Waterville Landing TIS

Waterville, Ohio

June 27, 2022

Prepared for:

HB Concerts Inc
3010 Stewart Rd
Monroe, Michigan 48162
P: 248-730-4393

Devonshire Reit II, INC
P.O. Box 639
Neapolis, OH 43547
P: 419-356-0425

Prepared By:

DGL Consulting Engineers, LLC
3455 Briarfield Blvd, Suite E
Maumee, Ohio 43537
P: 419-535-1015

DGL CONSULTING ENGINEERS

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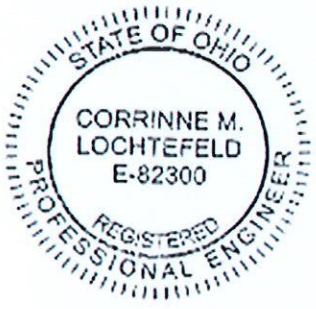

1. EXECUTIVE SUMMARY

DGL was commissioned by HB Concerts Inc. to analyze the impacts of a proposed amphitheater in the Waterville Landing development in Waterville, Ohio. The proposed site is located between SR-64 and Neapolis-Waterville Road, to the east of US-24. The existing site is currently undeveloped land with residential facilities to the east, and a small commercial development to the north. The proposed site will provide an outdoor concert facility with both lawn and reserved seating as well as various small buildings to be used for concessions, utilities, production, and restrooms.

Analysis has been performed in accordance with the Ohio Department of Transportation (ODOT) and Lucas County requirements. Traffic counts were collected at the intersections adjacent to the proposed site. The ITE Trip Generation Manual does not have a land use for Amphitheater nor any other land use that would be similar. A factor of 2.5 tickets per car was used to generate the total trips for the development, which came from previously approved studies. In order to analyze the "worst-case scenario" all proposed trips to the amphitheater site were added to the peak hour volumes to create the event conditions.

The proposed development will impact the entire surrounding roadway system during event days, with SR-64, Pray Boulevard, and Waterville-Monclova Road being the most affected. While analysis can be done using the event traffic, HCS does not accurately analyze the conditions. Although, HCS analysis was conducted for the Event Traffic Conditions, relief of the traffic impacts from the event traffic though permanent infrastructure improvements would be expensive and only necessary the 25-30 times a year when an event occurs. Conversion of the existing infrastructure during events to a Maintenance of Traffic plan with cones, signage and message boards would be just as effective as the HCS suggested infrastructure improvements.

To mitigate the additional traffic generated by the development, an event Maintenance of Traffic plan has been provided and the following are recommended:

- Employ local Law Enforcement Officers to direct and manage traffic during ingress and egress.
- Set up temporary traffic signs and flashing message boards for events.
- Set cones to adjust for the large traffic flow on SR-64 and Pray Boulevard.

2. INTRODUCTION

HB Concerts, Inc. is proposing to construct an amphitheater at the current extension of Pray Boulevard. The development known as "Project Guitar" is located in Waterville, Lucas County Ohio on SR 64 (Waterville-Swanton Road) between the US 24 interchange and Pray Boulevard. Figure 1 illustrates the location of the development area.

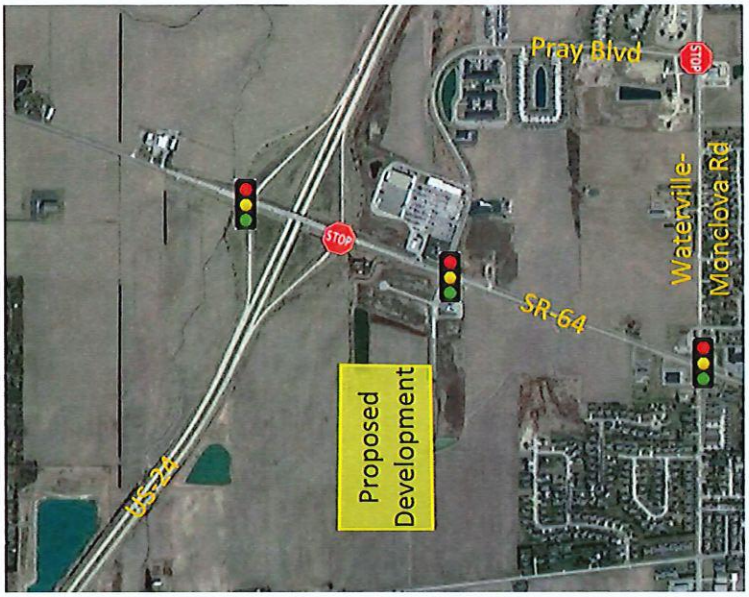

Figure 1 - Proposed Location

3. STUDY LOCATION

The proposed development is located a suburban area southwest of Toledo, Ohio. The site is located near the interchange of US-24 to SR-64 and expected to draw visitors from a regional area. US-24 offers freeway access to I-475 to the northeast which then can access I-75 and the Ohio Turnpike. To the southwest, US-24 provides access to various communities.

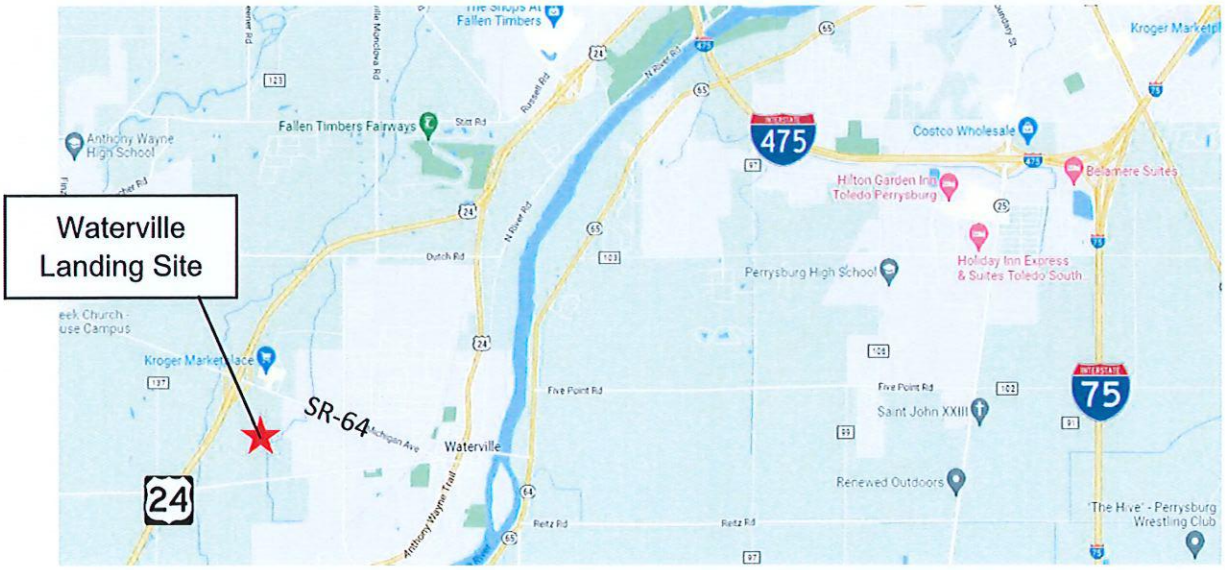

Figure 2 - Study Location

4. EXISTING CONDITIONS

Roadway classification and Annual Average Daily Traffic (AADT) were collected from the ODOT Transportation Information and Mapping System (TIMS) website.

- SR-64 (Waterville-Swanton Road/Michigan Avenue) is a two-lane roadway with an AADT of 13,920 vehicles. It is classified as a major collector with a speed limit of 50 MPH.
- US-24 is a Principal Arterial Freeway, with an AADT of 25,059 and a speed limit of 70 MPH. Waterville-Monclova Road is also a two-lane road, classified as a major collector with an AADT of 4,056 vehicles with a speed limit of 35 MPH.
- Pray Boulevard is a local road with no documented AADT. It is a two-lane roadway with a speed limit of 35 MPH.

5. TRAFFIC DATA COLLECTION

Traffic Data was collected by DGL via video counts at the following locations:

- SR-64 & US-24 Southbound Ramps
  - Thursday - May 5th, 2022 – 4:15 PM to 6:15 PM
  - Saturday - May 7th, 2022 – 12:30 PM to 1:30 PM
- SR-64 & US-24 Northbound Ramps
  - Thursday - May 5th, 2022 – 4:15 PM to 6:15 PM
  - Saturday - May 7th, 2022 – 12:30 PM to 1:30 PM
- SR-64 & Pray Boulevard
  - Thursday - May 5th, 2022 – 4:15 PM to 6:15 PM
  - Saturday - May 7th, 2022 – 12:30 PM to 1:30 PM
- SR-64 & Waterville-Monclova Road
  - Thursday - May 5th, 2022 – 4:15 PM to 6:15 PM
  - Saturday - May 7th, 2022 – 12:30 PM to 1:30 PM
- Waterville-Monclova Road & Pray Boulevard
  - Thursday - May 5th, 2022 – 4:15 PM to 6:15 PM
  - Saturday - May 7th, 2022 – 12:30 PM to 1:30 PM
- ATR along SR-64 – 5/7/2022

The PM Peak Hour occurred from 4:30 PM to 5:30 PM and the Weekend Peak Hour occurred from 12:30 PM to 1:30 PM. It should be noted that only the Weekday PM Peak Hour and Weekend Peak Hour were counted as most amphitheater events occur in the evenings and on weekends.

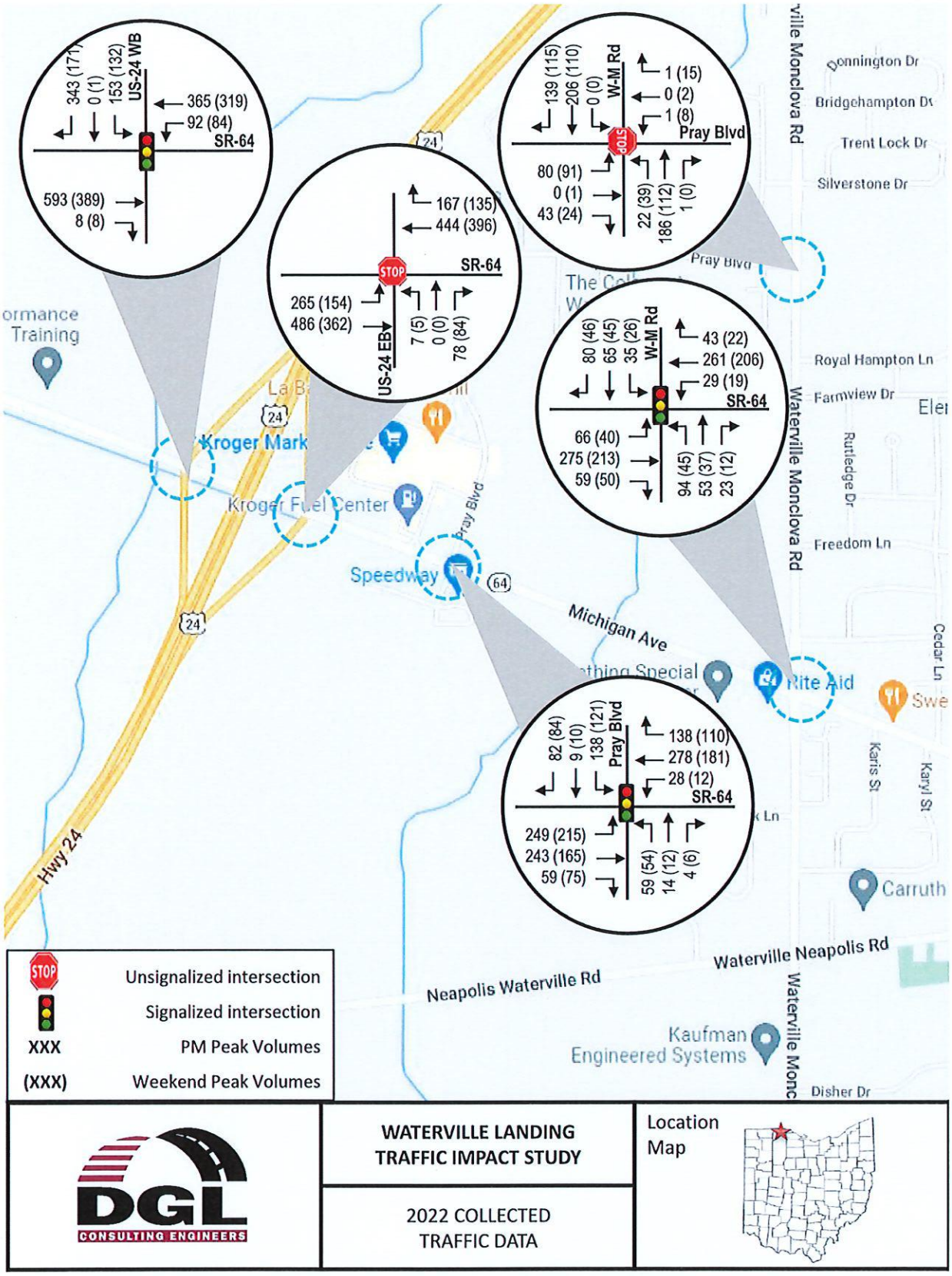

Figure 3 - 2022 Existing Traffic Volumes

6. PROPOSED CONDITIONS

6a. Access Locations

The proposed Waterville Landing venue is shown in Figure 4. The site is located approximately 1,000 feet from the SR-64/Pray Boulevard intersection. All site drives will access Pray Boulevard. There will be three access points into the parking lot, although specific locations of site drives are not critical to this study. It has been determined that assistance in directing traffic to and from the site drives will be conducted by venue staff and local law enforcement.

Figure 4 - Access Locations

7. ANALYSIS

7a. Trip Generation

The ITE Trip Generation Manual does not have a land use for an Amphitheater nor any other land use that would be similar. It is estimated that the capacity of the amphitheater will be 10,300 seats. A factor of 2.5 tickets per car was used to generate the total trips for the development, which came from previously approved studies A small amount of exiting trips during the pre-event period were included in the study for vehicles dropping off attendees and exiting the site.

The Peak Hour trips for the Waterville Landing amphitheater were calculated as follows:

Table 1 Overall Trip Generation Calculations				
Trip Generator	PM Event Enter	PM Event Exit	Weekend Event Enter	Weekend Event Exit
Amphitheater Concert	3914	206	3708	412
Total Trips	**3914**	**206**	**3708**	**412**

7b. No Build Conditions

Collected traffic volumes were grown by 1.0% per year to estimate the 2023 and 2043 traffic volumes. The growth rate was calculated using the ODOT SHIFT Tool. Figure 5 and Figure 6 show the No Build traffic conditions.

7c. Trip Distribution

The new trips to the proposed Waterville Landing site were distributed based on the surrounding area. A smaller portion of the trips were assigned to the site from the City of Waterville and from south (25%). A majority of the trips (75%) were assigned to the US-24 interchange which services the greater Toledo area. Figure 7 shows the proposed trip distributions.

7d. Event Conditions

Like the No-Build Conditions, traffic volumes were grown by 1.0% to estimate the 2023 and 2043 traffic volumes at the intersection surrounding the proposed site. Trips from the trip generation calculations were then added to the grown volumes to obtain the projected traffic at the intersections.

It is anticipated that the peak hours of the roadway will not necessarily align with the peak hour of the amphitheater. With a 7:00 PM event start time and gates opening at 5:30 PM, the end of the weekday PM peak hour may be impacted. To create a "worst-case scenario", all proposed trips generated from the amphitheater development were added to the peak hour traffic. Figure 8 and Figure 9 illustrate Build traffic conditions.

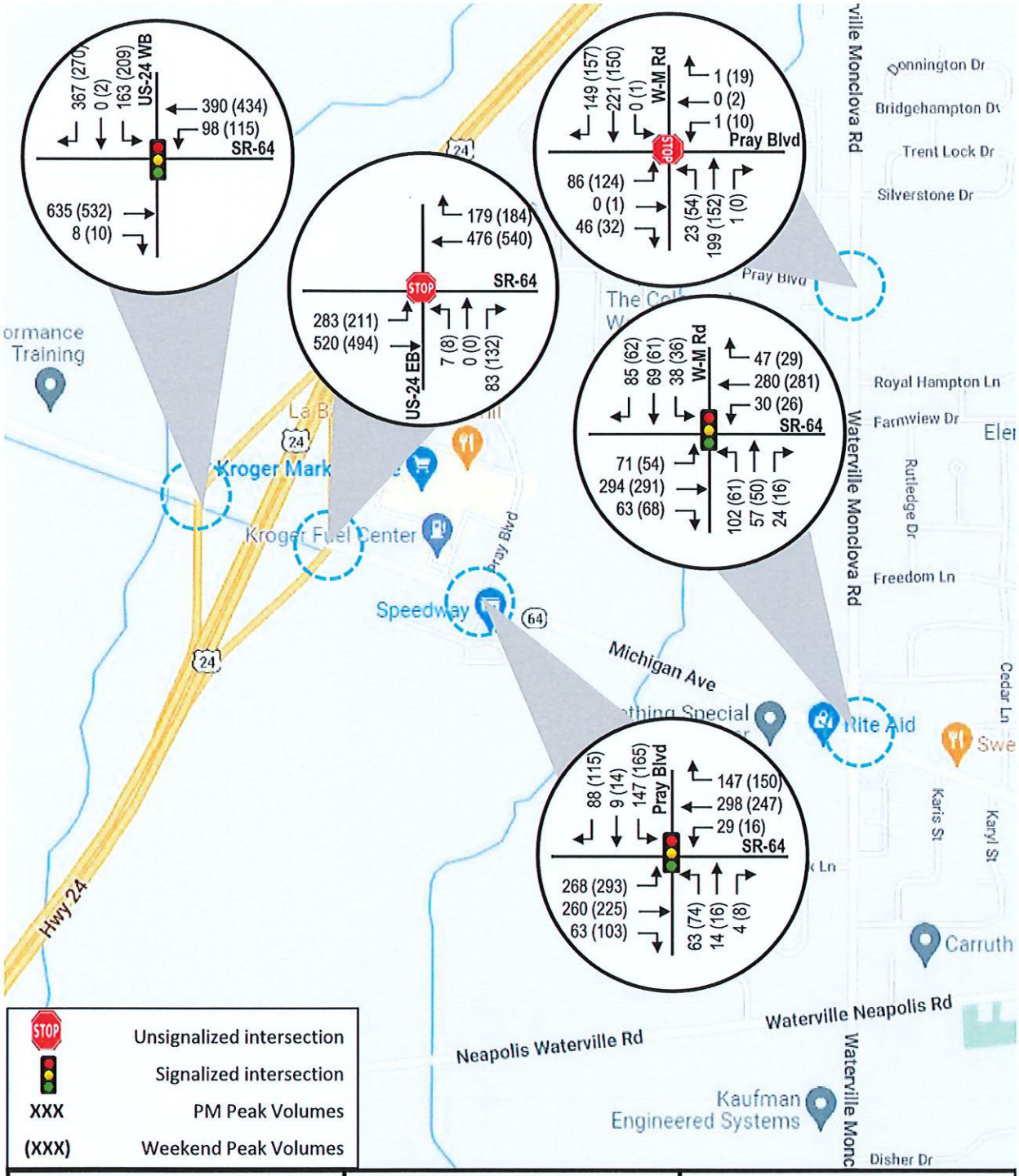

Figure 5 - 2023 No-Build Traffic Volumes

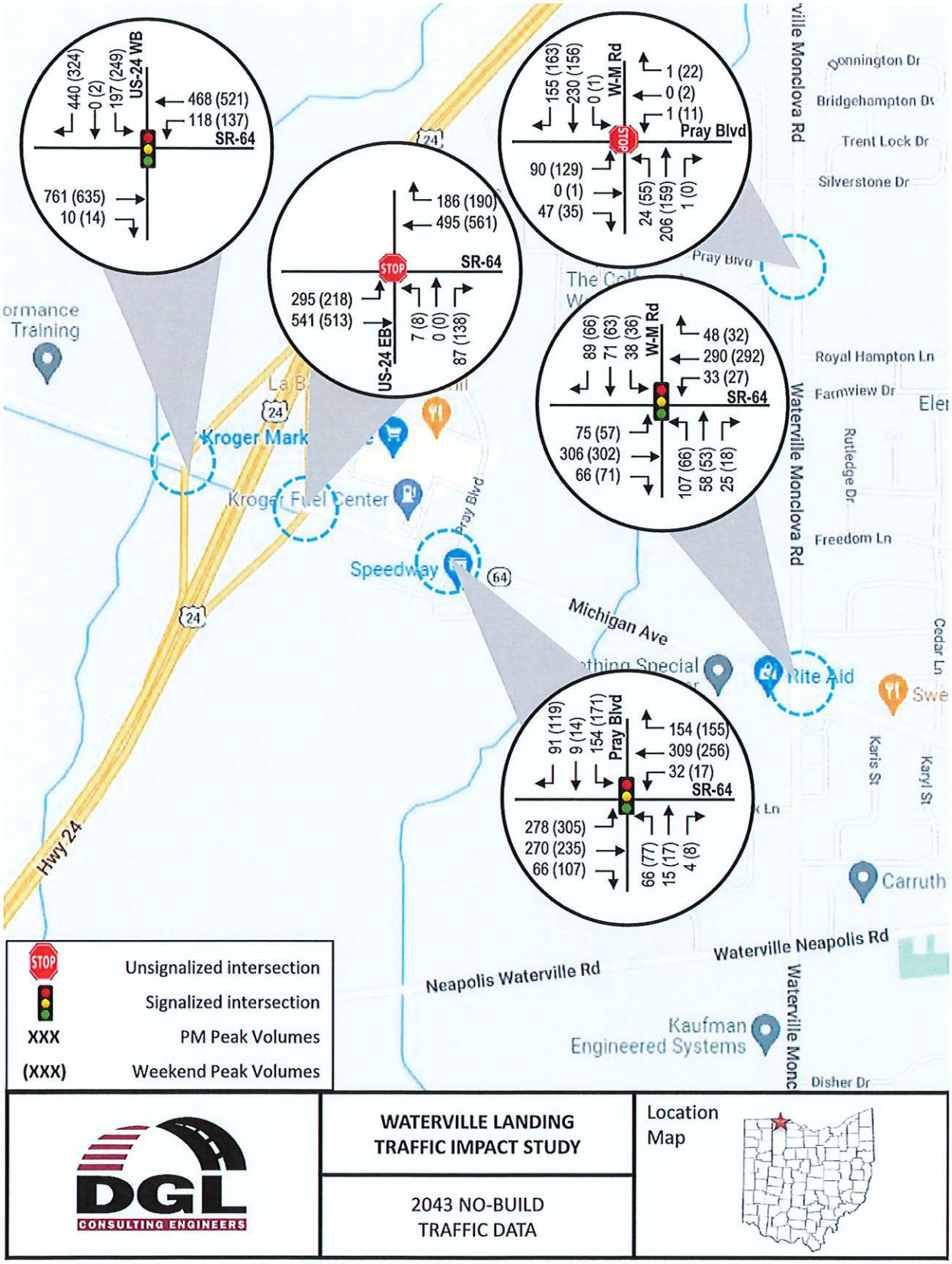

Figure 6 - 2043 No-Build Traffic Volumes

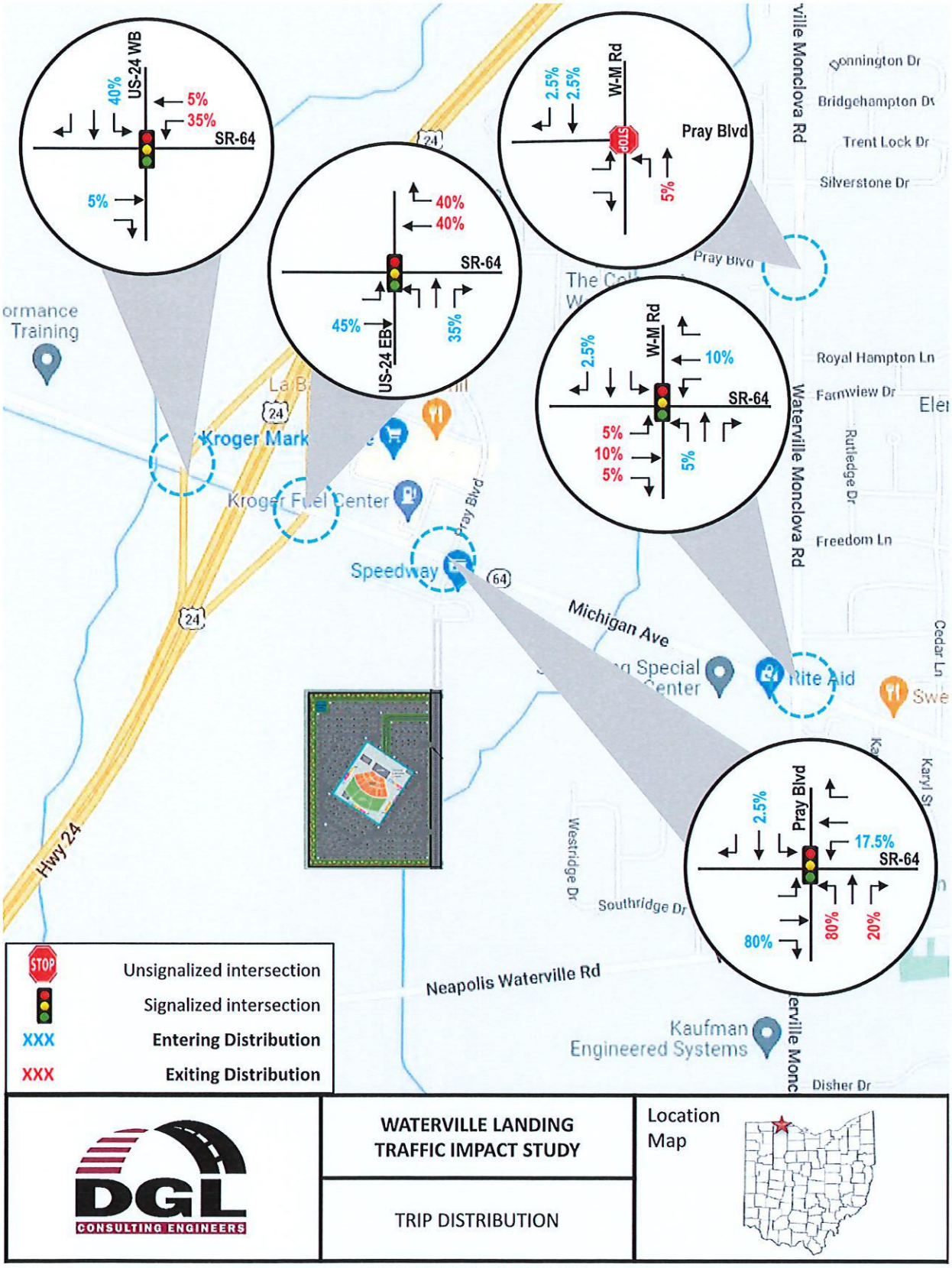

Figure 7 - Trip Distribution

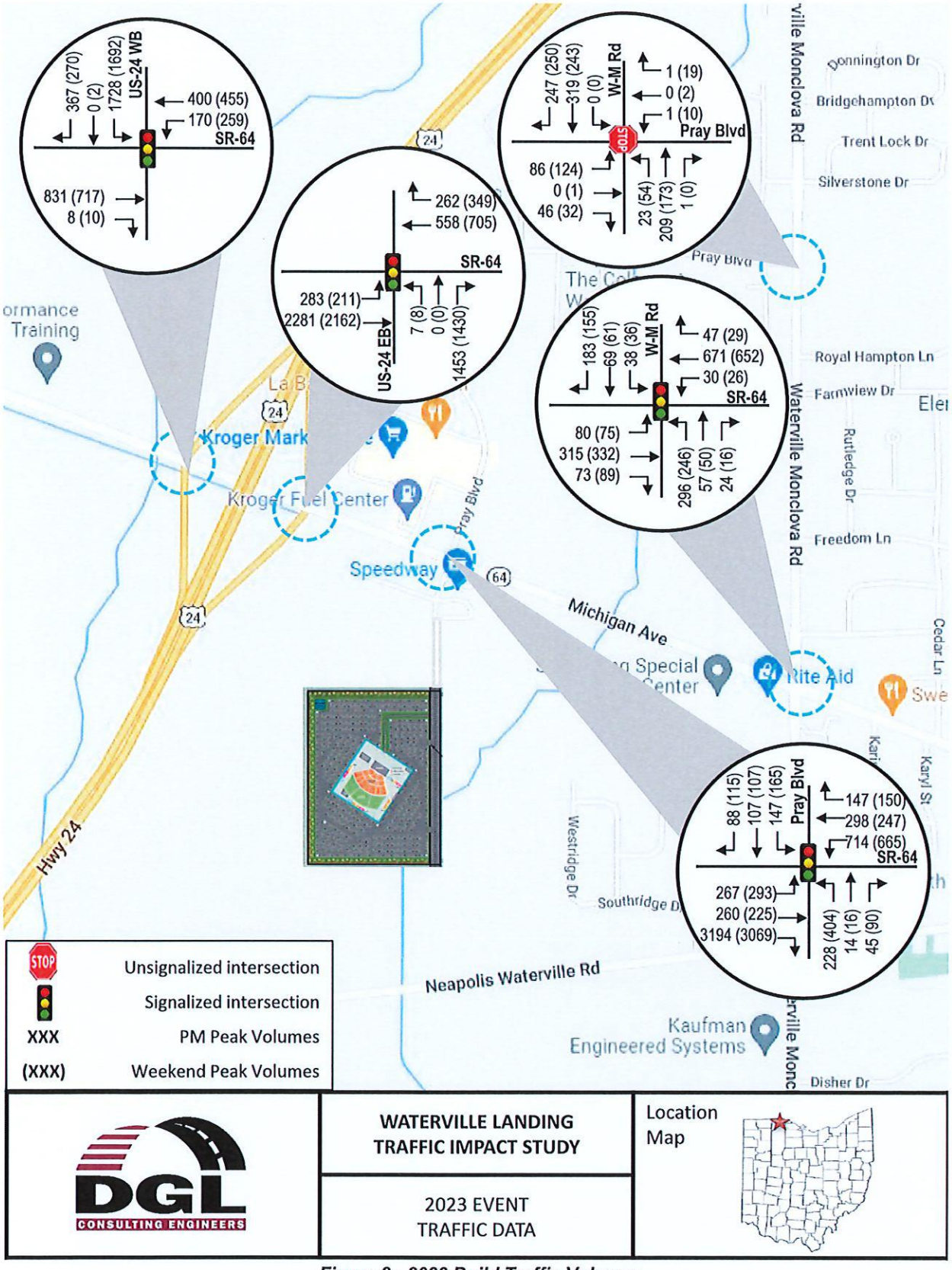

Figure 8 - 2023 Build Traffic Volumes

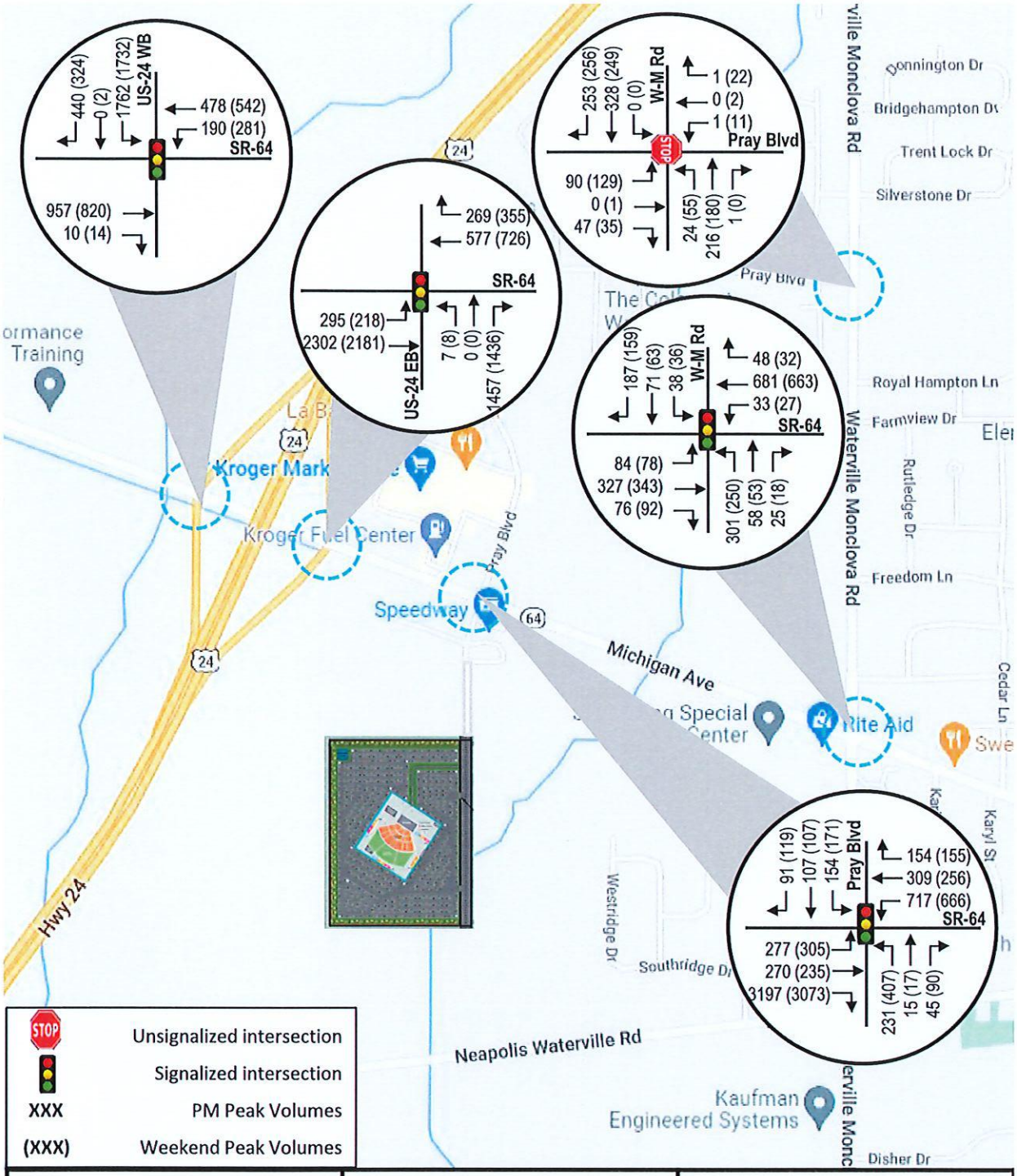

Figure 9 - 2043 Build Traffic Volumes

7e. Intersection Capacity

The level of service (LOS) is a way to classify the intersection on a scale of A to F, from a functional standpoint. Intersections and approaches are assigned an overall grade based on traffic volumes, capacity, and overall delay experienced by drivers.

