

Miller's Landing Master Traffic Study

Town of Castle Rock, Colorado



Date: May 14, 2021

Submitted To:

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TABLE OF CONTENTS

1.0	Introduction	3
2.0	Project Description	3
3.0	Study Considerations	7
3.1	Data Collection	7
3.2	Evaluation Methodology	7
3.3	Level of Service Definitions	7
4.0	Existing Conditions	9
4.1	Roadways	9
4.2	Intersections	10
4.3	Pedestrian and Bicycle	10
4.4	Existing Intersection Capacity Analysis	11
5.0	Future Conditions	11
5.1	Annual Growth Factor and Future Volume Methodology	11
5.2	Planned Transportation Improvements	17
5.3	Year 2023 Background Intersection Capacity Analysis	17
5.4	Year 2027 Background Intersection Capacity Analysis	19
5.5	Year 2030 Background Intersection Capacity Analysis	19
5.6	Year 2040 Background Intersection Capacity Analysis	20
6.0	Future Conditions with Miller's Landing development	21
6.1	Trip Generation	21
6.2	Trip Distribution and Assignment	23
6.3	Year 2023 Background + Project Intersection Capacity Analysis	30
6.4	Year 2027 Background + Project Intersection Capacity Analysis	34
6.5	Year 2030 Background + Project Intersection Capacity Analysis	36
6.6	Year 2040 Background + Project Intersection Capacity Analysis	38
7.0	Auxiliary Lane and Access Spacing Evaluation	38
8.0	Queuing analysis	41
9.0	Plum Creek Parkway Roadway Capacity	45
10.0	Bicycle and Pedestrian Accommodations	45
11.0	Conclusions	46

LIST OF TABLES

Table 1. Level of Service Summary	12
Table 2. Trip Generation Summary.....	24
Table 3. Trip Type Breakdown	25
Table 4. Peak Hour Intersection Level of Service Summary (Project-Added).....	33
Table 5. Queuing Summary (Existing and Background Scenarios)	34
Table 6. Queuing Summary (Project Added Scenarios).....	44
Table 7. Planned/Recommended Improvements and Anticipated Timeframe	49

LIST OF FIGURES

Figure 1. Vicinity Map.....	5
Figure 2. Concept Site and Access Plan	6
Figure 3. Existing Traffic Volumes	8
Figure 4. Year 2023 Background Traffic Volumes	14
Figure 5. Year 2027 Background Traffic Volumes	15
Figure 6. Year 2030 Background Traffic Volumes	16
Figure 7. Year 2040 Background Traffic Volumes	18
Figure 8. Trip Distribution.....	26
Figure 9. Year 2023 Site-Generated Trips (Ph 1).....	27
Figure 10. Year 2027 Site-Generated Trips (Ph 1 + Ph 2)	28
Figure 11. Site-Generated Trips at Buildout (Ph 1 + Ph 2 on Year 2040 Network).....	29
Figure 12. Year 2023 Total Traffic Volumes	31
Figure 13. Year 2027 Total Traffic Volumes	36
Figure 14. Year 2030 Total Traffic Volumes	38
Figure 15. Year 2040 Total Traffic Volumes	40

APPENDIX

Existing Traffic Data

Level of Service Definitions

Intersection Capacity Worksheets

MILLER'S LANDING MASTER TRAFFIC STUDY

1.0 INTRODUCTION

The Fox Tuttle Transportation Group has prepared this traffic impact study for the proposed development of the land north of Plum Creek Parkway and west of I-25 in the Town of Castle Rock. The project proposes to develop a mix of retail, office and residential uses.

The purpose of this study is to assist in identifying potential traffic impacts within the study area as a result of each phase of this project. The traffic study addresses existing, short-term (Year 2023), mid-term (Year 2027) and long-term (Year 2040) peak hour intersection and roadway conditions in the study area with and without the project generated traffic. The information contained in this study is anticipated to be used by the Town staff in identifying any intersection or roadway deficiencies and potential improvements for each scenario. This study focuses on the weekday AM, weekday PM and Saturday peak hours, which represent the periods of highest trip generation for the proposed mix of uses and of adjacent street traffic. This study also includes an evaluation of roadway laneage needs, auxiliary lane requirements, and intersection traffic controls.

The study is consistent with the requirements listed in *Town of Castle Rock Transportation Design Criteria Manual* (December 2018). The study reflects input received from staff at a pre-application meeting held on August 25, 2020.

Additional town documents reviewed, referenced, and incorporated into this study, as relevant, include the following:

- Town of Castle Rock Transportation Master Plan ("Town TMP") (October 2017)
- Coachline Road Access Plan (Felsburg Holt & Ullevig, 2008)

2.0 PROJECT DESCRIPTION

The proposed land use and estimated timeframe for when each phase will be completed and fully occupied is summarized below, as broken down for the purposes of this traffic analysis. A vicinity map showing where each phase is located is shown on **Figure 1**.

Phase 1 (estimated to be completed in Year 2023)

- 300,000 square feet of retail use

Phase 2 (estimated to be completed in Year 2027)

- 125,000 square feet of office use
- 75,000 square feet of general retail and restaurant uses
- 600 multi-family dwelling units

The project proposes access to the site, as follows:

- Right-in, right-out (RI/RO) access along Plum Creek Parkway located approximately 670 feet west of the future proposed Prairie Hawk Drive intersection. This access will be constructed with Phase 1.
- Access to/from the site via the proposed construction of Prairie Hawk Drive from Plum Creek Parkway to the north property border. In the future, Prairie Hawk Drive will be extended to Atchison Way and ultimately improved/widened to Wolfensberger Road. The following access is proposed along the future Prairie Hawk Drive extension:
 - o Full movement access (Saddlemaker Trail) at new, multilane roundabout along Prairie Hawk Drive approximately 1,400 feet north of Plum Creek Parkway. This access will be constructed with Phase 1.
- Full-movement access along Plum Creek Parkway located 0.50 miles west of the I-25 southbound (west) ramp terminal intersection. This access will feature roundabout control and is consistent with the recommendations of the Coachline Road Access Plan. This access will be constructed with Phase 2.

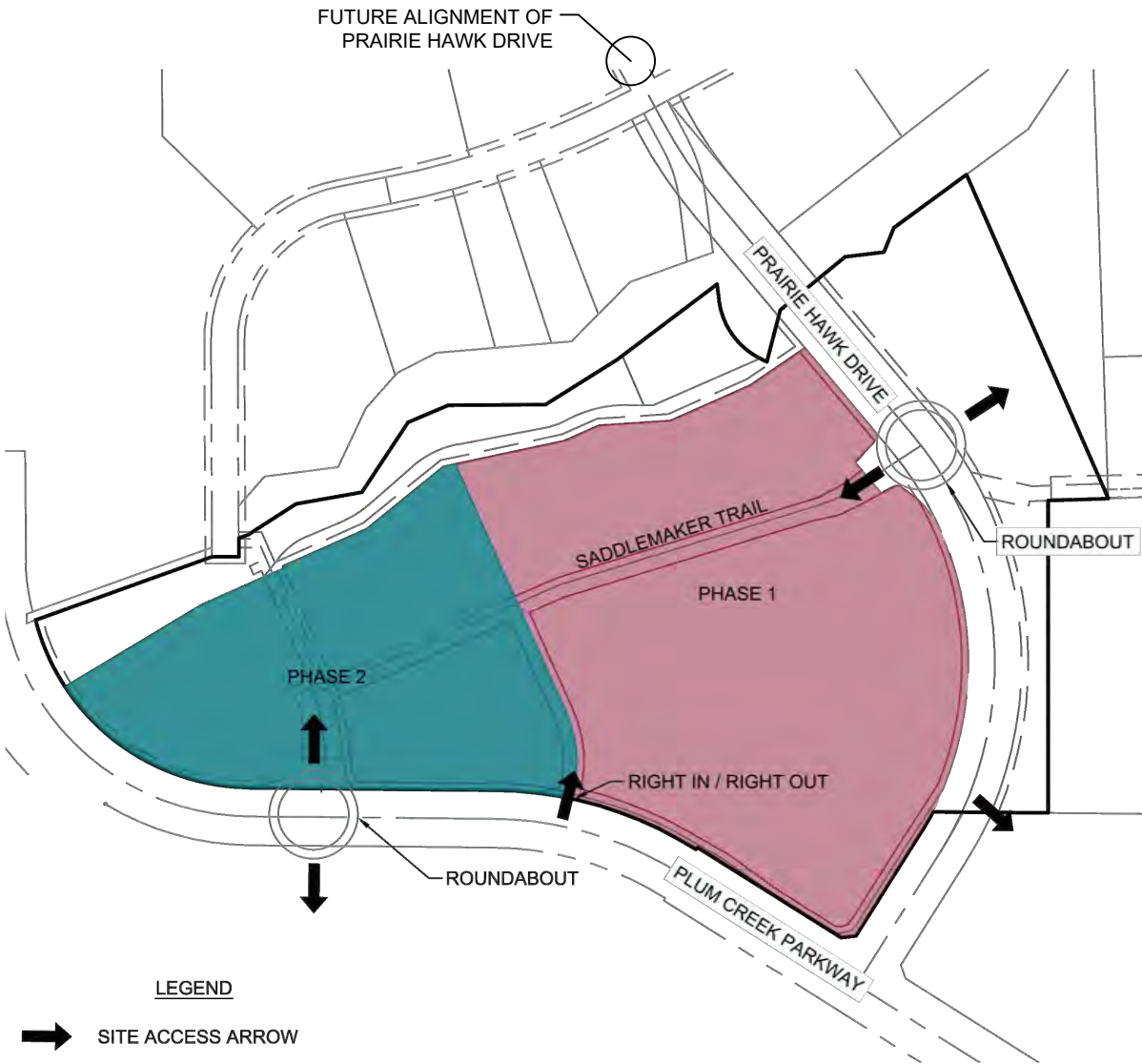
A preliminary site and access plan is provided on **Figure 2**.



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MILLER'S LANDING MASTER TRAFFIC STUDY
VICINITY MAP

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3.0 STUDY CONSIDERATIONS

3.1 Data Collection

Intersection turning movement and daily traffic volumes were collected in March 2019, June 2019, and September 2020 within the study area or obtained from Town staff. Recent counts were compared to pre-COVID data in the same locations to verify that all data used was representative of typical conditions in the study area. The existing traffic volumes are illustrated on **Figure 3**. The existing intersection geometry and traffic control are also shown on this figure. Signal-related information for the existing intersections were provided by the Town of Castle Rock. Count data sheets are provided in the **Appendix**.

3.2 Evaluation Methodology

The traffic operations analysis addressed the signalized and unsignalized intersection operations using the procedures and methodologies set forth by the *Highway Capacity Manual (HCM)*¹. Existing peak hour factors were applied to the intersections for the existing scenarios. Study intersections were evaluated using Synchro software and roundabout intersections were evaluated using SIDRA software and HCM6 methodology.

3.3 Level of Service Definitions

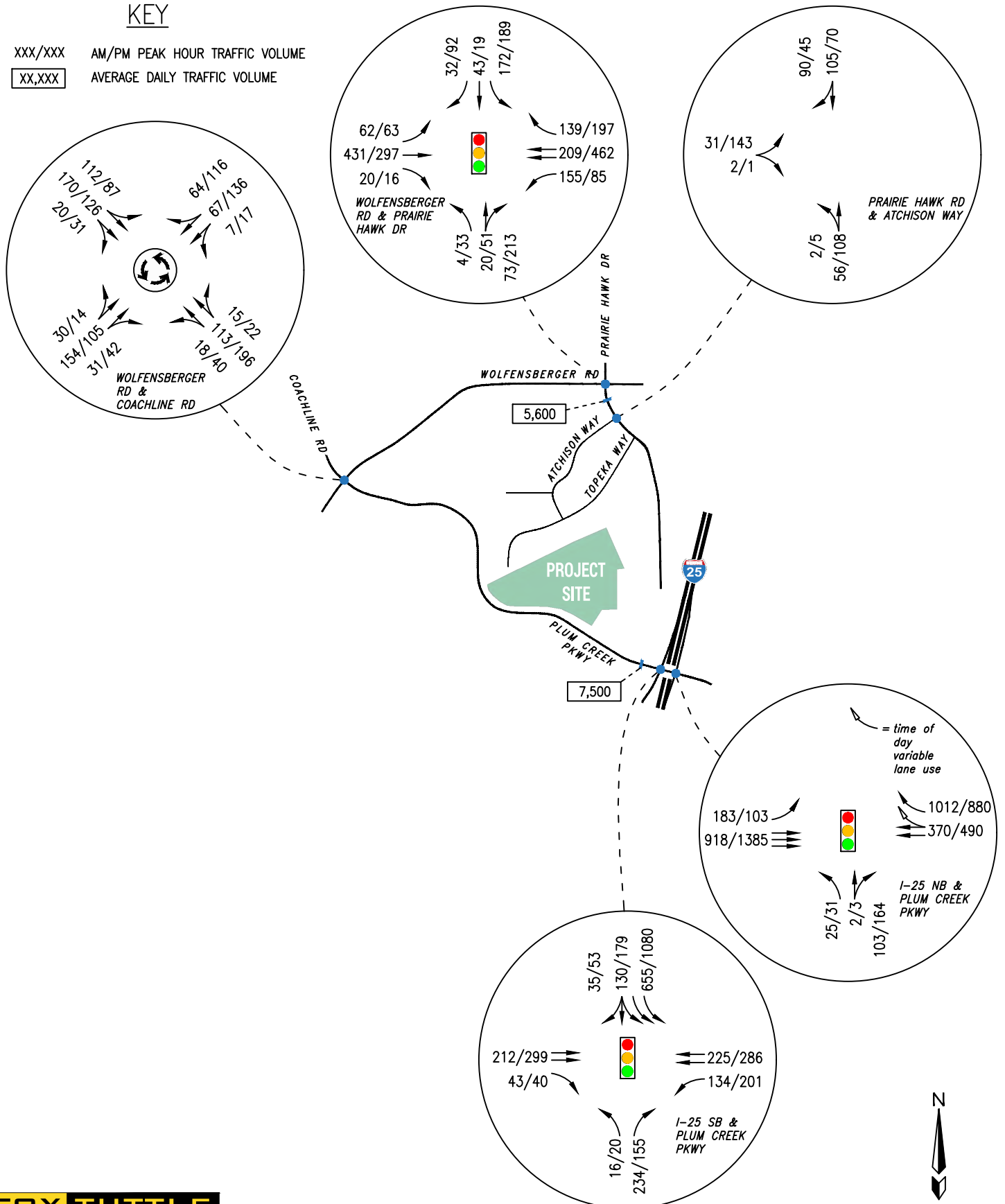
A Level of Service analysis was conducted to determine the existing and future performance of the study area intersection and to determine the most appropriate traffic control device and need for auxiliary lanes for the study intersections.

To measure and describe the operational status of the study intersections, transportation engineers and planners commonly use a grading system referred to as “Level of Service” (LOS) that is defined by the *HCM*. LOS characterizes the operational conditions of an intersection’s traffic flow, ranging from LOS A (indicating very good, free flow operations) and LOS F (indicating congested and sometimes oversaturated conditions). These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with traveling through the intersections. The intersection LOS is represented as a delay in seconds per vehicle for the intersection as a whole and for each turning movement. A more detailed discussion of LOS methodology is contained in the **Appendix** for reference.

¹ Highway Capacity Manual, Highway Research Board Special Report 209, Transportation Research Board, National Research Council, 2010 and 6th Edition (2016).

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



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MILLER'S LANDING MASTER TRAFFIC STUDY EXISTING TRAFFIC VOLUMES

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Typically, LOS A through C is considered to be good for the overall intersection operations and the desired standard for overall intersection performance is LOS D or better. Individual movements may be allowed to fall to LOS E or F depending on the circumstances, such as a low-volume, sidestreet approach to an arterial where signal warrants are not met, or a protected-only, signalized left-turn movement where safety is prioritized over operational efficiency.

4.0 EXISTING CONDITIONS

4.1 Roadways

The study area boundaries were established based on conversations with Town staff. The existing study area street network consists of arterial roadways and an interstate. The primary public roadways that serve the project site are discussed in the following text and illustrated on **Figure 1**.

Plum Creek Parkway is a two-lane, primary arterial roadway that provides east-west access through southern Castle Rock, extending from Wolfensberger Road on the west to Ridge Road to the east. Per the most recent traffic counts, Plum Creek Parkway carries approximately 6,600 vehicles per day (vpd) west of I-25. The posted speed limit is 30 mph near the I-25 interchange and transitions to 45 mph to the west.

