak (1 PM - 2 PM) All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269



Thu Apr 21, 2022 PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269

Leg	East		
Direction	Westbound		
Time	Т	Арр	Int
2022-04-21 4:45PM	24	24	24
5:00PM	25	25	25
5:15PM	21	21	21
5:30PM	21	21	21
Total	91	91	91
% Approach	100%	-	-
% Total	100%	100%	-
PHF	0.910	0.910	0.910
Lights	91	91	91
% Lights	100%	100%	100%
Articulated Trucks and Single-Unit Trucks	0	0	0
% Articulated Trucks and Single-Unit Trucks	0%	0%	0%
Buses	0	0	0
% Buses	0%	0%	0%

Thu Apr 21, 2022 PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses) All Channels ID: 940572, Location: 45.04899, -93.247269