Capacity Analysis was conducted for various geometric and traffic control alternatives. HCS 7 Software was used to determine the LOS for the signalized and stop-controlled intersections. LOS is generally identified for each movement or approach. LOS C is considered acceptable in all conditions, while LOS D is considered acceptable in congested urban areas, such as interchanges and commuter corridors. For Two-Way Stop controlled intersections, the LOS is undefined for the overall intersection.

Table 2 Intersection Level of Service And Delay (in seconds)

Signalized Intersection				Unsignalized Intersection		
A	<=	10s		A	<=	10s
B	>	10-20s		B	>	10-15s
C	>	20-35s		C	>	15-25s
D	>	35-55s		D	>	25-35s
E	>	55-80s		E	>	35-50s
F	>	80s		F	>	50s

Existing Conditions

The 2022 counted traffic was analyzed with existing road conditions to review how the intersections are currently functioning. Currently, all surrounding intersections function at acceptable level of service.

Table 3 Existing Conditions				
	PM Peak		Weekend Peak	
	2022 Existing		2022 Existing	
	LOS	Delay	LOS	Delay
SR-64 & US-24 Westbound - Signalized				
Eastbound (SR-64)	B	17.1	B	13.0
Westbound (SR-64)	B	15.3	B	13.5
Southbound (US-24)	C	20.9	B	17.4
Overall	**B**	**17.8**	**B**	**14.4**
SR-64 & US-24 Eastbound - Unsignalized				
Eastbound (SR-64)	B	10.6	A	9.3
Northbound (US-24)	C	18.0	B	12.6
SR-64 & Pray Boulevard - Signalized				
Eastbound (SR-64)	B	13.1	B	11.4
Westbound (SR-64)	B	10.2	A	9.6
Northbound (Pray)	C	21.4	C	21.3
Southbound (Pray)	C	22.7	C	22.4
Overall	**B**	**14.3**	**B**	**13.8**
SR-64 & Waterville-Monclova Road - Signalized				
Eastbound (SR-64)	C	25.7	C	24.0
Westbound (SR-64)	C	25.7	C	23.9
Northbound (W-M)	C	25.5	C	23.3
Southbound (W-M)	C	23.6	C	22.7
Overall	**C**	**25.3**	**C**	**23.7**
Waterville-Monclova Road & Pray Boulevard - Unsignalized				
Eastbound (Pray)	B	12.4	B	11.5
Westbound (Pray)	B	11.7	B	10.2
Northbound (W-M)	A	8.1	A	7.8
Southbound (W-M)	A	7.6	A	7.4

No-Build Conditions

The No-Build Conditions were also analyzed at the surrounding intersections as they are functioning currently, two-way-stop-controlled and signalized intersections. The existing intersections are anticipated to function at acceptable levels of service for both 2023 and 2043 peak hours.

Table 4 No-Build Conditions								
	PM Peak				Weekend Peak			
	2023 No-Build		2043 No-Build		2023 No-Build		2043 No-Build	
	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
SR-64 & US-24 Westbound - Signalized								
Eastbound (SR-64)	B	18.6	C	28.1	B	15.6	B	19.2
Westbound (SR-64)	B	16.1	C	22.0	B	16.0	B	19.5
Southbound (US-24)	C	22.1	C	28.4	B	19.2	C	21.3
Overall	**B**	**19.0**	**C**	**26.4**	**B**	**16.8**	**B**	**19.9**
SR-64 & US-24 Eastbound - Unsignalized								
Eastbound (SR-64)	B	11.1	B	11.5	B	10.8	B	11.1
Northbound (US-24)	C	19.9	C	21.2	C	17.3	C	18.1
SR-64 & Pray Boulevard - Signalized								
Eastbound (SR-64)	B	13.8	B	14.2	B	13.2	B	13.7
Westbound (SR-64)	B	10.4	B	10.5	B	10.0	B	10.1
Northbound (Pray)	C	21.5	C	21.6	C	21.8	C	21.8
Southbound (Pray)	C	22.9	C	23.0	C	23.3	C	23.4
Overall	**B**	**14.7**	**B**	**14.9**	**B**	**15.0**	**B**	**15.2**
SR-64 & Waterville-Monclova Road - Signalized								
Eastbound (SR-64)	C	27.0	C	27.9	C	28.9	C	30.0
Westbound (SR-64)	C	26.8	C	27.2	C	26.6	C	27.3
Northbound (W-M)	C	25.9	C	26.1	C	24.2	C	24.4
Southbound (W-M)	C	23.8	C	23.9	C	23.3	C	23.4
Overall	**C**	**26.2**	**C**	**26.8**	**C**	**26.7**	**C**	**27.4**
Waterville-Monclova Road & Pray Boulevard - Unsignalized								
Eastbound (Pray)	B	12.9	B	13.3	B	14.0	B	14.4
Westbound (Pray)	B	12.0	B	12.2	B	11.1	B	11.2
Northbound (W-M)	A	8.2	A	8.3	A	8.1	A	8.1
Southbound (W-M)	A	7.6	A	7.7	A	7.5	A	7.5

Event Traffic

It is well known that traffic for an event venue can create major traffic congestion before and after the actual event. HCS analysis was conducted to determine what mitigation is needed under the Event Traffic Conditions. The analyses revealed the infrastructure improvements that would mitigate the additional event traffic. Construction of these improvements would be costly and only needed 25-30 times a year. This led to the development of an Event Traffic plan that could be implemented on Event dates.

SR-64 is wide enough to accommodate two lanes in a single direction as well as a single opposing lane. Dual lefts from the Westbound US 24 ramps to a two lane Eastbound Right Turn at Pray Boulevard would greatly improve entering traffic volumes. Existing Northbound Pray Boulevard to SR-64 dual left lanes to the Westbound US-24 ramp would be maintained. The width of SR-64 and Pray Boulevard will allow for two lanes of ingress or egress traffic.

It is expected that Law Enforcement Offices and traffic cones will be used to direct traffic to and from the venue. Flashing message signs, temporary signs along SR-64 between US-24 and Waterville-Monclova Road and the surrounding roadways should also be utilized during the events.

An Event Traffic Plan has been designed and can be found in figures Figure 10 to Figure 15.

WATERVILLE LANDING - PROJECT GUITAR

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MAINTENANCE OF EVENT TRAFFIC
INTERCHANGE LAYOUT ENTERING TRAFFIC
FIGURE 11

WATERVILLE LANDING - PROJECT GUITAR

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MAINTENANCE OF EVENT TRAFFIC
INTERSECTION LAYOUT ENTERING TRAFFIC
FIGURE 12

WATERVILLE LANDING - PROJECT GUITAR

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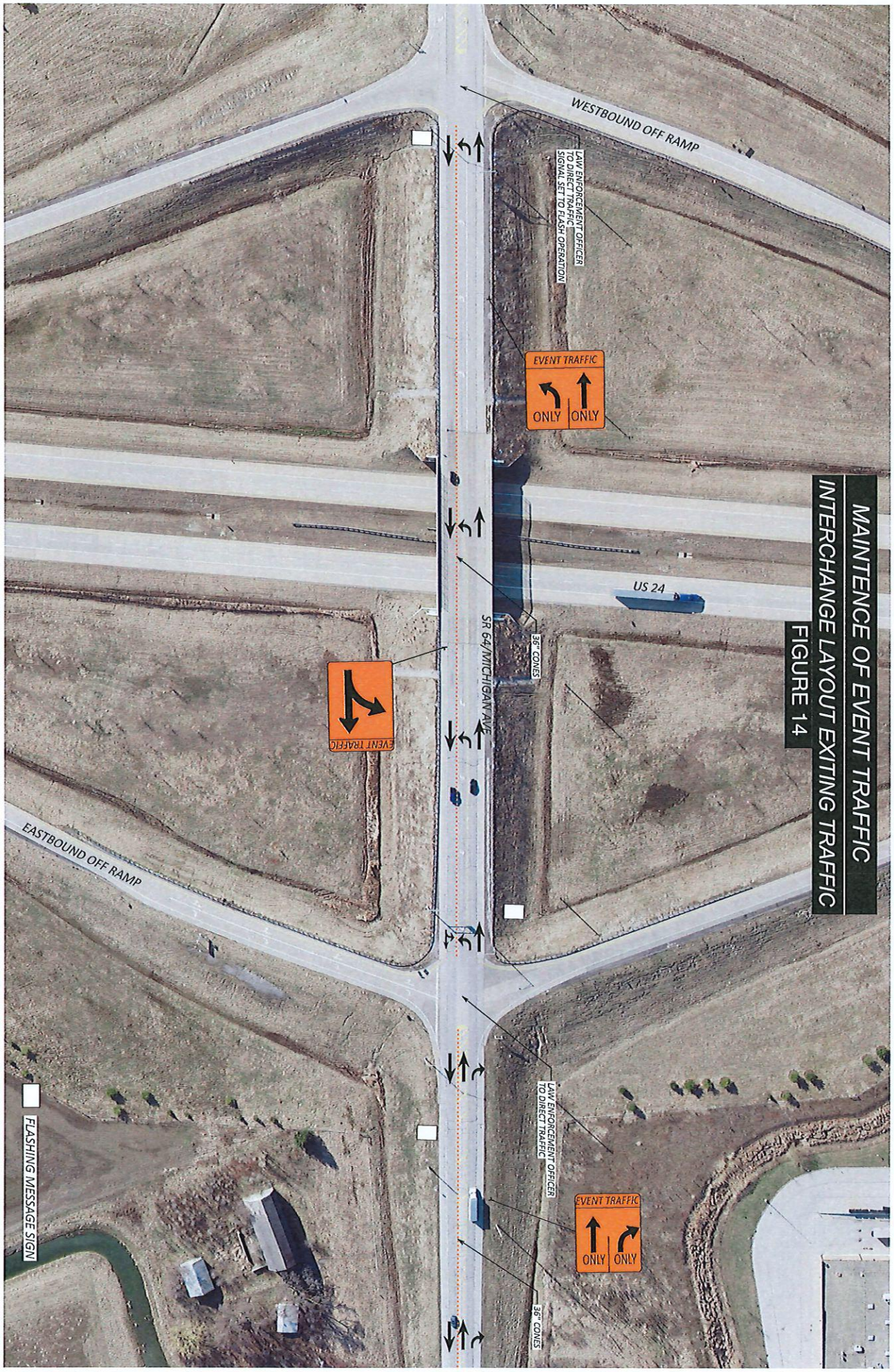

MAINTENCE OF EVENT TRAFFIC
INTERCHANGE LAYOUT EXITING TRAFFIC
FIGURE 14

WATERVILLE LANDING - PROJECT GUITAR

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MAINTENCE OF EVENT TRAFFIC
INTERSECTION LAYOUT EXITING TRAFFIC
FIGURE 15

8. CONCLUSIONS

The proposed amphitheater will create large traffic volumes prior to and after an event. It is anticipated that 25 to 30 events will take place per year. Mitigation of the traffic impacts from the event center though permanent infrastructure improvements would be expensive and only necessary when an event occurs. An Event Traffic Plan utilizing Law Enforcement Offers (LEOs), cones, signage and message boards would be just as effective as the HCS suggested roadway improvements, at much lower cost.

9. RECOMMENDATIONS

The construction of the Waterville Landing Amphitheater will impact the surrounding roads and intersections 25-30 times per year. To mitigate the additional traffic generated by the development, the following recommendations are presented for the adjacent intersections:

- Employ local Law Enforcement Officers to direct and manage traffic during ingress and egress.
- Set up temporary traffic signs and flashing message boards.
- Set cones to adjust for the large traffic flow on SR-64 and Pray Boulevard.

Appendix A
Turn Movement Counts

Waterville Landing TIS
SR-64 and US-24 Southbound

5/16/2022

Leg	SR 64				SR 64				US 24 SB					
Direction	Eastbound				Westbound				Southbound					
Start Time	Thru	Right	**Total**	Peds	Left	Thru	**Total**	Peds	Left	Thru	Right	**Total**	Peds	**Int Total**
2022-05-05 16:15:00	122	1	**123**	0	31	81	**112**	0	39	0	72	**111**	0	**346**
2022-05-05 16:30:00	155	3	**158**	0	26	93	**119**	0	34	0	63	**97**	0	**374**
2022-05-05 16:45:00	127	1	**128**	0	17	92	**109**	0	34	0	101	**135**	0	**372**
2022-05-05 17:00:00	173	4	**177**	0	21	74	**95**	0	48	0	86	**134**	0	**406**
2022-05-05 17:15:00	138	0	**138**	0	28	106	**134**	0	37	0	93	**130**	0	**402**
PM PH Totals	**593**	**8**	**601**	**0**	**92**	**365**	**457**	**0**	**153**	**0**	**343**	**496**	**0**	**1554**
PM PHF	**0.86**	**0.50**	**0.85**		**0.82**	**0.86**	**0.85**		**0.80**		**0.85**	**0.92**		**0.96**
2022-05-05 17:30:00	120	1	**121**	0	21	103	**124**	0	31	1	72	**104**	0	**349**
2022-05-05 17:45:00	104	1	**105**	0	19	99	**118**	0	18	1	73	**92**	0	**315**
2022-05-05 18:00:00	98	2	**100**	0	19	59	**78**	0	27	0	59	**86**	0	**264**
2022-05-07 12:30:00	106	4	**110**	0	8	78	**86**	0	27	0	48	**75**	0	**271**
2022-05-07 12:45:00	95	1	**96**	0	21	75	**96**	0	52	0	41	**93**	0	**285**
2022-05-07 13:00:00	90	1	**91**	0	14	85	**99**	0	27	0	37	**64**	0	**254**
2022-05-07 13:15:00	98	2	**100**	0	41	81	**122**	0	26	1	45	**72**	0	**294**
Weekend PH Totals	**389**	**8**	**397**	**0**	**84**	**319**	**403**	**0**	**132**	**1**	**171**	**304**	**0**	**1104**
Weekend PHF	**0.92**	**0.50**	**0.90**		**0.51**	**0.94**	**0.83**		**0.63**		**0.89**	**0.82**		**0.94**
Grand Total	1426	21	**1447**	0	266	1026	**1292**	0	400	3	790	**1193**	0	**3932**
% Approach	98.5%	1.5%			20.6%	79.4%			33.5%	0.3%	66.2%			
% Total	36.3%	0.5%	**36.8%**		6.8%	26.1%	**32.9%**		10.2%	0.1%	20.1%	**30.3%**		
Lights	1406	19	**1425**		255	1018	**1273**		392	2	778	**1172**		**3870**
% Lights	98.6%	90.5%	**98.5%**		95.9%	99.2%	**98.5%**		98.0%	66.7%	98.5%	**98.2%**		**98.4%**
Heavy	20	2	**22**		11	8	**19**		8	1	12	**21**		**62**
% Heavy	1.4%	9.5%	**1.5%**		4.1%	0.8%	**1.5%**		2.0%	33.3%	1.5%	**1.8%**		**1.6%**
Pedestrians				0				0					0	
% Pedestrians				0.0%				0.0%					0.0%	
Bicycles				0				0					0	
% Bicycles				0.0%				0.0%					0.0%	

Waterville Landing TIS
SR-64 and US-24 Northbound

5/16/2022

Leg	SR 64			SR 64			US 24 NB				
Direction	Eastbound			Westbound			Northbound				
Start Time	Left	Thru	**Total**	Thru	Right	**Total**	Left	Thru	Right	**Total**	**Int Total**
2022-05-05 16:15:00	50	118	**168**	113	36	**149**	4	0	21	**25**	**342**
2022-05-05 16:30:00	73	118	**191**	112	38	**150**	3	0	16	**19**	**360**
2022-05-05 16:45:00	58	104	**162**	109	41	**150**	1	0	15	**16**	**328**
2022-05-05 17:00:00	71	151	**222**	94	47	**141**	0	0	26	**26**	**389**
2022-05-05 17:15:00	63	113	**176**	129	41	**170**	3	0	21	**24**	**370**
PM PH Totals	**265**	**486**	**751**	**444**	**167**	**611**	**7**	**0**	**78**	**85**	**1447**
PM PHF	**0.91**	**0.80**	**0.85**	**0.86**	**0.89**	**0.90**	**0.58**		**0.75**	**0.82**	**0.93**
2022-05-05 17:30:00	53	99	**152**	121	28	**149**	1	0	22	**23**	**324**
2022-05-05 17:45:00	40	82	**122**	119	36	**155**	0	1	16	**17**	**294**
2022-05-05 18:00:00	39	87	**126**	77	23	**100**	2	1	12	**15**	**241**
2022-05-07 12:30:00	41	91	**132**	85	32	**117**	2	0	19	**21**	**270**
2022-05-07 12:45:00	40	108	**148**	94	27	**121**	3	0	30	**33**	**302**
2022-05-07 13:00:00	27	87	**114**	100	37	**137**	0	0	17	**17**	**268**
2022-05-07 13:15:00	46	76	**122**	117	39	**156**	0	0	18	**18**	**296**
Weekend PH Totals	**154**	**362**	**516**	**396**	**135**	**531**	**5**	**0**	**84**	**89**	**1136**
Weekend PHF	**0.84**	**0.84**	**0.87**	**0.85**	**0.87**	**0.85**	**0.42**		**0.70**	**0.67**	**0.94**
Grand Total	601	1234	**1835**	1270	425	**1695**	19	2	233	**254**	**3784**
% Approach	32.8%	67.2%		74.9%	25.1%		7.5%	0.8%	91.7%		
% Total	15.9%	32.6%	**48.5%**	33.6%	11.2%	**44.8%**	0.5%	0.1%	6.2%	**6.7%**	
Lights	591	1219	**1810**	1253	407	**1660**	18	2	216	**236**	**3706**
% Lights	98.3%	98.8%	**98.6%**	98.7%	95.8%	**97.9%**	94.7%	100.0%	92.7%	**92.9%**	**97.9%**
Heavy	10	15	**25**	17	18	**35**	1	0	17	**18**	**78**
% Heavy	1.7%	1.2%	**1.4%**	1.3%	4.2%	**2.1%**	5.3%	0.0%	7.3%	**7.1%**	**2.1%**

Waterville Landing TIS
SR-64 and Pray Boulevard

5/16/2022

Leg	SR 64						SR 64					Pray Blvd					Pray Blvd					
Direction	Eastbound						Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	U-Turn	**Total**	Peds	Left	Thru	Right	**Total**	Peds	Left	Thru	Right	**Total**	Peds	Left	Thru	Right	**Total**	Peds	**Int Total**
2022-05-05 16:15:00	61	62	15	0	**138**	0	4	66	36	**106**	0	13	1	1	**15**	0	27	2	14	**43**	0	**302**
2022-05-05 16:30:00	61	53	15	0	**129**	0	9	74	35	**118**	0	15	3	1	**19**	0	32	4	23	**59**	1	**325**
2022-05-05 16:45:00	55	54	19	0	**128**	0	7	70	29	**106**	0	16	2	1	**19**	0	38	2	16	**56**	0	**309**
2022-05-05 17:00:00	80	73	14	0	**167**	0	6	64	43	**113**	0	13	6	0	**19**	0	33	3	21	**57**	0	**356**
2022-05-05 17:15:00	53	63	11	1	**128**	0	6	70	31	**107**	0	15	3	2	**20**	0	35	0	22	**57**	0	**312**
PM PH Totals	**249**	**243**	**59**	**1**	**552**	**0**	**28**	**278**	**138**	**444**	**0**	**59**	**14**	**4**	**77**	**0**	**138**	**9**	**82**	**229**	**1**	**1302**
PM PHF	**0.78**	**0.83**	**0.78**	**0.25**	**0.83**		**0.78**	**0.94**	**0.80**	**0.94**		**0.92**	**0.58**	**0.50**	**0.96**		**0.91**	**0.56**	**0.89**	**0.97**		**0.91**
2022-05-05 17:30:00	53	52	22	0	**127**	0	3	75	34	**112**	0	17	1	2	**20**	0	38	4	13	**55**	0	**314**
2022-05-05 17:45:00	47	41	13	0	**101**	0	5	54	25	**84**	0	16	1	1	**18**	0	35	4	14	**53**	1	**256**
2022-05-05 18:00:00	34	35	16	0	**85**	0	4	46	26	**76**	0	12	3	0	**15**	0	32	4	12	**48**	0	**224**
2022-05-07 12:30:00	64	42	11	0	**117**	0	4	39	25	**68**	0	7	3	0	**10**	0	28	2	22	**52**	0	**247**
2022-05-07 12:45:00	57	38	32	0	**127**	0	3	50	31	**84**	0	12	3	1	**16**	0	32	5	19	**56**	0	**283**
2022-05-07 13:00:00	44	45	16	0	**105**	0	3	49	25	**77**	0	7	4	2	**13**	0	34	2	18	**54**	0	**249**
2022-05-07 13:15:00	50	40	16	0	**106**	0	2	43	29	**74**	1	28	2	3	**33**	0	27	1	25	**53**	1	**266**
Weekend PH Totals	**215**	**165**	**75**	**0**	**455**	**0**	**12**	**181**	**110**	**303**	**1**	**54**	**12**	**6**	**72**	**0**	**121**	**10**	**84**	**215**	**1**	**1045**
Weekend PHF	**0.84**	**0.92**	**0.59**		**0.90**		**0.75**	**0.91**	**0.89**	**0.90**		**0.48**	**0.75**	**0.50**	**0.55**		**0.89**	**0.50**	**0.84**	**0.96**		**0.92**
Grand Total	659	598	200	1	**1458**	0	56	700	369	**1125**	1	171	32	14	**217**	0	391	33	219	**643**	3	**3443**
% Approach	45.2%	41.0%	13.7%	0.1%			5.0%	62.2%	32.8%			78.8%	14.7%	6.5%			60.8%	5.1%	34.1%			
% Total	19.1%	17.4%	5.8%	0.0%	**42.3%**		1.6%	20.3%	10.7%	**32.7%**		5.0%	0.9%	0.4%	**6.3%**		11.4%	1.0%	6.4%	**18.7%**		
Lights	653	590	180	1	**1424**		56	687	366	**1109**		154	32	14	**200**		390	33	217	**640**		**3373**
% Lights	99.1%	98.7%	90.0%	100.0%	**97.7%**		100.0%	98.1%	99.2%	**98.6%**		90.1%	100.0%	100.0%	**92.2%**		99.7%	100.0%	99.1%	**99.5%**		**98.0%**
Heavy	6	8	20	0	**34**		0	13	3	**16**		17	0	0	**17**		1	0	2	**3**		**70**
% Heavy	0.9%	1.3%	10.0%	0.0%	**2.3%**		0.0%	1.9%	0.8%	**1.4%**		9.9%	0.0%	0.0%	**7.8%**		0.3%	0.0%	0.9%	**0.5%**		**2.0%**
Pedestrians						0					1					0					2	
% Pedestrians						0.0%					100.0%					0.0%					66.7%	
Bicycles						0					0					0					1	
% Bicycles						0.0%					0.0%					0.0%					33.3%	

Waterville Landing TIS
SR-64 and Waterville Monclova Road

5/16/2022

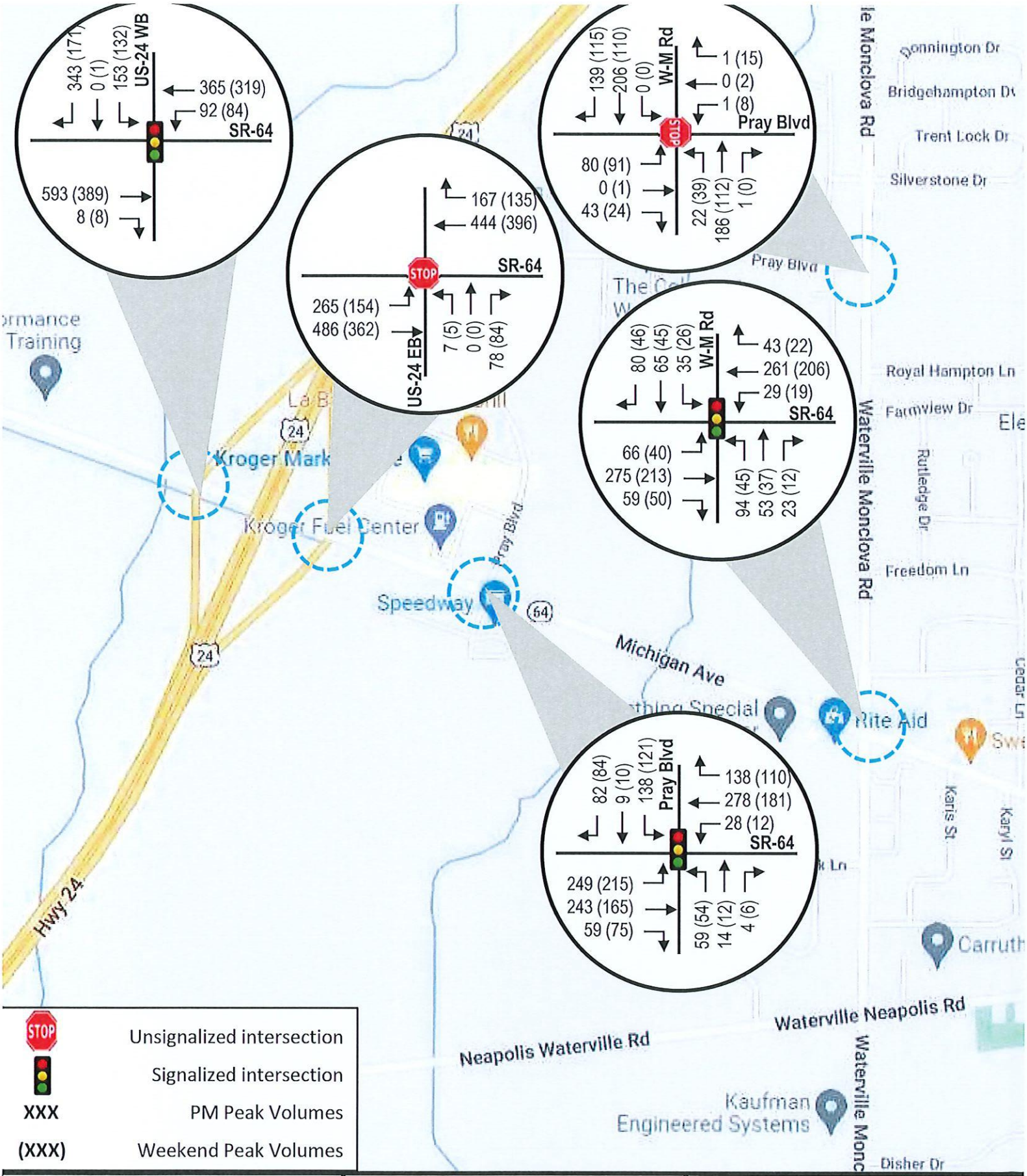
Leg	SR 64						SR 64						Waterville Monclova Rd						Waterville Monclova Rd					
Direction	Eastbound						Westbound						Northbound						Southbound					
Start Time	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	U-Turn	Total	Peds	Left	Thru	Right	Total	Peds	Int Total
2022-05-05 16:15:00	17	71	11	0	99	0	7	62	9	0	78	0	16	8	6	0	30	0	7	21	21	49	0	256
2022-05-05 16:30:00	17	63	15	1	96	0	5	59	8	0	72	0	32	11	4	0	47	0	3	20	27	50	1	265
2022-05-05 16:45:00	16	65	9	0	90	0	7	74	14	0	95	0	18	18	9	0	45	0	12	13	18	43	0	273
2022-05-05 17:00:00	16	76	15	0	107	0	10	64	12	0	86	2	30	13	3	2	48	0	12	13	15	40	0	281
2022-05-05 17:15:00	17	71	20	0	108	0	7	64	9	0	80	0	14	11	7	0	32	0	8	19	20	47	0	267
PM PH Totals	**66**	**275**	**59**	**1**	**401**	**0**	**29**	**261**	**43**	**0**	**333**	**2**	**94**	**53**	**23**	**2**	**172**	**0**	**35**	**65**	**80**	**180**	**1**	**1086**
PM PHF	**0.97**	**0.90**	**0.74**	**0.25**	**0.93**		**0.73**	**0.88**	**0.77**		**0.88**		**0.73**	**0.74**	**0.64**	**0.25**	**0.90**		**0.73**	**0.81**	**0.74**	**0.90**		**0.97**
2022-05-05 17:30:00	18	75	12	0	105	0	7	73	10	0	90	0	14	11	2	0	27	0	12	11	16	39	0	261
2022-05-05 17:45:00	20	57	10	0	87	0	6	47	8	0	61	0	15	16	5	0	36	0	13	9	9	31	0	215
2022-05-05 18:00:00	11	49	16	0	76	0	5	48	13	1	67	0	17	12	2	0	31	0	9	13	14	36	0	210
2022-05-07 12:30:00	9	47	18	0	74	0	5	45	4	0	54	0	11	11	2	0	24	0	8	8	12	28	0	180
2022-05-07 12:45:00	10	51	8	0	69	0	4	60	4	0	68	0	17	15	0	1	33	0	8	15	11	34	0	204
2022-05-07 13:00:00	15	62	12	0	89	0	7	51	3	0	61	0	6	2	4	0	12	0	5	10	9	24	0	186
2022-05-07 13:15:00	6	53	12	0	71	0	3	50	11	0	64	0	11	9	6	0	26	0	5	12	14	31	0	192
Weekend PH Totals	**40**	**213**	**50**	**0**	**303**	**0**	**19**	**206**	**22**	**0**	**247**	**0**	**45**	**37**	**12**	**1**	**95**	**0**	**26**	**45**	**46**	**117**	**0**	**762**
Weekend PHF	**0.67**	**0.86**	**0.69**		**0.85**		**0.68**	**0.86**	**0.50**		**0.91**		**0.66**	**0.62**	**0.50**	**0.25**	**0.72**		**0.81**	**0.75**	**0.82**	**0.86**		**0.93**
Grand Total	172	740	158	1	**1071**	0	73	697	105	1	**876**	2	201	137	50	3	**391**	0	102	164	186	**452**	1	**2790**
% Approach	16.1%	69.1%	14.8%	0.1%			8.3%	79.6%	12.0%	0.1%			51.4%	35.0%	12.8%	0.8%			22.6%	36.3%	41.2%			
% Total	6.2%	26.5%	5.7%	0.0%	**38.4%**		2.6%	25.0%	3.8%	0.0%	**31.4%**		7.2%	4.9%	1.8%	0.1%	**14.0%**		3.7%	5.9%	6.7%	**16.2%**		
Lights	171	735	155	1	**1062**		73	693	105	1	**872**		193	136	50	3	**382**		99	162	184	**445**		**2761**
% Lights	99.4%	99.3%	98.1%	100.0%	**99.2%**		100.0%	99.4%	100.0%	100.0%	**99.5%**		96.0%	99.3%	100.0%	100.0%	**97.7%**		97.1%	98.8%	98.9%	**98.5%**		**99.0%**
Heavy	1	5	3	0	**9**		0	4	0	0	**4**		8	1	0	0	**9**		3	2	2	**7**		**29**
% Heavy	0.6%	0.7%	1.9%	0.0%	**0.8%**		0.0%	0.6%	0.0%	0.0%	**0.5%**		4.0%	0.7%	0.0%	0.0%	**2.3%**		2.9%	1.2%	1.1%	**1.5%**		**1.0%**
Pedestrians						0						2						0					1	
% Pedestrians						0.0%						100.0%						0.0%					100.0%	
Bicycles						0						0						0					0	
% Bicycles						0.0%						0.0%						0.0%					0.0%	