Interstate 25 (I-25) is a north-south, six-lane freeway that provides regional access through the project vicinity. I-25 carries approximately 92,000 vpd north of Plum Creek Parkway (*per CDOT data, 2017*). The posted speed limit on I-25 is 65 mph.

Wolfensberger Road is a two-lane, east-west major arterial west of Auburn Drive and transitions to a four-lane roadway to the east. This roadway provides access through central Castle Rock, extending from Perry Parkway (SH 105) to the west to I-25 and downtown Castle Rock to the east. The posted speed limit is 45 mph in the project vicinity.

Prairie Hawk Drive is a two-lane, north-south major arterial north of Wolfensberger Road and a local road to the south. The posted speed limit is 45 mph north of Wolfensberger Road and 30 mph to the south.

Coachline Road is a four-lane, north-south major arterial that provides access between Wolfensberger Road and Meadows Parkway to the north. The posted speed limit is 40 mph.

4.2 Intersections

The study area includes five existing intersections that are listed below with the current traffic control and were analyzed for existing and future background year traffic operations:

1. I-25 Northbound (East) Ramps (signalized)
2. I-25 Southbound (West) Ramps (signalized)
3. Plum Creek Parkway/Coachline Road & Wolfensberger Road (roundabout)
4. Wolfensberger Road & Prairie Hawk Drive (signalized)
5. Prairie Hawk Drive & Atchison Way (unsignalized)

The existing lane configuration at each of the study locations is illustrated on **Figure 3**. It should be noted that the westbound approach of the I-25 Northbound (East) Ramps has variable lane assignment with signage that displays different lane geometry by time of day. During the AM peak the westbound approach is signed as a westbound thru, a shared thru/right and a right-turn lane and during the PM peak hour it is signed as two westbound thru lanes and a westbound shared thru/right-turn lane. Additional site-access intersections were analyzed for the scenarios with the addition of project-added traffic.

4.3 Pedestrian and Bicycle

Currently, there is a sidewalk on the north side of Plum Creek Parkway that extends west of I-25 for approximately ¼-mile and a 10-ft wide multi-use path on the south side of Plum Creek Parkway west of I-25. The north-side sidewalk ends at a marked/signed mid-block pedestrian crossing with a raised median refuge. The south side multi-use path extends past the Philip S. Miller Park and terminates as a 6-ft detached sidewalk at Auburn Drive. A sidewalk extends from Auburn Drive on the north side of Plum Creek Parkway to Wolfensberger Road. There is sidewalk on both the north and south sides of Wolfensberger Road east of Prairie Hawk Drive and on the north side to the west of Prairie Hawk Drive. There is currently no sidewalk along Prairie Hawk Drive, Atchison Way and Topeka Way. There exists a variable-width shoulder along the north side of Plum Creek Parkway west of I-25 but no dedicated on-street bicycle facilities elsewhere in the study area.

4.4 Existing Intersection Capacity Analysis

The existing volumes, lane configuration, and traffic control are illustrated on **Figure 3**. The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection Level of Service worksheets are attached in the **Appendix**. **All project intersections are shown to be operating at LOS C or better overall in the AM and PM peak hours, which meets Town of Castle Rock requirements for overall intersection operations. All individual movements at each study area intersection area also operating acceptably at LOS D or better.**

5.0 FUTURE CONDITIONS

5.1 Annual Growth Factor and Future Volume Methodology

In order to forecast the future peak hour traffic volumes, background traffic growth assumptions were estimated based on a review of various resources: DRCOG 2040 regional model projections, CDOT data, the Town Transportation Master Plan (TMP) Year 2040 projections, and the Coachline Road Access Plan.

A comparison of the DRCOG base-year vs. 2040 projections shows annual growth of approximately 1.2% along Plum Creek Parkway on the east side of I-25. The Town TMP projects a full build 2040 volume of 24,900 vpd on Plum Creek Parkway just west of I-25. The project development area is included in these models. Thus, a 1.2% background growth rate was applied within the I-25 & Plum Creek Parkway interchange area, with project volumes added top of these background growth forecasts. As will be discussed further in this report, with the current mix of land use and density proposed, it is estimated that the Year 2040 total volume (background growth + project) will be 29,400 vpd on Plum Creek Parkway west of I-25. When compared to the Town's TMP projection of 24,900 vpd for this roadway segment, but accounting for the added density of the current land use proposal, this illustrates that the background growth assumptions are consistent with the Town TMP model forecasts. The TMP volumes indicate a similar 1.2% to 1.3% annual growth rate elsewhere in the study (Wolfensberger Rd, Coachline Rd), which was applied.

By the Year 2030, it is anticipated that the Crystal Valley interchange will be constructed 2-miles to the south of Plum Creek Parkway on I-25. Per the Town TMP forecasts for Plum Creek Boulevard and the W. Frontage Road with and without the new interchange, it is anticipated that when it is open it will provide a more direct route to/from land uses in that area and will result in some shift of traffic from the Plum Creek Parkway interchange to the new interchange (approximately 5,400 vpd in Year 2030 and 6,100 vpd in Year 2040). This shift is accounted for in the future-year background volumes beyond 2030 in this report.



Table 1 - Peak Hour Intersection Level of Service Summary (Existing and Background)

Intersection and Lane Group	Existing				Year 2023 Background				Year 2027 Background				Year 2030 Background				Year 2040 Background			
	AM		PM		AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNAL CONTROL																				
I-25 NB Ramps & Plum Creek Pkwy	12	B	12	B	12	B	24	C	13	B	13	B	17	B	22	C	19	B	24	C
Eastbound Left	10	A	10	A	11	B	26	C	12	B	10	A	20	B	25	C	43	D	53	D
Eastbound Through	1	A	8	A	0	A	16	B	0	A	8	A	8	A	16	B	8	A	17	B
Westbound Through	15	B	14	B	16	B	12	B	16	B	15	B	20	B	31	C	23	C	30	C
Westbound Right	20	B	14	B	21	C	44	D	22	C	14	B	20	B	26	C	19	B	22	C
Northbound Left	26	C	31	C	26	C	32	C	26	C	31	C	27	C	22	C	28	C	22	C
Northbound Left+Through+Right	26	C	31	C	26	C	32	C	26	C	31	C	28	C	23	C	27	C	24	C
Northbound Right	27	C	33	C	27	C	34	C	27	C	35	C	28	C	23	C	26	C	22	C
I-25 SB Ramps & Plum Creek Pkwy	28	C	29	C	30	C	30	C	31	C	31	C	17	B	23	C	18	B	25	C
Eastbound Through+Right	20	B	39	D	21	C	40	D	22	C	41	D	15	B	21	C	16	B	22	C
Westbound Left	19	B	28	C	21	C	29	C	22	C	29	C	8	A	13	B	9	A	14	B
Westbound Through	19	B	26	C	20	B	26	C	21	C	26	C	9	A	12	B	9	A	13	B
Northbound Left	42	D	45	D	39	D	45	D	39	D	45	D	--	--	--	--	--	--	--	--
Northbound Right	42	D	44	D	39	D	44	D	39	D	44	D	--	--	--	--	--	--	--	--
Southbound Left	31	C	25	C	34	C	26	C	34	C	26	C	25	C	29	C	25	C	32	C
Southbound Left+Through+Right	32	C	27	C	37	D	28	C	37	D	29	C	22	C	26	C	24	C	28	C
Wolfensberger Rd & Prairie Hawk Dr	20	B	22	C	22	C	24	C	23	C	24	C	21	C	21	C	21	C	23	C
Eastbound Left	16	B	19	B	16	B	20	B	16	B	19	B	17	B	17	B	18	B	18	B
Eastbound Through+Right	31	C	22	C	35	C	24	C	41	D	23	C	33	C	21	C	--	--	--	--
Eastbound Through (planned)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	25	C	22	C
Eastbound Right (planned)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	B	20	B
Westbound Left	15	B	18	B	15	B	19	B	15	B	18	B	14	B	16	B	21	C	17	B
Westbound Through	16	B	22	C	16	B	24	C	16	B	23	C	16	B	22	C	17	B	24	C
Westbound Right	18	B	23	C	17	B	23	C	17	B	24	C	15	B	23	C	16	B	20	B
Northbound Left	18	B	17	B	18	B	17	B	19	B	17	B	21	C	20	B	24	C	21	C
Northbound Through+Right	20	B	25	C	20	B	27	C	21	C	27	C	--	--	--	--	--	--	--	--
Northbound Through (planned)	--	--	--	--	--	--	--	--	--	--	--	--	22	C	24	C	25	C	25	C
Northbound Right (planned)	--	--	--	--	--	--	--	--	--	--	--	--	22	C	24	C	24	C	29	C
Southbound Left	14	B	23	C	15	B	27	C	15	B	34	C	16	B	14	B	19	B	16	B
Southbound Through	14	B	15	B	14	B	16	B	15	B	16	B	18	B	17	B	20	B	18	B
Southbound Right	14	B	16	B	14	B	17	B	15	B	17	B	17	B	17	B	19	B	18	B
STOP SIGN CONTROL																				
Prairie Hawk Dr & Atchison Way	1	A	5	A	1	A	5	A	2	A	6	A	--	--	--	--	--	--	--	--
Eastbound Left+Right	10	B	12	B	10	A	13	B	10	A	13	B	--	--	--	--	--	--	--	--
Northbound Left+Through	8	A	8	A	8	A	8	A	8	A	8	A	--	--	--	--	--	--	--	--
ROUNDAABOUT CONTROL																				
Coachline Rd & Wolfensberger Rd	4	A	4	A	4	A	5	A	4	A	5	A	5	A	5	A	5	A	5	A
Southeast Approach	4	A	4	A	5	A	5	A	4	A	5	A	5	A	5	A	5	A	5	A
Northeast Approach	4	A	5	A	4	A	5	A	4	A	5	A	4	A	5	A	4	A	6	A
Northwest Approach	4	A	4	A	4	A	5	A	4	A	5	A	4	A	5	A	5	A	5	A
Southwest Approach	5	A	4	A	5	A	4	A	5	A	4	A	5	A	4	A	6	A	5	A

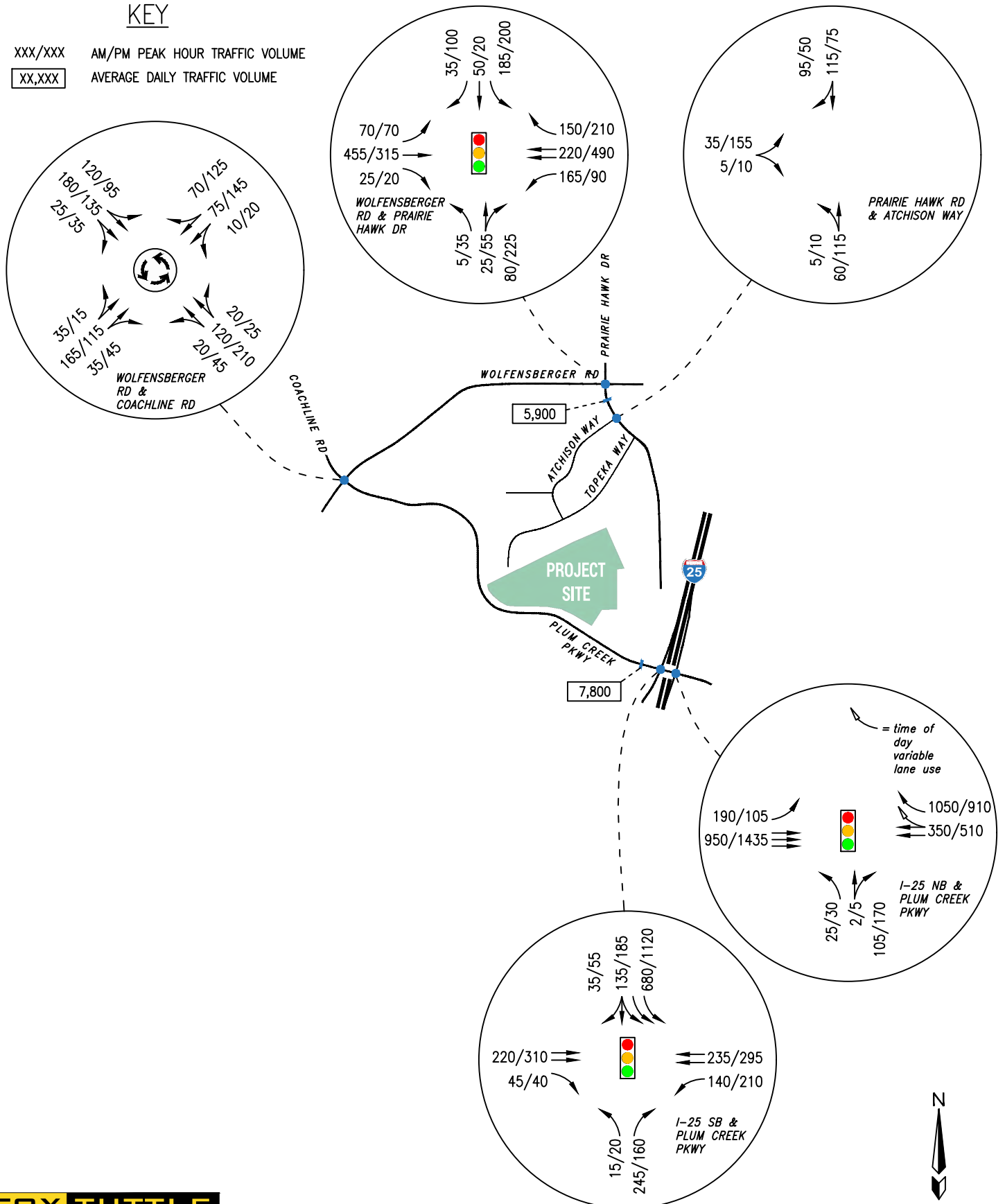
For future intersections along Plum Creek Parkway, including Prairie Hawk Drive and a future Castle Meadows access that may align with the new, proposed roundabout at Saddlemaker Trail, volume projections were estimated based on data provided in the Coachline Road Access Plan.

For the Year 2030 and Year 2040 scenarios, buildout of the adjacent Castle Meadows (18-acres) on the east side of Prairie Hawk Drive (north of Plum Creek) to include 650,000 SF of office use. This traffic was added to the study area roadway network for the Year 2030 and beyond scenarios in addition to the ambient growth rates. This provides a conservative basis for traffic impacts in the area, though this land could potentially include other uses (retail, residential) in lieu of office.

Future year traffic projections were then balanced between study intersections to obtain forecast 2040 turning movement volumes. Background traffic volumes for Year 2023, Year 2027, Year 2030, and Year 2040 are provided on **Figure 4**, **Figure 5**, **Figure 6**, and **Figure 7** respectively.

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



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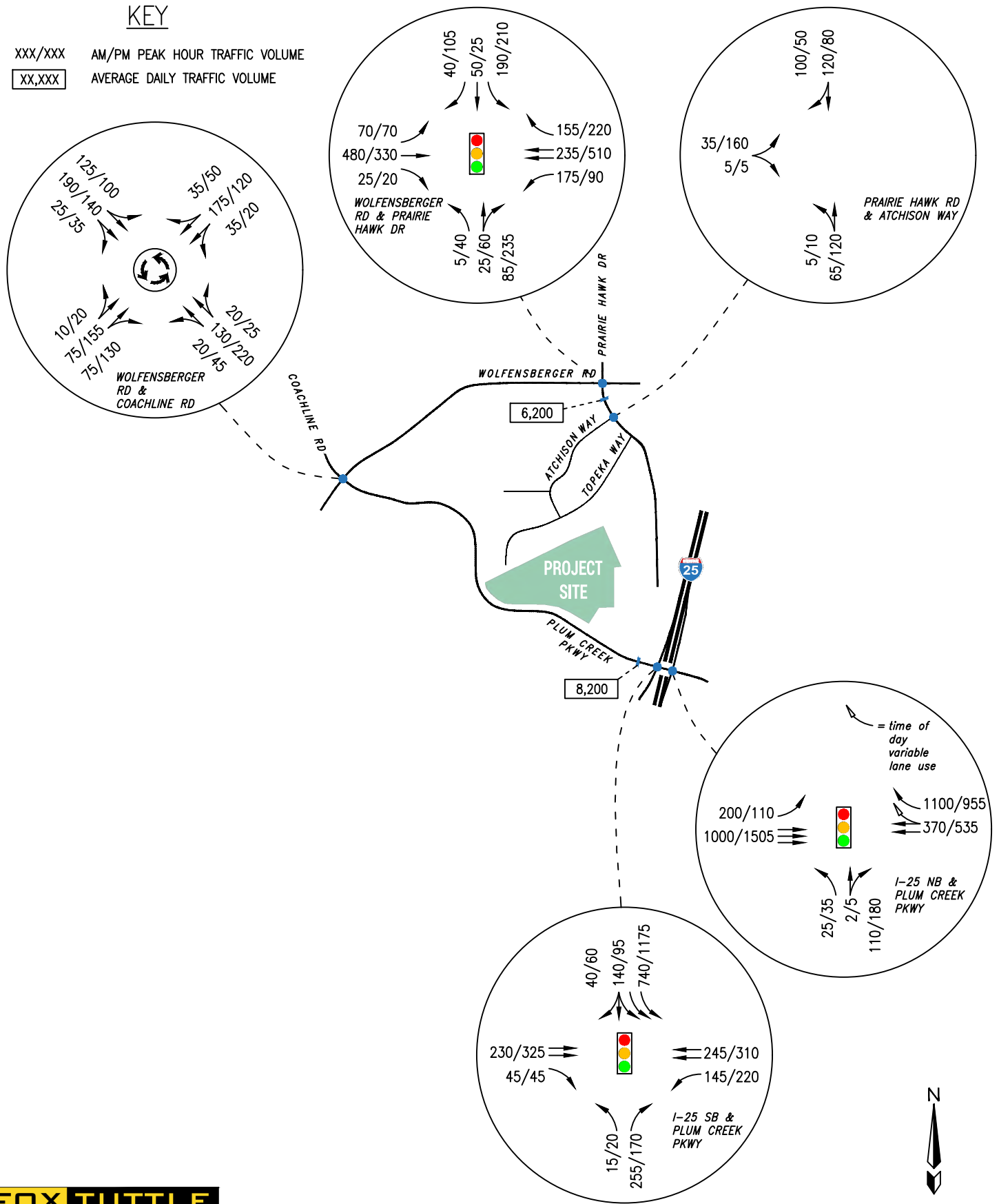
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MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2023 BACKGROUND TRAFFIC VOLUMES

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KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

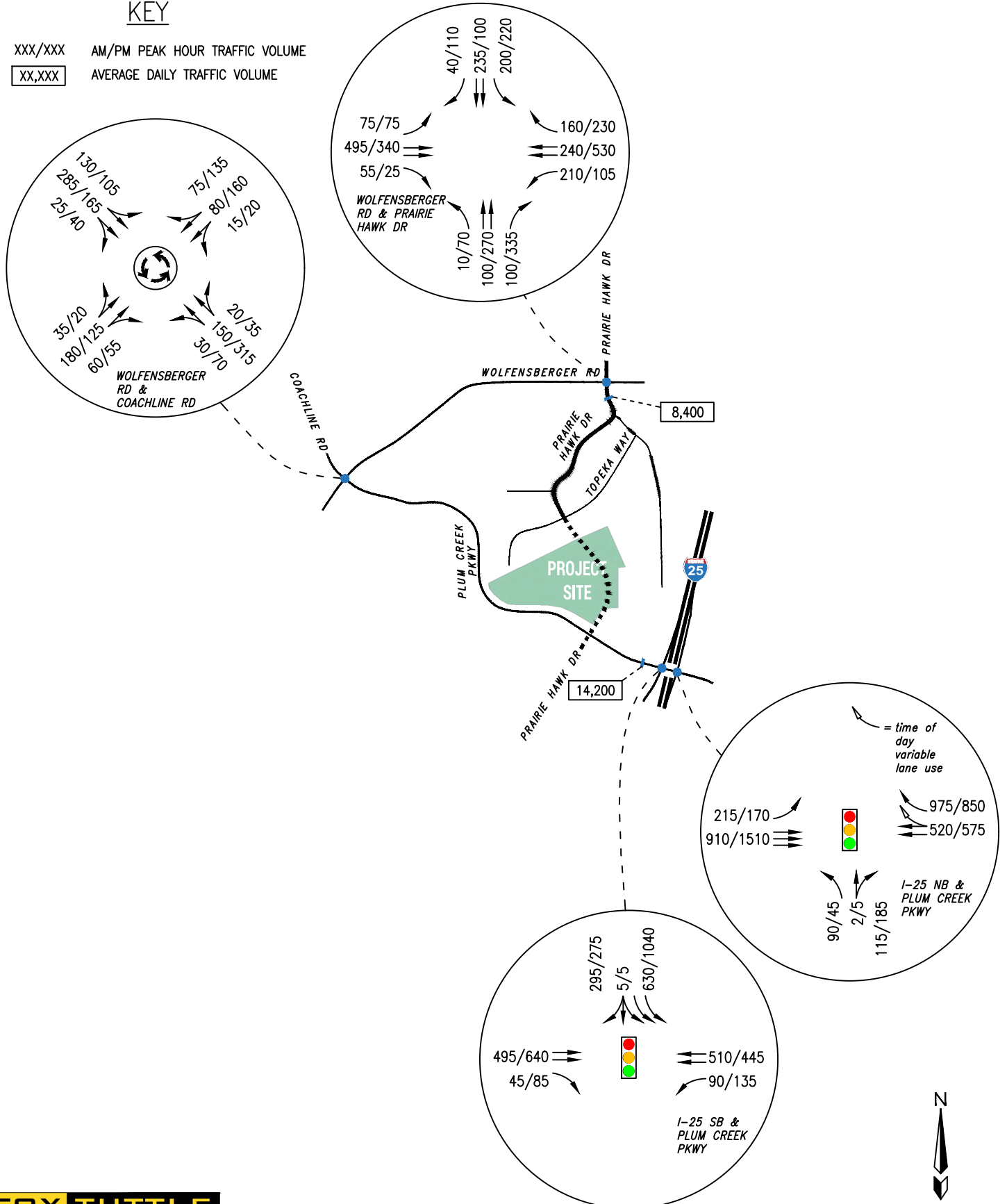
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MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2027 BACKGROUND TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	5
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KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

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MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2030 BACKGROUND TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	6
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5.2 Planned Transportation Improvements

Per the Town TMP and discussions during the scoping meeting with Town staff, a number of planned transportation improvements are accounted for in this study. The following summarizes transportation improvements that directly impact the study area:

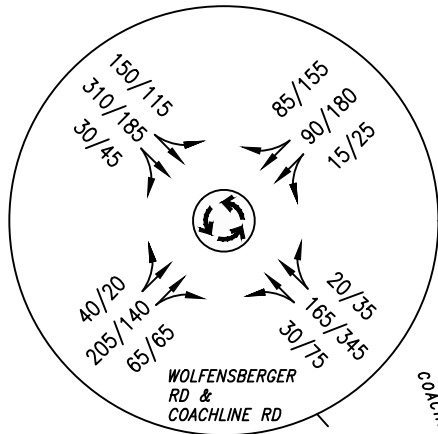
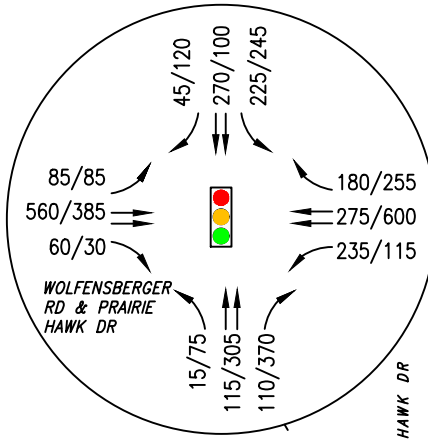
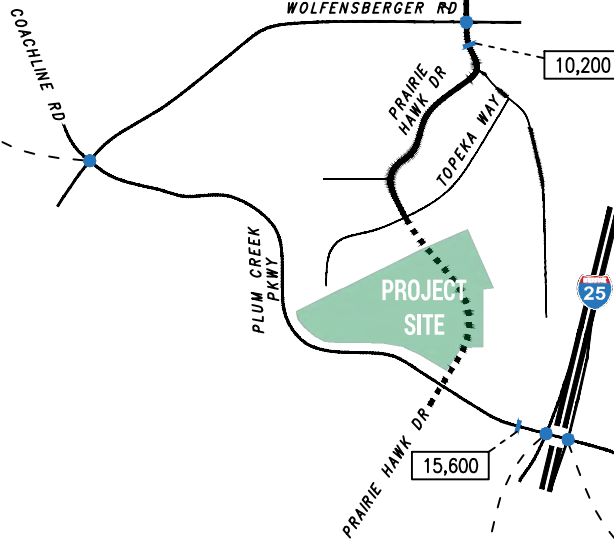
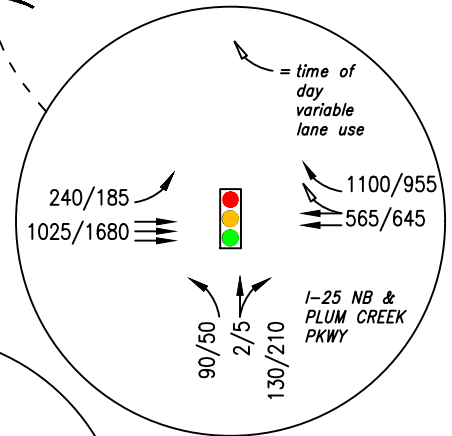
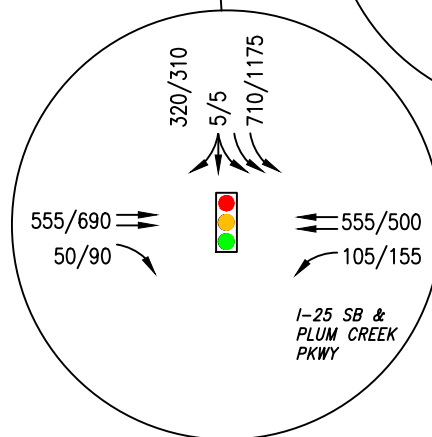
- **Prairie Hawk Drive north of Wolfensberger Road:** The Town plans to expand Prairie Hawk Drive to a four-lane roadway north of Wolfensberger Road in Year 2022.
- **Prairie Hawk Drive south of Wolfensberger Road:** Per the TMP, Prairie Hawk Drive will be improved to a four-lane arterial roadway prior to year 2030, along the current Atchinson Way alignment to Topeka Way.
- **Prairie Hawk Drive & Wolfensberger Road Intersection:** Town plans to expand Wolfensberger Road to a four-lane roadway with a dedicated eastbound right-turn lane at the Prairie Hawk Drive intersection prior to year 2030. Per the Town TMP, a northbound right turn lane will also be added on Prairie Hawk Drive approaching Wolfensberger Road.
- **West Frontage Road realignment:** the west frontage road is expected to be relocated to the Prairie Hawk alignment. This improvement is expected to be constructed by 2030. This will remove the northbound approach at the existing I-25 & Plum Creek Parkway west ramp intersection and improve operations at this signal.
- **I-25/Crystal Valley Interchange:** this improvement is anticipated to be constructed by 2030 per the Town Transportation Master Plan, though the design process has begun, and it is expected to be constructed sooner. It should be noted that once Crystal Valley Interchange is constructed, some traffic currently using the Plum Creek Parkway interchange is expected to divert to enter/exit I-25 at Crystal Valley. This is anticipated to improve traffic operations at both I-25 ramp intersections at Plum Creek Parkway. To provide a conservative basis for analysis of this project, the interchange is assumed in the Year 2030 scenario for this study.

5.3 Year 2023 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the Year 2023 background scenario and to identify any capacity constraints associated with background traffic in the short-term buildout scenario for Phase 1, which is anticipated to be built and occupied within the next four years. The background volumes, lane configuration, and traffic control are illustrated on **Figure 4**.

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

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MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2040 BACKGROUND TRAFFIC VOLUMES

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The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the short-term background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection Level of Service worksheets are attached in the **Appendix**.

All project intersections and individual movements are shown to operate at LOS D or better in the AM and PM peak hours for the Year 2023 background traffic scenario, which meets Town of Castle Rock requirements for intersection operations.

5.4 Year 2027 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the 2027 background scenario and to identify any capacity constraints associated with background traffic in a mid-term buildout scenario for Phase 2, which is anticipated to be built and occupied within the next seven years. The background volumes, lane configuration, and traffic control are illustrated on **Figure 5**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the mid-term background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection Level of Service worksheets are attached in the **Appendix**.

All project intersections and individual movements are shown to operate at LOS D or better in the AM and PM peak hours for the Year 2027 background traffic scenario, which meets Town of Castle Rock requirements for intersection operations.

5.5 Year 2030 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the 2030 background scenario and to identify any capacity constraints associated with background traffic for the project buildout year, which is anticipated to be built and occupied within the next 10 years (all three phases). The background volumes, lane configuration, and traffic control are illustrated on **Figure 5**. For the Year 2030, consistent with the Town TMP and as discussed in Section 5.2, it is assumed that the Crystal Valley Interchange, Prairie Hawk/W. Frontage Road alignment, and Wolfensberger improvements are in place for this scenario.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the Year 2030 background volumes. The results of the LOS

calculations for the intersections are summarized in **Table 1**. The intersection Level of Service worksheets are attached in the **Appendix**.

All project intersections and individual movements are shown to operate at LOS D or better in the AM and PM peak hours for the Year 2030 background traffic scenario, which meets Town of Castle Rock requirements for intersection operations. This assumes the Crystal Valley Interchange, Prairie Hawk/W. Frontage Road alignment, and Wolfensberger improvements are in place for this scenario, consistent with the Town TMP.

5.6 Year 2040 Background Intersection Capacity Analysis

The study area intersections were evaluated to determine baseline operations for the 2040 background scenario and to identify any capacity constraints associated with background traffic in the long-range scenario. The background volumes, lane configuration, and traffic control are illustrated on **Figure 7**.

The Level of Service criteria discussed previously was applied to the study area intersections to determine the impacts with the long-term background volumes. The results of the LOS calculations for the intersections are summarized in **Table 1**. The intersection Level of Service worksheets are attached in the **Appendix**.

All project intersections and individual movements are shown to operate at LOS D or better in the AM and PM peak hours for the Year 2040 background traffic scenario, which meets Town of Castle Rock requirements for intersection operations. This assumes the Crystal Valley Interchange, Prairie Hawk/W. Frontage Road alignment, and Wolfensberger improvements are in place for this scenario, consistent with the Town TMP.

6.0 FUTURE CONDITIONS WITH MILLER'S LANDING DEVELOPMENT

6.1 Trip Generation

A trip generation estimate was performed to determine the traffic characteristics for each of the four phases. Trip rates contained in the *Institute of Transportation Engineers (ITE) Trip Generation Manual*² were applied to estimate the traffic for the proposed land uses.

ITE trip generation rates for "Shopping Center (#820), "Multifamily Housing" (#221) and "General Office Building" (#710) were utilized for the Phase 1 retail, Phase 2 residential, and Phase 2 office uses, respectively.

Specific uses and tenants for the Phase 2 retail spaces are unknown at this time. It is anticipated that the Phase 2 retail uses may include shopping, restaurants, and entertainment. For the projected retail land use on the site, trip rates were developed based on weighted averages of several ITE land uses that depict the potential general retail, restaurant, and entertainment uses. These uses are described in the following paragraphs.

"Shopping Center" (ITE #820) is described as follows:

Shopping centers, including neighborhood centers, community centers, regional centers, and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities (for example, ice skating rinks or indoor miniature golf courses). Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices.

For the restaurant uses, these were assumed a variety of restaurant types using "Fast Casual Restaurant" (ITE #930), "Quality Restaurant" (ITE #931) and "High-Turnover Sit-Down Restaurant" (ITE #932).

To develop the "combination" rate to apply to the propose Phase 2 retail square footage, the following breakdown of potential retail space was utilized, based on discussion with the

² Trip Generation 10th Edition, Institute of Transportation Engineers, 2017.

development team: 67% general retail ("Shopping Center") and 33% restaurant uses (5% "Fast Casual Restaurant, 15% "Quality Restaurant", and 13% "High-Turnover Restaurant").

Trip generation estimates using these rates are summarized on **Table 2** for each phase and total.

The site is expected to experience the four basic trip types as discussed below:

Primary Trips. These trips are made specifically to visit the site and are considered "new" trips. Primary trips would not have been made if the proposed project did not exist. Therefore, this is the only trip type that increases the total number of trips made on a regional basis. It is expected that the proposed project will experience most primary trips.

Pass-By Trips. Pass-by trips are those that are already occurring on the adjacent roadway network but will divert into the site to visit a site use, typically retail/restaurant/services. An example would be a vehicle trip already occurring on Plum Creek Parkway that would turn into the site to visit a restaurant, but the restaurant visit was not the primary purpose of the trip. Pass-by trips do not create any increase in the traffic volumes within the primary impact area. The only impact of the pass-by trips is at the site driveways and adjacent intersections where through movements become turning movements into and out of the site. Therefore, pass-by trips have no additional impact on the road system beyond the site's driveways or immediately adjacent intersections.