Waterville Landing TIS
Pray Boulevard and Waterville Monclova Road

5/16/2022

Leg	Pray Blvd					Commercial Drive					Waterville Monclova Rd					Waterville Monclova Rd						
Direction	Eastbound					Westbound					Northbound					Southbound						
Start Time	Left	Thru	Right	**Total**	Peds	Left	Thru	Right	**Total**	Peds	Left	Thru	Right	**Total**	Peds	Left	Thru	Right	U-Turn	**Total**	Peds	**Int Total**
2022-05-05 16:15:00	19	1	11	**31**	0	0	0	0	**0**	1	11	34	0	**45**	0	0	51	31	0	**82**	0	**158**
2022-05-05 16:30:00	23	0	4	**27**	0	1	0	1	**2**	0	9	38	1	**48**	0	0	59	28	0	**87**	0	**164**
2022-05-05 16:45:00	14	0	13	**27**	0	0	0	0	**0**	0	3	61	0	**64**	0	0	51	29	0	**80**	0	**171**
2022-05-05 17:00:00	24	0	15	**39**	0	0	0	0	**0**	0	6	48	0	**54**	0	0	51	40	0	**91**	0	**184**
2022-05-05 17:15:00	19	0	11	**30**	0	0	0	0	**0**	0	4	39	0	**43**	0	0	45	42	0	**87**	0	**160**
PM PH Totals	**80**	**0**	**43**	**123**	**0**	**1**	**0**	**1**	**2**	**0**	**22**	**186**	**1**	**209**	**0**	**0**	**206**	**139**	**0**	**345**	**0**	**679**
PM PHF	**0.83**		**0.72**	**0.79**		**0.25**		**0.25**	**0.25**		**0.61**	**0.76**	**0.25**	**0.82**			**0.87**	**0.83**		**0.95**		**0.92**
2022-05-05 17:30:00	13	0	15	**28**	0	2	0	0	**2**	0	11	39	0	**50**	0	0	56	38	0	**94**	0	**174**
2022-05-05 17:45:00	18	0	13	**31**	0	1	0	0	**1**	0	10	42	2	**54**	0	0	48	24	0	**72**	0	**158**
2022-05-05 18:00:00	21	0	12	**33**	0	0	0	0	**0**	1	9	40	1	**50**	0	0	46	35	0	**81**	0	**164**
2022-05-07 12:30:00	28	0	5	**33**	0	1	0	1	**2**	0	5	29	0	**34**	0	0	18	32	0	**50**	0	**119**
2022-05-07 12:45:00	20	0	4	**24**	0	3	1	4	**8**	0	11	26	0	**37**	0	0	34	30	0	**64**	0	**133**
2022-05-07 13:00:00	21	0	9	**30**	0	4	1	6	**11**	0	10	23	0	**33**	0	0	27	25	0	**52**	0	**126**
2022-05-07 13:15:00	22	1	6	**29**	0	0	0	4	**4**	0	13	34	0	**47**	0	0	31	28	1	**60**	0	**140**
Weekend PH Totals	**91**	**1**	**24**	**116**	**0**	**8**	**2**	**15**	**25**	**0**	**39**	**112**	**0**	**151**	**0**	**0**	**110**	**115**	**1**	**226**	**0**	**518**
Weekend PHF	**0.81**	**0.25**	**0.67**	**0.88**		**0.50**	**0.50**	**0.63**	**0.57**		**0.75**	**0.82**		**0.80**			**0.81**	**0.90**	**0.25**	**0.88**		**0.93**
Grand Total	242	2	118	**362**	0	12	2	16	**30**	2	102	453	4	**559**	0	0	517	382	1	**900**	0	**1851**
% Approach	66.9%	0.6%	32.6%			40.0%	6.7%	53.3%			18.2%	81.0%	0.7%			0.0%	57.4%	42.4%	0.1%			
% Total	13.1%	0.1%	6.4%	**19.6%**		0.6%	0.1%	0.9%	**1.6%**		5.5%	24.5%	0.2%	**30.2%**		0.0%	27.9%	20.6%	0.1%	**48.6%**		
Lights	242	1	117	**360**		12	2	15	**29**		98	451	4	**553**		0	509	379	1	**889**		**1831**
% Lights	100.0%	50.0%	99.2%	**99.4%**		100.0%	100.0%	93.8%	**96.7%**		96.1%	99.6%	100.0%	**98.9%**		0.0%	98.5%	99.2%	100.0%	**98.8%**		**98.9%**
Heavy	0	1	1	**2**		0	0	1	**1**		4	2	0	**6**		0	8	3	0	**11**		**20**
% Heavy	0.0%	50.0%	0.8%	**0.6%**		0.0%	0.0%	6.3%	**3.3%**		3.9%	0.4%	0.0%	**1.1%**		0.0%	1.5%	0.8%	0.0%	**1.2%**		**1.1%**
Pedestrians					0					2					0						0	
% Pedestrians					0.0%					100.0%					0.0%						0.0%	
Bicycles					0					0					0						0	
% Bicycles					0.0%					0.0%					0.0%						0.0%	

Appendix B
Traffic Figures

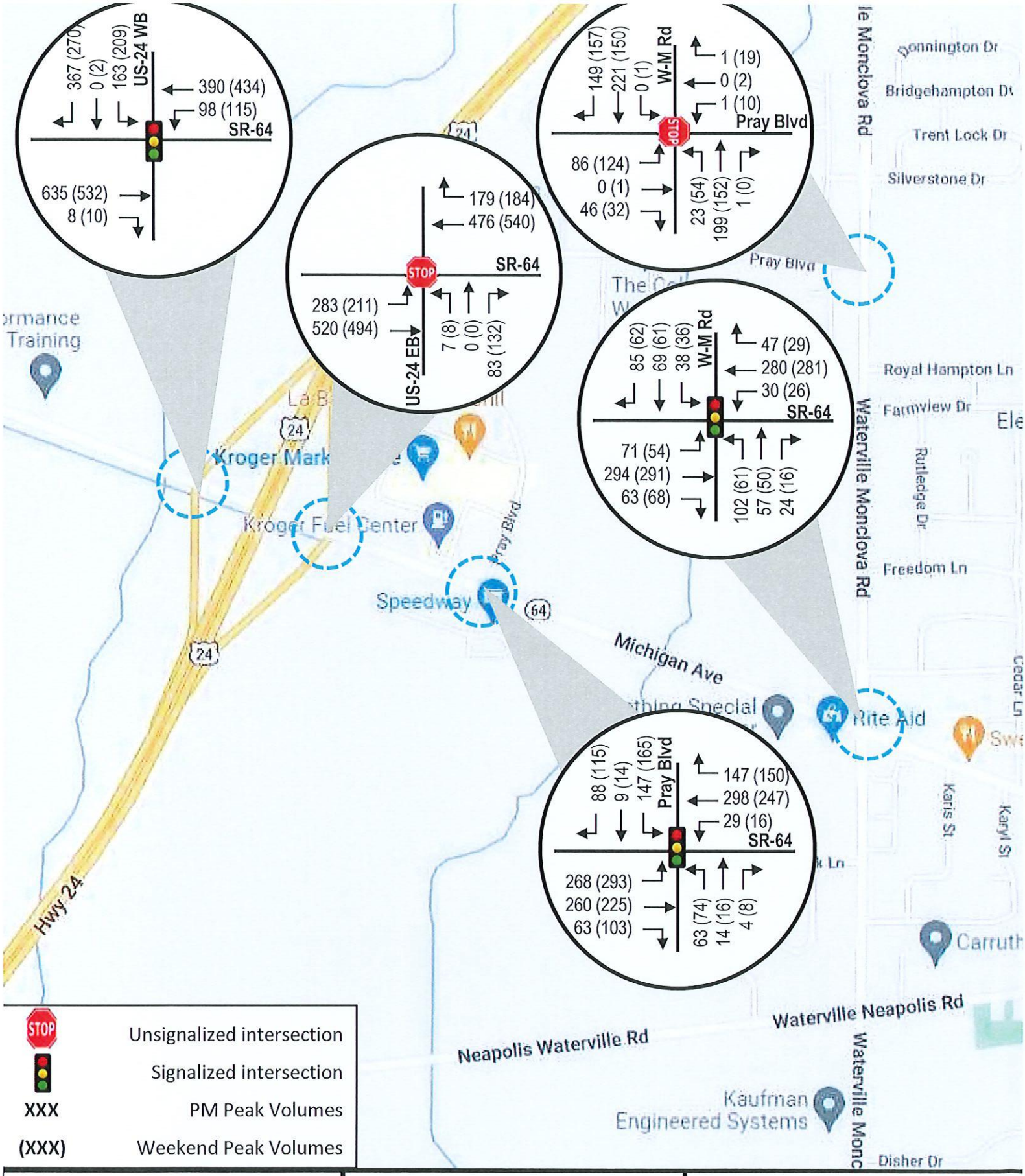


DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

2022 COLLECTED TRAFFIC DATA

Location Map

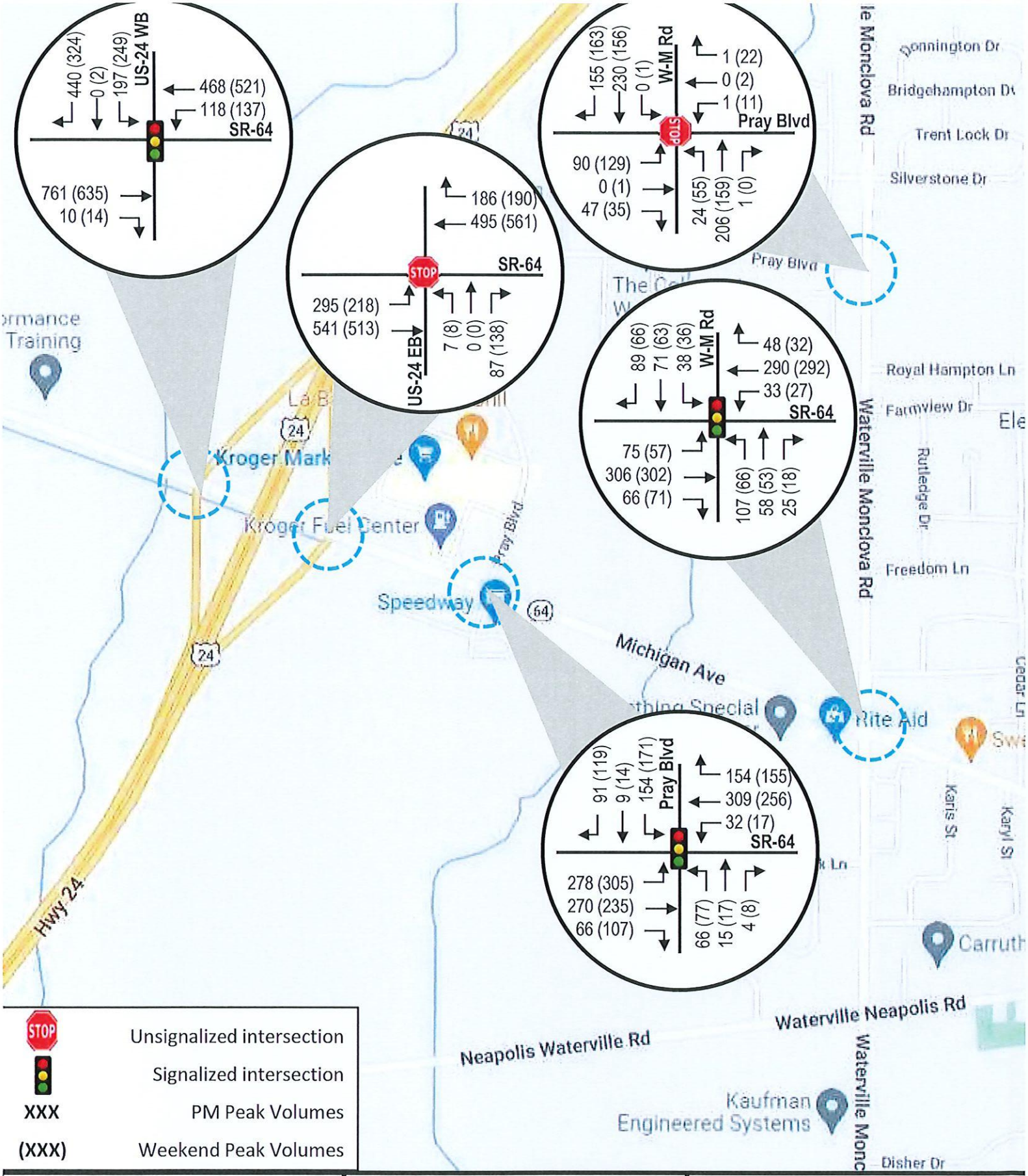


DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

2023 NO-BUILD TRAFFIC DATA

Location Map

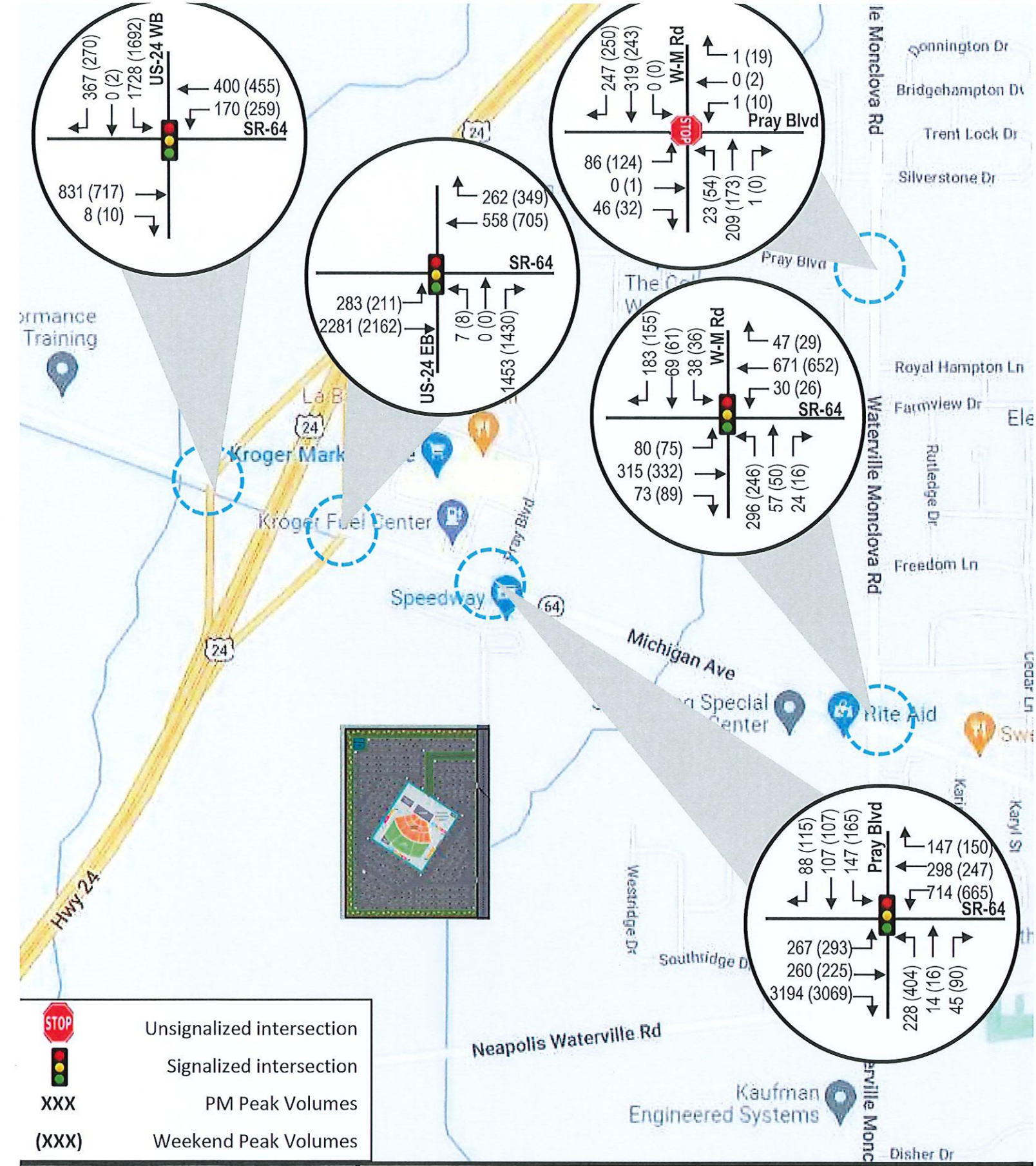


DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

2043 NO-BUILD TRAFFIC DATA

Location Map



STOP Unsignalized intersection

Signalized intersection

XXX PM Peak Volumes

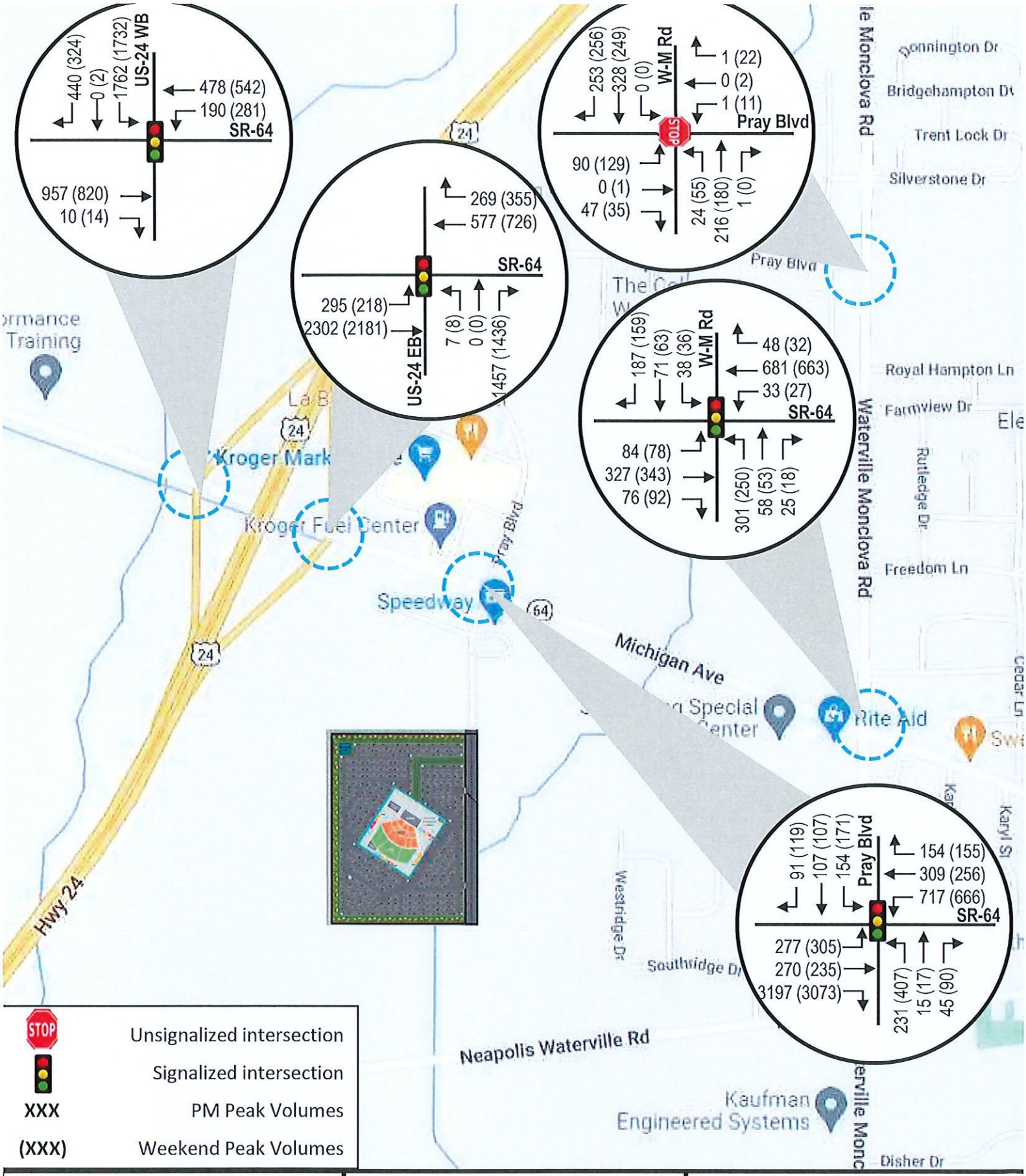
(XXX) Weekend Peak Volumes

DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

2023 EVENT TRAFFIC DATA

Location Map

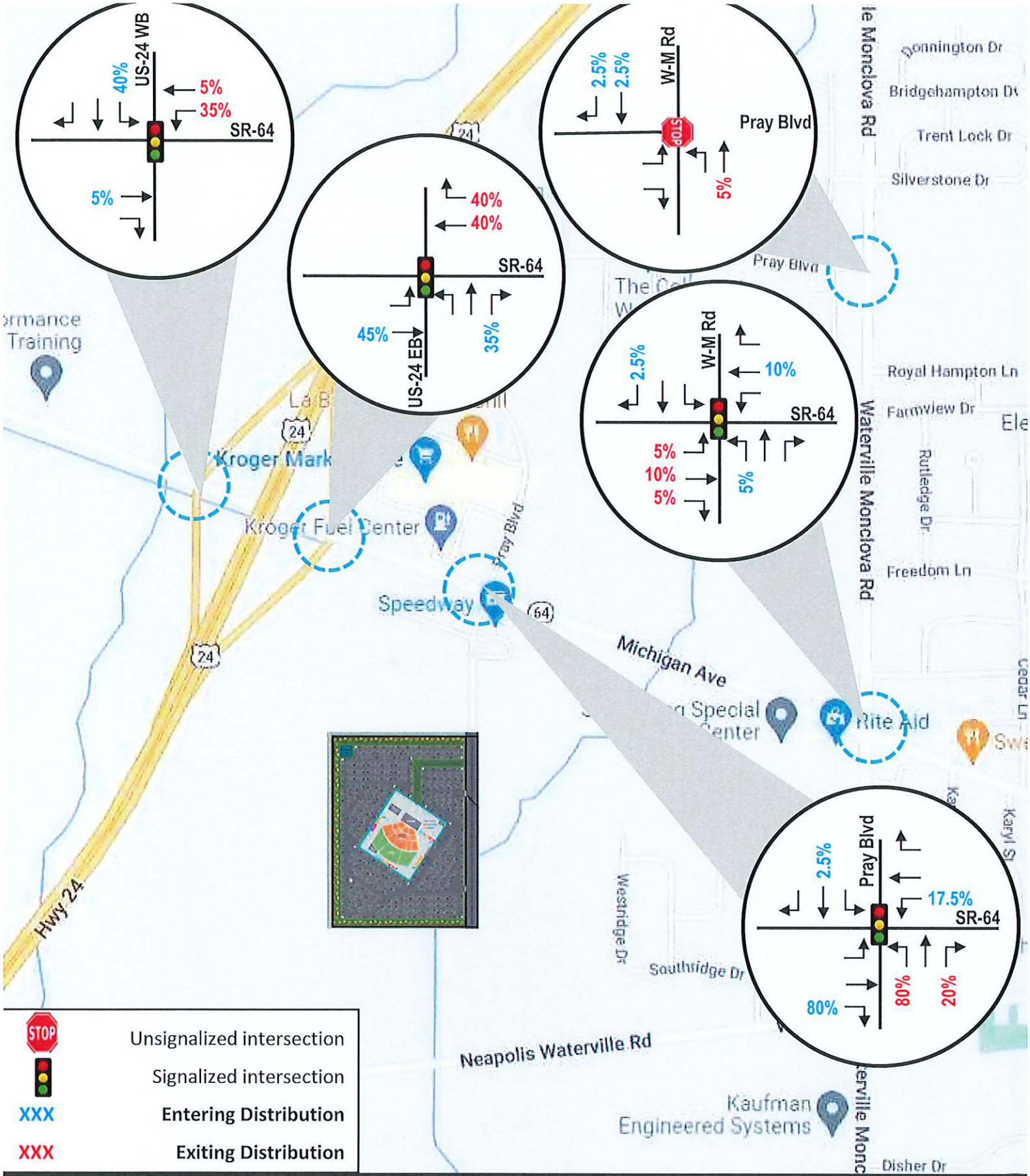


DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

2043 EVENT TRAFFIC DATA

Location Map



DGL CONSULTING ENGINEERS

WATERVILLE LANDING TRAFFIC IMPACT STUDY

TRIP DISTRIBUTION

Location Map

Appendix C
Calculations

Trip Generation												
ITE Land Use	Variable		PM Peak Hour	PM Distribution		PM Enter	PM Exit	Weekend Peak Hour	Weekend Distribution		Weekend Enter	Weekend Exit
				Enter	Exit				Enter	Exit		
Amphitheater Concerts	10,300	Tickets	4,120	95%	5%	3914	206	4,120	90%	10%	3708	412
	Total		**4120**			**3914**	**206**	**4120**			**3708**	**412**
	TOTAL Trips:		**4,120**		**TOTAL Trips:**	**3,914**	**206**	**4,120**		**TOTAL Trips:**	**3,708**	**412**

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

US-24 WB & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					- Northbound					US-24 WB Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM		166	3		169	28	100			128						36		67		103	
4:45 PM		136	1		137	18	98			116						36		108		144	
5:00 PM		185	4		189	22	79			101						51		92		143	
5:15 PM		148			148	30	113			143						40		100		140	1661
No-Build PM Peak	**0**	**635**	**8**	**0**	**643**	**98**	**390**	**0**	**0**	**488**	**0**	**0**	**0**	**0**	**0**	**163**	**0**	**367**	**0**	**530**	**1661**
Entering Traffic		**196**														**1565**					
Exiting Traffic						**72**	**10**														
Build PM Peak Total	**0**	**831**	**8**	**0**	**839**	**170**	**400**	**0**	**0**	**570**	**0**	**0**	**0**	**0**	**0**	**1728**	**0**	**367**	**0**	**2095**	**1661**
12:30 PM		145	5		150	11	106			117						43		76		119	
12:00 AM		130	1		131	29	102			131						82		65		147	
1:00 PM		123	1		124	19	116			135						43		58		101	
1:15 PM		134	3		137	56	110			166						41	2	71		114	1572
No-Build Weekend Peak	**0**	**532**	**10**	**0**	**542**	**115**	**434**	**0**	**0**	**549**	**0**	**0**	**0**	**0**	**0**	**209**	**2**	**270**	**0**	**481**	**1572**
Entering Traffic		**185**														**1483**					
Exiting Traffic						**144**	**21**														
Build Weekend Peak Total	**0**	**717**	**10**	**0**	**727**	**259**	**455**	**0**	**0**	**714**	**0**	**0**	**0**	**0**	**0**	**1692**	**2**	**270**	**0**	**1964**	**1572**

	PM Peak	Weekend Peak
Enter	3,914	3,708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