Pass-by was applied to the retail portions of the project. These land uses historically have shown to have pass-by trips as indicated by the national data in the *ITE Trip Generation Handbook*, which are those vehicles that utilize one of the adjacent roadways to travel between their origin and destination and choose to make a stop within the development site before they continue on route. This is not a reduction of trips, but a redirect of existing/background trips that will become a customer of the new businesses. The *ITE Trip Generation Handbook* defines pass-by as "trips made as intermediate stops on the way from an origin to primary trip destination without a route diversion". The pass-by trips percentages used for this analysis are shown on **Table 3**.

Multi-Use (Internal) Trips. These internal trips occur from one land use or building to another within the site boundaries. For example, a restaurant patron may also use a retail store or entertainment venue in one vehicular visit to the site. Multi-use or multi-purpose trips typically do not affect the exterior site access points, nor add any additional traffic volumes to the adjacent street network. The multi-use factors applied for this project were assumed to be include in the 5% internal capture reduction reflected on **Table 1**. Note that to estimate the

internal capture rate, the NCHRP Report 684 – Internal Trip Capture Estimation Tool was utilized. Results of the internal trip capture analysis indicate that the project site is estimated to have an internal capture reduction of approximately 15% during the AM and PM peak hours. Therefore, the 5% reduction provides a conservatively low estimate.

Non-Auto Trips. These trips are that originate from outside the site that may be completed by walking, bicycling, or riding transit. Although some non-auto trips may be expected to occur via the trail and sidewalk network or by on-street bicyclists, to provide a conservative assessment of vehicular site traffic impacts, no non-auto use trip reduction was applied for this project.

Table 3 provides the trip type breakdown estimate for the Miller's Landing development by phase, to include both "primary" (unique) and "pass-by" trip types. A breakdown of trip estimates and assumptions for each individual lot is provided in the Appendix.

6.2 Trip Distribution and Assignment

The estimated trip volumes were distributed onto the study area street network based on existing traffic characteristics, land uses, and traffic patterns in the area, as well as regional growth projections and future roadway infrastructure.

Figure 8 summarizes the trip distribution assumptions for short-term (Phase 1, 2023) and mid-term/long-term scenarios (Phase 2, Year 2027). Prior to the construction of the Prairie Hawk Drive extension between the project and Atchison Way (planned with Phase 2), all traffic destined to/from I-25 northbound was assumed to access I-25 via Plum Creek Parkway. However, once the Prairie Hawk Drive extension is constructed, it is assumed that a portion of these trips will utilize Wolfensberger Road and Prairie Hawk Drive for trips oriented to/from the north.

Using these distribution assumptions, the projected site traffic was assigned to the study area roadway network for the weekday AM and PM peak hours. The site-generated traffic volumes for Year 2023 (Phase 1), Year 2027 (Phase 1 + Phase 2), and Year 2030 (buildout, all phases) are shown on **Figure 9**, **Figure 10**, and **Figure 11**, respectively.

Miller's Landing Master Traffic Study



Table 2. Trip Generation Estimate

Land Use	Size	Unit	Internal Capture and Multi-Use Trip Reduction ⁽¹⁾	Average Weekday Trips		Average Saturday Trips		Weekday AM Peak Hour Trips				Weekday PM Peak Hour Trips				Saturday Peak Hour Trips			
				Rate	Total	Rate	Total	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Miller's Landing Phase 1 (2023)																			
#820 Shopping Center	300	1,000 SF	0%	37.75	11325	46.12	13836	0.94	282	175	107	3.81	1143	549	594	4.50	1350	702	648
Subtotal Phase 1					11325		13836		282	175	107		1143	549	594		1350	702	648
Miller's Landing Phase 2 (2027)																			
#710 General Office Building	125.0	1,000 SF	5%	9.74	1157	2.21	262	1.16	138	119	19	1.15	137	22	115	0.53	63	34	29
Retail (Combined) ²	157.8	1,000 SF	5%	68.24	10227	76.24	11425	2.14	321	201	120	5.70	854	453	401	7.77	1165	621	544
#221 Multifamily Housing (Mid-Rise)	600.0	D.U.	5%	5.44	3101	4.91	2799	0.36	205	53	152	0.44	251	153	98	0.44	251	123	128
Subtotal Phase 2					14485		14486		664	373	291		1242	628	614		1479	778	701
TOTAL All Phases					25810		28322		946	548	398		2385	1177	1208		2829	1480	1349

Source: ITE Trip Generation 10th Edition. 2017.

⁽¹⁾ Accounts for auto and non-auto multi-use trips between two or more uses on site (ie: someone visits a coffee shop on their way to their office or walks to a restaurant from work for lunch or from the hotel, thus only one unique auto trip to the site was generated in these instances).

⁽²⁾ Combined rate for retail uses - averages ITE trip rates assuming retail space is 67% general retail ("Shopping Center") and 33% restaurant uses (5% "Fast Casual Restaurant, 15% "Quality Restaurant", and 13% "High-Turnover Restaurant").



Table 3. Trip Type Breakdown

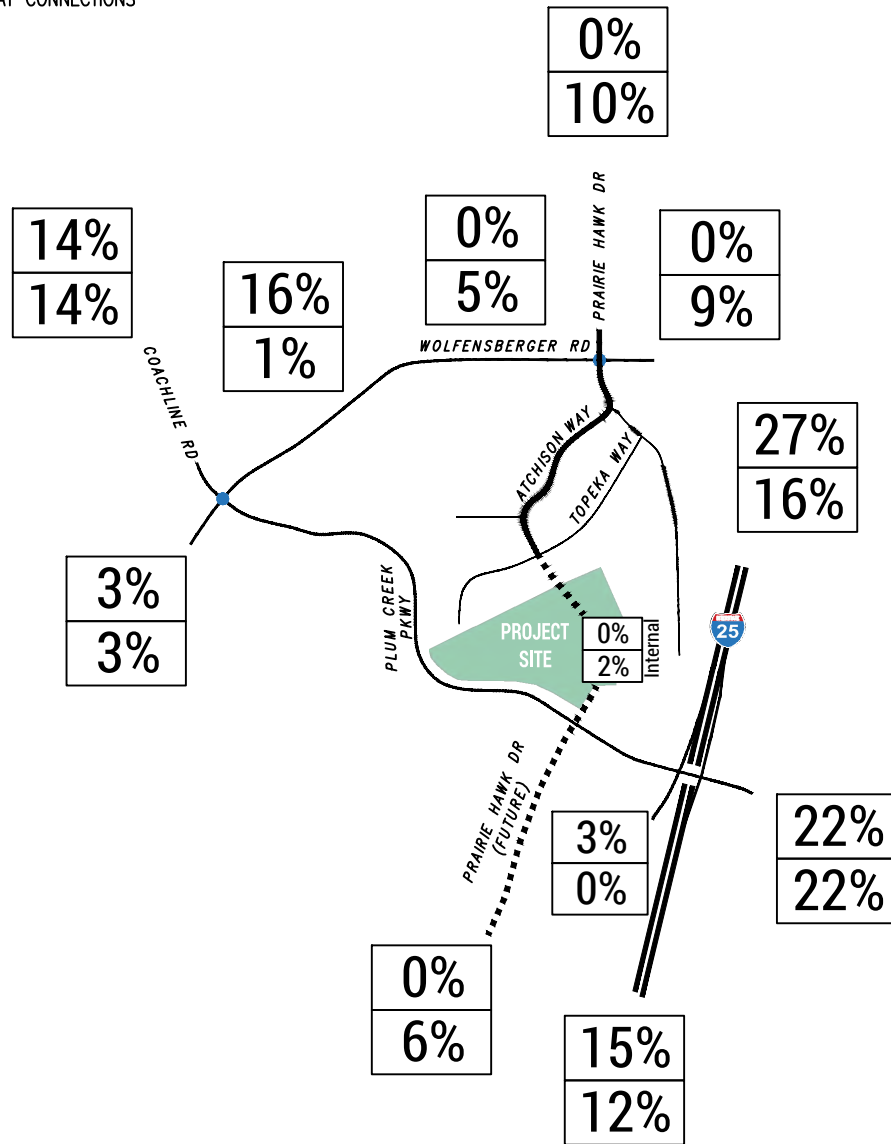
	Trip Type % ⁽¹⁾		PRIMARY Trips						PASS-BY Trips					
Land Use	Primary	Pass-By	Daily In	Daily Out	AM In	AM Out	PM In	PM Out	Daily In	Daily Out	AM In	AM Out	PM In	PM Out
Miller's Landing Phase 1														
#820 Shopping Center	65%	35%	3681	3681	114	70	357	386	1982	1982	61	37	192	208
Phase 1 Subtotal			3681	3681	114	70	357	386	1982	1982	61	37	192	208
Miller's Landing Phase 2														
#710 General Office Building	100%	0%	579	579	119	19	22	115	0	0	0	0	0	0
Retail (Combined) ⁽²⁾	80%	20%	4091	4091	161	96	362	321	1023	1023	40	24	91	80
#221 Multifamily Housing (Mid-Rise)	100%	0%	1551	1551	53	152	153	98	0	0	0	0	0	0
Phase 2 Subtotal			6220	6220	333	267	537	534	1023	1023	40	24	91	80
Miller's Landing - TOTAL ALL PHASES			9900	9900	447	337	894	920	3005	3005	101	61	283	288

Source: ITE Trip Generation Handbook, 10th Edition (2017).

⁽¹⁾ Supported by ITE average data for each land use or comparable land use.

KEY

X%	= SHORT-TERM TRIP DISTRIBUTION
X%	= LONG-TERM TRIP DISTRIBUTION w/FUTURE ROADWAY CONNECTIONS



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY TRIP DISTRIBUTION

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	8
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XXX/XXX	AM/PM PEAK HOUR TRAFFIC VOLUME
XX,XXX	AVERAGE DAILY TRAFFIC VOLUME



FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	9
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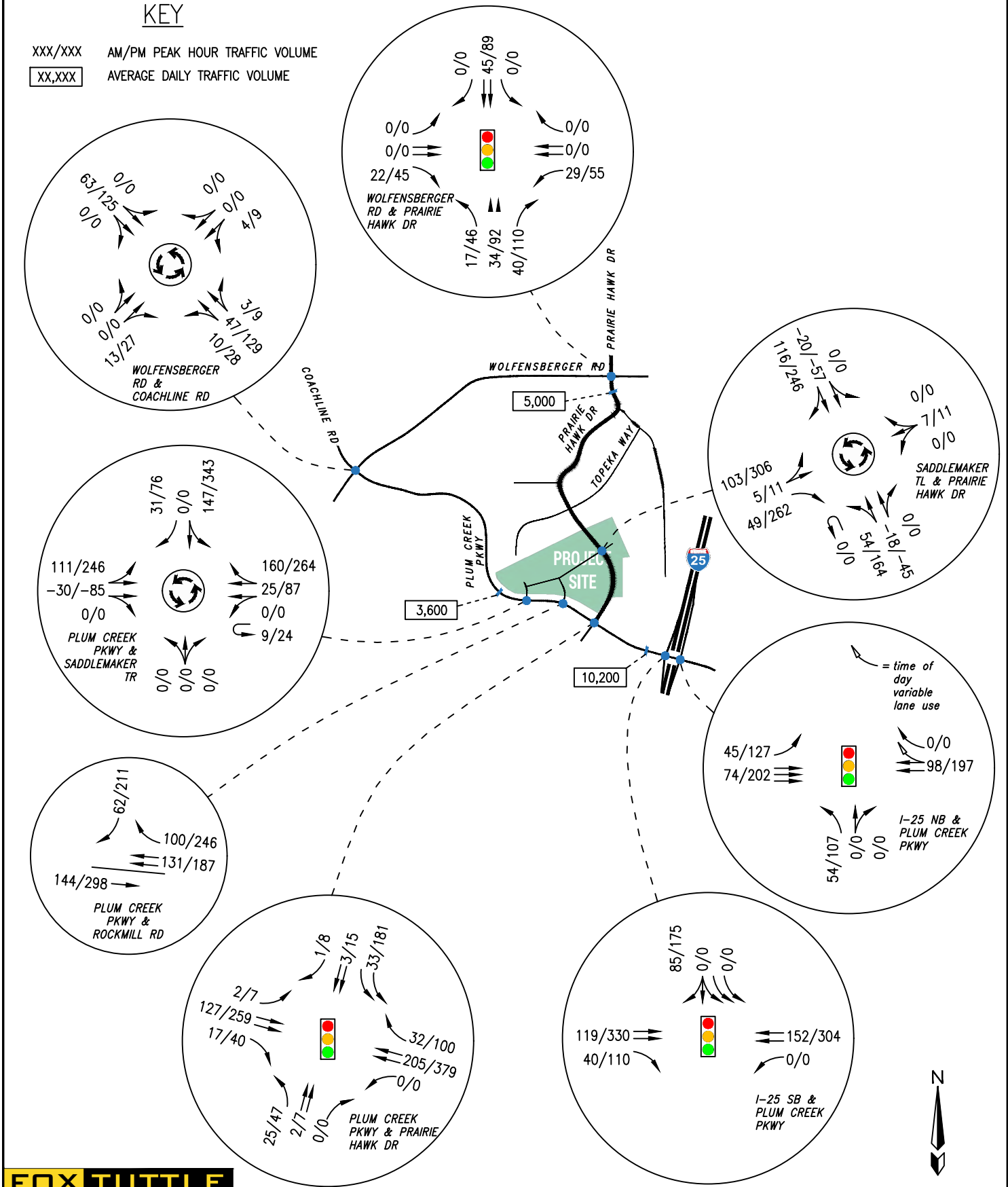
XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	10
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KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY

SITE-GENERATED TRIPS AT BUILDOUT (PH 1 + PH 2 ON YEAR 2040 NETWORK)

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	11
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6.3 Year 2023 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of Phase 1 development trips in the near-term scenario at Phase 1 project build out (anticipated to be year 2023). The following improvements were assumed to be built by the project to provide adequate access:

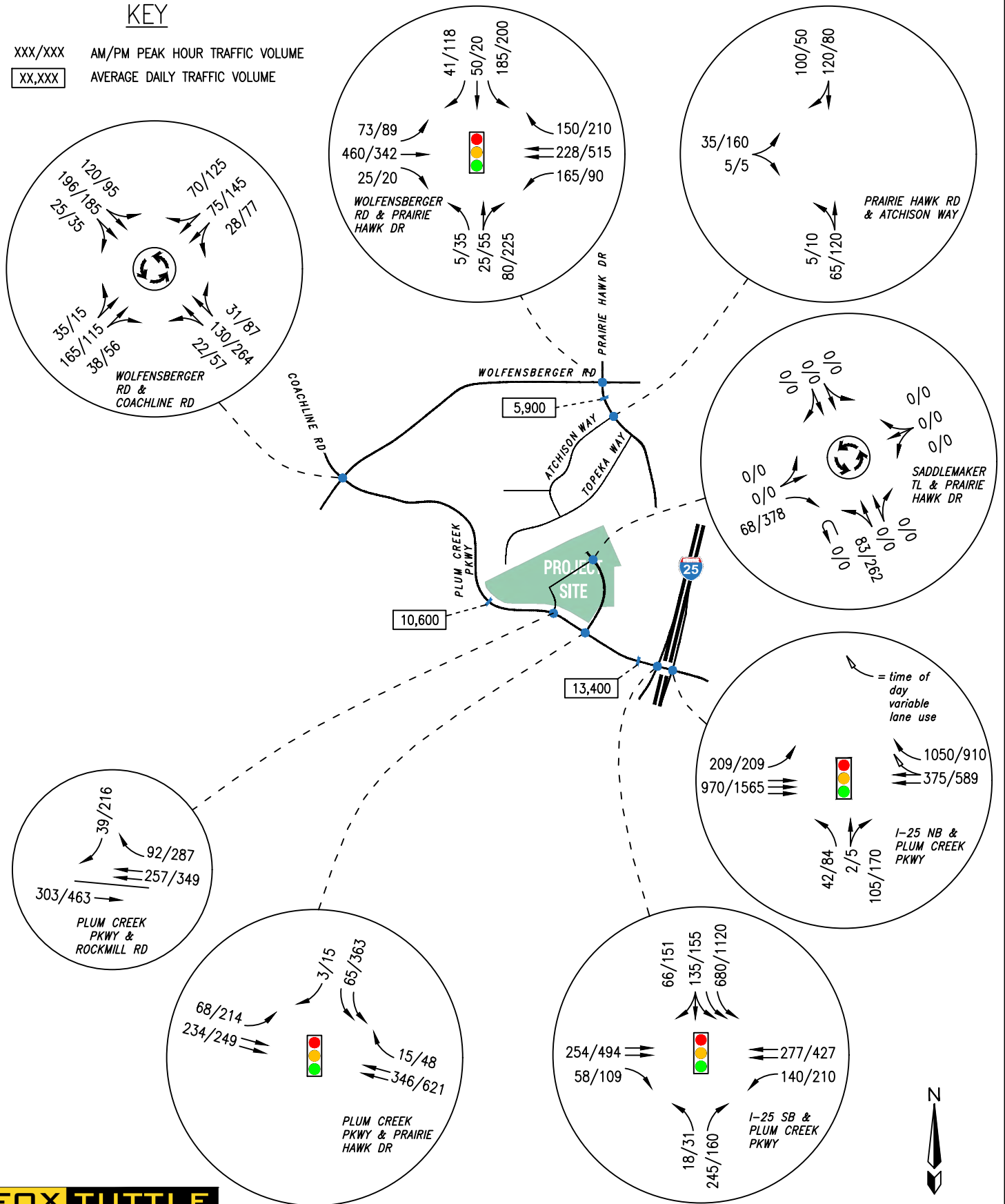
- A westbound right-turn deceleration lane on Plum Creek Parkway at the Rockmill Road (right-in, right-out) access
- Roundabout control at the Prairie Hawk Drive & Saddlemaker Trail access
- Widening of Plum Creek Parkway to four-lanes along the Phase 1 project frontage
- Construction of the Prairie Hawk Drive & Plum Creek Parkway intersection (north leg), to include an eastbound left-turn deceleration lane, westbound right-turn deceleration lane, southbound left-turn (dual) deceleration lane, and southbound right-turn deceleration lane.
- Signalization of the Prairie Hawk Drive & Plum Creek Parkway intersection

The projected site-added traffic was added to the Year 2023 background study area traffic volumes and are illustrated on **Figure 12**. The figure also illustrates the necessary traffic control and lane configurations for all of the proposed accesses. The results of the LOS calculations for the intersections are summarized on **Table 4**. The intersection Level of Service worksheets are attached in the **Appendix**.

As shown on the Level of Service summary tables, **all study area intersections are projected to continue to operate acceptably overall (LOS D or better) with all of the planned/proposed improvements in place. All individual movements are also expected to operate at LOS D or better for the Year 2023 (Phase 1) scenario, which meets Town of Castle Rock requirements for intersection operations.**

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2023 TOTAL TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	12
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Table 4 - Peak Hour Intersection Level of Service Summary (w/ Project)

Intersection and Lane Group	Year 2023 Phase 1				Year 2027 Phase 2				Year 2030 w/Build Out				Year 2040 Build-Out			
	AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNAL CONTROL																
I-25 NB Ramps & Plum Creek Pkwy	13	B	11	B	15	B	14	B	19	B	15	B	20	B	16	B
Eastbound Left	12	B	17	B	20	B	31	C	34	C	39	D	40	D	35	C
Eastbound Through	1	A	1	A	1	A	1	A	7	A	1	A	6	A	1	A
Westbound Through	17	B	19	B	20	B	25	C	25	C	25	C	26	C	30	C
Westbound Right	21	C	17	B	24	C	18	B	21	C	19	B	22	C	20	B
Northbound Left	27	C	31	C	27	C	33	C	29	C	34	C	32	C	33	C
Northbound Left+Through+Right	27	C	33	C	28	C	35	C	29	C	36	D	33	C	36	D
Northbound Right	27	C	33	C	28	C	35	C	29	C	36	D	33	C	36	D
I-25 SB Ramps & Plum Creek Pkwy	29	C	35	C	30	C	36	D	13	B	18	B	14	B	21	C
Eastbound Through+Right	17	B	34	C	19	B	41	D	13	B	11	B	14	B	28	C
Westbound Left	22	C	34	C	27	C	49	D	7	A	32	C	8	A	24	C
Westbound Through	21	C	26	C	27	C	36	D	7	A	17	B	9	A	4	A
Northbound Left	39	D	46	D	37	D	46	D	--	--	--	--	--	--	--	--
Northbound Right	40	D	45	D	47	D	44	D	--	--	--	--	--	--	--	--
Southbound Left	32	C	35	C	32	C	32	C	28	C	30	C	27	C	31	C
Southbound Left+Through	34	C	40	D	34	C	39	D	30	C	33	C	28	C	34	C
Southbound Right (Project Improvement)	--	--	--	--	24	C	1	A	1	A	1	A	1	A	1	A
Wolfensberger Rd & Prairie Hawk Dr	22	C	24	C	21	C	26	C	19	B	27	C	20	B	25	C
Eastbound Left	16	B	19	B	17	B	23	C	15	B	25	C	16	B	25	C
Eastbound Through+Right	36	D	22	C	31	C	33	C	21	C	31	C	--	--	--	--
Eastbound Through (planned)	--	--	--	--	--	--	--	--	--	--	--	--	21	C	29	C
Eastbound Right (planned)	--	--	--	--	--	--	--	--	--	--	--	--	18	B	27	C
Westbound Left	15	B	18	B	14	B	22	C	17	B	32	C	16	B	25	C
Westbound Through	16	B	23	C	15	B	26	C	14	B	31	C	14	B	30	C
Westbound Right	17	B	24	C	16	B	26	C	15	B	32	C	15	B	31	C
Northbound Left	18	B	18	B	20	B	16	B	21	C	16	B	22	C	14	B
Northbound Through+Right	20	B	27	C	21	C	20	B	--	--	--	--	--	--	--	--
Northbound Through (planned)	--	--	--	--	--	--	--	--	22	C	21	C	24	C	20	B
Northbound Right (planned)	--	--	--	--	--	--	--	--	25	C	32	C	27	C	27	C
Southbound Left	15	B	31	C	16	B	20	B	21	C	22	C	29	C	18	B
Southbound Through	14	B	16	B	17	B	18	B	20	B	18	B	23	C	17	B
Southbound Right	14	B	18	B	16	B	18	B	19	B	19	B	21	C	18	B
Plum Creek Pkwy & Prairie Hawk Dr	12	B	17	B	11	B	14	B	26	C	28	C	27	C	28	C
Eastbound Left	9	A	11	B	9	A	10	A	20	B	19	B	22	C	19	B
Eastbound Through	8	A	8	A	8	A	9	A	25	C	25	C	27	C	26	C
Eastbound Right	--	--	--	--	--	--	--	--	23	C	23	C	25	C	24	C
Westbound Left	--	--	--	--	--	--	--	--	18	B	18	B	19	B	19	B
Westbound Through	12	B	17	B	11	B	15	B	21	C	22	C	23	C	22	C
Westbound Right	0	A	0	A	0	A	0	A	0	A	0	A	0	A	0	A
Northbound Left	--	--	--	--	--	--	--	--	49	D	52	D	48	D	49	D
Northbound Through	--	--	--	--	--	--	--	--	21	C	32	C	31	C	32	C
Northbound Right	--	--	--	--	--	--	--	--	31	C	25	C	29	C	24	C
Southbound Left	23	C	26	C	23	C	25	C	30	C	47	D	30	C	45	D
Southbound Through	--	--	--	--	--	--	--	--	24	C	32	C	24	C	34	C
Southbound Right	23	C	23	C	23	--	23	C	23	C	31	C	23	C	32	C



Table 4 - Peak Hour Intersection Level of Service Summary (w/ Project)

Intersection and Lane Group	Year 2023 Phase 1				Year 2027 Phase 2				Year 2030 w/Build Out				Year 2040 Build-Out			
	AM		PM		AM		PM		AM		PM		AM		PM	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
STOP SIGN CONTROL																
Prairie Hawk Dr & Atchison Way	1	A	6	A	2	A	10	A	--	--	--	--	--	--	--	--
Eastbound Left+Right	10	A	13	B	11	B	25	C	--	--	--	--	--	--	--	--
Northbound Left+Through	8	A	8	A	8	A	8	A	--	--	--	--	--	--	--	--
Plum Creek Parkway Dr & Rockmill Rd (RI/RO)	1	A	2	A	1	A	1	A	1	A	1	A	1	A	1	A
Southbound Right-Turn	9	A	11	B	10	A	13	B	11	B	14	B	11	B	15	B
ROUNDABOUT CONTROL																
Coachline Rd & Wolfensberger Rd	5	A	6	A	5	A	6	A	6	A	7	A	6	A	7	A
Eastbound Approach	5	A	6	A	5	A	6	A	5	A	7	A	6	A	7	A
Westbound Approach	5	A	6	A	4	A	7	A	5	A	8	A	5	A	8	A
Northbound Approach	5	A	6	A	5	A	6	A	6	A	6	A	6	A	6	A
Southbound Approach	6	A	5	A	6	A	5	A	7	A	6	A	8	A	6	A
Prairie Hawk Dr & Saddlemaker Tr (Roundabout)	5	A	4	A	4	A	6	A	6	A	11	B	6	A	12	B
South Approach (Northbound)	4	A	4	A	4	A	6	A	6	A	9	A	6	A	10	B
East Approach (Westbound)	--	--	--	--	4	A	5	A	5	A	15	B	5	A	16	C
North Approach (Southbound)	--	--	--	--	4	A	5	A	6	A	9	A	6	A	9	A
West Approach (Eastbound)	4	A	5	A	4	A	6	A	6	A	12	B	7	A	14	B
Plum Creek Pkwy & Saddlemaker Tr (Roundabout)	--	--	--	--	5	A	8	A	6	A	12	B	6	A	13	B
South Approach (Northbound)	--	--	--	--	--	--	--	--	5	A	14	B	6	A	15	C
East Approach (Westbound)	--	--	--	--	5	A	8	A	6	A	11	B	6	A	12	B
North Approach (Southbound)	--	--	--	--	5	A	10	B	6	A	16	C	6	A	18	C
West Approach (Eastbound)	--	--	--	--	5	A	7	A	5	A	9	A	5	A	9	A

6.4 Year 2027 Background + Project Intersection Capacity Analysis

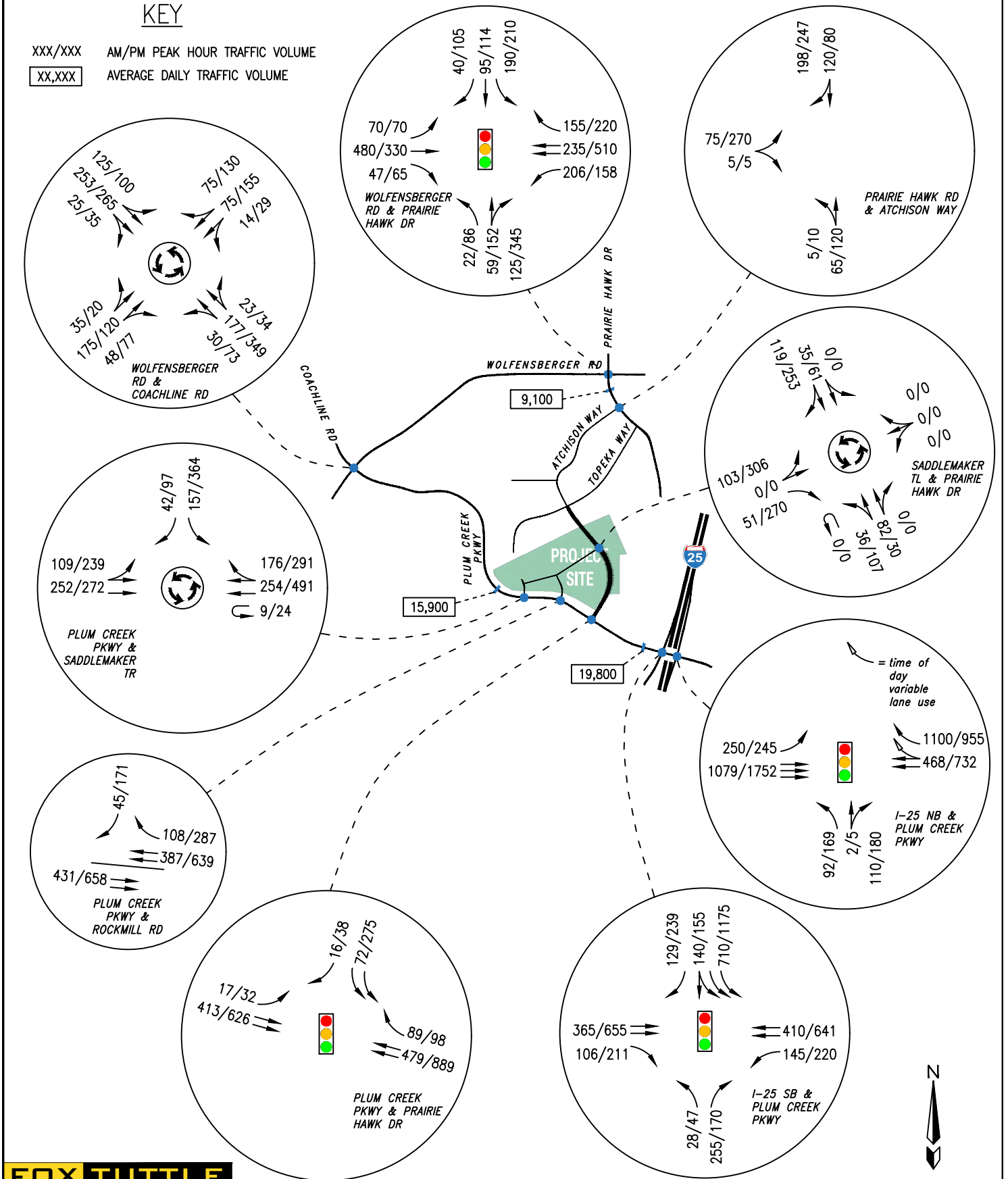
This section discusses impacts associated with the addition of Phase 2 development trips in the mid-term scenario at Phase 2 project build out (anticipated to be year 2027). Based on delay and queueing analysis, an exclusive southbound right-turn lane at the I-25 Southbound (West) Ramps is recommended with Phase 2 development to mitigate southbound approach delays. This right-turn lane should be constructed as a free-right-turn bypass lane with a westbound acceleration lane on Plum Creek Parkway to allow right-turn vehicles to make a “free” right-turn movement onto Plum Creek Parkway and not build up as part of the southbound approach queue. A 160' southbound right-turn storage lane is proposed with a 220' taper (380' total), which maximizes the length of this lane given constraints due the railroad right-of-way just to the west of the I-25 southbound off-ramp.

The projected Phase 2 site-added traffic was added to the Year 2027 background and Phase 1 site-added traffic. The resultant traffic volumes are illustrated on **Figure 13**. The figure also illustrates the necessary traffic control and lane configurations for all of the proposed accesses. The results of the LOS calculations for the intersections are summarized on **Table 4**. The intersection Level of Service worksheets are attached in the **Appendix**.

As shown on the Level of Service summary tables, **all study area intersections are projected to continue to operate acceptably overall (LOS D or better) with all of the planned/proposed improvements in place. All individual movements are also expected to operate at LOS D or better for the Year 2027 (Phase 1 + Phase 2) scenario, which meets Town of Castle Rock requirements for intersection operations.**

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2027 TOTAL TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	13
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6.5 Year 2030 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with site buildout in the Year 2030 scenario, when completion of the long-range transportation improvements identified in the Town Transportation master Plan discussed in Section 5.2 are anticipated to be in place. The projected site buildout traffic was added to the Year 2030 background traffic. The resultant traffic volumes are illustrated on **Figure 14**. The figure also illustrates the necessary traffic control and lane configurations for all of the proposed accesses.