US-24 EB & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					US-24 EB Northbound					- Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	78	126			204		120	41		161	3		17		20						
4:45 PM	62	111			173		117	44		161	1		16		17						
5:00 PM	76	162			238		101	50		151			28		28						
5:15 PM	67	121			188		138	44		182	3		22		25						1548
No-Build PM Peak	**283**	**520**	**0**	**0**	**803**	**0**	**476**	**179**	**0**	**655**	**7**	**0**	**83**	**0**	**90**	**0**	**0**	**0**	**0**	**0**	**1548**
Entering Traffic		**1761**											**1370**								
Exiting Traffic							**82**	**83**													
Build PM Peak Total	**283**	**2281**	**0**	**0**	**2564**	**0**	**558**	**262**	**0**	**820**	**7**	**0**	**1453**	**0**	**1460**	**0**	**0**	**0**	**0**	**0**	**1548**
12:30 PM	56	124			180		116	44		160	3		30		33						
12:00 AM	55	147			202		128	37		165	5		47		52						
1:00 PM	37	119			156		136	50		186			27		27						
1:15 PM	63	104			167		160	53		213			28		28						1569
No-Build Weekend Peak	**211**	**494**	**0**	**0**	**705**	**0**	**540**	**184**	**0**	**724**	**8**	**0**	**132**	**0**	**140**	**0**	**0**	**0**	**0**	**0**	**1569**
Entering Traffic		**1668**											**1298**								
Exiting Traffic							**165**	**165**													
Build Weekend Peak Total	**211**	**2162**	**0**	**0**	**2373**	**0**	**705**	**349**	**0**	**1054**	**8**	**0**	**1430**	**0**	**1438**	**0**	**0**	**0**	**0**	**0**	**1569**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Pray Blvd & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					Pray Blvd Northbound					Pray Blvd Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	65	57	16		138	10	79	37		126	16	3	1		20	34	4	25		63	
4:45 PM	59	58	20		137	7	75	31		113	17	2	1		20	41	2	17		60	
5:00 PM	86	78	15		179	6	69	46		121	14	6			20	35	3	22		60	
5:15 PM	57	67	12	1	137	6	75	33		114	16	3	2		21	37		24		61	1390
No-Build PM Peak	**267**	**260**	**63**	**1**	**591**	**29**	**298**	**147**	**0**	**474**	**63**	**14**	**4**	**0**	**81**	**147**	**9**	**88**	**0**	**244**	**1390**
Entering Traffic			3131			685											98				
Exiting Traffic											165		41								
Build PM Peak Total	**267**	**260**	**3194**	**1**	**3722**	**714**	**298**	**147**	**0**	**1159**	**228**	**14**	**45**	**0**	**287**	**147**	**107**	**88**	**0**	**342**	**1390**
12:30 PM	87	57	15		159	5	53	34		92	10	4			14	38	3	30		71	
12:00 AM	78	52	44		174	4	68	42		114	16	4	1		21	44	7	26		77	
1:00 PM	60	61	22		143	4	67	34		105	10	5	3		18	46	3	25		74	
1:15 PM	68	55	22		145	3	59	40		102	38	3	4		45	37	1	34		72	1426
No-Build Weekend Peak	**293**	**225**	**103**	**0**	**621**	**16**	**247**	**150**	**0**	**413**	**74**	**16**	**8**	**0**	**98**	**165**	**14**	**115**	**0**	**294**	**1426**
Entering Traffic			2966			649											93				
Exiting Traffic											330		82								
Build Weekend Peak Total	**293**	**225**	**3069**	**0**	**3587**	**665**	**247**	**150**	**0**	**1062**	**404**	**16**	**90**	**0**	**510**	**165**	**107**	**115**	**0**	**387**	**1426**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Waterville-Monclova Rd & SR-64

Opening Peak Hour Traffic Calculations

	(SR-64) Michigan Ave Eastbound					(SR-64) Michigan Ave Westbound					Waterville-Monclova Rd Northbound					Waterville-Monclova Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	18	67	16	1	102	5	63	9		77	34	12	4		50	3	21	29		53	
4:45 PM	17	70	10		97	7	79	15		101	19	19	10		48	13	14	19		46	
5:00 PM	17	81	16		114	11	69	13		93	32	14	3	2	51	13	14	16		43	
5:15 PM	18	76	21		115	7	69	10		86	15	12	7		34	9	20	21		50	1160
No-Build PM Peak	**70**	**294**	**63**	**1**	**428**	**30**	**280**	**47**	**0**	**357**	**100**	**57**	**24**	**2**	**183**	**38**	**69**	**85**	**0**	**192**	**1160**
Entering Traffic							391				196							98			
Exiting Traffic	10	21	10																		
Build PM Peak Total	**80**	**315**	**73**	**1**	**470**	**30**	**671**	**47**	**0**	**748**	**296**	**57**	**24**	**2**	**379**	**38**	**69**	**183**	**0**	**290**	**1160**
12:30 PM	12	64	25		101	7	61	5		73	15	15	3		33	11	11	16		38	
12:00 AM	14	70	11		95	5	82	5		92	23	20		1	44	11	20	15		46	
1:00 PM	20	85	16		121	10	70	4		84	8	3	5		16	7	14	12		33	
1:15 PM	8	72	16		96	4	68	15		87	15	12	8		35	7	16	19		42	1036
No-Build Weekend Peak	**54**	**291**	**68**	**0**	**413**	**26**	**281**	**29**	**0**	**336**	**61**	**50**	**16**	**1**	**128**	**36**	**61**	**62**	**0**	**159**	**1036**
Entering Traffic							371				185							93			
Exiting Traffic	21	41	21																		
Build Weekend Peak Total	**75**	**332**	**89**	**0**	**495**	**26**	**652**	**29**	**0**	**707**	**246**	**50**	**16**	**1**	**313**	**36**	**61**	**155**	**0**	**252**	**1036**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Waterville-Monclova Rd & Pray Blvd

Opening Peak Hour Traffic Calculations

	Pray Blvd Eastbound					- Westbound					Waterville-Monclova Rd Northbound					Waterville-Monclova Rd Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	25		4		29	1		1		2	10	41	1		52		63	30		93	
4:45 PM	15		14		29						3	65			68		55	31		86	
5:00 PM	26		16		42						6	51			57		55	43		98	
5:15 PM	20		12		32						4	42			46		48	45		93	727
No-Build PM Peak	**86**	**0**	**46**	**0**	**132**	**1**	**0**	**1**	**0**	**2**	**23**	**199**	**1**	**0**	**223**	**0**	**221**	**149**	**0**	**370**	**727**
Entering Traffic																	**98**	**98**			
Exiting Traffic												**10**									
Build PM Peak Total	**86**	**0**	**46**	**0**	**132**	**1**	**0**	**1**	**0**	**2**	**23**	**209**	**1**	**0**	**233**	**0**	**319**	**247**	**0**	**566**	**727**
12:30 PM	38		7		45	1		1		2	7	40			47		25	44		69	
12:00 AM	27		5		32	4	1	5		10	15	35			50		46	41		87	
1:00 PM	29		12		41	5	1	8		14	14	31			45		37	34		71	
1:15 PM	30	1	8		39			5		5	18	46			64		42	38	1	81	702
No-Build Weekend Peak	**124**	**1**	**32**	**0**	**157**	**10**	**2**	**19**	**0**	**31**	**54**	**152**	**0**	**0**	**206**	**0**	**150**	**157**	**1**	**308**	**702**
Entering Traffic																	**93**	**93**			
Exiting Traffic												**21**									
Build Weekend Peak Total	**124**	**1**	**32**	**0**	**157**	**10**	**2**	**19**	**0**	**31**	**54**	**173**	**0**	**0**	**227**	**0**	**243**	**250**	**1**	**493**	**702**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

US-24 WB & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					- Northbound					US-24 WB Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM		199	4		203	33	119			152						44		81		125	
4:45 PM		163	1		164	22	118			140						44		130		174	
5:00 PM		222	5		227	27	95			122						62		110		172	
5:15 PM		177			177	36	136			172						47		119		166	1994
No-Build PM Peak	**0**	**761**	**10**	**0**	**771**	**118**	**468**	**0**	**0**	**586**	**0**	**0**	**0**	**0**	**0**	**197**	**0**	**440**	**0**	**637**	**1994**
Entering Traffic		**196**														**1565**					
Exiting Traffic						**72**	**10**														
Build PM Peak Total	**0**	**957**	**10**	**0**	**967**	**190**	**478**	**0**	**0**	**668**	**0**	**0**	**0**	**0**	**0**	**1762**	**0**	**440**	**0**	**2202**	**1994**
12:30 PM		173	7		180	13	127			140						51		91		142	
12:45 PM		155	2		157	34	123			157						98		78		176	
1:00 PM		147	2		149	23	139			162						51		70		121	
1:15 PM		160	3		163	67	132			199						49	2	85		136	1882
No-Build Weekend Peak	**0**	**635**	**14**	**0**	**649**	**137**	**521**	**0**	**0**	**658**	**0**	**0**	**0**	**0**	**0**	**249**	**2**	**324**	**0**	**575**	**1882**
Entering Traffic		**185**														**1483**					
Exiting Traffic						**144**	**21**														
Build Weekend Peak Total	**0**	**820**	**14**	**0**	**834**	**281**	**542**	**0**	**0**	**823**	**0**	**0**	**0**	**0**	**0**	**1732**	**2**	**324**	**0**	**2058**	**1882**

	PM Peak	Weekend Peak
Enter	3,914	3,708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

US-24 EB & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					US-24 EB Northbound					- Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	81	131			212		125	42		167	3		18		21						
4:45 PM	65	116			181		121	46		167	1		17		18						
5:00 PM	79	168			247		105	52		157			29		29						
5:15 PM	70	126			196		144	46		190	3		23		26						1611
No-Build PM Peak	**295**	**541**	**0**	**0**	**836**	**0**	**495**	**186**	**0**	**681**	**7**	**0**	**87**	**0**	**94**	**0**	**0**	**0**	**0**	**0**	**1611**
Entering Traffic		**1761**											**1370**								
Exiting Traffic							**82**	**83**													
Build PM Peak Total	**295**	**2302**	**0**	**0**	**2597**	**0**	**577**	**269**	**0**	**846**	**7**	**0**	**1457**	**0**	**1464**	**0**	**0**	**0**	**0**	**0**	**1611**
12:30 PM	58	129			187		120	45		165	3		31		34						
12:45 PM	57	153			210		133	38		171	5		49		54						
1:00 PM	38	123			161		142	52		194			28		28						
1:15 PM	65	108			173		166	55		221			30		30						1628
No-Build Weekend Peak	**218**	**513**	**0**	**0**	**731**	**0**	**561**	**190**	**0**	**751**	**8**	**0**	**138**	**0**	**146**	**0**	**0**	**0**	**0**	**0**	**1628**
Entering Traffic		**1668**											**1298**								
Exiting Traffic							**165**	**165**													
Build Weekend Peak Total	**218**	**2181**	**0**	**0**	**2399**	**0**	**726**	**355**	**0**	**1081**	**8**	**0**	**1436**	**0**	**1444**	**0**	**0**	**0**	**0**	**0**	**1628**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Pray Blvd & SR-64

Opening Peak Hour Traffic Calculations

	SR-64 (Waterville-Swanton Rd) Eastbound					SR-64 (Waterville-Swanton Rd) Westbound					Pray Blvd Northbound					Pray Blvd Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	68	59	17		144	10	82	39		131	17	3	1		21	36	4	26		66	
4:45 PM	61	60	21		142	8	78	32		118	18	2	1		21	42	2	18		62	
5:00 PM	89	81	16		186	7	71	48		126	14	7			21	37	3	23		63	
5:15 PM	59	70	12	1	142	7	78	35		120	17	3	2		22	39		24		63	1448
No-Build PM Peak	**277**	**270**	**66**	**1**	**614**	**32**	**309**	**154**	**0**	**495**	**66**	**15**	**4**	**0**	**85**	**154**	**9**	**91**	**0**	**254**	**1448**
Entering Traffic			**3131**			**685**											**98**				
Exiting Traffic											**165**		**41**								
Build PM Peak Total	**277**	**270**	**3197**	**1**	**3745**	**717**	**309**	**154**	**0**	**1180**	**231**	**15**	**45**	**0**	**291**	**154**	**107**	**91**	**0**	**352**	**1448**
12:30 PM	91	60	16		167	6	55	35		96	10	4			14	40	3	31		74	
12:45 PM	81	54	45		180	4	71	44		119	17	4	1		22	45	7	27		79	
1:00 PM	62	64	23		149	4	69	35		108	10	6	3		19	48	3	26		77	
1:15 PM	71	57	23		151	3	61	41		105	40	3	4		47	38	1	35		74	1481
No-Build Weekend Peak	**305**	**235**	**107**	**0**	**647**	**17**	**256**	**155**	**0**	**428**	**77**	**17**	**8**	**0**	**102**	**171**	**14**	**119**	**0**	**304**	**1481**
Entering Traffic			**2966**			**649**											**93**				
Exiting Traffic											**330**		**82**								
Build Weekend Peak Total	**305**	**235**	**3073**	**0**	**3613**	**666**	**256**	**155**	**0**	**1077**	**407**	**17**	**90**	**0**	**514**	**171**	**107**	**119**	**0**	**397**	**1481**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Waterville-Monclova Rd & SR-64

Opening Peak Hour Traffic Calculations

	(SR-64) Michigan Ave					(SR-64) Michigan Ave					Waterville-Monclova Rd					Waterville-Monclova Rd					
	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	19	70	17	1	107	6	66	9		81	36	12	4		52	3	22	30		55	
4:45 PM	18	72	10		100	8	82	16		106	20	20	10		50	13	14	20		47	
5:00 PM	18	85	17		120	11	71	13		95	33	14	3	2	52	13	14	17		44	
5:15 PM	19	79	22		120	8	71	10		89	16	12	8		36	9	21	22		52	1206
No-Build PM Peak	**74**	**306**	**66**	**1**	**447**	**33**	**290**	**48**	**0**	**371**	**105**	**58**	**25**	**2**	**190**	**38**	**71**	**89**	**0**	**198**	**1206**
Entering Traffic							**391**				**196**							**98**			
Exiting Traffic	**10**	**21**	**10**																		
Build PM Peak Total	**84**	**327**	**76**	**1**	**489**	**33**	**681**	**48**	**0**	**762**	**301**	**58**	**25**	**2**	**386**	**38**	**71**	**187**	**0**	**296**	**1206**
12:30 PM	13	67	26		106	7	64	6		77	16	16	3		35	11	11	17		39	
12:45 PM	14	72	11		97	6	85	6		97	24	21		1	46	11	21	16		48	
1:00 PM	21	88	17		126	10	72	4		86	9	3	6		18	7	14	13		34	
1:15 PM	9	75	17		101	4	71	16		91	16	13	9		38	7	17	20		44	1083
No-Build Weekend Peak	**57**	**302**	**71**	**0**	**430**	**27**	**292**	**32**	**0**	**351**	**65**	**53**	**18**	**1**	**137**	**36**	**63**	**66**	**0**	**165**	**1083**
Entering Traffic							**371**				**185**							**93**			
Exiting Traffic	**21**	**41**	**21**																		
Build Weekend Peak Total	**78**	**343**	**92**	**0**	**512**	**27**	**663**	**32**	**0**	**722**	**250**	**53**	**18**	**1**	**322**	**36**	**63**	**159**	**0**	**258**	**1083**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Study Name: 22104 Waterville Landing TIS
Date: 5/6/2022

Waterville-Monclova Rd & Pray Blvd

Opening Peak Hour Traffic Calculations

	Pray Blvd					-					Waterville-Monclova Rd					Waterville-Monclova Rd					
	Eastbound					Westbound					Northbound					Southbound					
Start Time	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Left	Thru	Right	U-Turn	App Total	Peak Period
4:30 PM	26		4		30	1		1		2	10	42	1		53		66	31		97	
4:45 PM	16		14		30						3	68			71		57	32		89	
5:00 PM	27		17		44						7	53			60		57	45		102	
5:15 PM	21		12		33						4	43			47		50	47		97	755
No-Build PM Peak	**90**	**0**	**47**	**0**	**137**	**1**	**0**	**1**	**0**	**2**	**24**	**206**	**1**	**0**	**231**	**0**	**230**	**155**	**0**	**385**	**755**
Entering Traffic																	**98**	**98**			
Exiting Traffic												**10**									
Build PM Peak Total	**90**	**0**	**47**	**0**	**137**	**1**	**0**	**1**	**0**	**2**	**24**	**216**	**1**	**0**	**241**	**0**	**328**	**253**	**0**	**581**	**755**
12:30 PM	40		7		47	1		1		2	7	41			48		26	45		71	
12:45 PM	28		6		34	4	1	6		11	16	37			53		48	43		91	
1:00 PM	30		13		43	6	1	9		16	14	33			47		38	35		73	
1:15 PM	31	1	9		41			6		6	18	48			66		44	40	1	85	734
No-Build Weekend Peak	**129**	**1**	**35**	**0**	**165**	**11**	**2**	**22**	**0**	**35**	**55**	**159**	**0**	**0**	**214**	**0**	**156**	**163**	**1**	**320**	**734**
Entering Traffic																	**93**	**93**			
Exiting Traffic												**21**									
Build Weekend Peak Total	**129**	**1**	**35**	**0**	**165**	**11**	**2**	**22**	**0**	**35**	**55**	**180**	**0**	**0**	**235**	**0**	**249**	**256**	**1**	**505**	**734**

	PM Peak	Weekend Peak
Enter	3914	3708
Exit	206	412
Total:	4120	4120

Appendix D
HCS 7 Reports

HCS7 Two-Way Stop-Control Report

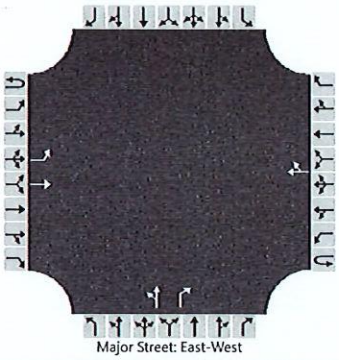
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2022 Existing PM Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		265	486				444	167		7	0	78				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		285								8		84				
Capacity, c (veh/h)		932								58		544				
v/c Ratio		0.31								0.13		0.15				
95% Queue Length, Q_{95} (veh)		1.3								0.4		0.5				
Control Delay (s/veh)		10.6								75.9		12.8				
Level of Service (LOS)		B								F		B				
Approach Delay (s/veh)	3.7								18.0							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

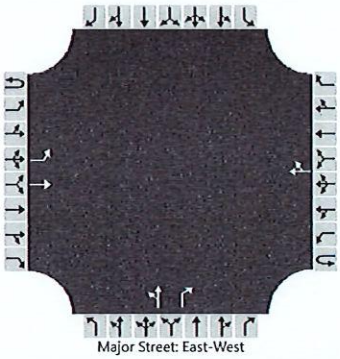
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2022 Existing Wknd Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		154	362				396	135		5	0	84				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

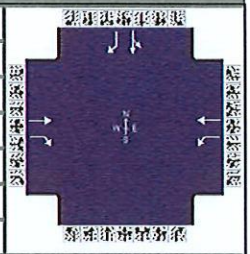
Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		164								5		89				
Capacity, c (veh/h)		1008								138		651				
v/c Ratio		0.16								0.04		0.14				
95% Queue Length, Q_{95} (veh)		0.6								0.1		0.5				
Control Delay (s/veh)		9.3								32.1		11.4				
Level of Service (LOS)		A								D		B				
Approach Delay (s/veh)	2.8								12.6							
Approach LOS									B							

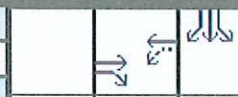
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2022 SR-64 & US-24 WB Existing PM Peak.xus		
Project Description	2022 Existing PM Peak				

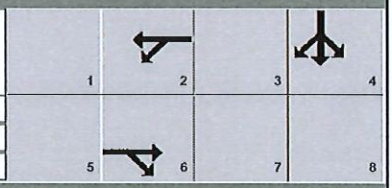


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		593	8	92	365					153	0	343

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	33.0	24.0	0.0	0.0	0.0	0.0	
Yellow	5.0	4.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



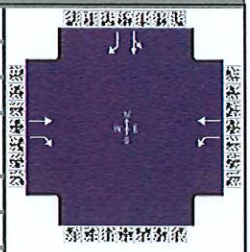
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, (*Y+R c*), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (*g s*), s		20.0		27.6				15.4
Green Extension Time (*g e*), s		5.8		3.1				1.4
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.47		0.98				0.22

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		618	8	96	380						159	357
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	793	1885						1344	1585
Queue Service Time (*g s*), s		18.0	0.2	7.6	9.3						6.2	13.4
Cycle Queue Clearance Time (*g c*), s		18.0	0.2	25.6	9.3						6.2	13.4
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	272	889						461	543
Volume-to-Capacity Ratio (*X*)		0.695	0.012	0.352	0.428						0.346	0.657
Back of Queue (*Q*), ft/ln (95 th percentile)		292.9	3	65.6	159.9						102.5	216.4
Back of Queue (*Q*), veh/ln (95 th percentile)		11.6	0.1	2.5	6.3						3.2	8.5
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.13	0.00						0.00	0.62
Uniform Delay (*d 1*), s/veh		14.5	9.8	24.6	12.2						17.1	19.5
Incremental Delay (*d 2*), s/veh		2.6	0.0	1.1	0.5						0.4	2.9
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		17.2	9.8	25.7	12.7						17.6	22.4
Level of Service (LOS)		B	A	C	B						B	C
Approach Delay, s/veh / LOS	17.1	B		15.3	B		0.0			20.9	C	
Intersection Delay, s/veh / LOS	17.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.52	B	1.27	A			1.34	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2022 SR-64 & US-24 WB Existing Weekend Peak...		
Project Description	2022 Existing Weekend Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		389	8	84	319					132	1	171

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	33.0	24.0	0.0	0.0	0.0	0.0						
Yellow	5.0	4.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

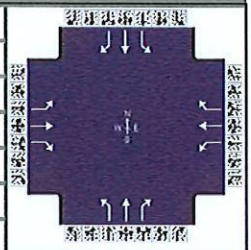
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (g_s), s		12.4		17.3				8.0
Green Extension Time (g_e), s		5.2		4.7				1.1
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.10		0.21				0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		414	9	89	339						141	182
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	957	1885						1344	1585
Queue Service Time (g_s), s		10.4	0.2	4.9	8.1						5.4	6.0
Cycle Queue Clearance Time (g_c), s		10.4	0.2	15.3	8.1						5.4	6.0
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	412	889						461	543
Volume-to-Capacity Ratio (*X*)		0.466	0.012	0.217	0.382						0.307	0.335
Back of Queue (*Q*), ft/ln (95 th percentile)		178.1	3.1	48.1	138.6						89.5	93.3
Back of Queue (*Q*), veh/ln (95 th percentile)		7.1	0.1	1.9	5.5						2.8	3.7
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.10	0.00						0.00	0.27
Uniform Delay (d_1), s/veh		12.5	9.8	17.7	11.9						16.9	17.1
Incremental Delay (d_2), s/veh		0.5	0.0	0.4	0.4						0.4	0.4
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		13.1	9.8	18.1	12.3						17.3	17.4
Level of Service (LOS)		B	A	B	B						B	B
Approach Delay, s/veh / LOS	13.0	B		13.5	B		0.0			17.4	B	
Intersection Delay, s/veh / LOS	14.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.18	A	1.19	A			1.02	A

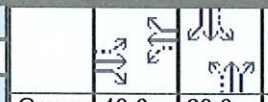
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2022 SR-64 & Pray Blvd Existing PM Peak.xus		
Project Description	2022 Existing PM Peak				

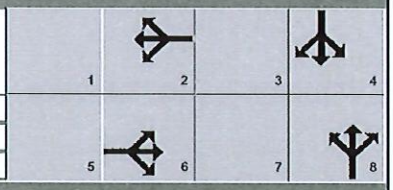


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	250	243	59	28	278	138	59	14	4	138	9	82

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	43.0	23.0	0.0	0.0	0.0	0.0	
Yellow	5.0	5.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



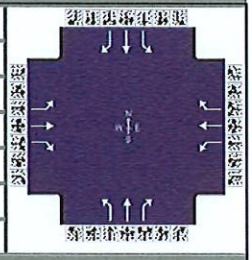
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.2		4.2
Queue Clearance Time (g_s), s		24.3		9.3		5.3		9.3
Green Extension Time (g_e), s		4.1		4.5		1.1		1.0
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.08		0.01		0.00		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	275	267	65	31	305	152	65	15	4	152	10	90
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1082	1885	1485	1130	1870	1598	1316	1900	1610	1420	1900	1598
Queue Service Time (g_s), s	15.0	6.1	1.7	1.2	7.2	3.9	3.0	0.5	0.2	6.9	0.3	3.4
Cycle Queue Clearance Time (g_c), s	22.3	6.1	1.7	7.3	7.2	3.9	3.3	0.5	0.2	7.3	0.3	3.4
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	574	1013	798	611	1005	859	463	546	463	490	546	459
Volume-to-Capacity Ratio (*X*)	0.479	0.264	0.081	0.050	0.304	0.177	0.140	0.028	0.009	0.309	0.018	0.196
Back of Queue (*Q*), ft/ln (95 th percentile)	146.4	93.3	21.7	11.9	110	50.2	43.2	9	2.6	100.4	5.8	56.3
Back of Queue (*Q*), veh/ln (95 th percentile)	5.8	3.7	0.8	0.5	4.3	2.0	1.6	0.4	0.1	4.0	0.2	2.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.30	0.00	0.04	0.02	0.00	0.13	0.17	0.00	0.01	0.35	0.00	0.12
Uniform Delay (d_1), s/veh	16.4	10.0	8.9	11.9	10.2	9.5	21.6	20.5	20.4	23.1	20.4	21.5
Incremental Delay (d_2), s/veh	0.6	0.1	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.4	0.0	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.0	10.1	9.0	12.0	10.4	9.6	21.7	20.5	20.4	23.5	20.4	21.7
Level of Service (LOS)	B	B	A	B	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	13.1	B		10.2	B		21.4	C		22.7	C	
Intersection Delay, s/veh / LOS	14.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.49	A	1.29	A	0.63	A	0.90	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2022 SR-64 & Pray Blvd Existing Weekend Peak....		
Project Description	2022 Existing Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	215	165	75	12	181	110	54	12	6	121	10	84

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	43.0	23.0	0.0	0.0	0.0	0.0	1	2	3	4		
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

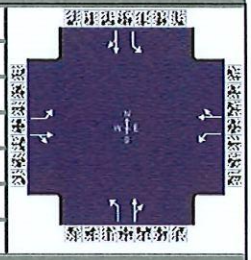
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.1		4.1		4.2		4.2
Queue Clearance Time (g_s), s		16.4		6.3		5.0		8.2
Green Extension Time (g_e), s		3.0		3.1		1.0		0.9
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.00		0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	234	179	82	13	197	120	59	13	7	132	11	91
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1195	1885	1485	1224	1870	1598	1315	1900	1610	1423	1900	1598
Queue Service Time (g_s), s	10.0	3.9	2.1	0.4	4.3	3.0	2.7	0.4	0.2	5.8	0.3	3.5
Cycle Queue Clearance Time (g_c), s	14.4	3.9	2.1	4.3	4.3	3.0	3.0	0.4	0.2	6.2	0.3	3.5
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	668	1013	798	688	1005	859	463	546	463	492	546	459
Volume-to-Capacity Ratio (*X*)	0.350	0.177	0.102	0.019	0.196	0.139	0.127	0.024	0.014	0.267	0.020	0.199
Back of Queue (*Q*), ft/ln (95 th percentile)	103.9	59.4	27.8	4.6	66.2	38.6	39	7.6	3.8	85.5	6.3	57
Back of Queue (*Q*), veh/ln (95 th percentile)	4.1	2.4	1.0	0.2	2.6	1.5	1.4	0.3	0.2	3.4	0.3	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.21	0.00	0.06	0.01	0.00	0.10	0.15	0.00	0.01	0.29	0.00	0.12
Uniform Delay (d_1), s/veh	13.3	9.5	9.1	10.6	9.6	9.2	21.5	20.4	20.4	22.7	20.4	21.5
Incremental Delay (d_2), s/veh	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.3	0.0	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	13.6	9.5	9.1	10.6	9.7	9.3	21.6	20.5	20.4	23.0	20.4	21.7
Level of Service (LOS)	B	A	A	B	A	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	11.4	B		9.6	A		21.3	C		22.4	C	
Intersection Delay, s/veh / LOS	13.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.30	A	1.03	A	0.62	A	0.87	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2022 SR-64 & Waterville-Monclova Rd Existing P…		
Project Description	2022 Existing PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	67	275	59	29	261	43	96	53	23	35	65	80

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	25.0	25.0	0.0	0.0	0.0	1	2	3	4		
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8		
Red	1.0	1.0	1.0	0.0	0.0	0.0						

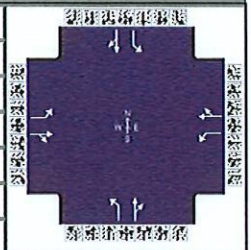
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.3		4.3
Queue Clearance Time (g_s), s	3.6	15.9	2.7	14.3		13.5		7.7
Green Extension Time (g_e), s	0.1	1.8	0.0	1.9		1.0		1.2
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.21	0.00	0.13		0.03		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	69	344		30	313		99	78		36	149	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1827		1810	1838		1218	1788		1310	1715	
Queue Service Time (g_s), s	1.6	13.9		0.7	12.3		5.8	2.8		1.8	5.7	
Cycle Queue Clearance Time (g_c), s	1.6	13.9		0.7	12.3		11.5	2.8		4.5	5.7	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	642	537		623	541		361	526		428	504	
Volume-to-Capacity Ratio (*X*)	0.108	0.641		0.048	0.580		0.274	0.149		0.084	0.296	
Back of Queue (*Q*), ft/ln (95 th percentile)	26.5	256.9		11.1	230.5		77.7	51.2		24.9	102.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	10.2		0.4	9.1		3.0	2.0		1.0	4.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.11	0.00		0.06	0.00		0.39	0.00		0.13	0.00	
Uniform Delay (d_1), s/veh	11.1	26.1		11.1	25.5		27.7	22.1		23.8	23.2	
Incremental Delay (d_2), s/veh	0.1	2.6		0.0	1.6		0.4	0.1		0.1	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.2	28.7		11.1	27.1		28.1	22.3		23.9	23.5	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	25.7	C		25.7	C		25.5	C		23.6	C	
Intersection Delay, s/veh / LOS	25.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.17	A	1.05	A	0.78	A	0.79	A

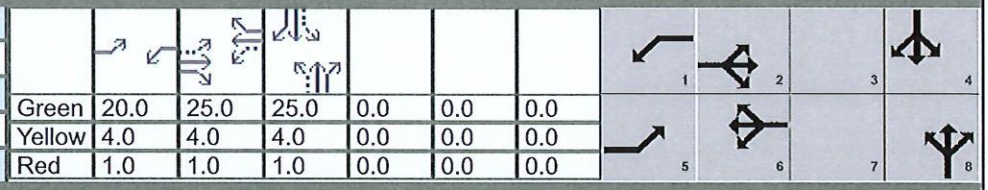
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2022 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon...	File Name	2022 SR-64 & Waterville-Monclova Rd Existing W...		
Project Description	2022 Existing Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	40	213	50	19	206	22	46	37	12	26	45	46

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	20.0	25.0	25.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.2		4.2
Queue Clearance Time (g_s), s	3.0	13.0	2.5	11.1		8.2		5.6
Green Extension Time (g_e), s	0.1	1.5	0.0	1.6		0.7		0.7
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.05	0.00	0.02		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	43	283		20	245		49	53		28	98	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1853		1277	1806		1341	1728	
Queue Service Time (g_s), s	1.0	11.0		0.5	9.1		2.6	1.8		1.3	3.6	
Cycle Queue Clearance Time (g_c), s	1.0	11.0		0.5	9.1		6.2	1.8		3.1	3.6	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	694	536		667	545		406	531		451	508	
Volume-to-Capacity Ratio (*X*)	0.062	0.527		0.031	0.450		0.122	0.099		0.062	0.193	
Back of Queue (*Q*), ft/ln (95 th percentile)	16.3	207.2		7.6	177.6		35.5	33.9		18.8	64.9	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.6	8.2		0.3	7.0		1.4	1.3		0.7	2.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.07	0.00		0.04	0.00		0.18	0.00		0.10	0.00	
Uniform Delay (d_1), s/veh	10.4	25.1		10.5	24.4		24.8	21.8		22.9	22.4	
Incremental Delay (d_2), s/veh	0.0	1.0		0.0	0.6		0.1	0.1		0.1	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	10.4	26.0		10.6	25.0		24.9	21.9		23.0	22.6	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	24.0	C		23.9	C		23.3	C		22.7	C	
Intersection Delay, s/veh / LOS	23.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.03	A	0.93	A	0.66	A	0.70	A