Both the background transportation network projects discussed in Section 5.2 and project access improvements were assumed to be in place for this scenario, including:

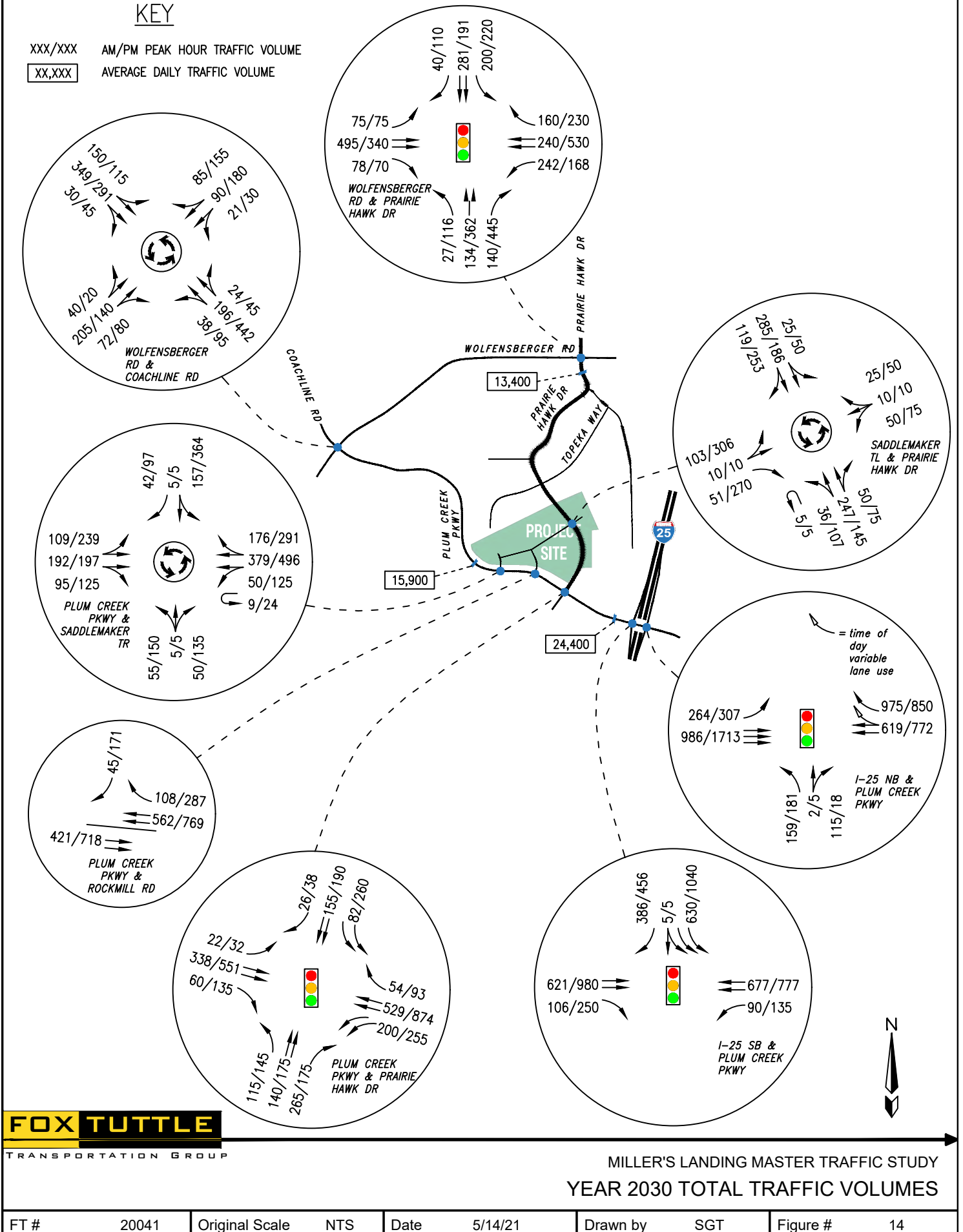
- Crystal Valley & I-25 Interchange
- Extension of Prairie Hawk Drive south of Plum Creek Parkway and realignment of W. Frontage Road from the I-25 W. Ramps to Prairie Hawk Drive
- Improvements at the Wolfensberger Road & Prairie Hawk Drive intersection, including widening of the eastbound and southbound approaches to include two through lanes and separate right-turn deceleration lanes
- Widening of Prairie Hawk Drive south of Wolfensberger Road to a four-lane major arterial, with realignment to make Prairie Hawk Drive the through movement at the current Atchison Way/Prairie Hawk Drive intersection, and extension of Prairie Hawk Drive to the project along the current Atchison Way alignment.

The results of the LOS calculations for the intersections are summarized on **Table 4**. The intersection Level of Service worksheets are attached in the **Appendix**.

As shown on the Level of Service summary tables, **all study area intersections are projected to continue to operate acceptably overall (LOS D or better) with all of the planned/proposed improvements in place. All individual movements are also expected to operate at LOS D or better for the Year 2030 (project buildout, all phases) scenario, which meets Town of Castle Rock requirements for intersection operations.**

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2030 TOTAL TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	14
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6.6 Year 2040 Background + Project Intersection Capacity Analysis

This section discusses impacts associated with the addition of all three phases of the Miller's Landing development trips in the long-term, Year 2040 scenario with full build out and occupancy. The site-generated volumes were added to the projected 2040 background volumes and are illustrated on **Figure 15**.

The results of the LOS calculations for the intersections are summarized on **Table 4**. The intersection Level of Service worksheets are attached in the **Appendix**.

As shown on the Level of Service summary tables, **all study area intersections are projected to continue to operate acceptably overall (LOS D or better) with all of the planned/proposed improvements in place. All individual movements are also expected to operate at LOS D or better for the Year 2040 (project buildout, all phases) scenario, which meets Town of Castle Rock requirements for intersection operations.**

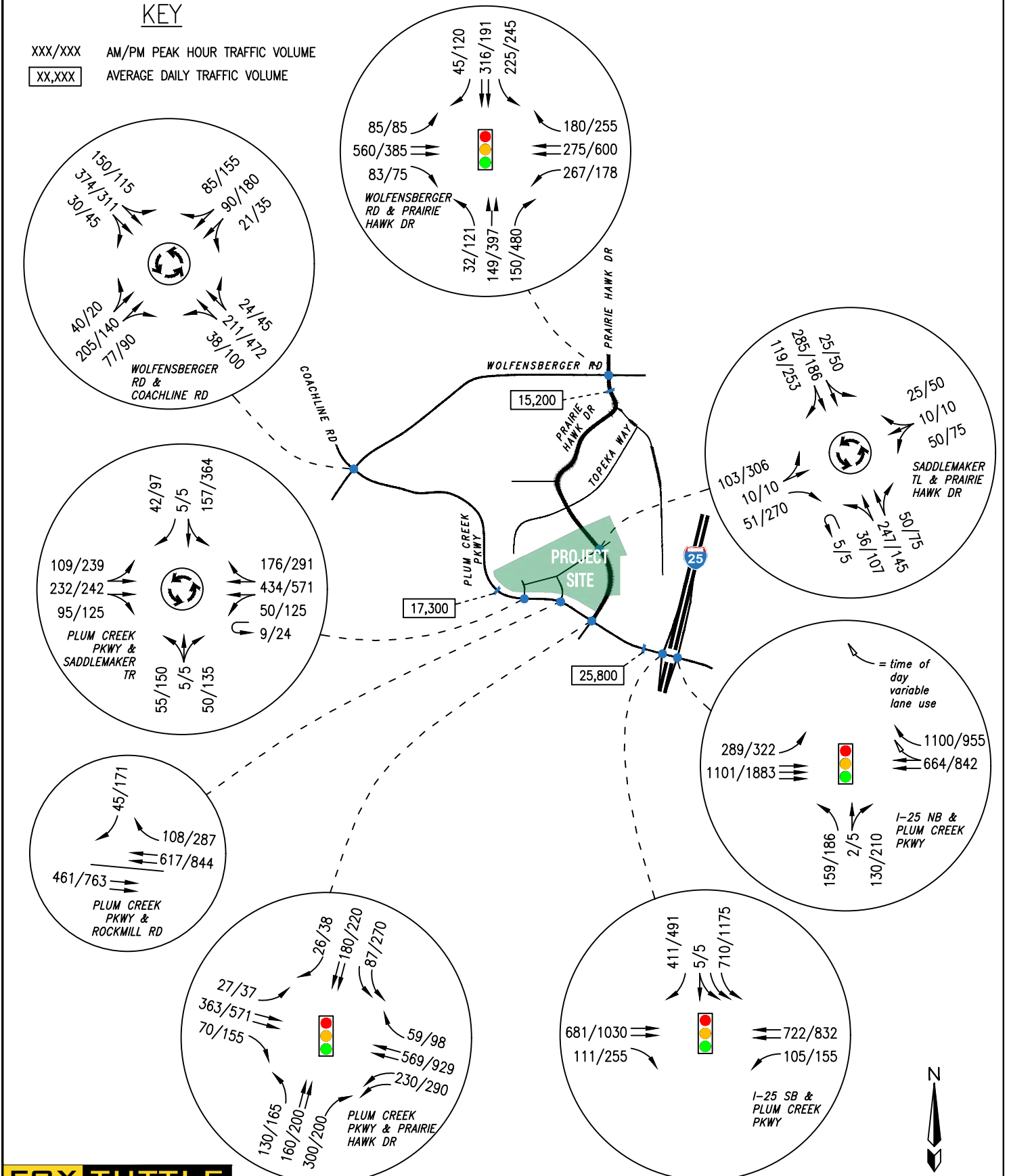
7.0 AUXILIARY LANE AND ACCESS SPACING EVALUATION

Auxiliary lanes were evaluated using the Level of Service results, queuing reports, and auxiliary lane criteria consistent with the Town of Castle Rock Transportation Design Criteria Manual and the State Highway Access Code for the proposed site access locations on Plum Creek Parkway and Prairie Hawk Drive.

- **A westbound acceleration lane** is recommended on Plum Creek Parkway at the I-25 Southbound (West) Ramps intersection to accommodate the free southbound right-turn movement onto Plum Creek Parkway. Per the State Highway Access Code, for a 30 mph roadway, the westbound acceleration lane should be a 155' lane with a 95' taper (250' total). The acceleration lane can be accommodated within the available space in the existing grass boulevard between the westbound lane and sidewalk.

KEY

XXX/XXX AM/PM PEAK HOUR TRAFFIC VOLUME
 XX,XXX AVERAGE DAILY TRAFFIC VOLUME



FOX TUTTLE

TRANSPORTATION GROUP

MILLER'S LANDING MASTER TRAFFIC STUDY YEAR 2040 TOTAL TRAFFIC VOLUMES

FT #	20041	Original Scale	NTS	Date	5/14/21	Drawn by	SGT	Figure #	15
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Plum Creek Parkway

Using the NR-B category for a 45-mph roadway per CDOT and Town criteria, as well as accounting for volume/storage, the following auxiliary turn lane designs are prescribed along Plum Creek Parkway:

- **Westbound right-turn deceleration lane** at the right-in, right-out access at Rockmill Road. A lane length to include a 230' lane + 160' taper (390' total) is recommended and can be accommodated in the proposed access spacing.
- **Westbound acceleration lanes** are not warranted or recommended on Plum Creek Parkway at either the full-movement or right-in, right-out access, based on the projected exiting volume. This is also consistent with the Coachline Road Access Plan which did not recommend acceleration lanes for safety considerations.
- **Westbound right-turn deceleration lane** at Prairie Hawk Drive. This is recommended to be constructed as a "free right" turn, with a continuous acceleration/deceleration to the first access into the site (to the Castle Meadows parcel) north of Plum Creek Parkway.
- **Eastbound left-turn deceleration lane** at Prairie Hawk Drive. A 230' lane + 160' taper (390' total) is recommended and can be accommodated in the proposed access spacing.

Prairie Hawk Drive

The future Prairie Hawk Drive connection north of Plum Creek Parkway is planned to be a four-lane major arterial with a 40-mph posted/design speed. Using the NR-B category for a 40-mph roadway per CDOT and Town criteria, as well as accounting for volume/storage, the following auxiliary turn lane designs are prescribed for the proposed accesses:

- **Southbound dual left-turn deceleration lane** at Plum Creek Parkway. A 275' lane + 120' taper (320' total) is recommended based on the proposed access spacing.
- **Southbound right-turn deceleration lane** at Plum Creek Parkway. A 150' lane + 120' taper (320' total) is recommended based on the proposed access spacing.

Access spacing guidelines based on the Town of Castle Rock Transportation Design Criteria Manual for a major arterial are ½ mile for full access intersections. The current spacing is as follows for the proposed accesses along Prairie Hawk Drive

- **Roundabout at Saddlemaker Trail:** approximately 1,400 feet north of Plum Creek Parkway and 920' south of Topeka Way.

Based on the analysis provided in this report, the spacing and configuration is anticipated to operate effectively with no safety concerns.

8.0 QUEUING ANALYSIS

Synchro/HCM queue reports are provided in the Appendix for existing, background, and all scenarios with project-added traffic. A summary of the 95th-percentile queues for relevant movements is provided on **Table 5** and **Table 6**.

As shown on these tables, projected short-term and long-term queues with buildout of this project can be accommodated within the proposed intersection network and existing/proposed auxiliary lanes. The following should be noted:

- Plum Creek Parkway and I-25 Northbound (East) Ramps
 - o The eastbound left turn queues into the adjacent through lane to the west of the I-25 Southbound (West) Ramps in all future scenarios with the project-added traffic. This lane can be striped to indicate a left-turn only at the I-25 NB ramps while maintain sufficient eastbound through lane capacity in two dedicated through lanes.
- Plum Creek Parkway and I-25 Southbound (West) Ramps
 - o During the PM peak hour in existing, Year 2023 and Year 2027 (background and project-added), the westbound left-turn queues are expected to extend into the adjacent through lane to the east of the I-25 Northbound (East) Ramps. This condition will be mitigated for both background and project-added scenarios with realignment of the W. Frontage Road to Prairie Hawk Drive (anticipated by Year 2030 per the Town TMP).
- Wolfensberger Road and Prairie Hawk Drive
 - o In the Year 2030 with project (Phase 3), the existing westbound left-turn lane storage (approx. 125') would be met with no improvements. Thus, it is recommended that the project extend this lane storage by narrowing the existing median on westbound Wolfensberger. Per Town criteria and based on volume, 300' of storage should be provided.



Table 5 - Queue Summary (Existing and Background)

Intersection and Lane Group	Storage Distance (Existing or Assumed/ Recommended for Future)	Existing		Year 2023 Background		Year 2027 Background		Year 2030 Background		Year 2040 Background	
		95th% Queue		95th% Queue		95th% Queue		95th% Queue		95th% Queue	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SIGNAL CONTROL											
I-25 NB Ramps & Plum Creek Pkwy											
Eastbound Left	170' (+340' to west of SB Ramp)	98'	20'	115'	20'	118'	19'	127'	118'	210'	195'
Eastbound Through	170' (+ west of SB Ramp)	95'	86'	146'	89'	165'	93'	106'	268'	121'	311'
Westbound Through+Right	625'	136'	165'	148'	178'	167'	195'	268'	312'	321'	379'
Westbound Right	625'	62'	47'	64'	48'	65'	49'	62'	64'	65'	68'
Northbound Left	350'	32'	41'	32'	40'	32'	43'	76'	43'	80'	46'
Northbound Left+Through+Right	1000' (to Gore)	35'	56'	36'	63'	36'	75'	48'	79'	47'	94'
Northbound Right	150'	11'	41'	12'	44'	15'	48'	22'	41'	26'	49'
I-25 SB Ramps & Plum Creek Pkwy											
Eastbound Through+Right	1,350 (to future Prairie Hawk Drive)	57'	105'	61'	109'	64'	115'	100'	147'	112'	159'
Westbound Left	170' (+380' to east of NB Ramp)	126'	187'	133'	198'	138'	205'	44'	75'	50'	84'
Westbound Through	175' (+ east of NB Ramp)	98'	122'	103'	126'	107'	132'	102'	106'	111'	120'
Northbound Left	275'	32'	36'	28'	36'	28'	36'	--	--	--	--
Northbound Right	275'	109'	61'	72'	63'	73'	64'	--	--	--	--
Southbound Left	1,400' (to Gore)	202'	326'	239'	342'	251'	365'	182'	322'	209'	382'
Southbound Left-Through+Right	1,400' (to Gore)	234'	370'	278'	389'	315'	420'	137'	278'	187'	339'
Wolfensberger Rd & Prairie Hawk Dr											
Eastbound Left	315'	29'	40'	31'	47'	31'	49'	34'	51'	38'	65'
Eastbound Through+Right	315'	154'	110'	171'	124'	186'	134'	222'	126'	--	--
Eastbound Through (planned)	1340'	--	--	--	--	--	--	--	--	162'	151'
Eastbound Right (planned)	315'	--	--	--	--	--	--	--	--	0'	0'
Westbound Left	100'	60'	49'	63'	56'	67'	61'	82'	66'	97'	82'
Westbound Through	935'	55'	142'	58'	160'	61'	172'	63'	178'	72'	229'
Westbound Right	100'	25'	45'	26'	48'	26'	49'	26'	52'	24'	74'
Northbound Left	60'	6'	27'	7'	28'	7'	32'	11'	48'	18'	56'
Northbound Through+Right	250'	41'	91'	46'	107'	46'	124'	--	--	--	--
Northbound Through (planned)	315'	--	--	--	--	--	--	37'	105'	51'	125'
Northbound Right (planned)	315'	--	--	--	--	--	--	0'	80'	32'	145'
Southbound Left	345'	85'	156'	94'	175'	102'	197'	123'	137'	159'	167'
Southbound Through	860'	37'	24'	41'	25'	41'	29'	74'	41'	100'	43'
Southbound Right	345'	0'	0'	0'	0'	0'	0'	0'	28'	0'	34'
STOP SIGN CONTROL											
Prairie Hawk Dr & Atchison Way											
Eastbound Left+Right	680'	5'	28'	8'	35'	8'	38'	--	--	--	--
Northbound Left+Through	405'	0'	0'	0'	3'	0'	3'	--	--	--	--
Southbound Through+Right	260'	0'	0'	0'	0'	0'	0'	--	--	--	--
ROUNDABOUT CONTROL											
Coachline Rd & Wolfensberger Rd											
Southeast Approach	500'	7'	13'	8'	14'	9'	15'	11'	23'	12'	26'
Northeast Approach	350'	6'	14'	7'	15'	7'	17'	8'	19'	9'	23'
Northwest Approach	500'	14'	12'	15'	13'	16'	14'	22'	16'	25'	19'
Southwest Approach	1100'	11'	8'	13'	9'	13'	10'	17'	10'	20'	12'