HCS7 Two-Way Stop-Control Report

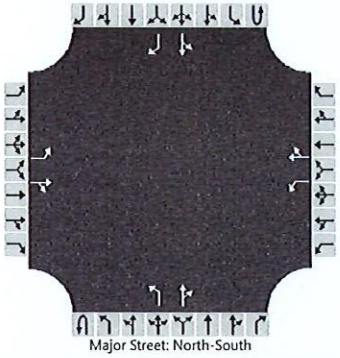
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2022 Existing PM Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		80	0	43		1	0	1		22	186	1		0	206	139
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		87		47		1		1		24				0		
Capacity, c (veh/h)		495		819		402		827		1173				1381		
v/c Ratio		0.18		0.06		0.00		0.00		0.02				0.00		
95% Queue Length, Q_{95} (veh)		0.6		0.2		0.0		0.0		0.1				0.0		
Control Delay (s/veh)		13.8		9.7		14.0		9.4		8.1				7.6		
Level of Service (LOS)		B		A		B		A		A				A		
Approach Delay (s/veh)		12.4				11.7				0.9				0.0		
Approach LOS		B				B										

HCS7 Two-Way Stop-Control Report

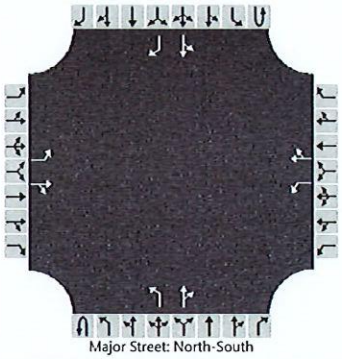
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2022 Existing Wknd Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		91	1	24		8	2	15		39	112	0		0	110	115
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		98		27		9		18		42				0		
Capacity, c (veh/h)		598		906		536		835		1313				1480		
v/c Ratio		0.16		0.03		0.02		0.02		0.03				0.00		
95% Queue Length, Q_{95} (veh)		0.6		0.1		0.0		0.1		0.1				0.0		
Control Delay (s/veh)		12.2		9.1		11.8		9.4		7.8				7.4		
Level of Service (LOS)		B		A		B		A		A				A		
Approach Delay (s/veh)	11.5				10.2				2.0				0.0			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

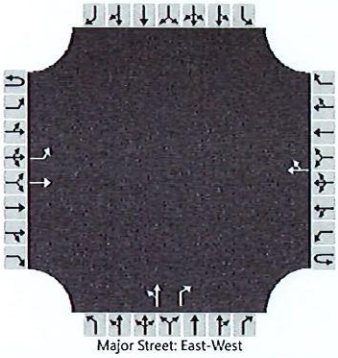
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 No-Build PM Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		283	520				476	179		7	0	83				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		304								8		89				
Capacity, c (veh/h)		895								46		518				
v/c Ratio		0.34								0.16		0.17				
95% Queue Length, Q_{95} (veh)		1.5								0.5		0.6				
Control Delay (s/veh)		11.1								97.0		13.4				
Level of Service (LOS)		B								F		B				
Approach Delay (s/veh)	3.9								19.9							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

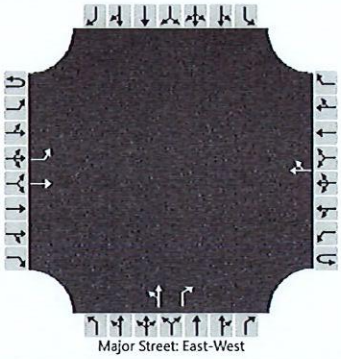
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 No-Build Wknd Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		211	494				540	184		8	0	132				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

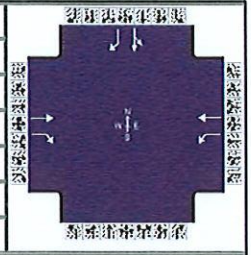
Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		224								9		140				
Capacity, c (veh/h)		846								62		542				
v/c Ratio		0.27								0.14		0.26				
95% Queue Length, Q_{95} (veh)		1.1								0.4		1.0				
Control Delay (s/veh)		10.8								72.3		14.0				
Level of Service (LOS)		B								F		B				
Approach Delay (s/veh)	3.2								17.3							
Approach LOS									C							

HCS7 Signalized Intersection Results Summary

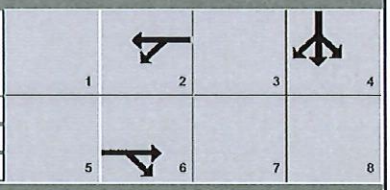
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB No-Build PM Peak.xus		
Project Description	2023 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		635	8	98	390					163	0	367

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	33.0	24.0	0.0	0.0	0.0	0.0	
Yellow	5.0	4.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



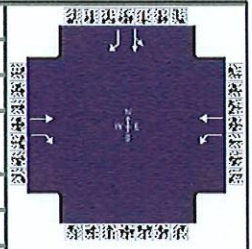
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (g_s), s		22.0		30.8				16.6
Green Extension Time (g_e), s		5.6		1.5				1.4
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.61		1.00				0.36

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		661	8	102	406						170	382
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	761	1885						1344	1585
Queue Service Time (g_s), s		20.0	0.2	8.8	10.2						6.7	14.6
Cycle Queue Clearance Time (g_c), s		20.0	0.2	28.8	10.2						6.7	14.6
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	244	889						461	543
Volume-to-Capacity Ratio (*X*)		0.744	0.012	0.418	0.457						0.369	0.703
Back of Queue (*Q*), ft/ln (95 th percentile)		325.2	3	74.6	173.8						110.4	236.7
Back of Queue (*Q*), veh/ln (95 th percentile)		12.9	0.1	2.9	6.9						3.5	9.3
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.15	0.00						0.00	0.68
Uniform Delay (d_1), s/veh		15.1	9.8	26.8	12.5						17.3	19.9
Incremental Delay (d_2), s/veh		3.7	0.0	1.6	0.5						0.5	4.1
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		18.8	9.8	28.4	13.0						17.8	24.0
Level of Service (LOS)		B	A	C	B						B	C
Approach Delay, s/veh / LOS	18.6	B		16.1	B		0.0			22.1	C	
Intersection Delay, s/veh / LOS	19.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.59	B	1.33	A			1.40	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB No-Build Weekend Pea…		
Project Description	2023 No-Build Weekend Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		532	10	115	434					209	2	270

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	33.0	24.0	0.0	0.0	0.0	0.0						
Yellow	5.0	4.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

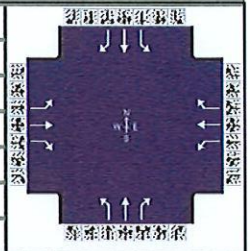
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (g_s), s		17.9		27.0				12.2
Green Extension Time (g_e), s		6.6		3.5				1.6
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.42		0.93				0.06

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		566	11	122	462						224	287
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	832	1885						1344	1585
Queue Service Time (g_s), s		15.9	0.3	9.1	12.0						9.2	10.2
Cycle Queue Clearance Time (g_c), s		15.9	0.3	25.0	12.0						9.2	10.2
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	306	889						461	543
Volume-to-Capacity Ratio (*X*)		0.637	0.015	0.399	0.520						0.487	0.529
Back of Queue (Q), ft/ln (95 th percentile)		259.7	3.8	81.7	202.9						153.7	161.7
Back of Queue (Q), veh/ln (95 th percentile)		10.3	0.1	3.2	8.1						4.9	6.4
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.16	0.00						0.00	0.46
Uniform Delay (d_1), s/veh		14.0	9.8	23.4	13.0						18.1	18.5
Incremental Delay (d_2), s/veh		1.7	0.0	1.2	0.7						0.8	1.0
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		15.7	9.9	24.6	13.7						18.9	19.4
Level of Service (LOS)		B	A	C	B						B	B
Approach Delay, s/veh / LOS	15.6	B		16.0	B		0.0			19.2	B	
Intersection Delay, s/veh / LOS	16.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.44	A	1.45	A			1.33	A

HCS7 Signalized Intersection Results Summary

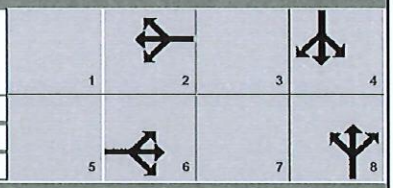
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd No-Build PM Peak.xus		
Project Description	2023 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	268	260	63	29	298	147	63	14	4	147	9	88

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	43.0	23.0	0.0	0.0	0.0	0.0	
Yellow	5.0	5.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



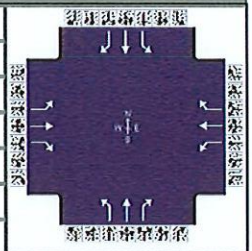
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.2		4.2
Queue Clearance Time (g_s), s		27.1		9.9		5.5		9.8
Green Extension Time (g_e), s		4.3		5.0		1.2		1.0
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.16		0.01		0.00		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	295	286	69	32	327	162	69	15	4	162	10	97
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1061	1885	1485	1111	1870	1598	1316	1900	1610	1420	1900	1598
Queue Service Time (g_s), s	17.2	6.6	1.8	1.3	7.9	4.2	3.2	0.5	0.2	7.4	0.3	3.7
Cycle Queue Clearance Time (g_c), s	25.1	6.6	1.8	7.9	7.9	4.2	3.5	0.5	0.2	7.8	0.3	3.7
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	556	1013	798	595	1005	859	463	546	463	490	546	459
Volume-to-Capacity Ratio (*X*)	0.530	0.282	0.087	0.054	0.326	0.188	0.149	0.028	0.009	0.330	0.018	0.211
Back of Queue (*Q*), ft/ln (95 th percentile)	167	100.6	23.3	12.5	119.7	53.9	46.3	9	2.6	107.8	5.8	60.6
Back of Queue (*Q*), veh/ln (95 th percentile)	6.6	4.0	0.9	0.5	4.7	2.1	1.7	0.4	0.1	4.3	0.2	2.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.34	0.00	0.05	0.02	0.00	0.13	0.18	0.00	0.01	0.37	0.00	0.13
Uniform Delay (d_1), s/veh	17.4	10.1	9.0	12.2	10.4	9.5	21.7	20.5	20.4	23.3	20.4	21.6
Incremental Delay (d_2), s/veh	1.0	0.2	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.4	0.0	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.4	10.2	9.0	12.3	10.6	9.6	21.8	20.5	20.4	23.7	20.4	21.8
Level of Service (LOS)	B	B	A	B	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	13.8	B		10.4	B		21.5	C		22.9	C	
Intersection Delay, s/veh / LOS	14.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.56	B	1.35	A	0.63	A	0.93	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd No-Build Weekend Peak...		
Project Description	2023 No-Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	293	225	103	16	247	150	74	16	8	165	14	115

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	43.0	23.0	0.0	0.0	0.0	0.0						
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

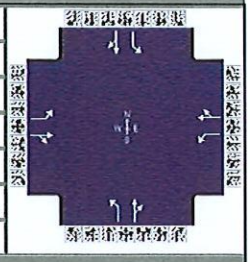
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.2		4.2
Queue Clearance Time (g_s), s		25.4		8.2		6.2		10.9
Green Extension Time (g_e), s		4.2		4.7		1.4		1.3
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.10		0.01		0.00		0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	318	245	112	17	268	163	80	17	9	179	15	125
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1120	1885	1485	1153	1870	1598	1310	1900	1610	1418	1900	1598
Queue Service Time (g_s), s	17.2	5.5	3.0	0.7	6.2	4.2	3.8	0.5	0.3	8.3	0.5	4.8
Cycle Queue Clearance Time (g_c), s	23.4	5.5	3.0	6.2	6.2	4.2	4.2	0.5	0.3	8.9	0.5	4.8
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	605	1013	798	630	1005	859	459	546	463	488	546	459
Volume-to-Capacity Ratio (*X*)	0.526	0.241	0.140	0.028	0.267	0.190	0.175	0.032	0.019	0.367	0.028	0.272
Back of Queue (*Q*), ft/ln (95 th percentile)	173	83.8	38.9	6.5	94.5	54.6	54.6	10.2	5.1	121.9	8.9	80
Back of Queue (*Q*), veh/ln (95 th percentile)	6.9	3.3	1.4	0.3	3.7	2.2	2.0	0.4	0.2	4.9	0.4	3.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.36	0.00	0.08	0.01	0.00	0.14	0.21	0.00	0.02	0.42	0.00	0.16
Uniform Delay (d_1), s/veh	16.3	9.8	9.3	11.5	10.0	9.5	22.0	20.5	20.4	23.7	20.5	22.0
Incremental Delay (d_2), s/veh	0.8	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.5	0.0	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.1	10.0	9.3	11.5	10.1	9.6	22.2	20.5	20.4	24.1	20.5	22.3
Level of Service (LOS)	B	A	A	B	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	13.2	B		10.0	B		21.8	C		23.3	C	
Intersection Delay, s/veh / LOS	15.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.60	B	1.23	A	0.66	A	1.01	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd No-Build P…		
Project Description	2023 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	71	294	63	30	280	47	102	57	24	38	69	85

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	20.0	25.0	25.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8		
Red	1.0	1.0	1.0	0.0	0.0	0.0						

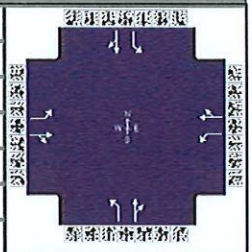
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.3		4.3
Queue Clearance Time (g_s), s	3.7	17.1	2.7	15.5		14.4		8.1
Green Extension Time (g_e), s	0.2	1.8	0.0	2.0		1.1		1.3
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.33	0.00	0.21		0.06		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	73	368		31	337		105	84		39	159	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1827		1810	1838		1208	1790		1304	1715	
Queue Service Time (g_s), s	1.7	15.1		0.7	13.5		6.3	2.9		1.9	6.1	
Cycle Queue Clearance Time (g_c), s	1.7	15.1		0.7	13.5		12.4	2.9		4.9	6.1	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	625	537		606	540		353	526		423	504	
Volume-to-Capacity Ratio (*X*)	0.117	0.685		0.051	0.624		0.298	0.159		0.093	0.315	
Back of Queue (*Q*), ft/ln (95 th percentile)	28.2	278.6		11.5	249.9		83.8	54.7		27.3	109.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.1	11.1		0.5	9.9		3.2	2.2		1.1	4.4	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.12	0.00		0.06	0.00		0.42	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	11.3	26.5		11.4	25.9		28.2	22.2		24.0	23.3	
Incremental Delay (d_2), s/veh	0.1	3.6		0.0	2.2		0.5	0.1		0.1	0.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.4	30.1		11.4	28.2		28.6	22.4		24.1	23.7	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	27.0	C		26.8	C		25.9	C		23.8	C	
Intersection Delay, s/veh / LOS	26.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.22	A	1.09	A	0.80	A	0.81	A

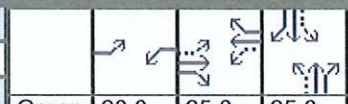
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd No-Build…		
Project Description	2023 No-Build Wknd Peak				

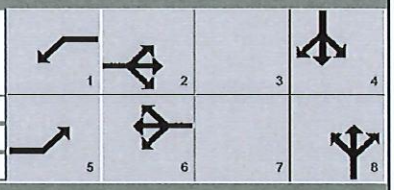


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	54	291	68	26	281	29	62	50	16	36	61	62

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	20.0	25.0	25.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, (*Y+R c*), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.2		4.2
Queue Clearance Time (*g s*), s	3.3	18.1	2.6	15.2		10.7		7.0
Green Extension Time (*g e*), s	0.1	1.7	0.0	2.0		0.9		1.0
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.45	0.00	0.19		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	58	386		28	333		67	71		39	132	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1854		1238	1806		1319	1728	
Queue Service Time (*g s*), s	1.3	16.1		0.6	13.2		3.7	2.5		1.9	5.0	
Cycle Queue Clearance Time (*g c*), s	1.3	16.1		0.6	13.2		8.7	2.5		4.3	5.0	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	629	536		593	545		376	531		435	508	
Volume-to-Capacity Ratio (*X*)	0.092	0.720		0.047	0.611		0.177	0.134		0.089	0.260	
Back of Queue (*Q*), ft/ln (95 th percentile)	22.2	296.7		10.4	245.8		49.9	46.1		26.6	89.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.9	11.8		0.4	9.8		1.9	1.8		1.0	3.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.09	0.00		0.05	0.00		0.25	0.00		0.14	0.00	
Uniform Delay (*d 1*), s/veh	11.2	26.9		11.5	25.8		26.2	22.0		23.6	22.9	
Incremental Delay (*d 2*), s/veh	0.1	4.7		0.0	2.0		0.2	0.1		0.1	0.3	
Initial Queue Delay (*d 3*), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.2	31.5		11.6	27.8		26.5	22.2		23.7	23.2	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	28.9	C		26.6	C		24.2	C		23.3	C	
Intersection Delay, s/veh / LOS	26.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.22	A	1.08	A	0.71	A	0.77	A

HCS7 Two-Way Stop-Control Report

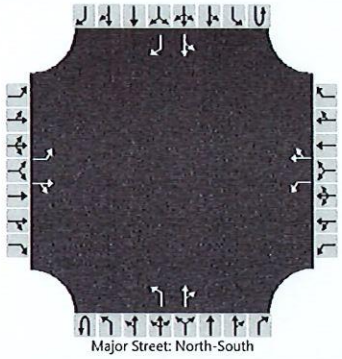
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 No-Build PM Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		86	0	46		1	0	1		23	199	1		0	221	149
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		93		50		1		1		25				0		
Capacity, c (veh/h)		470		802		376		812		1146				1364		
v/c Ratio		0.20		0.06		0.00		0.00		0.02				0.00		
95% Queue Length, Q_{95} (veh)		0.7		0.2		0.0		0.0		0.1				0.0		
Control Delay (s/veh)		14.5		9.8		14.6		9.4		8.2				7.6		
Level of Service (LOS)		B		A		B		A		A				A		
Approach Delay (s/veh)	12.9				12.0				0.8				0.0			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

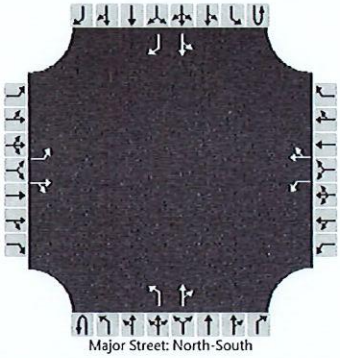
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 No-Build Wknd Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		124	1	32		10	2	19		54	152	0		1	150	157
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		133		35		11		23		58				1		
Capacity, c (veh/h)		486		858		418		779		1219				1427		
v/c Ratio		0.27		0.04		0.03		0.03		0.05				0.00		
95% Queue Length, Q_{95} (veh)		1.1		0.1		0.1		0.1		0.1				0.0		
Control Delay (s/veh)		15.2		9.4		13.8		9.8		8.1				7.5		
Level of Service (LOS)		C		A		B		A		A				A		
Approach Delay (s/veh)	14.0				11.1				2.1				0.0			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

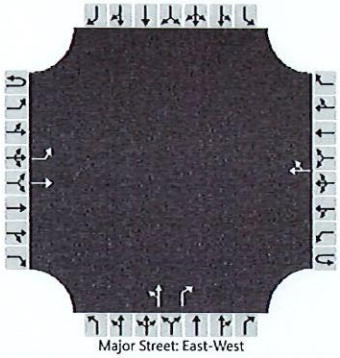
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 No-Build PM Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		295	541				495	186		7	0	87				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		317								8		94				
Capacity, c (veh/h)		874								40		503				
v/c Ratio		0.36								0.19		0.19				
95% Queue Length, Q_{95} (veh)		1.7								0.6		0.7				
Control Delay (s/veh)		11.5								114.1		13.8				
Level of Service (LOS)		B								F		B				
Approach Delay (s/veh)	4.0								21.2							
Approach LOS									C							

HCS7 Two-Way Stop-Control Report

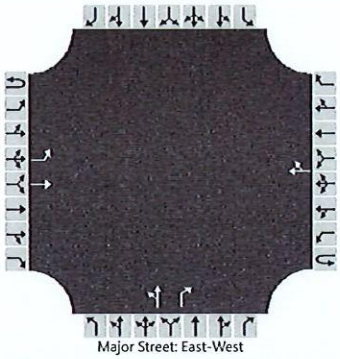
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 No-Build Wknd Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		218	513				561	190		8	0	138				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

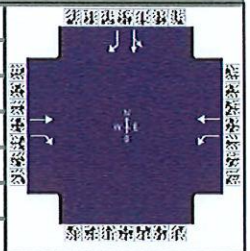
Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		232								9		147				
Capacity, c (veh/h)		825								55		528				
v/c Ratio		0.28								0.15		0.28				
95% Queue Length, Q_{95} (veh)		1.2								0.5		1.1				
Control Delay (s/veh)		11.1								81.8		14.4				
Level of Service (LOS)		B								F		B				
Approach Delay (s/veh)	3.3								18.1							
Approach LOS									C							

HCS7 Signalized Intersection Results Summary

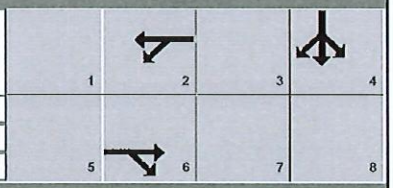
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB No-Build PM Peak.xus		
Project Description	2043 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		761	10	118	468					197	0	440

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	33.0	24.0	0.0	0.0	0.0	0.0	
Yellow	5.0	4.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



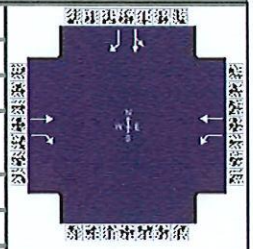
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, (*Y+R c*), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (*g s*), s		28.8		35.0				20.7
Green Extension Time (*g e*), s		3.0		0.0				1.0
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		1.00		1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		793	10	123	488						205	458
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	673	1885						1344	1585
Queue Service Time (*g s*), s		26.8	0.3	6.2	12.9						8.3	18.7
Cycle Queue Clearance Time (*g c*), s		26.8	0.3	33.0	12.9						8.3	18.7
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	162	889						461	543
Volume-to-Capacity Ratio (*X*)		0.892	0.015	0.759	0.549						0.445	0.843
Back of Queue (Q), ft/ln (95 th percentile)		465.4	3.8	134.2	215.9						137.9	320.1
Back of Queue (Q), veh/ln (95 th percentile)		18.5	0.1	5.2	8.6						4.4	12.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.27	0.00						0.00	0.91
Uniform Delay (*d 1*), s/veh		16.9	9.8	33.5	13.2						17.8	21.3
Incremental Delay (*d 2*), s/veh		11.5	0.0	19.7	0.9						0.7	11.6
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		28.4	9.9	53.2	14.1						18.5	32.8
Level of Service (LOS)		C	A	D	B						B	C
Approach Delay, s/veh / LOS	28.1	C		22.0	C		0.0			28.4	C	
Intersection Delay, s/veh / LOS	26.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.81	B	1.49	A			1.58	B

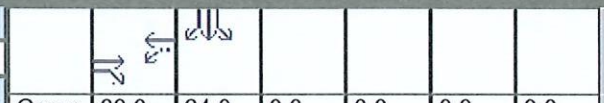
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB No-Build Weekend Pea…		
Project Description	2043 No-Build Weekend Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		635	14	137	521					249	2	324

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	33.0	24.0	0.0	0.0	0.0	0.0	1	2	3	4		
Yellow	5.0	4.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

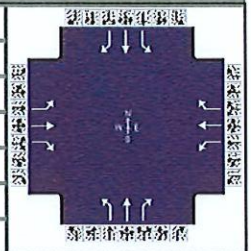
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.2		5.2				4.3
Queue Clearance Time (g_s), s		22.7		35.0				14.8
Green Extension Time (g_e), s		6.3		0.0				1.8
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.74		1.00				0.22

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		676	15	146	554						267	345
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	751	1885						1344	1585
Queue Service Time (g_s), s		20.7	0.4	12.3	15.4						11.4	12.8
Cycle Queue Clearance Time (g_c), s		20.7	0.4	33.0	15.4						11.4	12.8
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	235	889						461	543
Volume-to-Capacity Ratio (*X*)		0.760	0.021	0.620	0.624						0.579	0.634
Back of Queue (*Q*), ft/ln (95 th percentile)		336.7	5.4	125.6	252.9						196.3	206.7
Back of Queue (*Q*), veh/ln (95 th percentile)		13.4	0.2	4.9	10.0						6.2	8.1
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.02	0.25	0.00						0.00	0.59
Uniform Delay (d_1), s/veh		15.2	9.9	29.4	13.9						18.9	19.3
Incremental Delay (d_2), s/veh		4.1	0.0	5.7	1.6						1.8	2.4
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		19.4	9.9	35.1	15.4						20.7	21.7
Level of Service (LOS)		B	A	D	B						C	C
Approach Delay, s/veh / LOS	19.2	B		19.5	B		0.0			21.3	C	
Intersection Delay, s/veh / LOS	19.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.63	B	1.64	B			1.50	A

HCS7 Signalized Intersection Results Summary

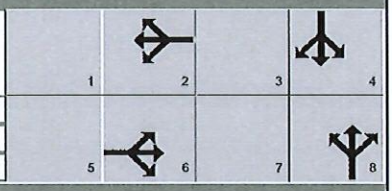
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd No-Build PM Peak.xus		
Project Description	2043 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	278	270	66	32	309	154	66	15	4	154	9	91

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	43.0	23.0	0.0	0.0	0.0	0.0	
Yellow	5.0	5.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



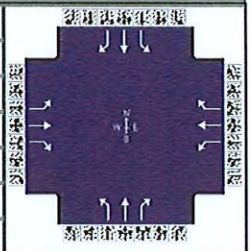
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.2		4.2
Queue Clearance Time (g_s), s		28.8		10.4		5.6		10.3
Green Extension Time (g_e), s		4.3		5.3		1.2		1.1
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.23		0.01		0.00		0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	305	297	73	35	340	169	73	16	4	169	10	100
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1049	1885	1485	1100	1870	1598	1316	1900	1610	1419	1900	1598
Queue Service Time (g_s), s	18.6	6.9	1.9	1.5	8.2	4.4	3.3	0.5	0.2	7.8	0.3	3.8
Cycle Queue Clearance Time (g_c), s	26.8	6.9	1.9	8.4	8.2	4.4	3.6	0.5	0.2	8.3	0.3	3.8
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	546	1013	798	586	1005	859	463	546	463	489	546	459
Volume-to-Capacity Ratio (*X*)	0.559	0.293	0.091	0.060	0.338	0.197	0.157	0.030	0.009	0.346	0.018	0.218
Back of Queue (*Q*), ft/ln (95 th percentile)	180.5	105.2	24.5	14.1	125.4	56.6	48.7	9.7	2.6	113.6	5.8	62.9
Back of Queue (*Q*), veh/ln (95 th percentile)	7.2	4.2	0.9	0.6	4.9	2.2	1.8	0.4	0.1	4.5	0.2	2.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.37	0.00	0.05	0.03	0.00	0.14	0.19	0.00	0.01	0.39	0.00	0.13
Uniform Delay (d_1), s/veh	18.0	10.2	9.0	12.4	10.5	9.6	21.7	20.5	20.4	23.5	20.4	21.7
Incremental Delay (d_2), s/veh	1.3	0.2	0.0	0.0	0.2	0.1	0.2	0.0	0.0	0.4	0.0	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.3	10.3	9.0	12.5	10.7	9.7	21.9	20.5	20.4	23.9	20.4	21.9
Level of Service (LOS)	B	B	A	B	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	14.2	B		10.5	B		21.6	C		23.0	C	
Intersection Delay, s/veh / LOS	14.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.60	B	1.39	A	0.64	A	0.95	A

HCS7 Signalized Intersection Results Summary

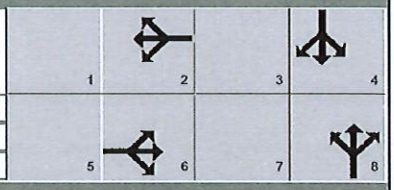
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd No-Build Weekend Peak...		
Project Description	2043 No-Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	305	235	107	17	256	155	77	17	8	171	14	119

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	43.0	23.0	0.0	0.0	0.0	0.0	
Yellow	5.0	5.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



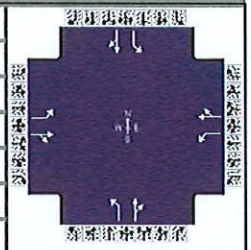
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.2		4.2
Queue Clearance Time (g_s), s		27.0		8.5		6.4		11.3
Green Extension Time (g_e), s		4.3		5.0		1.5		1.3
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		0.15		0.01		0.01		0.04

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	332	255	116	18	278	168	84	18	9	186	15	129
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1110	1885	1485	1142	1870	1598	1310	1900	1610	1416	1900	1598
Queue Service Time (g_s), s	18.5	5.8	3.1	0.7	6.5	4.4	3.9	0.6	0.3	8.7	0.5	5.0
Cycle Queue Clearance Time (g_c), s	25.0	5.8	3.1	6.5	6.5	4.4	4.4	0.6	0.3	9.3	0.5	5.0
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	597	1013	798	621	1005	859	459	546	463	487	546	459
Volume-to-Capacity Ratio (*X*)	0.556	0.252	0.146	0.030	0.277	0.196	0.182	0.034	0.019	0.381	0.028	0.282
Back of Queue (*Q*), ft/ln (95 th percentile)	186.5	88.2	40.5	7	98.4	56.4	57	10.8	5.1	127.1	8.9	83.1
Back of Queue (*Q*), veh/ln (95 th percentile)	7.4	3.5	1.5	0.3	3.9	2.2	2.1	0.4	0.2	5.1	0.4	3.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.38	0.00	0.08	0.01	0.00	0.14	0.22	0.00	0.02	0.44	0.00	0.17
Uniform Delay (d_1), s/veh	16.8	9.9	9.3	11.6	10.1	9.6	22.0	20.5	20.4	23.8	20.5	22.1
Incremental Delay (d_2), s/veh	1.1	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.0	0.5	0.0	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.0	10.0	9.4	11.7	10.2	9.7	22.2	20.5	20.4	24.3	20.5	22.4
Level of Service (LOS)	B	B	A	B	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	13.7	B		10.1	B		21.8	C		23.4	C	
Intersection Delay, s/veh / LOS	15.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.65	B	1.26	A	0.67	A	1.03	A

HCS7 Signalized Intersection Results Summary

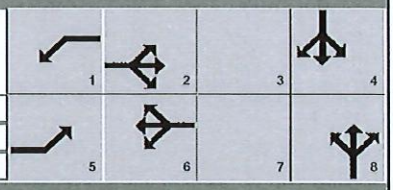
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2043 SR-64 & Waterville-Monclova Rd No-Build P…		
Project Description	2043 No-Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	75	306	66	33	290	48	107	58	25	38	71	89