Table 6 - Queue Summary (w/ Project)

Intersection and Lane Group	Storage Distance (Existing or Assumed/ Recommended for Future)	Year 2023 Phase 1		Year 2027 Phase 2		Year 2030 Phase 3		Year 2040 Build-Out	
		95th% Queue		95th% Queue		95th% Queue		95th% Queue	
		AM	PM	AM	PM	AM	PM	AM	PM
SIGNAL CONTROL									
I-25 NB Ramps & Plum Creek Pkwy									
Eastbound Left	170' (+340' to west of SB Ramp)	128'	99'	187'	149'	229'	252'	260'	290'
Eastbound Through	170' (+ west of SB Ramp)	133'	193'	145'	199'	112'	155'	113'	263'
Westbound Through+Right	650'	169'	244'	247'	363'	339'	366'	375'	441'
Westbound Right	650'	64'	52'	65'	59'	63'	59'	62'	62'
Northbound Left	350'	46'	84'	75'	126'	97'	113'	107'	141'
Northbound Left+Through+Right	1000' (to Gore)	37'	76'	49'	110'	87'	114'	92'	126'
Northbound Right	150'	13'	45'	21'	62'	38'	69'	43'	76'
I-25 SB Ramps & Plum Creek Pkwy									
Eastbound Through+Right	1,350 (to future Prairie Hawk Drive)	54'	158'	71'	234'	141'	115'	158'	347'
Westbound Left	170' (+380' to east of NB Ramp)	137'	186'	134'	222'	46'	109'	56'	59'
Westbound Through	175' (+ east of NB Ramp)	122'	160'	181'	271'	148'	224'	172'	46'
Northbound Left	275'	33'	50'	42'	67'	--	--	--	--
Northbound Right	275'	96'	64'	169'	64'	--	--	--	--
Southbound Left	1,400' (to Gore)	232'	406'	225'	374'	115'	278'	152'	318'
Southbound Left-Through+Right	1,400' (to Gore)	263'	489'	--	--	--	--	--	--
Southbound Left+Through	1,400' (to Gore)	--	--	270'	508'	116'	321'	181'	367'
Southbound Right (Project Improvement)	550'	--	--	0'	0'	0'	0'	0'	0'
Wolfensberger Rd & Prairie Hawk Dr									
Eastbound Left	315'	32'	57'	31'	45'	36'	49'	41'	68'
Eastbound Through+Right	315'	172'	133'	192'	147'	157'	132'	--	--
Eastbound Through (planned)	1340'	--	--	--	--	--	--	178'	154'
Eastbound Right (planned)	315'	--	--	--	--	--	--	0'	0'
Westbound Left	125'	63'	56'	80'	87'	112'	97'	117'	125'
Westbound Through	935'	60'	168'	62'	161'	64'	174'	75'	230'
Westbound Right	100'	26'	47'	25'	47'	24'	53'	23'	74'
Northbound Left	60'	7'	29'	20'	57'	25'	76'	31'	78'
Northbound Through+Right	250'	46'	108'	53'	118'	--	--	--	--
Northbound Through (planned)	1340'	--	--	--	--	52'	134'	63'	147'
Northbound Right (planned)	375'	--	--	--	--	34'	214'	32'	265'
Southbound Left	345'	94'	179'	127'	132'	144'	164'	206'	156'
Southbound Through	860'	41'	25'	77'	94'	101'	74'	123'	74'
Southbound Right	345'	0'	5'	0'	0'	0'	21'	0'	24'
Plum Creek Pkwy & Prairie Hawk Dr									
Eastbound Left	350'	33'	90'	7'	15'	84'	31'	24'	34'
Eastbound Through	540'	45'	48'	78'	122'	123'	250'	148'	263'
Eastbound Right	350'	--	--	--	--	21'	14'	0'	52'
Westbound Left	350'	--	--	--	--	124'	265'	143'	268'
Westbound Through	1350'	34'	198'	51'	271'	237'	398'	206'	393'
Westbound Right	350'	1'	22'	1'	21'	76'	34'	2'	24'
Northbound Left	350'	--	--	--	--	152'	153'	128'	168'
Northbound Through	350'	--	--	--	--	81'	78'	73'	89'
Northbound Right	350'	--	--	--	--	95'	57'	48'	71'
Southbound Left	275'	30'	132'	27'	89'	106'	125'	43'	128'
Southbound Through	375'	--	--	--	--	74'	87'	80'	102'
Southbound Right	230'	7'	15'	13'	18'	0'	0'	0'	42'



Table 6 - Queue Summary (w/ Project)

Intersection and Lane Group	Storage Distance (Existing or Assumed/ Recommended for Future)	Year 2023 Phase 1		Year 2027 Phase 2		Year 2030 Phase 3		Year 2040 Build-Out	
		95th% Queue		95th% Queue		95th% Queue		95th% Queue	
		AM	PM	AM	PM	AM	PM	AM	PM
STOP SIGN CONTROL									
Prairie Hawk Dr & Atchison Way									
Eastbound Left+Right	680'	5'	38'	13'	138'	--	--	--	--
Northbound Left+Through	405'	0'	3'	0'	3'	--	--	--	--
Southbound Through+Right	260'	0'	0'	0'	0'	--	--	--	--
Prairie Hawk Dr & Rockmill Rd (R/I/RO)									
Southbound Right-Turn	100'	5'	30'	5'	30'	5'	35'	5'	38'
ROUNDBABOUT CONTROL									
Coachline Rd & Wolfensberger Rd									
Eastbound Approach	500'	10'	22'	13'	25'	14'	35'	16'	38'
Westbound Approach	350'	8'	20'	8'	20'	9'	22'	10'	27'
Northbound Approach	500'	16'	17'	20'	22'	26'	25'	30'	28'
Southbound Approach	1100'	13'	10'	15'	12'	19'	13'	22'	15'
Prairie Hawk Dr & Saddlemaker Tr									
Eastbound Approach	950'	0'	0'	15'	23'	23'	104'	36'	104'
Southbound Approach	1100'	--	--	0'	0'	0'	46'	5'	50'
Westbound Approach	550'	--	--	19'	25'	25'	35'	38'	41'
Southbound Approach	200'	8'	20'	14'	39'	39'	86'	24'	95'
Plum Creek Pkwy & Saddlemaker Tr									
Northbound Approach	550'	--	--	--	--	13'	70'	13'	74'
Eastbound Approach	350'	--	--	24'	57'	35'	115'	40'	142'
Southbound Approach	1100'	--	--	16'	74'	20'	109'	21'	121'
Westbound Approach	350'	--	--	18'	33'	21'	46'	24'	54'

9.0 PLUM CREEK PARKWAY ROADWAY CAPACITY

Per the development agreement, the developer is responsible for widening Plum Creek Parkway to two through lanes in each direction when a 12,000 average daily traffic (ADT) threshold is exceeded with development of the project. **Based on the current traffic counts and the projected site-added daily traffic, this is anticipated to occur with build out of Phase 1.** It is recommended that the project thus construct the widening along the Phase 1 limits from I-25 to Rockmill Road with Phase 1. The completion of the four-lane widening from Rockmill Road to the west project limits, and through the proposed roundabout at Saddlemaker Trail, should be completed with Phase 2.

10.0 BICYCLE AND PEDESTRIAN ACCOMODATIONS

Consistent with the Town TMP, future pedestrian and bicycle accommodations in the area should include an off-street multi-use path (≥ 8 ft width) along the north side of Plum Creek Parkway along the project frontage and on-street bike lanes or a bikeable shoulder when Plum Creek Parkway is eventually widened to four lanes. Internal bicycle and pedestrian accommodations within project, as well as specific connections to external trails and facilities, are being developed by the design team and have not yet been reviewed by Fox Tuttle.

11.0 CONCLUSIONS

The Miller's Landing project proposes development of the land north of Plum Creek Parkway and west of I-25 in the Town of Castle Rock to include a mix of entertainment, hotel, residential, office and retail uses. Access is proposed via Plum Creek Parkway and the extension of Prairie Hawk Drive through the project.

A trip generation analysis was completed for each of the three phases. Estimated driveways trips generated by each phase are summarized below. A portion of these trips are not "new" trips to the network and will be pass-by or diverted link type trips.

- Phase 1 (projected Year 2023 buildout): approximately 11,325 weekday daily, 282 AM peak, and 1,143 PM peak hour trips.
- Phase 2 (projected Year 2027 buildout): approximately 14,485 weekday daily, 664 AM peak, 1,242 PM peak hour trips.
- Total: approximately 25,810 weekday daily, 946 AM peak, 2,385 PM peak hour trips.

It was determined that the existing and proposed roadway and intersection can adequately accommodate the projected traffic volumes for short-term, mid-term and long-term buildout conditions with the recommended improvements summarized in **Table 7** on the following page.

Table 7. Planned/Recommended Improvements and Anticipated Timeframe

	Anticipated Timeframe
Town and/or "By Other" Projects (Not Related to Project)⁽¹⁾	
Prairie Hawk Drive Realignment: Town plans to realign and widen Atchison Way into Prairie Hawk Drive south of Wolfensberger Road and improve as 4-lane arterial roadway to Topeka Way	By 2030 (per TMP)
Wolfensberger Road west of Prairie Hawk Drive: Town plans to expand Wolfensberger Road to a four-lane roadway with a dedicated eastbound right-turn lane at the Prairie Hawk Drive intersection	By 2030 (per TMP)
Prairie Hawk & Wolfensberger Road Intersection: Add an eastbound right turn lane, add a northbound right turn lane	By 2030 (per TMP)
W. Frontage Road Realignment: The W. Frontage Road will be realigned to become the south leg of the Prairie Hawk Drive & Plum Creek Parkway intersection	By 2030 (per TMP)
Project-Related Improvements^{(2) (3)}	
Proposed RI/RO Access at Rockmill Rd: Construct westbound right-turn decel lane (230' lane + 160' taper)	Phase 1
Construct roundabout at Prairie Hawk Dr & Saddlemaker Trail access	Phase 1
Construct Prairie Hawk Dr in ultimate alignment between Plum Creek Pkwy & north site border	Phase 1
Construct Prairie Hawk Dr & Plum Creek intersection(north half) w/traffic signal; construct eastbound right-turn decel lane (230' lane + 160' taper) w/free right-turn to northbound Prairie Hawk Dr; construct dual southbound left-turn (275' lane + 120' taper) and separate southbound right-turn lane (150' lane + 120' taper); construct eastbound left-turn decel lane (230' lane + 160' taper)	Phase 1
Widen Plum Creek Parkway to 4-lanes along project frontage (triggered requirement when volume exceeds 12,000 ADT)	Phase 1 & 2
Extend Prairie Hawk Dr to Atchison Way to provide access to project from Wolfensberger Rd	Phase 2
Construct roundabout at Plum Creek Parkway and Saddlemaker Trail access	Phase 2
I-25 SB Ramp: Add exclusive southbound right-turn lane w/westbound acceleration lane (160' lane + 220' taper)	Phase 2
At the Wolfensberger Road and Prairie Hawk Drive intersection, construct a northbound right-turn lane (375' + 120' taper) with overlap phase concurrent with westbound left-turn phase (<i>this may be a shared responsibility with the Town and other developments that contribute volume to this movement and/or combined with the Town's widening and realignment of Prairie Hawk Drive to Atchison Way</i>)	Phase 3
At the Wolfensberger Road and Prairie Hawk Drive intersection, extend the westbound left-turn lane storage from 125' (existing) to 300' (<i>this may be a shared responsibility with the Town and other developments that contribute volume to this movement</i>)	Phase 3

⁽¹⁾ These improvements are recommended to mitigate existing and future background deficiencies (with non-project traffic) and would need to be implemented by the Town, CDOT, or other project(s) to mitigate non-project traffic impacts independent of development of the project site

⁽²⁾ These improvements are recommended to be provided by the developer in conjunction with development of the project.

⁽³⁾ The anticipated timeframe for construction and occupancy of each phase is provided in Section 2.0 of the study report.

Appendix:

Existing Traffic Data

Level of Service Definitions

Intersection Capacity Worksheets



Existing Traffic Data



Castle Rock, CO
 Miller's Landing, FTH #18096
 AM Peak
 Coachline Rd & Wolfensberger Rd

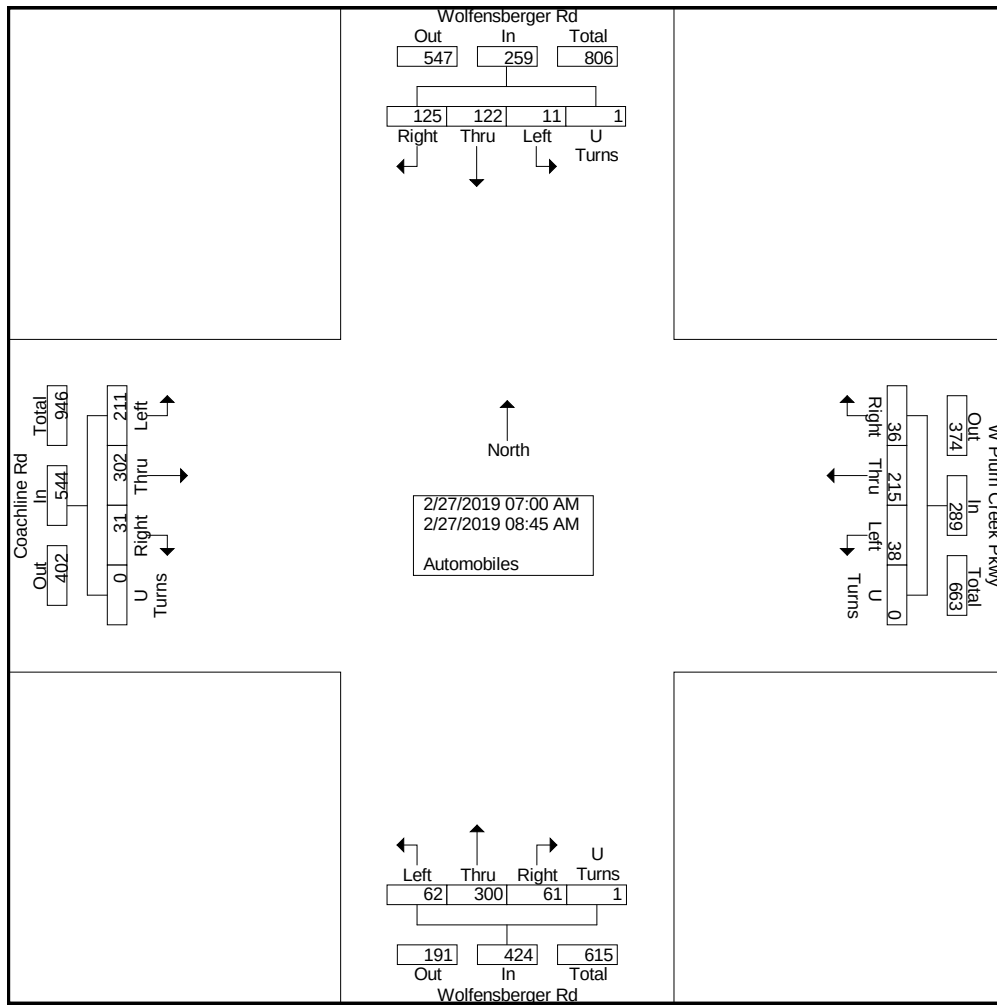
File Name : Coach & Wolf AM
 Site Code : IPO 43
 Start Date : 2/27/2019
 Page No : 1