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	25.0	25.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						



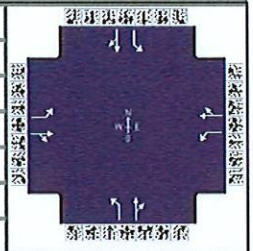
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.3		4.3
Queue Clearance Time (g_s), s	3.8	17.9	2.8	16.0		15.1		8.4
Green Extension Time (g_e), s	0.2	1.7	0.1	2.0		1.1		1.4
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.44	0.00	0.26		0.09		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	77	384		34	348		110	86		39	165	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1827		1810	1838		1201	1788		1302	1714	
Queue Service Time (g_s), s	1.8	15.9		0.8	14.0		6.7	3.0		2.0	6.4	
Cycle Queue Clearance Time (g_c), s	1.8	15.9		0.8	14.0		13.1	3.0		5.0	6.4	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	617	537		595	541		348	526		421	504	
Volume-to-Capacity Ratio (*X*)	0.125	0.714		0.057	0.645		0.317	0.163		0.093	0.327	
Back of Queue (*Q*), ft/ln (95 th percentile)	29.8	293.6		12.7	259.9		88.7	56.2		27.3	114.4	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	11.6		0.5	10.3		3.4	2.2		1.1	4.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.12	0.00		0.07	0.00		0.44	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	11.5	26.8		11.6	26.1		28.5	22.2		24.1	23.4	
Incremental Delay (d_2), s/veh	0.1	4.5		0.0	2.6		0.5	0.1		0.1	0.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.6	31.3		11.6	28.8		29.1	22.4		24.2	23.8	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	27.9	C		27.2	C		26.1	C		23.9	C	
Intersection Delay, s/veh / LOS	26.8						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.25	A	1.12	A	0.81	A	0.82	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2043 SR-64 & Waterville-Monclova Rd No-Build…		
Project Description	2043 No-Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	57	302	71	27	292	32	66	53	18	36	63	66

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	20.0	25.0	25.0	0.0	0.0	0.0	5	6	7	8		
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.2		4.2
Queue Clearance Time (g_s), s	3.4	18.9	2.7	15.9		11.2		7.2
Green Extension Time (g_e), s	0.1	1.6	0.0	2.1		1.0		1.1
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.58	0.00	0.25		0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	61	401		29	348		71	76		39	139	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1852		1230	1803		1312	1726	
Queue Service Time (g_s), s	1.4	16.9		0.7	13.9		4.0	2.7		1.9	5.2	
Cycle Queue Clearance Time (g_c), s	1.4	16.9		0.7	13.9		9.2	2.7		4.6	5.2	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	619	536		582	545		371	530		430	508	
Volume-to-Capacity Ratio (*X*)	0.099	0.748		0.050	0.639		0.191	0.144		0.090	0.273	
Back of Queue (*Q*), ft/ln (95 th percentile)	23.5	312.6		10.8	259		53.7	49.8		26.8	94.5	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.9	12.4		0.4	10.3		2.1	2.0		1.0	3.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.10	0.00		0.06	0.00		0.27	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	11.3	27.2		11.7	26.1		26.6	22.1		23.8	23.0	
Incremental Delay (d_2), s/veh	0.1	5.7		0.0	2.5		0.2	0.1		0.1	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	11.4	32.9		11.8	28.6		26.8	22.2		23.9	23.3	
Level of Service (LOS)	B	C		B	C		C	C		C	C	
Approach Delay, s/veh / LOS	30.0	C		27.3	C		24.4	C		23.4	C	
Intersection Delay, s/veh / LOS	27.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.25	A	1.11	A	0.73	A	0.78	A

HCS7 Two-Way Stop-Control Report

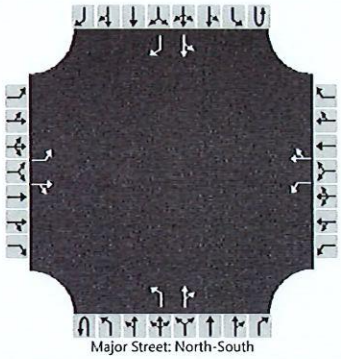
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 No-Build PM Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		90	0	47		1	0	1		24	206	1		0	230	155
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		98		51		1		1		26				0		
Capacity, c (veh/h)		456		792		361		804		1130				1356		
v/c Ratio		0.21		0.06		0.00		0.00		0.02				0.00		
95% Queue Length, Q_{95} (veh)		0.8		0.2		0.0		0.0		0.1				0.0		
Control Delay (s/veh)		15.0		9.9		15.0		9.5		8.3				7.7		
Level of Service (LOS)		C		A		B		A		A				A		
Approach Delay (s/veh)	13.3				12.2				0.9				0.0			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

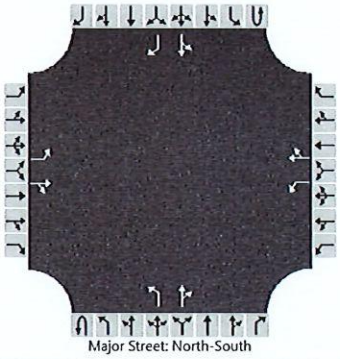
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 No-Build Wknd Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		129	1	35		11	2	22		55	159	0		1	156	163
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		139		39		12		26		59				1		
Capacity, c (veh/h)		471		853		402		779		1205				1418		
v/c Ratio		0.29		0.05		0.03		0.03		0.05				0.00		
95% Queue Length, Q_{95} (veh)		1.2		0.1		0.1		0.1		0.2				0.0		
Control Delay (s/veh)		15.8		9.4		14.2		9.8		8.1				7.5		
Level of Service (LOS)		C		A		B		A		A				A		
Approach Delay (s/veh)		14.4				11.2				2.1				0.0		
Approach LOS		B				B										

HCS7 Two-Way Stop-Control Report

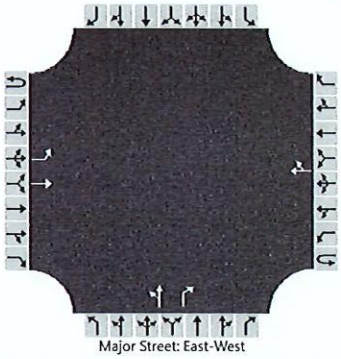
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 Build PM Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		283	2281				558	262		7	0	1453				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		304								8		1562				
Capacity, c (veh/h)		768								1		38				
v/c Ratio		0.40								5.34		41.12				
95% Queue Length, Q_{95} (veh)		1.9								2.1		193.6				
Control Delay (s/veh)		12.7								6198.7		18248.6				
Level of Service (LOS)		B								F		F				
Approach Delay (s/veh)	1.4								18190.8							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

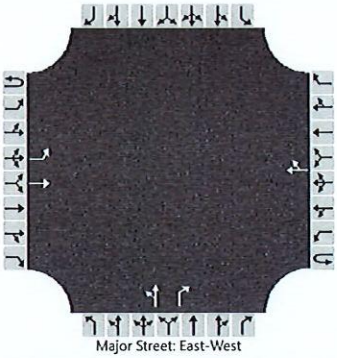
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 Build Wknd Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		211	2162				705	349		8	0	1430				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

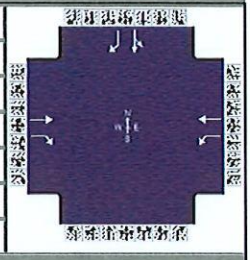
Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		224								9		1521				
Capacity, c (veh/h)		624								2		47				
v/c Ratio		0.36								4.72		32.16				
95% Queue Length, Q_{95} (veh)		1.6								2.3		187.3				
Control Delay (s/veh)		14.0								5059.9		14179.2				
Level of Service (LOS)		B								F		F				
Approach Delay (s/veh)	1.2								14128.5							
Approach LOS									F							

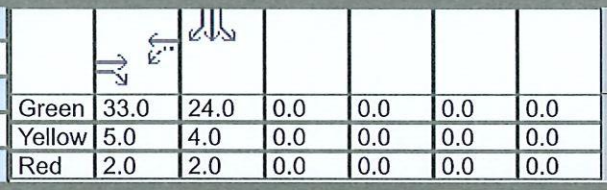
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB Build PM Peak.xus		
Project Description	2023 Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		831	8	170	400					1728	0	367

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB				WB				NB				SB			
Green	33.0	24.0	0.0	0.0	0.0	0.0										
Yellow	5.0	4.0	0.0	0.0	0.0	0.0										
Red	2.0	2.0	0.0	0.0	0.0	0.0										

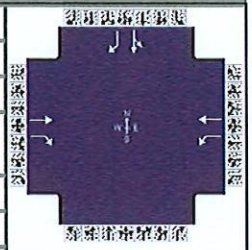
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.4		5.4				4.1
Queue Clearance Time (g_s), s		33.4		35.0				26.0
Green Extension Time (g_e), s		0.0		0.0				0.0
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		1.00		1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		866	8	177	417						1800	382
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	629	1885						1344	1585
Queue Service Time (g_s), s		31.4	0.2	1.6	10.5						24.0	14.6
Cycle Queue Clearance Time (g_c), s		31.4	0.2	33.0	10.5						24.0	14.6
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	117	889						461	543
Volume-to-Capacity Ratio (*X*)		0.974	0.012	1.512	0.469						3.907	0.703
Back of Queue (*Q*), ft/ln (95 th percentile)		610.6	3	495.5	179.9						8824.8	236.7
Back of Queue (*Q*), veh/ln (95 th percentile)		24.2	0.1	19.2	7.1						279.3	9.3
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	0.99	0.00						0.00	0.68
Uniform Delay (d_1), s/veh		18.1	9.8	34.9	12.6						23.0	19.9
Incremental Delay (d_2), s/veh		24.0	0.0	269.3	0.5						1313.4	4.1
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		42.1	9.8	304.2	13.1						1336.4	24.0
Level of Service (LOS)		D	A	F	B						F	C
Approach Delay, s/veh / LOS	41.8	D		99.9	F		0.0			1106.5	F	
Intersection Delay, s/veh / LOS	687.8						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.93	B	1.47	A			4.09	D

HCS7 Signalized Intersection Results Summary

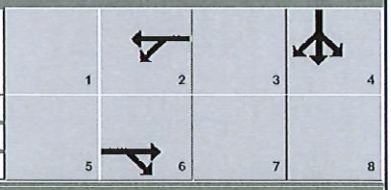
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB Build Weekend Peak.xus		
Project Description	2023 Build Weekend Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		717	10	259	455					1692	2	270

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	33.0	24.0	0.0	0.0	0.0	0.0	
Yellow	5.0	4.0	0.0	0.0	0.0	0.0	
Red	2.0	2.0	0.0	0.0	0.0	0.0	



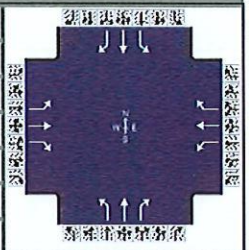
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, (*Y+R c*), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.5		5.5				4.1
Queue Clearance Time (*g s*), s		27.1		35.0				26.0
Green Extension Time (*g e*), s		4.4		0.0				0.0
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		0.98		1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		763	11	276	484						1802	287
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	693	1885						1344	1585
Queue Service Time (*g s*), s		25.1	0.3	7.9	12.8						24.0	10.2
Cycle Queue Clearance Time (*g c*), s		25.1	0.3	33.0	12.8						24.0	10.2
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	181	889						461	543
Volume-to-Capacity Ratio (*X*)		0.858	0.015	1.526	0.545						3.911	0.529
Back of Queue (*Q*), ft/ln (95 th percentile)		424.2	3.8	728.4	214.5						8837.6	161.7
Back of Queue (*Q*), veh/ln (95 th percentile)		16.8	0.1	28.2	8.5						279.7	6.4
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	1.46	0.00						0.00	0.46
Uniform Delay (*d 1*), s/veh		16.4	9.8	33.3	13.2						23.0	18.5
Incremental Delay (*d 2*), s/veh		8.7	0.0	262.7	0.9						1315.3	1.0
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		25.1	9.9	296.0	14.0						1338.3	19.4
Level of Service (LOS)		C	A	F	B						F	B
Approach Delay, s/veh / LOS	24.9	C		116.3	F		0.0			1157.0	F	
Intersection Delay, s/veh / LOS	697.1						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.76	B	1.74	B			3.94	D

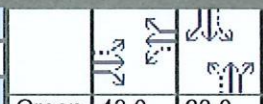
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd Build PM Peak.xus		
Project Description	2023 Build PM Peak				

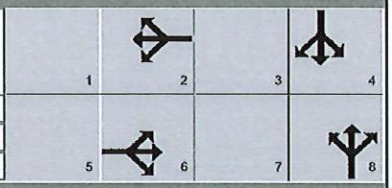


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	268	260	3194	714	298	147	228	14	45	147	107	88

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	43.0	23.0	0.0	0.0	0.0	0.0						
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0						



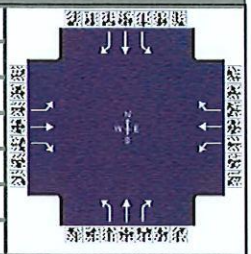
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.3		4.3
Queue Clearance Time (g_s), s		45.0		45.0		21.9		9.8
Green Extension Time (g_e), s		0.0		0.0		0.4		2.3
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		1.00		1.00		1.00		0.09

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	295	286	3510	785	327	162	251	15	49	162	118	97
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1061	1885	1485	1111	1870	1598	1194	1900	1610	1420	1900	1598
Queue Service Time (g_s), s	17.2	6.6	43.0	36.4	7.9	4.2	16.1	0.5	1.8	7.4	3.8	3.7
Cycle Queue Clearance Time (g_c), s	25.1	6.6	43.0	43.0	7.9	4.2	19.9	0.5	1.8	7.8	3.8	3.7
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	556	1013	798	595	1005	859	377	546	463	490	546	459
Volume-to-Capacity Ratio (*X*)	0.530	0.282	4.399	1.318	0.326	0.188	0.664	0.028	0.107	0.330	0.215	0.211
Back of Queue (*Q*), ft/ln (95 th percentile)	167	100.6	15509.4	1389	119.7	53.9	227.3	9	29.8	107.8	73.1	60.6
Back of Queue (*Q*), veh/ln (95 th percentile)	6.6	4.0	574.4	55.6	4.7	2.1	8.4	0.4	1.2	4.3	2.9	2.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.34	0.00	31.98	2.70	0.00	0.13	0.87	0.00	0.11	0.37	0.00	0.13
Uniform Delay (d_1), s/veh	17.4	10.1	18.5	24.6	10.4	9.5	29.2	20.5	20.9	23.3	21.6	21.6
Incremental Delay (d_2), s/veh	1.0	0.2	1532.3	154.7	0.2	0.1	4.4	0.0	0.1	0.4	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.4	10.2	1550.8	179.3	10.6	9.6	33.6	20.5	21.1	23.7	21.8	21.8
Level of Service (LOS)	B	B	F	F	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	1332.8	F		114.4	F		31.0	C		22.6	C	
Intersection Delay, s/veh / LOS	927.4						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	7.24	F	2.59	C	1.01	A	1.11	A

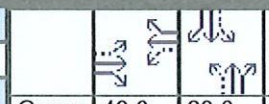
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd Build Weekend Peak.xus		
Project Description	2023 Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	293	225	3069	665	247	150	404	16	90	165	107	115

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	43.0	23.0	0.0	0.0	0.0	0.0	1	2	3	4		
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

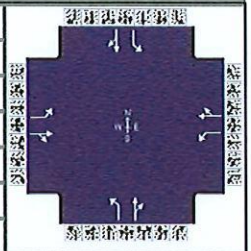
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.3		4.3
Queue Clearance Time (g_s), s		45.0		45.0		25.0		10.9
Green Extension Time (g_e), s		0.0		0.0		0.0		3.4
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		1.00		1.00		1.00		0.24

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	318	245	3336	723	268	163	439	17	98	179	116	125
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1120	1885	1485	1153	1870	1598	1195	1900	1610	1418	1900	1598
Queue Service Time (g_s), s	17.2	5.5	43.0	37.5	6.2	4.2	19.3	0.5	3.7	8.3	3.7	4.8
Cycle Queue Clearance Time (g_c), s	23.4	5.5	43.0	43.0	6.2	4.2	23.0	0.5	3.7	8.9	3.7	4.8
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	605	1013	798	630	1005	859	378	546	463	488	546	459
Volume-to-Capacity Ratio (*X*)	0.526	0.241	4.180	1.147	0.267	0.190	1.162	0.032	0.211	0.367	0.213	0.272
Back of Queue (*Q*), ft/ln (95 th percentile)	173	83.8	14570.4	943.9	94.5	54.6	716.7	10.2	60.9	121.9	72.1	80
Back of Queue (*Q*), veh/ln (95 th percentile)	6.9	3.3	539.6	37.8	3.7	2.2	26.5	0.4	2.4	4.9	2.9	3.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.36	0.00	30.04	1.83	0.00	0.14	2.76	0.00	0.23	0.42	0.00	0.16
Uniform Delay (d_1), s/veh	16.3	9.8	18.5	23.9	10.0	9.5	32.7	20.5	21.6	23.7	21.6	22.0
Incremental Delay (d_2), s/veh	0.8	0.1	1434.2	83.6	0.1	0.1	98.1	0.0	0.2	0.5	0.2	0.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	17.1	10.0	1452.7	107.5	10.1	9.6	130.7	20.5	21.8	24.1	21.8	22.3
Level of Service (LOS)	B	A	F	F	B	A	F	C	C	C	C	C
Approach Delay, s/veh / LOS	1244.9	F		71.1	E		108.1	F		23.0	C	
Intersection Delay, s/veh / LOS	830.3						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	6.92	F	2.39	B	1.40	A	1.18	A

HCS7 Signalized Intersection Results Summary

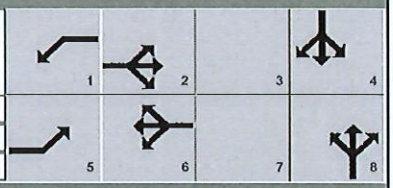
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd Build PM…		
Project Description	2023 Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	81	315	73	30	671	47	298	57	24	38	69	183

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	20.0	25.0	25.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						



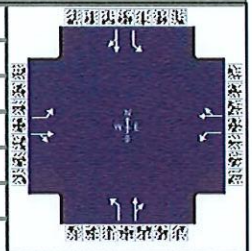
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.5		4.5
Queue Clearance Time (g_s), s	4.0	18.9	2.7	27.0		27.0		13.1
Green Extension Time (g_e), s	0.2	2.6	0.0	0.0		0.0		2.5
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.72	0.00	1.00		1.00		0.15

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	84	400		31	740		307	84		39	260	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1863		1102	1790		1304	1667	
Queue Service Time (g_s), s	2.0	16.9		0.7	25.0		13.9	2.9		1.9	11.1	
Cycle Queue Clearance Time (g_c), s	2.0	16.9		0.7	25.0		25.0	2.9		4.9	11.1	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	507	536		583	548		265	526		423	490	
Volume-to-Capacity Ratio (*X*)	0.165	0.746		0.053	1.351		1.158	0.159		0.093	0.530	
Back of Queue (Q), ft/ln (95 th percentile)	32.6	311.5		11.5	1373		534.7	54.7		27.3	194.7	
Back of Queue (Q), veh/ln (95 th percentile)	1.3	12.4		0.5	54.5		20.7	2.2		1.1	7.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.00		0.06	0.00		2.67	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	13.5	27.1		11.7	30.0		37.8	22.2		24.0	25.1	
Incremental Delay (d_2), s/veh	0.2	5.6		0.0	169.6		104.9	0.1		0.1	1.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	13.7	32.8		11.8	199.6		142.7	22.4		24.1	26.2	
Level of Service (LOS)	B	C		B	F		F	C		C	C	
Approach Delay, s/veh / LOS	29.5	C		192.1	F		117.0	F		25.9	C	
Intersection Delay, s/veh / LOS	111.0						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.29	A	1.76	B	1.13	A	0.98	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd Build Wee…		
Project Description	2023 Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	75	332	89	26	652	29	247	50	16	36	61	155

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	20.0	25.0	25.0	0.0	0.0	0.0	5	6	7	8		
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.4		4.4
Queue Clearance Time (g_s), s	3.9	21.9	2.6	27.0		27.0		11.7
Green Extension Time (g_e), s	0.2	1.6	0.0	0.0		0.0		2.2
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	1.00	0.00	1.00		1.00		0.08

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	81	453		28	732		266	71		39	232	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1816		1810	1871		1130	1806		1319	1670	
Queue Service Time (g_s), s	1.9	19.9		0.6	25.0		15.3	2.5		1.9	9.7	
Cycle Queue Clearance Time (g_c), s	1.9	19.9		0.6	25.0		25.0	2.5		4.3	9.7	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	507	534		545	550		288	531		435	491	
Volume-to-Capacity Ratio (*X*)	0.159	0.847		0.051	1.331		0.922	0.134		0.089	0.473	
Back of Queue (*Q*), ft/ln (95 th percentile)	31.4	381.8		10.4	1324.9		329.2	46.1		26.6	170	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	15.1		0.4	52.6		12.8	1.8		1.0	6.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.00		0.05	0.00		1.65	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	13.5	28.2		12.5	30.0		36.6	22.0		23.6	24.6	
Incremental Delay (d_2), s/veh	0.1	12.1		0.0	161.0		33.2	0.1		0.1	0.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	13.7	40.3		12.5	191.0		69.8	22.2		23.7	25.3	
Level of Service (LOS)	B	D		B	F		E	C		C	C	
Approach Delay, s/veh / LOS	36.3	D		184.4	F		59.8	E		25.1	C	
Intersection Delay, s/veh / LOS	98.1						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.37	A	1.74	B	1.04	A	0.93	A

HCS7 Two-Way Stop-Control Report

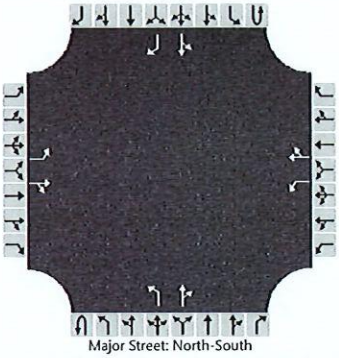
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 Build PM Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		86	0	46		1	0	1		23	209	1		0	319	247
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		93		50		1		1		25				0		
Capacity, c (veh/h)		392		699		285		801		955				1352		
v/c Ratio		0.24		0.07		0.00		0.00		0.03				0.00		
95% Queue Length, Q_{95} (veh)		0.9		0.2		0.0		0.0		0.1				0.0		
Control Delay (s/veh)		17.1		10.5		17.7		9.5		8.9				7.7		
Level of Service (LOS)		C		B		C		A		A				A		
Approach Delay (s/veh)	14.8				13.6				0.9				0.0			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

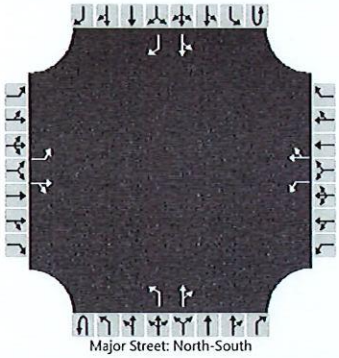
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2023 Build Wknd Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		124	1	32		10	2	19		54	173	0		1	243	250
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		133		35		11		23		58				1		
Capacity, c (veh/h)		400		753		316		714		1028				1401		
v/c Ratio		0.33		0.05		0.03		0.03		0.06				0.00		
95% Queue Length, Q_{95} (veh)		1.4		0.1		0.1		0.1		0.2				0.0		
Control Delay (s/veh)		18.5		10.0		16.8		10.2		8.7				7.6		
Level of Service (LOS)		C		B		C		B		A				A		
Approach Delay (s/veh)		16.7				12.3				2.1				0.0		
Approach LOS		C				B										

HCS7 Two-Way Stop-Control Report

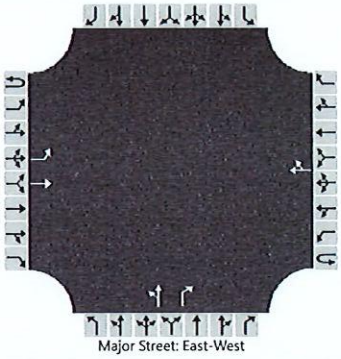
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 Build PM Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		295	2302				577	269		7	0	1457				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		317								8		1567				
Capacity, c (veh/h)		750								1		37				
v/c Ratio		0.42								6.26		42.59				
95% Queue Length, Q_{95} (veh)		2.1								2.1		194.3				
Control Delay (s/veh)		13.3								7318.6		18919.1				
Level of Service (LOS)		B								F		F				
Approach Delay (s/veh)	1.5								18863.7							
Approach LOS									F							

HCS7 Two-Way Stop-Control Report

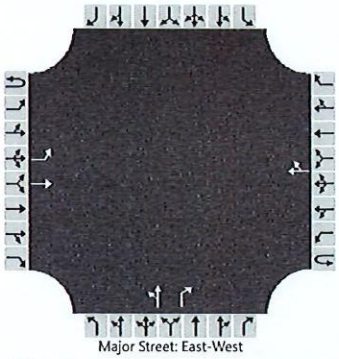
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 Build Wknd Peak
Intersection Orientation	East-West
Project Description	Waterville Landing TIS

Site Information

Intersection	SR-64 & US-24 EB
Jurisdiction	City of Waterville
East/West Street	SR-64
North/South Street	US-24 Eastbound
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	1	1		0	0	0
Configuration		L	T					TR		LT		R				
Volume (veh/h)		218	2181				726	355		8	0	1436				
Percent Heavy Vehicles (%)		2								5	0	7				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

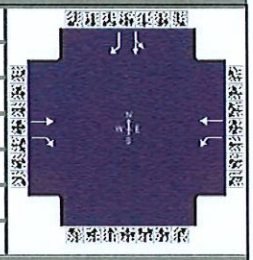
Base Critical Headway (sec)		4.1								7.1	6.5	6.2				
Critical Headway (sec)		4.12								7.15	6.50	6.27				
Base Follow-Up Headway (sec)		2.2								3.5	4.0	3.3				
Follow-Up Headway (sec)		2.22								3.55	4.00	3.37				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		232								9		1528				
Capacity, c (veh/h)		609								2		46				
v/c Ratio		0.38								5.37		33.24				
95% Queue Length, Q_{95} (veh)		1.8								2.3		188.3				
Control Delay (s/veh)		14.5								5803.3		14670.9				
Level of Service (LOS)		B								F		F				
Approach Delay (s/veh)	1.3								14621.8							
Approach LOS									F							

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB Build PM Peak.xus		
Project Description	2043 Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		957	10	190	478					1762	0	440

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	33.0	24.0	0.0	0.0	0.0	0.0						
Yellow	5.0	4.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

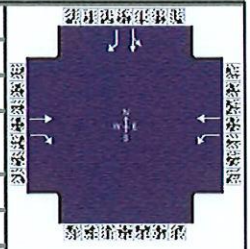
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.4		5.4				4.1
Queue Clearance Time (g_s), s		35.0		35.0				26.0
Green Extension Time (g_e), s		0.0		0.0				0.0
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		1.00		1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		997	10	198	498						1835	458
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	556	1885						1344	1585
Queue Service Time (g_s), s		33.0	0.3	0.0	13.3						24.0	18.7
Cycle Queue Clearance Time (g_c), s		33.0	0.3	33.0	13.3						24.0	18.7
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	103	889						461	543
Volume-to-Capacity Ratio (*X*)		1.122	0.015	1.924	0.560						3.984	0.843
Back of Queue (*Q*), ft/ln (95 th percentile)		1042.9	3.8	674.4	221.5						9040.5	320.1
Back of Queue (*Q*), veh/ln (95 th percentile)		41.4	0.1	26.1	8.8						286.1	12.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.01	1.35	0.00						0.00	0.91
Uniform Delay (d_1), s/veh		18.5	9.8	35.0	13.3						23.0	21.3
Incremental Delay (d_2), s/veh		69.5	0.0	449.6	1.0						1347.9	11.6
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		88.0	9.9	484.6	14.3						1370.9	32.8
Level of Service (LOS)		F	A	F	B						F	C
Approach Delay, s/veh / LOS	87.2	F		148.1	F		0.0			1103.5	F	
Intersection Delay, s/veh / LOS	681.1						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	2.15	B	1.64	B			4.27	D

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB Build Weekend Peak.xus		
Project Description	2043 Build Weekend Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		820	14	281	542					1732	2	324

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	33.0	24.0	0.0	0.0	0.0	0.0						
Yellow	5.0	4.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

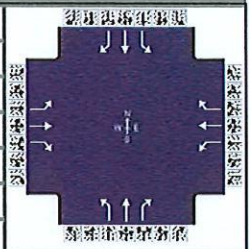
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2				4
Case Number		7.0		6.0				11.0
Phase Duration, s		40.0		40.0				30.0
Change Period, ($Y+R_c$), s		7.0		7.0				6.0
Max Allow Headway (*MAH*), s		5.5		5.5				4.1
Queue Clearance Time (g_s), s		33.9		35.0				26.0
Green Extension Time (g_e), s		0.0		0.0				0.0
Phase Call Probability		1.00		1.00				1.00
Max Out Probability		1.00		1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		872	15	299	577						1845	345
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	625	1885						1344	1585
Queue Service Time (g_s), s		31.9	0.4	1.1	16.3						24.0	12.8
Cycle Queue Clearance Time (g_c), s		31.9	0.4	33.0	16.3						24.0	12.8
Green Ratio (*g/C*)		0.47	0.47	0.47	0.47						0.34	0.34
Capacity (*c*), veh/h		889	700	113	889						461	543
Volume-to-Capacity Ratio (*X*)		0.982	0.021	2.646	0.649						4.004	0.634
Back of Queue (*Q*), ft/ln (95 th percentile)		628	5.4	1201.2	266.2						9096.7	206.7
Back of Queue (*Q*), veh/ln (95 th percentile)		24.9	0.2	46.6	10.6						287.9	8.1
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.02	2.40	0.00						0.00	0.59
Uniform Delay (d_1), s/veh		18.2	9.9	34.9	14.1						23.0	19.3
Incremental Delay (d_2), s/veh		25.7	0.0	765.5	1.9						1356.9	2.4
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0						0.0	0.0
Control Delay (*d*), s/veh		43.9	9.9	800.5	16.0						1379.9	21.7
Level of Service (LOS)		D	A	F	B						F	C
Approach Delay, s/veh / LOS	43.3	D		283.8	F		0.0			1166.0	F	
Intersection Delay, s/veh / LOS	718.6						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.37	A	1.66	B	1.95	B	1.95	B
Bicycle LOS Score / LOS	1.95	B	1.93	B			4.10	D

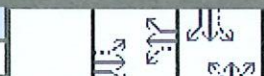
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd Build PM Peak.xus		
Project Description	2043 Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	278	270	3197	717	309	154	231	15	45	154	107	91

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	43.0	23.0	0.0	0.0	0.0	0.0	1	2	3	4		
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0	5	6	7	8		

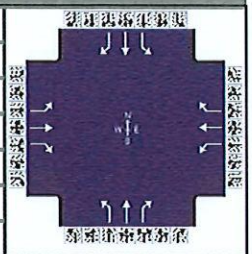
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, ($Y+R_c$), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.3		4.3
Queue Clearance Time (g_s), s		45.0		45.0		22.2		10.3
Green Extension Time (g_e), s		0.0		0.0		0.3		2.4
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		1.00		1.00		1.00		0.10

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	305	297	3513	788	340	169	254	16	49	169	118	100
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1049	1885	1485	1100	1870	1598	1194	1900	1610	1419	1900	1598
Queue Service Time (g_s), s	18.6	6.9	43.0	36.1	8.2	4.4	16.4	0.5	1.8	7.8	3.8	3.8
Cycle Queue Clearance Time (g_c), s	26.8	6.9	43.0	43.0	8.2	4.4	20.2	0.5	1.8	8.3	3.8	3.8
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	546	1013	798	586	1005	859	377	546	463	489	546	459
Volume-to-Capacity Ratio (*X*)	0.559	0.293	4.403	1.344	0.338	0.197	0.673	0.030	0.107	0.346	0.215	0.218
Back of Queue (*Q*), ft/ln (95 th percentile)	180.5	105.2	15527.2	1449.5	125.4	56.6	231.1	9.7	29.8	113.6	73.1	62.9
Back of Queue (*Q*), veh/ln (95 th percentile)	7.2	4.2	575.1	58.0	4.9	2.2	8.6	0.4	1.2	4.5	2.9	2.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.37	0.00	32.01	2.81	0.00	0.14	0.89	0.00	0.11	0.39	0.00	0.13
Uniform Delay (d_1), s/veh	18.0	10.2	18.5	24.7	10.5	9.6	29.3	20.5	20.9	23.5	21.6	21.7
Incremental Delay (d_2), s/veh	1.3	0.2	1534.1	166.2	0.2	0.1	4.6	0.0	0.1	0.4	0.2	0.2
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	19.3	10.3	1552.6	190.9	10.7	9.7	34.0	20.5	21.1	23.9	21.8	21.9
Level of Service (LOS)	B	B	F	F	B	A	C	C	C	C	C	C
Approach Delay, s/veh / LOS	1327.6	F		120.0	F		31.3	C		22.7	C	
Intersection Delay, s/veh / LOS	921.5						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	7.28	F	2.63	C	1.02	A	1.13	A

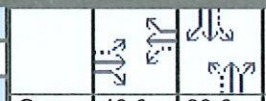
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd Build Weekend Peak.xus		
Project Description	2043 Build Wknd Peak				

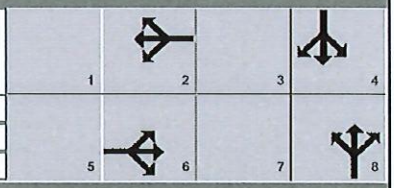


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	305	235	3073	666	256	155	407	17	90	171	107	119

Signal Information			
Cycle, s	80.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	43.0	23.0	0.0	0.0	0.0	0.0						
Yellow	5.0	5.0	0.0	0.0	0.0	0.0						
Red	2.0	2.0	0.0	0.0	0.0	0.0						



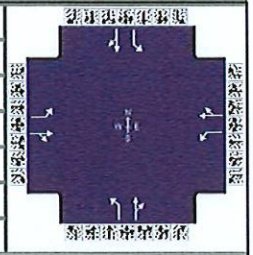
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6		2		8		4
Case Number		5.0		5.0		5.0		5.0
Phase Duration, s		50.0		50.0		30.0		30.0
Change Period, (*Y+R c*), s		7.0		7.0		7.0		7.0
Max Allow Headway (*MAH*), s		4.2		4.2		4.3		4.3
Queue Clearance Time (*g s*), s		45.0		45.0		25.0		11.3
Green Extension Time (*g e*), s		0.0		0.0		0.0		3.4
Phase Call Probability		1.00		1.00		1.00		1.00
Max Out Probability		1.00		1.00		1.00		0.26

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	332	255	3340	724	278	168	442	18	98	186	116	129
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1110	1885	1485	1142	1870	1598	1195	1900	1610	1416	1900	1598
Queue Service Time (*g s*), s	18.5	5.8	43.0	37.2	6.5	4.4	19.3	0.6	3.7	8.7	3.7	5.0
Cycle Queue Clearance Time (*g c*), s	25.0	5.8	43.0	43.0	6.5	4.4	23.0	0.6	3.7	9.3	3.7	5.0
Green Ratio (*g/C*)	0.54	0.54	0.54	0.54	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29
Capacity (*c*), veh/h	597	1013	798	621	1005	859	378	546	463	487	546	459
Volume-to-Capacity Ratio (*X*)	0.556	0.252	4.186	1.166	0.277	0.196	1.170	0.034	0.211	0.381	0.213	0.282
Back of Queue (*Q*), ft/ln (95 th percentile)	186.5	88.2	14593.9	985	98.4	56.4	731.5	10.8	60.9	127.1	72.1	83.1
Back of Queue (*Q*), veh/ln (95 th percentile)	7.4	3.5	540.5	39.4	3.9	2.2	27.1	0.4	2.4	5.1	2.9	3.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.38	0.00	30.09	1.91	0.00	0.14	2.81	0.00	0.23	0.44	0.00	0.17
Uniform Delay (*d 1*), s/veh	16.8	9.9	18.5	24.1	10.1	9.6	32.7	20.5	21.6	23.8	21.6	22.1
Incremental Delay (*d 2*), s/veh	1.1	0.1	1436.6	91.2	0.1	0.1	101.3	0.0	0.2	0.5	0.2	0.3
Initial Queue Delay (*d 3*), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	18.0	10.0	1455.1	115.3	10.2	9.7	134.0	20.5	21.8	24.3	21.8	22.4
Level of Service (LOS)	B	B	F	F	B	A	F	C	C	C	C	C
Approach Delay, s/veh / LOS	1239.8		F	75.1		E	110.6		F	23.1		C
Intersection Delay, s/veh / LOS	826.0						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.07	B	2.07	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	6.97	F	2.42	B	1.41	A	1.20	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2043 SR-64 & Waterville-Monclova Rd Build PM…		
Project Description	2043 Build PM Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	85	327	76	33	681	48	303	58	25	38	71	187

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	20.0	25.0	25.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0		5	6	7	8	
Red	1.0	1.0	1.0	0.0	0.0	0.0						

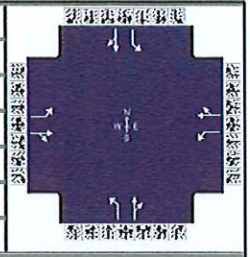
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.5		4.5
Queue Clearance Time (g_s), s	4.1	19.7	2.8	27.0		27.0		13.4
Green Extension Time (g_e), s	0.2	2.4	0.1	0.0		0.0		2.5
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	0.83	0.00	1.00		1.00		0.17

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	88	415		34	752		312	86		39	266	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1863		1096	1788		1302	1668	
Queue Service Time (g_s), s	2.1	17.7		0.8	25.0		13.6	3.0		2.0	11.4	
Cycle Queue Clearance Time (g_c), s	2.1	17.7		0.8	25.0		25.0	3.0		5.0	11.4	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	507	536		572	548		260	526		421	490	
Volume-to-Capacity Ratio (*X*)	0.173	0.775		0.059	1.371		1.200	0.163		0.093	0.542	
Back of Queue (*Q*), ft/ln (95 th percentile)	34.3	329.3		12.7	1428.2		576.1	56.2		27.3	199.4	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.4	13.1		0.5	56.7		22.3	2.2		1.1	7.9	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.14	0.00		0.07	0.00		2.88	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	13.6	27.4		12.0	30.0		37.9	22.2		24.1	25.2	
Incremental Delay (d_2), s/veh	0.2	7.0		0.0	178.5		121.1	0.1		0.1	1.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	13.7	34.4		12.0	208.5		159.0	22.4		24.2	26.4	
Level of Service (LOS)	B	C		B	F		F	C		C	C	
Approach Delay, s/veh / LOS	30.8	C		200.0	F		129.6	F		26.1	C	
Intersection Delay, s/veh / LOS	116.6						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.32	A	1.78	B	1.14	A	0.99	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2043 SR-64 & Waterville-Monclova Rd Build Wee…		
Project Description	2043 Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	343	92	27	663	32	251	53	18	36	63	159

Signal Information			
Cycle, s	85.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	20.0	25.0	25.0	0.0	0.0	0.0	5	6	7	8		
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	25.0	30.0	25.0	30.0		30.0		30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1		4.5		4.5
Queue Clearance Time (g_s), s	4.0	22.8	2.7	27.0		27.0		12.0
Green Extension Time (g_e), s	0.2	1.2	0.0	0.0		0.0		2.3
Phase Call Probability	1.00	1.00	1.00	1.00		1.00		1.00
Max Out Probability	0.00	1.00	0.00	1.00		1.00		0.09

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	84	468		29	747		270	76		39	239	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1816		1810	1870		1123	1803		1312	1670	
Queue Service Time (g_s), s	2.0	20.8		0.7	25.0		15.0	2.7		1.9	10.0	
Cycle Queue Clearance Time (g_c), s	2.0	20.8		0.7	25.0		25.0	2.7		4.6	10.0	
Green Ratio (*g/C*)	0.53	0.29		0.53	0.29		0.29	0.29		0.29	0.29	
Capacity (*c*), veh/h	507	534		535	550		283	530		430	491	
Volume-to-Capacity Ratio (*X*)	0.165	0.876		0.054	1.359		0.954	0.144		0.090	0.486	
Back of Queue (*Q*), ft/ln (95 th percentile)	32.8	407		10.8	1399.1		351.1	49.8		26.8	175.8	
Back of Queue (*Q*), veh/ln (95 th percentile)	1.3	16.2		0.4	55.5		13.6	2.0		1.0	7.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.13	0.00		0.06	0.00		1.76	0.00		0.14	0.00	
Uniform Delay (d_1), s/veh	13.5	28.5		12.7	30.0		37.0	22.1		23.8	24.7	
Incremental Delay (d_2), s/veh	0.2	15.1		0.0	173.1		41.1	0.1		0.1	0.7	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	13.7	43.6		12.8	203.1		78.1	22.2		23.9	25.5	
Level of Service (LOS)	B	D		B	F		E	C		C	C	
Approach Delay, s/veh / LOS	39.0	D		196.0	F		65.8	E		25.2	C	
Intersection Delay, s/veh / LOS	104.2						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.92	B	1.92	B
Bicycle LOS Score / LOS	1.40	A	1.77	B	1.06	A	0.95	A

HCS7 Two-Way Stop-Control Report

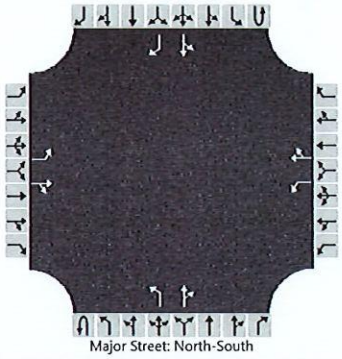
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 Build PM Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		90	0	47		1	0	1		24	216	1		0	328	253
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

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	7.00	6.21		7.10	6.50	6.26		4.14				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	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		98		51		1		1		26				0		
Capacity, c (veh/h)		380		690		274		793		942				1343		
v/c Ratio		0.26		0.07		0.00		0.00		0.03				0.00		
95% Queue Length, Q_{95} (veh)		1.0		0.2		0.0		0.0		0.1				0.0		
Control Delay (s/veh)		17.7		10.6		18.2		9.5		8.9				7.7		
Level of Service (LOS)		C		B		C		A		A				A		
Approach Delay (s/veh)		15.3				13.9				0.9				0.0		
Approach LOS		C				B										

HCS7 Two-Way Stop-Control Report

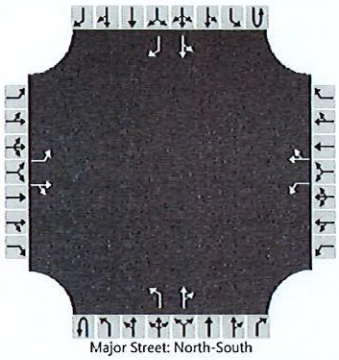
General Information

Analyst	CMS
Agency/Co.	DGL Consulting Engineers
Date Performed	5/18/2022
Analysis Year	2022
Time Analyzed	2043 Build Wknd Peak
Intersection Orientation	North-South
Project Description	Waterville Landing TIS

Site Information

Intersection	Pray & WatervilleMonclova
Jurisdiction	City of Waterville
East/West Street	Pray Blvd
North/South Street	Waterville-Monclova Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	1	0		1	1	0	0	1	1	0	0	0	1	1
Configuration		L		TR		L		TR		L		TR		LT		R
Volume (veh/h)		129	1	35		11	2	22		55	180	0		1	249	256
Percent Heavy Vehicles (%)		0	50	1		0	0	6		4				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized														No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

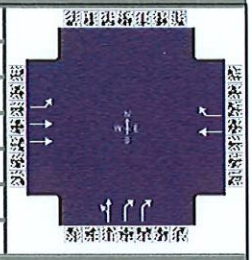
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	7.00	6.21		7.10	6.50	6.26		4.14				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.45	3.31		3.50	4.00	3.36		2.24				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		139		39		12		26		59				1		
Capacity, c (veh/h)		387		748		304		718		1016				1392		
v/c Ratio		0.36		0.05		0.04		0.04		0.06				0.00		
95% Queue Length, Q_{95} (veh)		1.6		0.2		0.1		0.1		0.2				0.0		
Control Delay (s/veh)		19.4		10.1		17.3		10.2		8.8				7.6		
Level of Service (LOS)		C		B		C		B		A				A		
Approach Delay (s/veh)		17.4				12.4				2.1				0.0		
Approach LOS		C				B										

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 EB Ramp	File Name	2023 SR-64 & US-24 EB Build PM Peak Improve...		
Project Description	2023 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	283	2281			558	262	7	0	1453			

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	7.0	46.0	48.0	0.0	0.0	0.0				
Yellow	4.0	5.0	4.0	0.0	0.0	0.0	5	6	7	8
Red	2.0	2.0	2.0	0.0	0.0	0.0				

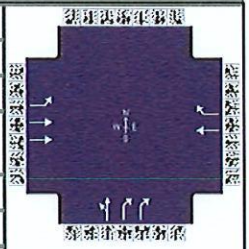
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		7.3		11.0		
Phase Duration, s	13.0	66.0		53.0		54.0		
Change Period, (*Y+R c*), s	6.0	7.0		7.0		6.0		
Max Allow Headway (*MAH*), s	5.1	5.1		5.1		5.4		
Queue Clearance Time (*g s*), s	9.0	61.0		36.2		50.0		
Green Extension Time (*g e*), s	0.0	0.0		9.6		0.0		
Phase Call Probability	1.00	1.00		1.00		1.00		
Max Out Probability	1.00	1.00		0.98		1.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	304	2453			600	282		8	1562			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1809			1900	1610		1810	1347			
Queue Service Time (*g s*), s	7.0	59.0			34.2	15.7		0.3	48.0			
Cycle Queue Clearance Time (*g c*), s	7.0	59.0			34.2	15.7		0.3	48.0			
Green Ratio (*g/C*)	0.46	0.49			0.38	0.38		0.40	0.40			
Capacity (*c*), veh/h	245	1779			728	617		724	1078			
Volume-to-Capacity Ratio (*X*)	1.244	1.379			0.824	0.456		0.010	1.450			
Back of Queue (*Q*), ft/ln (95 th percentile)	527.3	2495.1			590.7	253.2		5.8	1876.6			
Back of Queue (*Q*), veh/ln (95 th percentile)	20.8	99.8			23.6	10.1		0.2	71.1			
Queue Storage Ratio (*RQ*) (95 th percentile)	1.09	0.00			0.00	0.56		0.00	4.69			
Uniform Delay (*d 1*), s/veh	36.2	30.5			33.3	27.7		21.7	36.0			
Incremental Delay (*d 2*), s/veh	139.2	174.1			7.9	0.8		0.0	207.6			
Initial Queue Delay (*d 3*), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	175.4	204.6			41.3	28.4		21.7	243.6			
Level of Service (LOS)	F	F			D	C		C	F			
Approach Delay, s/veh / LOS	201.4	F		37.2	D		242.5	F		0.0		
Intersection Delay, s/veh / LOS	186.0						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.41	A	2.16	B	2.16	B
Bicycle LOS Score / LOS	2.76	C	1.94	B	3.08	C		

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 EB Ramp	File Name	2023 SR-64 & US-24 EB Build Weekend Peak Im…		
Project Description	2023 Build Weekend Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	211	2162			705	349	8	0	1430			

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	7.0	46.0	48.0	0.0	0.0	0.0						
Yellow	4.0	5.0	4.0	0.0	0.0	0.0						
Red	2.0	2.0	2.0	0.0	0.0	0.0	5	6	7	8		

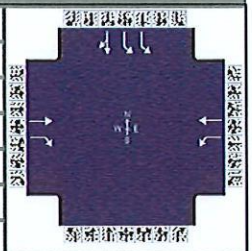
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		7.3		11.0		
Phase Duration, s	13.0	66.0		53.0		54.0		
Change Period, ($Y+R_c$), s	6.0	7.0		7.0		6.0		
Max Allow Headway (*MAH*), s	5.1	5.1		5.1		5.4		
Queue Clearance Time (g_s), s	9.0	61.0		48.0		50.0		
Green Extension Time (g_e), s	0.0	0.0		0.0		0.0		
Phase Call Probability	1.00	1.00		1.00		1.00		
Max Out Probability	1.00	1.00		1.00		1.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	224	2300			750	371		9	1521			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1809			1900	1610		1810	1347			
Queue Service Time (g_s), s	7.0	59.0			46.0	22.2		0.3	48.0			
Cycle Queue Clearance Time (g_c), s	7.0	59.0			46.0	22.2		0.3	48.0			
Green Ratio (*g/C*)	0.46	0.49			0.38	0.38		0.40	0.40			
Capacity (*c*), veh/h	164	1779			728	617		724	1078			
Volume-to-Capacity Ratio (*X*)	1.369	1.293			1.030	0.602		0.012	1.412			
Back of Queue (*Q*), ft/ln (95 th percentile)	491.4	2102.3			964.3	340		6.6	1763.6			
Back of Queue (*Q*), veh/ln (95 th percentile)	19.3	84.1			38.6	13.6		0.3	66.8			
Queue Storage Ratio (*RQ*) (95 th percentile)	1.01	0.00			0.00	0.76		0.00	4.41			
Uniform Delay (d_1), s/veh	31.4	30.5			37.0	29.7		21.7	36.0			
Incremental Delay (d_2), s/veh	200.1	136.2			41.2	2.0		0.0	190.7			
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	231.5	166.7			78.2	31.6		21.7	226.7			
Level of Service (LOS)	F	F			F	C		C	F			
Approach Delay, s/veh / LOS	172.5	F		62.8	E		225.6	F		0.0		
Intersection Delay, s/veh / LOS	164.4						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.41	A	2.16	B	2.16	B
Bicycle LOS Score / LOS	2.57	C	2.34	B	3.01	C		

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB Build PM Peak Improve...		
Project Description	2023 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		831	8	170	400					1728	0	367

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	16.0	32.0	53.0	0.0	0.0	0.0	5	6	7	8		
Yellow	4.0	5.0	4.0	0.0	0.0	0.0						
Red	2.0	2.0	2.0	0.0	0.0	0.0						

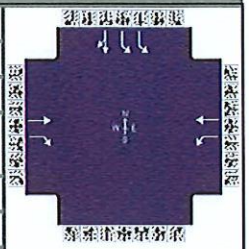
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2				4
Case Number		7.3	1.0	4.0				10.0
Phase Duration, s		39.0	22.0	61.0				59.0
Change Period, ($Y+R_c$), s		7.0	6.0	7.0				6.0
Max Allow Headway (*MAH*), s		5.0	4.1	5.0				4.2
Queue Clearance Time (g_s), s		34.0	9.9	20.7				55.0
Green Extension Time (g_e), s		0.0	0.3	6.3				0.0
Phase Call Probability		1.00	1.00	1.00				1.00
Max Out Probability		1.00	0.22	0.64				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		866	8	177	417					1800	382	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	1753	1885					1716	1196	
Queue Service Time (g_s), s		32.0	0.5	7.9	18.7					53.0	31.5	
Cycle Queue Clearance Time (g_c), s		32.0	0.5	7.9	18.7					53.0	31.5	
Green Ratio (*g/C*)		0.27	0.27	0.42	0.45					0.44	0.44	
Capacity (*c*), veh/h		503	396	294	848					1516	528	
Volume-to-Capacity Ratio (*X*)		1.722	0.021	0.603	0.491					1.188	0.724	
Back of Queue (*Q*), ft/ln (95 th percentile)		2378.3	8.8	162	328.1					1463.4	456.9	
Back of Queue (*Q*), veh/ln (95 th percentile)		94.4	0.3	6.3	13.0					57.2	14.5	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.03	0.32	0.00					4.18	0.00	
Uniform Delay (d_1), s/veh		44.0	32.4	27.5	23.3					33.5	27.5	
Incremental Delay (d_2), s/veh		333.2	0.0	3.4	0.6					91.3	4.9	
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0					0.0	0.0	
Control Delay (*d*), s/veh		377.2	32.5	31.0	23.9					124.8	32.4	
Level of Service (LOS)		F	C	C	C					F	C	
Approach Delay, s/veh / LOS	373.9	F		26.0	C		0.0			108.6	F	
Intersection Delay, s/veh / LOS	158.7						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.42	A	1.91	B	2.16	B	1.97	B
Bicycle LOS Score / LOS	1.93	B	1.47	A			4.09	D

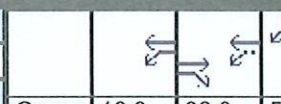
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2023 SR-64 & US-24 WB Build Weekend Peak I...		
Project Description	2023 Build Weekend Peak Improvements				

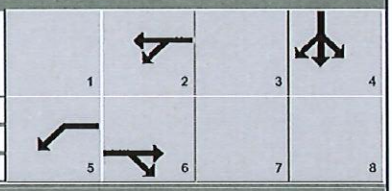


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		717	10	259	455					1692	2	270

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	16.0	32.0		53.0	0.0	0.0	0.0					
Yellow	4.0	5.0		4.0	0.0	0.0	0.0					
Red	2.0	2.0		2.0	0.0	0.0	0.0					



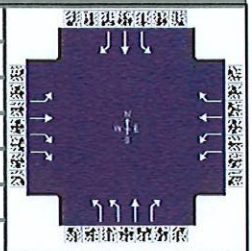
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2				4
Case Number		7.3	1.0	4.0				10.0
Phase Duration, s		39.0	22.0	61.0				59.0
Change Period, (*Y+R c*), s		7.0	6.0	7.0				6.0
Max Allow Headway (*MAH*), s		5.0	4.1	5.0				4.2
Queue Clearance Time (*g s*), s		34.0	16.5	24.8				55.0
Green Extension Time (*g e*), s		0.0	0.0	4.3				0.0
Phase Call Probability		1.00	1.00	1.00				1.00
Max Out Probability		1.00	1.00	0.84				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		763	11	276	484					1800	289	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	1753	1885					1716	1197	
Queue Service Time (*g s*), s		32.0	0.6	14.5	22.8					53.0	21.4	
Cycle Queue Clearance Time (*g c*), s		32.0	0.6	14.5	22.8					53.0	21.4	
Green Ratio (*g/C*)		0.27	0.27	0.42	0.45					0.44	0.44	
Capacity (*c*), veh/h		503	396	294	848					1516	529	
Volume-to-Capacity Ratio (*X*)		1.517	0.027	0.938	0.571					1.188	0.547	
Back of Queue (*Q*), ft/ln (95 th percentile)		1855.3	11.3	359.5	388.7					1463.4	320	
Back of Queue (*Q*), veh/ln (95 th percentile)		73.6	0.4	13.9	15.4					57.2	10.1	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.03	0.72	0.00					4.18	0.00	
Uniform Delay (*d 1*), s/veh		44.0	32.5	34.5	24.4					33.5	24.7	
Incremental Delay (*d 2*), s/veh		242.8	0.0	36.3	1.1					91.3	1.2	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0					0.0	0.0	
Control Delay (*d*), s/veh		286.8	32.5	70.9	25.6					124.8	25.9	
Level of Service (LOS)		F	C	E	C					F	C	
Approach Delay, s/veh / LOS	283.4	F		42.0	D		0.0			111.1	F	
Intersection Delay, s/veh / LOS	133.4						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.42	A	1.91	B	2.16	B	1.97	B
Bicycle LOS Score / LOS	1.76	B	1.74	B			3.94	D

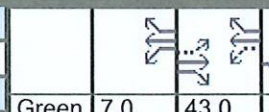
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd Build PM Peak Improve…		
Project Description	2023 Build PM Peak Improvements				

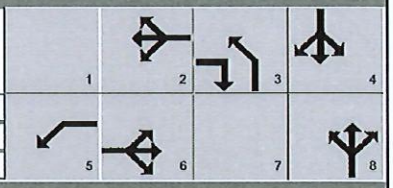


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	268	260	3194	714	298	147	228	14	45	147	107	88

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	43.0	22.0	20.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



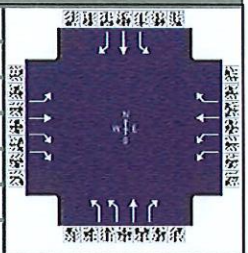
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8		4
Case Number		5.3	1.0	3.0	1.0	3.0		5.3
Phase Duration, s		50.0	14.0	64.0	29.0	56.0		27.0
Change Period, ($Y+R_c$), s		7.0	7.0	7.0	7.0	7.0		7.0
Max Allow Headway (*MAH*), s		4.2	4.0	4.2	4.1	4.2		4.2
Queue Clearance Time (g_s), s		45.0	9.0	15.4	8.4	4.2		14.8
Green Extension Time (g_e), s		0.0	0.0	27.1	0.8	1.4		0.8
Phase Call Probability		1.00	1.00	1.00	1.00	1.00		1.00
Max Out Probability		1.00	1.00	0.98	0.00	0.01		0.65

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	295	286	3510	785	327	162	251	15	49	162	118	97
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1061	1885	1314	1757	1870	1598	1620	1900	1610	1420	1900	1598
Queue Service Time (g_s), s	29.6	13.8	43.0	7.0	13.4	7.1	6.4	0.6	2.2	12.8	6.6	6.4
Cycle Queue Clearance Time (g_c), s	29.6	13.8	43.0	7.0	13.4	7.1	6.4	0.6	2.2	12.8	6.6	6.4
Green Ratio (*g/C*)	0.36	0.36	0.54	0.43	0.47	0.47	0.37	0.41	0.41	0.17	0.17	0.17
Capacity (*c*), veh/h	440	676	1423	866	888	759	980	776	657	297	317	266
Volume-to-Capacity Ratio (*X*)	0.669	0.423	2.466	0.906	0.369	0.213	0.256	0.020	0.075	0.545	0.371	0.363
Back of Queue (*Q*), ft/ln (95 th percentile)	307.3	252.4	6384.3	357.1	238.1	113.3	119.5	11.7	38.5	205.4	141.9	117.9
Back of Queue (*Q*), veh/ln (95 th percentile)	12.2	10.0	236.5	14.3	9.4	4.5	4.4	0.5	1.5	8.2	5.7	4.7
Queue Storage Ratio (*RQ*) (95 th percentile)	0.63	0.00	13.16	0.69	0.00	0.28	0.37	0.00	0.15	0.71	0.00	0.24
Uniform Delay (d_1), s/veh	34.2	29.1	27.5	37.2	20.0	18.4	26.4	21.2	21.7	47.0	44.4	44.4
Incremental Delay (d_2), s/veh	3.9	0.4	661.8	13.0	0.3	0.1	0.1	0.0	0.0	2.1	0.7	0.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	38.1	29.5	689.3	50.3	20.3	18.5	26.6	21.2	21.7	49.1	45.1	45.2
Level of Service (LOS)	D	C	F	D	C	B	C	C	C	D	D	D
Approach Delay, s/veh / LOS	596.3	F		38.5	D		25.5	C		46.8	D	
Intersection Delay, s/veh / LOS	415.2						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.10	B	2.28	B	2.46	B
Bicycle LOS Score / LOS	7.24	F	2.59	C	1.01	A	1.11	A

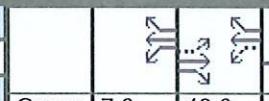
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2023 SR-64 & Pray Blvd Build Weekend Peak Im...		
Project Description	2023 Build Wknd Peak Improvements				

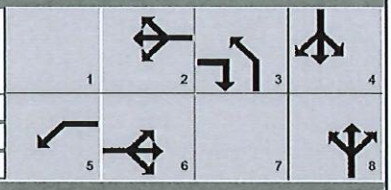


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	293	225	3069	665	247	150	404	16	90	165	107	115

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	7.0	43.0	22.0	20.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



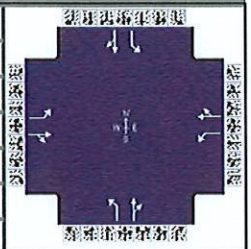
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8		4
Case Number		5.3	1.0	3.0	1.0	3.0		5.3
Phase Duration, s		50.0	14.0	64.0	29.0	56.0		27.0
Change Period, ($Y+R_c$), s		7.0	7.0	7.0	7.0	7.0		7.0
Max Allow Headway (*MAH*), s		4.2	4.0	4.2	4.1	4.2		4.2
Queue Clearance Time (g_s), s		45.0	9.0	12.6	13.9	6.6		16.5
Green Extension Time (g_e), s		0.0	0.0	29.4	1.2	1.7		0.7
Phase Call Probability		1.00	1.00	1.00	1.00	1.00		1.00
Max Out Probability		1.00	1.00	0.96	0.16	0.03		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	318	245	3336	723	268	163	439	17	98	179	116	125
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1120	1885	1314	1757	1870	1598	1620	1900	1610	1418	1900	1598
Queue Service Time (g_s), s	30.6	11.5	43.0	7.0	10.6	7.2	11.9	0.7	4.6	14.5	6.5	8.5
Cycle Queue Clearance Time (g_c), s	30.6	11.5	43.0	7.0	10.6	7.2	11.9	0.7	4.6	14.5	6.5	8.5
Green Ratio (*g/C*)	0.36	0.36	0.54	0.43	0.47	0.47	0.37	0.41	0.41	0.17	0.17	0.17
Capacity (*c*), veh/h	461	676	1423	931	888	759	982	776	657	296	317	266
Volume-to-Capacity Ratio (*X*)	0.691	0.362	2.344	0.777	0.302	0.215	0.447	0.022	0.149	0.606	0.367	0.469
Back of Queue (*Q*), ft/ln (95 th percentile)	331.6	218.4	5910.8	267.4	197.4	114.3	219.4	13.2	78.6	228.7	140.2	156
Back of Queue (*Q*), veh/ln (95 th percentile)	13.2	8.7	218.9	10.7	7.8	4.5	8.1	0.5	3.1	9.1	5.6	6.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.68	0.00	12.19	0.52	0.00	0.29	0.68	0.00	0.30	0.79	0.00	0.32
Uniform Delay (d_1), s/veh	34.5	28.4	27.5	33.4	19.3	18.4	28.2	21.2	22.4	47.7	44.4	45.2
Incremental Delay (d_2), s/veh	4.4	0.3	606.9	4.2	0.2	0.1	0.3	0.0	0.1	3.5	0.7	1.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	38.9	28.7	634.4	37.6	19.5	18.6	28.5	21.2	22.5	51.2	45.1	46.5
Level of Service (LOS)	D	C	F	D	B	B	C	C	C	D	D	D
Approach Delay, s/veh / LOS	547.7	F		30.7	C		27.2	C		48.1	D	
Intersection Delay, s/veh / LOS	366.0						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.10	B	2.28	B	2.46	B
Bicycle LOS Score / LOS	6.92	F	2.39	B	1.40	A	1.18	A

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd Build PM…		
Project Description	2023 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	81	315	73	30	671	47	298	57	24	38	69	183

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	51.0	17.0	25.0	0.0	0.0	1	2	3	4		
Yellow	4.0	4.0	4.0	4.0	0.0	0.0	5	6	7	8		
Red	1.0	1.0	1.0	1.0	0.0	0.0						

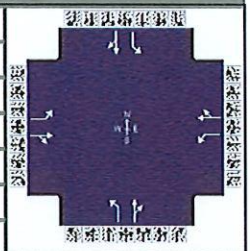
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	12.0	56.0	12.0	56.0	22.0	30.0	22.0	30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1	4.1	4.2	4.1	4.2
Queue Clearance Time (g_s), s	5.0	21.4	3.1	47.5	18.6	6.6	3.8	19.5
Green Extension Time (g_e), s	0.0	5.2	0.0	1.7	0.0	1.2	0.1	0.6
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.02	1.00	1.00	1.00	0.00	0.00	0.55

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	84	400		31	740		307	84		39	260	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1863		1753	1790		1767	1667	
Queue Service Time (g_s), s	3.0	19.4		1.1	45.5		16.6	4.6		1.8	17.5	
Cycle Queue Clearance Time (g_c), s	3.0	19.4		1.1	45.5		16.6	4.6		1.8	17.5	
Green Ratio (*g/C*)	0.48	0.42		0.48	0.42		0.35	0.21		0.35	0.21	
Capacity (*c*), veh/h	186	775		412	792		359	373		510	347	
Volume-to-Capacity Ratio (*X*)	0.449	0.516		0.075	0.935		0.857	0.224		0.077	0.748	
Back of Queue (*Q*), ft/ln (95 th percentile)	59.7	329.9		20.3	797.7		349.5	93.9		34.6	318.2	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	13.1		0.8	31.7		13.5	3.7		1.4	12.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.24	0.00		0.10	0.00		0.93	0.00		0.18	0.00	
Uniform Delay (d_1), s/veh	27.2	25.4		18.3	32.9		32.9	39.4		26.1	44.5	
Incremental Delay (d_2), s/veh	1.7	0.6		0.1	18.1		18.2	0.3		0.1	8.6	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	28.9	26.0		18.3	51.0		51.1	39.7		26.2	53.2	
Level of Service (LOS)	C	C		B	D		D	D		C	D	
Approach Delay, s/veh / LOS	26.5	C		49.7	D		48.7	D		49.6	D	
Intersection Delay, s/veh / LOS	43.7						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.29	A	1.76	B	1.13	A	0.98	A

HCS7 Signalized Intersection Results Summary

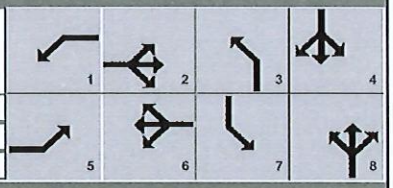
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2023 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2023 SR-64 & Waterville-Monclova Rd Build Wee…		
Project Description	2023 Build Wknd Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	75	332	89	26	652	29	247	50	16	36	61	155

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	51.0	17.0	25.0	0.0	0.0	
Yellow	4.0	4.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	1.0	1.0	0.0	0.0	



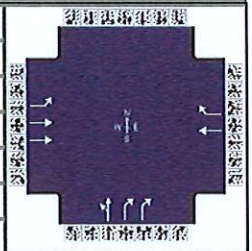
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	12.0	56.0	12.0	56.0	22.0	30.0	22.0	30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1	4.1	4.2	4.1	4.2
Queue Clearance Time (g_s), s	4.9	24.9	3.0	46.4	15.9	5.9	3.7	17.4
Green Extension Time (g_e), s	0.0	5.3	0.0	2.2	0.1	1.0	0.1	0.7
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.04	1.00	0.92	1.00	0.00	0.00	0.16

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	81	453		28	732		266	71		39	232	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1816		1810	1871		1753	1806		1767	1670	
Queue Service Time (g_s), s	2.9	22.9		1.0	44.4		13.9	3.9		1.7	15.4	
Cycle Queue Clearance Time (g_c), s	2.9	22.9		1.0	44.4		13.9	3.9		1.7	15.4	
Green Ratio (*g/C*)	0.48	0.42		0.48	0.42		0.35	0.21		0.35	0.21	
Capacity (*c*), veh/h	193	772		373	795		380	376		520	348	
Volume-to-Capacity Ratio (*X*)	0.418	0.587		0.075	0.921		0.698	0.189		0.074	0.668	
Back of Queue (*Q*), ft/ln (95 th percentile)	57.3	380.1		18.3	772.7		271.6	79.1		34.1	277.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.3	15.1		0.7	30.7		10.5	3.1		1.3	11.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.23	0.00		0.09	0.00		0.72	0.00		0.18	0.00	
Uniform Delay (d_1), s/veh	26.8	26.4		18.9	32.6		31.5	39.1		26.1	43.7	
Incremental Delay (d_2), s/veh	1.4	1.2		0.1	16.0		5.5	0.2		0.1	4.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	28.2	27.6		19.0	48.5		37.1	39.4		26.1	48.5	
Level of Service (LOS)	C	C		B	D		D	D		C	D	
Approach Delay, s/veh / LOS	27.7	C		47.5	D		37.5	D		45.3	D	
Intersection Delay, s/veh / LOS	39.9						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.37	A	1.74	B	1.04	A	0.93	A

HCS7 Signalized Intersection Results Summary

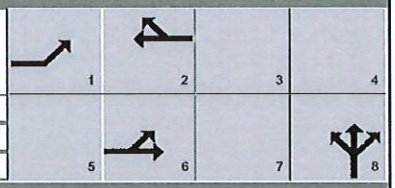
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 EB Ramp	File Name	2043 SR-64 & US-24 EB Build PM Peak Improve...		
Project Description	2043 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	295	2302			577	269	7	0	1457			

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	46.0	48.0	0.0	0.0	0.0
Yellow	4.0	5.0	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



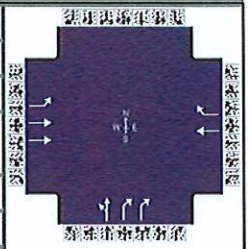
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		7.3		11.0		
Phase Duration, s	13.0	66.0		53.0		54.0		
Change Period, (*Y+R c*), s	6.0	7.0		7.0		6.0		
Max Allow Headway (*MAH*), s	5.1	5.1		5.1		5.4		
Queue Clearance Time (*g s*), s	9.0	61.0		37.9		50.0		
Green Extension Time (*g e*), s	0.0	0.0		7.9		0.0		
Phase Call Probability	1.00	1.00		1.00		1.00		
Max Out Probability	1.00	1.00		0.99		1.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	317	2475			620	289		8	1567			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1809			1900	1610		1810	1347			
Queue Service Time (*g s*), s	7.0	59.0			35.9	16.2		0.3	48.0			
Cycle Queue Clearance Time (*g c*), s	7.0	59.0			35.9	16.2		0.3	48.0			
Green Ratio (*g/C*)	0.46	0.49			0.38	0.38		0.40	0.40			
Capacity (*c*), veh/h	232	1779			728	617		724	1078			
Volume-to-Capacity Ratio (*X*)	1.370	1.392			0.852	0.469		0.010	1.454			
Back of Queue (*Q*), ft/ln (95 th percentile)	623.9	2554			625.5	259.8		5.8	1888.5			
Back of Queue (*Q*), veh/ln (95 th percentile)	24.6	102.2			25.0	10.4		0.2	71.5			
Queue Storage Ratio (*RQ*) (95 th percentile)	1.29	0.00			0.00	0.58		0.00	4.72			
Uniform Delay (*d 1*), s/veh	35.4	30.5			33.9	27.8		21.7	36.0			
Incremental Delay (*d 2*), s/veh	191.3	179.8			9.8	0.8		0.0	209.4			
Initial Queue Delay (*d 3*), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	226.7	210.3			43.7	28.6		21.7	245.4			
Level of Service (LOS)	F	F			D	C		C	F			
Approach Delay, s/veh / LOS	212.1	F		38.9	D		244.3	F		0.0		
Intersection Delay, s/veh / LOS	191.9						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.41	A	2.16	B	2.16	B
Bicycle LOS Score / LOS	2.79	C	1.99	B	3.09	C		

HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 EB Ramp	File Name	2043 SR-64 & US-24 EB Build Weekend Peak Im…		
Project Description	2043 Build Weekend Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	218	2181			726	355	8	0	1436			

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
Green	7.0	46.0	48.0	0.0	0.0	0.0	5	6	7	8
Yellow	4.0	5.0	4.0	0.0	0.0	0.0				
Red	2.0	2.0	2.0	0.0	0.0	0.0				

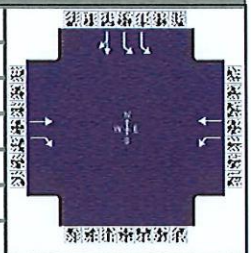
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	1	6		2		8		
Case Number	1.0	4.0		7.3		11.0		
Phase Duration, s	13.0	66.0		53.0		54.0		
Change Period, ($Y+R_c$), s	6.0	7.0		7.0		6.0		
Max Allow Headway (*MAH*), s	5.1	5.1		5.1		5.4		
Queue Clearance Time (g_s), s	9.0	61.0		48.0		50.0		
Green Extension Time (g_e), s	0.0	0.0		0.0		0.0		
Phase Call Probability	1.00	1.00		1.00		1.00		
Max Out Probability	1.00	1.00		1.00		1.00		

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6			2	12	3	8	18			
Adjusted Flow Rate (*v*), veh/h	232	2320			772	378		9	1528			
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1781	1809			1900	1610		1810	1347			
Queue Service Time (g_s), s	7.0	59.0			46.0	22.7		0.3	48.0			
Cycle Queue Clearance Time (g_c), s	7.0	59.0			46.0	22.7		0.3	48.0			
Green Ratio (*g/C*)	0.46	0.49			0.38	0.38		0.40	0.40			
Capacity (*c*), veh/h	164	1779			728	617		724	1078			
Volume-to-Capacity Ratio (*X*)	1.415	1.304			1.060	0.612		0.012	1.417			
Back of Queue (Q), ft/ln (95 th percentile)	524.5	2153.6			1041.3	346.8		6.6	1781.1			
Back of Queue (Q), veh/ln (95 th percentile)	20.6	86.1			41.7	13.9		0.3	67.5			
Queue Storage Ratio (*RQ*) (95 th percentile)	1.08	0.00			0.00	0.77		0.00	4.45			
Uniform Delay (d_1), s/veh	31.4	30.5			37.0	29.8		21.7	36.0			
Incremental Delay (d_2), s/veh	218.7	141.2			50.5	2.1		0.0	193.4			
Initial Queue Delay (d_3), s/veh	0.0	0.0			0.0	0.0		0.0	0.0			
Control Delay (*d*), s/veh	250.1	171.7			87.5	31.9		21.7	229.4			
Level of Service (LOS)	F	F			F	C		C	F			
Approach Delay, s/veh / LOS	178.9	F		69.3	E		228.2	F		0.0		
Intersection Delay, s/veh / LOS	169.3						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.41	A	2.16	B	2.16	B
Bicycle LOS Score / LOS	2.59	C	2.39	B	3.02	C		

HCS7 Signalized Intersection Results Summary

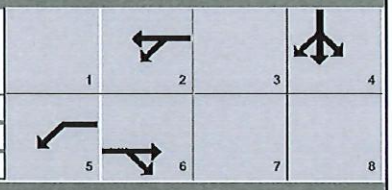
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.96
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB Build PM Peak Improve…		
Project Description	2043 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		957	10	190	478					1762	0	440

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	16.0	32.0	53.0	0.0	0.0	0.0
Yellow	4.0	5.0	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



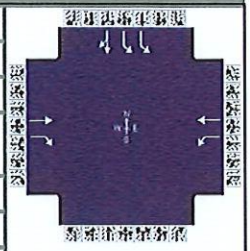
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2				4
Case Number		7.3	1.0	4.0				10.0
Phase Duration, s		39.0	22.0	61.0				59.0
Change Period, (*Y+R c*), s		7.0	6.0	7.0				6.0
Max Allow Headway (*MAH*), s		5.0	4.1	5.0				4.2
Queue Clearance Time (*g s*), s		34.0	10.9	25.7				55.0
Green Extension Time (*g e*), s		0.0	0.3	4.6				0.0
Phase Call Probability		1.00	1.00	1.00				1.00
Max Out Probability		1.00	0.51	0.94				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		997	10	198	498					1835	458	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	1753	1885					1716	1196	
Queue Service Time (*g s*), s		32.0	0.6	8.9	23.7					53.0	41.6	
Cycle Queue Clearance Time (*g c*), s		32.0	0.6	8.9	23.7					53.0	41.6	
Green Ratio (*g/C*)		0.27	0.27	0.42	0.45					0.44	0.44	
Capacity (*c*), veh/h		503	396	294	848					1516	528	
Volume-to-Capacity Ratio (*X*)		1.983	0.026	0.674	0.587					1.211	0.868	
Back of Queue (*Q*), ft/ln (95 th percentile)		3046.1	11.1	191.3	402.3					1550.1	621.2	
Back of Queue (*Q*), veh/ln (95 th percentile)		120.9	0.4	7.4	16.0					60.5	19.7	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.03	0.38	0.00					4.43	0.00	
Uniform Delay (*d 1*), s/veh		44.0	32.5	27.8	24.7					33.5	30.3	
Incremental Delay (*d 2*), s/veh		449.5	0.0	5.9	1.3					101.3	14.3	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0					0.0	0.0	
Control Delay (*d*), s/veh		493.5	32.5	33.8	25.9					134.8	44.6	
Level of Service (LOS)		F	C	C	C					F	D	
Approach Delay, s/veh / LOS	488.7	F		28.2	C		0.0			116.8	F	
Intersection Delay, s/veh / LOS	195.1						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.42	A	1.91	B	2.16	B	1.97	B
Bicycle LOS Score / LOS	2.15	B	1.64	B			4.27	D

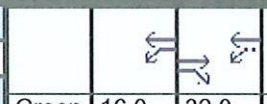
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Weekend Peak	PHF	0.94
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & US-24 WB Ramp	File Name	2043 SR-64 & US-24 WB Build Weekend Peak I...		
Project Description	2043 Build Weekend Peak Improvements				

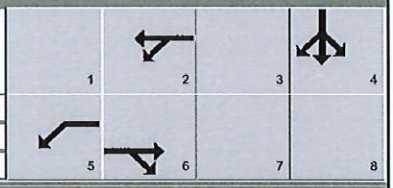


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h		820	14	281	542					1732	2	324

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	16.0	32.0	53.0	0.0	0.0	0.0
Yellow	4.0	5.0	4.0	0.0	0.0	0.0
Red	2.0	2.0	2.0	0.0	0.0	0.0



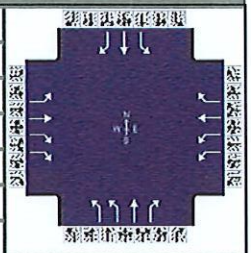
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2				4
Case Number		7.3	1.0	4.0				10.0
Phase Duration, s		39.0	22.0	61.0				59.0
Change Period, (*Y+R c*), s		7.0	6.0	7.0				6.0
Max Allow Headway (*MAH*), s		4.9	4.0	4.9				4.1
Queue Clearance Time (*g s*), s		34.0	18.0	31.1				55.0
Green Extension Time (*g e*), s		0.0	0.0	0.7				0.0
Phase Call Probability		1.00	1.00	1.00				1.00
Max Out Probability		1.00	1.00	1.00				1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement		6	16	5	2					7	4	14
Adjusted Flow Rate (*v*), veh/h		872	15	299	577					1843	347	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1885	1485	1753	1885					1716	1197	
Queue Service Time (*g s*), s		32.0	0.9	16.0	29.1					53.0	27.3	
Cycle Queue Clearance Time (*g c*), s		32.0	0.9	16.0	29.1					53.0	27.3	
Green Ratio (*g/C*)		0.27	0.27	0.42	0.45					0.44	0.44	
Capacity (*c*), veh/h		503	396	294	848					1516	529	
Volume-to-Capacity Ratio (*X*)		1.735	0.038	1.018	0.680					1.216	0.656	
Back of Queue (*Q*), ft/ln (95 th percentile)		2395.3	15.4	431	466.5					1557.9	394.8	
Back of Queue (*Q*), veh/ln (95 th percentile)		95.1	0.6	16.7	18.5					60.9	12.5	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.05	0.86	0.00					4.45	0.00	
Uniform Delay (*d 1*), s/veh		44.0	32.6	36.1	26.1					33.5	26.3	
Incremental Delay (*d 2*), s/veh		339.1	0.1	57.1	2.5					103.3	2.9	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0					0.0	0.0	
Control Delay (*d*), s/veh		383.1	32.6	93.2	28.6					136.8	29.3	
Level of Service (LOS)		F	C	F	C					F	C	
Approach Delay, s/veh / LOS	377.2	F		50.7	D		0.0			119.8	F	
Intersection Delay, s/veh / LOS	162.3						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.42	A	1.91	B	2.16	B	1.97	B
Bicycle LOS Score / LOS	1.95	B	1.93	B			4.10	D

HCS7 Signalized Intersection Results Summary

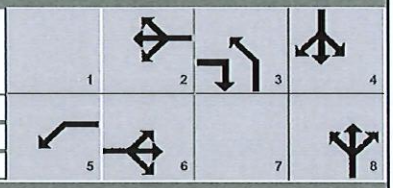
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.91
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd Build PM Peak Improve…		
Project Description	2043 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	278	270	3197	717	309	154	231	15	45	154	107	91

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	43.0	22.0	20.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



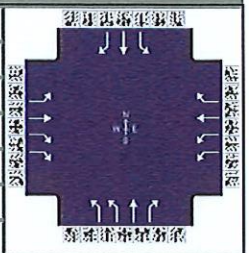
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8		4
Case Number		5.3	1.0	3.0	1.0	3.0		5.3
Phase Duration, s		50.0	14.0	64.0	29.0	56.0		27.0
Change Period, ($Y+R_c$), s		7.0	7.0	7.0	7.0	7.0		7.0
Max Allow Headway (*MAH*), s		4.2	4.0	4.2	4.1	4.2		4.2
Queue Clearance Time (g_s), s		45.0	9.0	16.0	8.5	4.2		15.6
Green Extension Time (g_e), s		0.0	0.0	26.5	0.8	1.4		0.7
Phase Call Probability		1.00	1.00	1.00	1.00	1.00		1.00
Max Out Probability		1.00	1.00	0.98	0.00	0.01		0.88

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	305	297	3513	788	340	169	254	16	49	169	118	100
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1049	1885	1314	1757	1870	1598	1620	1900	1610	1419	1900	1598
Queue Service Time (g_s), s	31.6	14.4	43.0	7.0	14.0	7.5	6.5	0.6	2.2	13.5	6.6	6.7
Cycle Queue Clearance Time (g_c), s	31.6	14.4	43.0	7.0	14.0	7.5	6.5	0.6	2.2	13.6	6.6	6.7
Green Ratio (*g/C*)	0.36	0.36	0.54	0.43	0.47	0.47	0.37	0.41	0.41	0.17	0.17	0.17
Capacity (*c*), veh/h	436	676	1423	849	888	759	980	776	657	296	317	266
Volume-to-Capacity Ratio (*X*)	0.701	0.439	2.468	0.928	0.382	0.223	0.259	0.021	0.075	0.571	0.371	0.376
Back of Queue (*Q*), ft/ln (95 th percentile)	324.8	261.9	6393.2	374.7	246.1	119.1	121.2	12.6	38.5	215.3	141.9	122.3
Back of Queue (*Q*), veh/ln (95 th percentile)	12.9	10.4	236.8	15.0	9.7	4.7	4.5	0.5	1.5	8.6	5.7	4.9
Queue Storage Ratio (*RQ*) (95 th percentile)	0.67	0.00	13.18	0.73	0.00	0.30	0.37	0.00	0.15	0.74	0.00	0.25
Uniform Delay (d_1), s/veh	34.9	29.3	27.5	37.9	20.2	18.5	26.5	21.2	21.7	47.3	44.4	44.4
Incremental Delay (d_2), s/veh	5.0	0.5	662.8	16.1	0.3	0.1	0.1	0.0	0.0	2.6	0.7	0.9
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	39.8	29.8	690.3	54.0	20.5	18.6	26.6	21.2	21.7	49.9	45.1	45.3
Level of Service (LOS)	D	C	F	D	C	B	C	C	C	D	D	D
Approach Delay, s/veh / LOS	594.4	F		40.6	D		25.6	C		47.3	D	
Intersection Delay, s/veh / LOS	412.7						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.10	B	2.28	B	2.46	B
Bicycle LOS Score / LOS	7.28	F	2.63	C	1.02	A	1.13	A

HCS7 Signalized Intersection Results Summary

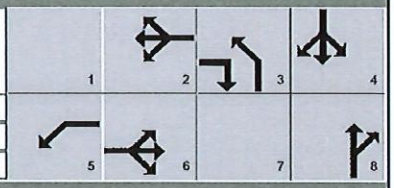
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Wknd Peak	PHF	0.92
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Pray Blvd	File Name	2043 SR-64 & Pray Blvd Build Weekend Peak Im...		
Project Description	2043 Build Wknd Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	305	235	3073	666	256	155	407	17	90	171	107	119

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	43.0	22.0	20.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	0.0	0.0
Red	2.0	2.0	2.0	2.0	0.0	0.0



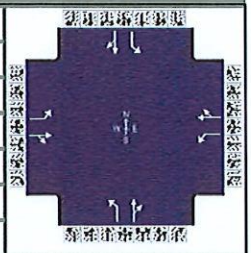
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		6	5	2	3	8		4
Case Number		5.3	1.0	3.0	2.0	3.0		5.3
Phase Duration, s		50.0	14.0	64.0	29.0	56.0		27.0
Change Period, ($Y+R_c$), s		7.0	7.0	7.0	7.0	7.0		7.0
Max Allow Headway (MAH), s		4.2	3.0	4.2	3.1	4.2		4.2
Queue Clearance Time (g_s), s		45.0	9.0	13.0	17.5	6.6		17.1
Green Extension Time (g_e), s		0.0	0.0	29.0	0.5	1.7		0.6
Phase Call Probability		1.00	1.00	1.00	1.00	1.00		1.00
Max Out Probability		1.00	1.00	0.96	0.36	0.04		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	1	6	16	5	2	12	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	332	255	3340	724	278	168	442	18	98	186	116	129
Adjusted Saturation Flow Rate (s), veh/h/ln	1110	1885	1314	1757	1870	1598	1620	1900	1610	1416	1900	1598
Queue Service Time (g_s), s	32.8	12.1	43.0	7.0	11.0	7.4	15.5	0.7	4.6	15.1	6.5	8.8
Cycle Queue Clearance Time (g_c), s	32.8	12.1	43.0	7.0	11.0	7.4	15.5	0.7	4.6	15.1	6.5	8.8
Green Ratio (g/C)	0.36	0.36	0.54	0.43	0.47	0.47	0.18	0.41	0.41	0.17	0.17	0.17
Capacity (c), veh/h	458	676	1423	914	888	759	594	776	657	296	317	266
Volume-to-Capacity Ratio (X)	0.725	0.378	2.347	0.792	0.313	0.222	0.745	0.024	0.149	0.628	0.367	0.486
Back of Queue (Q), ft/ln (95 th percentile)	352.3	227.3	5922.7	272.6	204.1	118.8	290.1	14.1	78.6	237.9	140.2	162
Back of Queue (Q), veh/ln (95 th percentile)	14.0	9.0	219.4	10.9	8.0	4.7	10.7	0.6	3.1	9.5	5.6	6.4
Queue Storage Ratio (RQ) (95 th percentile)	0.73	0.00	12.21	0.53	0.00	0.30	0.89	0.00	0.30	0.82	0.00	0.33
Uniform Delay (d_1), s/veh	35.2	28.6	27.5	34.0	19.4	18.5	46.3	21.2	22.4	48.0	44.4	45.3
Incremental Delay (d_2), s/veh	5.6	0.3	608.2	4.4	0.2	0.1	4.5	0.0	0.1	4.2	0.7	1.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	40.9	28.9	635.7	38.4	19.6	18.6	50.9	21.2	22.5	52.2	45.1	46.7
Level of Service (LOS)	D	C	F	D	B	B	D	C	C	D	D	D
Approach Delay, s/veh / LOS	546.0	F		31.1	C		44.9	D		48.6	D	
Intersection Delay, s/veh / LOS	365.8						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.44	B	2.10	B	2.28	B	2.46	B
Bicycle LOS Score / LOS	6.97	F	2.42	B	1.41	A	1.20	A

HCS7 Signalized Intersection Results Summary

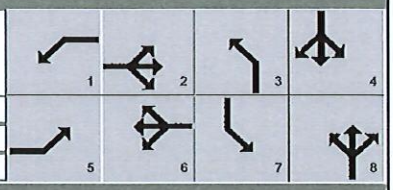
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 PM Peak	PHF	0.97
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon...	File Name	2043 SR-64 & Waterville-Monclova Rd Build PM...		
Project Description	2043 Build PM Peak Improvements				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	85	327	76	33	681	48	303	58	25	38	71	187

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	51.0	17.0	25.0	0.0	0.0	
Yellow	4.0	4.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	1.0	1.0	0.0	0.0	



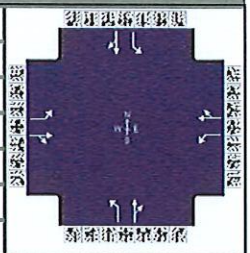
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	12.0	56.0	12.0	56.0	22.0	30.0	22.0	30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1	4.1	4.2	4.1	4.2
Queue Clearance Time (g_s), s	5.2	22.4	3.2	48.7	18.9	6.8	3.8	20.0
Green Extension Time (g_e), s	0.0	5.3	0.0	1.3	0.0	1.2	0.1	0.6
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.02	1.00	1.00	1.00	0.00	0.00	0.70

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	88	415		34	752		312	86		39	266	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1823		1810	1863		1753	1788		1767	1668	
Queue Service Time (g_s), s	3.2	20.4		1.2	46.7		16.9	4.8		1.8	18.0	
Cycle Queue Clearance Time (g_c), s	3.2	20.4		1.2	46.7		16.9	4.8		1.8	18.0	
Green Ratio (*g/C*)	0.48	0.42		0.48	0.42		0.35	0.21		0.35	0.21	
Capacity (*c*), veh/h	179	775		401	792		354	373		508	347	
Volume-to-Capacity Ratio (*X*)	0.490	0.536		0.085	0.949		0.883	0.230		0.077	0.766	
Back of Queue (*Q*), ft/ln (95 th percentile)	63.3	344		22.4	828.7		366	96.3		34.6	328.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	2.5	13.7		0.9	32.9		14.2	3.8		1.4	13.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.26	0.00		0.11	0.00		0.98	0.00		0.18	0.00	
Uniform Delay (d_1), s/veh	27.5	25.7		18.5	33.3		33.1	39.5		26.1	44.7	
Incremental Delay (d_2), s/veh	2.1	0.7		0.1	20.6		22.1	0.3		0.1	9.8	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	29.6	26.4		18.6	53.8		55.2	39.8		26.2	54.5	
Level of Service (LOS)	C	C		B	D		E	D		C	D	
Approach Delay, s/veh / LOS	27.0	C		52.3	D		51.9	D		50.9	D	
Intersection Delay, s/veh / LOS	45.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.32	A	1.78	B	1.14	A	0.99	A

HCS7 Signalized Intersection Results Summary

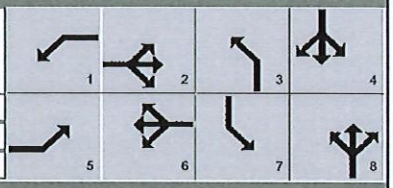
General Information				Intersection Information	
Agency	DGL Consulting Engineers			Duration, h	0.250
Analyst	CMS	Analysis Date	5/18/2022	Area Type	Other
Jurisdiction	City of Waterville	Time Period	2043 Wknd Peak	PHF	0.93
Urban Street	SR-64	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	SR-64 & Waterville-Mon…	File Name	2043 SR-64 & Waterville-Monclova Rd Build Wee…		
Project Description	2043 Build Wknd Peak				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	78	343	92	27	663	32	251	53	18	36	63	159

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	7.0	51.0	17.0	25.0	0.0	0.0	
Yellow	4.0	4.0	4.0	4.0	0.0	0.0	
Red	1.0	1.0	1.0	1.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	4.0	1.1	4.0	1.1	4.0
Phase Duration, s	12.0	56.0	12.0	56.0	22.0	30.0	22.0	30.0
Change Period, ($Y+R_c$), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s	4.1	4.1	4.1	4.1	4.1	4.2	4.1	4.2
Queue Clearance Time (g_s), s	5.0	25.9	3.0	47.9	16.2	6.2	3.7	17.8
Green Extension Time (g_e), s	0.0	5.5	0.0	1.6	0.1	1.1	0.1	0.7
Phase Call Probability	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Max Out Probability	1.00	0.05	1.00	1.00	1.00	0.00	0.00	0.22

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	84	468		29	747		270	76		39	239	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1795	1816		1810	1870		1753	1803		1767	1670	
Queue Service Time (g_s), s	3.0	23.9		1.0	45.9		14.2	4.2		1.7	15.8	
Cycle Queue Clearance Time (g_c), s	3.0	23.9		1.0	45.9		14.2	4.2		1.7	15.8	
Green Ratio (*g/C*)	0.48	0.42		0.48	0.42		0.35	0.21		0.35	0.21	
Capacity (*c*), veh/h	183	772		362	795		375	376		516	348	
Volume-to-Capacity Ratio (*X*)	0.458	0.606		0.080	0.940		0.719	0.203		0.075	0.686	
Back of Queue (Q), ft/ln (95 th percentile)	60.1	395.4		19.1	812		278.6	85.4		34.1	286.2	
Back of Queue (Q), veh/ln (95 th percentile)	2.4	15.7		0.8	32.2		10.8	3.4		1.3	11.4	
Queue Storage Ratio (RQ) (95 th percentile)	0.25	0.00		0.10	0.00		0.74	0.00		0.18	0.00	
Uniform Delay (d_1), s/veh	27.3	26.7		19.2	33.0		31.7	39.3		26.1	43.9	
Incremental Delay (d_2), s/veh	1.8	1.4		0.1	19.0		6.5	0.3		0.1	5.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	29.1	28.1		19.3	52.0		38.2	39.5		26.1	49.4	
Level of Service (LOS)	C	C		B	D		D	D		C	D	
Approach Delay, s/veh / LOS	28.2	C		50.8	D		38.5	D		46.2	D	
Intersection Delay, s/veh / LOS	41.6						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.92	B	1.92	B	1.94	B	1.94	B
Bicycle LOS Score / LOS	1.40	A	1.77	B	1.06	A	0.95	A