Groups Printed- Automobiles

Start Time	Coachline Rd Eastbound					W Plum Creek Pkwy Westbound					Wolfensberger Rd Northbound					Wolfensberger Rd Southbound					Int. Total
	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	
07:00 AM	14	18	4	0	36	8	14	6	0	28	7	38	7	0	52	0	8	5	0	13	129
07:15 AM	25	41	3	0	69	5	24	5	0	34	11	40	4	0	55	2	16	4	0	22	180
07:30 AM	24	66	8	0	98	4	25	2	0	31	10	30	8	0	48	2	15	9	1	27	204
07:45 AM	30	33	5	0	68	6	36	4	0	46	7	43	10	1	61	1	19	27	0	47	222
Total	93	158	20	0	271	23	99	17	0	139	35	151	29	1	216	5	58	45	1	109	735
08:00 AM	33	30	4	0	67	3	28	4	0	35	2	41	9	0	52	2	17	24	0	43	197
08:15 AM	28	29	3	0	60	3	33	4	0	40	6	28	7	0	41	1	14	17	0	32	173
08:30 AM	29	41	3	0	73	3	12	7	0	22	7	41	7	0	55	1	18	13	0	32	182
08:45 AM	28	44	1	0	73	6	43	4	0	53	12	39	9	0	60	2	15	26	0	43	229
Total	118	144	11	0	273	15	116	19	0	150	27	149	32	0	208	6	64	80	0	150	781
Grand Total	211	302	31	0	544	38	215	36	0	289	62	300	61	1	424	11	122	125	1	259	1516
Apprch %	38.8	55.5	5.7	0		13.1	74.4	12.5	0		14.6	70.8	14.4	0.2		4.2	47.1	48.3	0.4		
Total %	13.9	19.9	2	0	35.9	2.5	14.2	2.4	0	19.1	4.1	19.8	4	0.1	28	0.7	8	8.2	0.1	17.1	

Castle Rock, CO
Miller's Landing, FTH #18096
AM Peak
Coachline Rd & Wolfensberger Rd

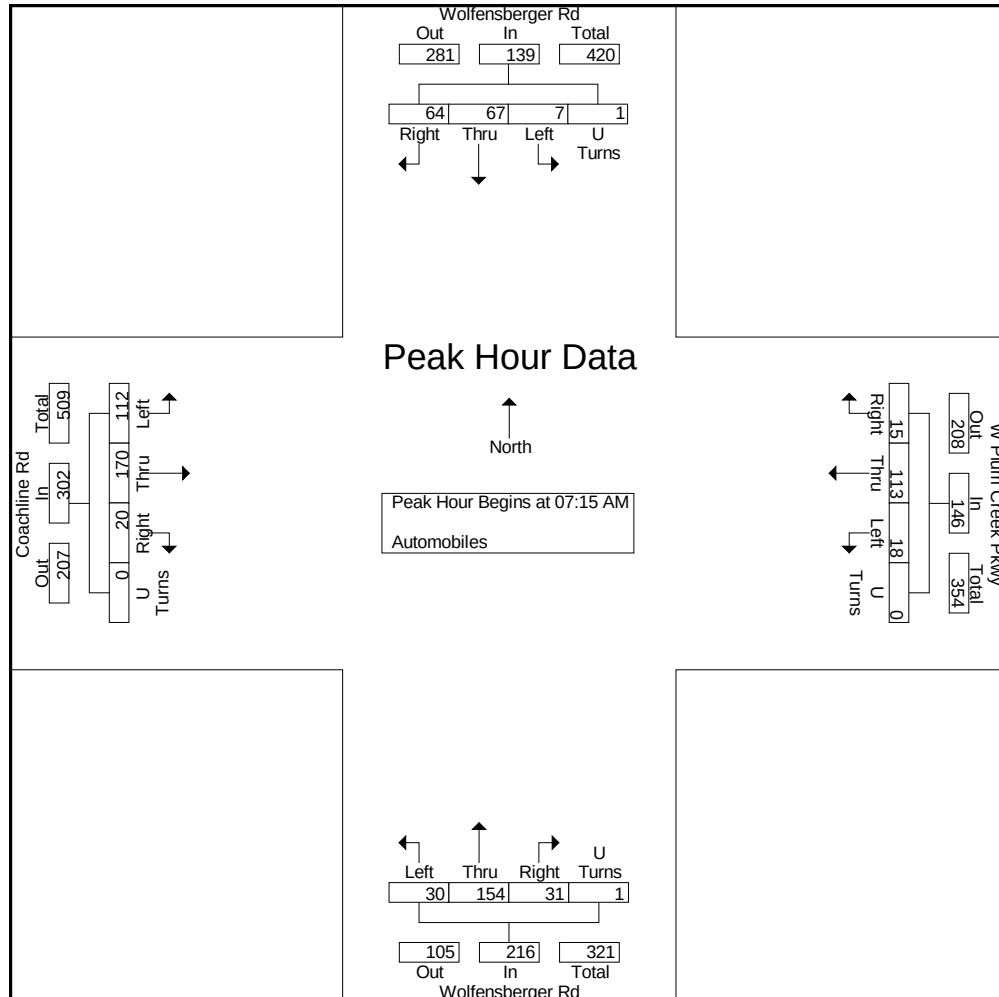
File Name : Coach & Wolf AM
Site Code : IPO 43
Start Date : 2/27/2019
Page No : 2



Castle Rock, CO
Miller's Landing, FTH #18096
AM Peak
Coachline Rd & Wolfensberger Rd

File Name : Coach & Wolf AM
Site Code : IPO 43
Start Date : 2/27/2019
Page No : 3

	Coachline Rd Eastbound					W Plum Creek Pkwy Westbound					Wolfensberger Rd Northbound					Wolfensberger Rd Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	25	41	3	0	69	5	24	5	0	34	11	40	4	0	55	2	16	4	0	22	180
07:30 AM	24	66	8	0	98	4	25	2	0	31	10	30	8	0	48	2	15	9	1	27	204
07:45 AM	30	33	5	0	68	6	36	4	0	46	7	43	10	1	61	1	19	27	0	47	222
08:00 AM	33	30	4	0	67	3	28	4	0	35	2	41	9	0	52	2	17	24	0	43	197
Total Volume	112	170	20	0	302	18	113	15	0	146	30	154	31	1	216	7	67	64	1	139	803
% App. Total	37.1	56.3	6.6	0		12.3	77.4	10.3	0		13.9	71.3	14.4	0.5		5	48.2	46	0.7		
PHF	.848	.644	.625	.000	.770	.750	.785	.750	.000	.793	.682	.895	.775	.250	.885	.875	.882	.593	.250	.739	.904



Castle Rock, CO
 Miller's Landing, FTH #18096
 PM Peak
 Coachline Rd & Wolfensberger Rd

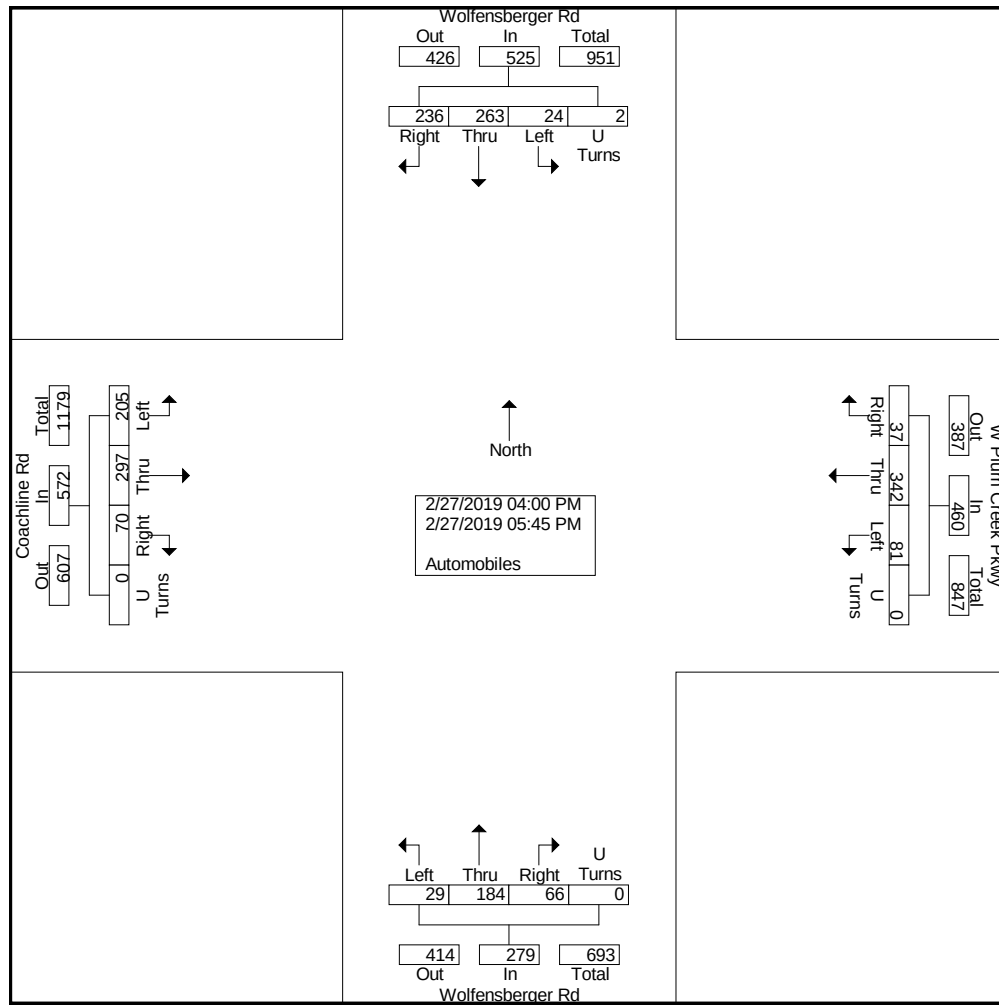
File Name : Coach & Wolf PM
 Site Code : IPO 43
 Start Date : 2/27/2019
 Page No : 1

Groups Printed- Automobiles

Start Time	Coachline Rd Eastbound					W Plum Creek Pkwy Westbound					Wolfensberger Rd Northbound					Wolfensberger Rd Southbound					Int. Total
	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	
04:00 PM	31	50	16	0	97	14	15	5	0	34	6	18	4	0	28	0	31	35	0	66	225
04:15 PM	33	53	11	0	97	9	50	0	0	59	5	20	8	0	33	3	37	24	1	65	254
04:30 PM	25	32	5	0	62	13	45	5	0	63	1	18	3	0	22	3	36	35	0	74	221
04:45 PM	11	30	6	0	47	15	46	9	0	70	5	34	10	0	49	5	33	27	1	66	232
Total	100	165	38	0	303	51	156	19	0	226	17	90	25	0	132	11	137	121	2	271	932
05:00 PM	25	30	7	0	62	6	33	4	0	43	1	25	13	0	39	5	36	26	0	67	211
05:15 PM	23	34	14	0	71	15	65	4	0	84	5	18	11	0	34	3	36	28	0	67	256
05:30 PM	28	32	4	0	64	4	52	5	0	61	3	28	8	0	39	4	31	35	0	70	234
05:45 PM	29	36	7	0	72	5	36	5	0	46	3	23	9	0	35	1	23	26	0	50	203
Total	105	132	32	0	269	30	186	18	0	234	12	94	41	0	147	13	126	115	0	254	904
Grand Total	205	297	70	0	572	81	342	37	0	460	29	184	66	0	279	24	263	236	2	525	1836
Apprch %	35.8	51.9	12.2	0		17.6	74.3	8	0		10.4	65.9	23.7	0		4.6	50.1	45	0.4		
Total %	11.2	16.2	3.8	0	31.2	4.4	18.6	2	0	25.1	1.6	10	3.6	0	15.2	1.3	14.3	12.9	0.1	28.6	

Castle Rock, CO
Miller's Landing, FTH #18096
PM Peak
Coachline Rd & Wolfensberger Rd

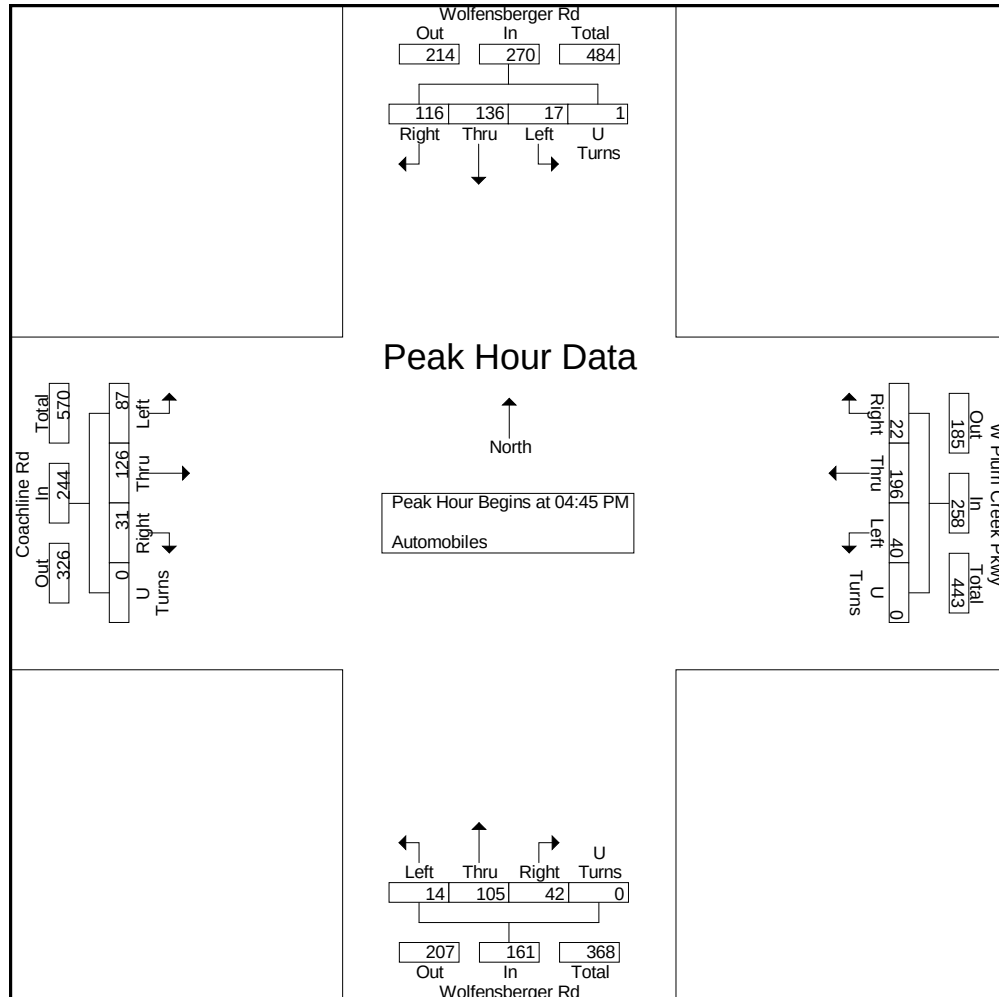
File Name : Coach & Wolf PM
Site Code : IPO 43
Start Date : 2/27/2019
Page No : 2



Castle Rock, CO
Miller's Landing, FTH #18096
PM Peak
Coachline Rd & Wolfensberger Rd

File Name : Coach & Wolf PM
Site Code : IPO 43
Start Date : 2/27/2019
Page No : 3

	Coachline Rd Eastbound					W Plum Creek Pkwy Westbound					Wolfensberger Rd Northbound					Wolfensberger Rd Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	11	30	6	0	47	15	46	9	0	70	5	34	10	0	49	5	33	27	1	66	232
05:00 PM	25	30	7	0	62	6	33	4	0	43	1	25	13	0	39	5	36	26	0	67	211
05:15 PM	23	34	14	0	71	15	65	4	0	84	5	18	11	0	34	3	36	28	0	67	256
05:30 PM	28	32	4	0	64	4	52	5	0	61	3	28	8	0	39	4	31	35	0	70	234
Total Volume	87	126	31	0	244	40	196	22	0	258	14	105	42	0	161	17	136	116	1	270	933
% App. Total	35.7	51.6	12.7	0		15.5	76	8.5	0		8.7	65.2	26.1	0		6.3	50.4	43	0.4		
PHF	.777	.926	.554	.000	.859	.667	.754	.611	.000	.768	.700	.772	.808	.000	.821	.850	.944	.829	.250	.964	.911





Castle Rock, CO
Acme Redevelopment
AM Peak
Prairie Hawk Dr and Atchison Way

File Name : Prairie Hawk and Atchison AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 1

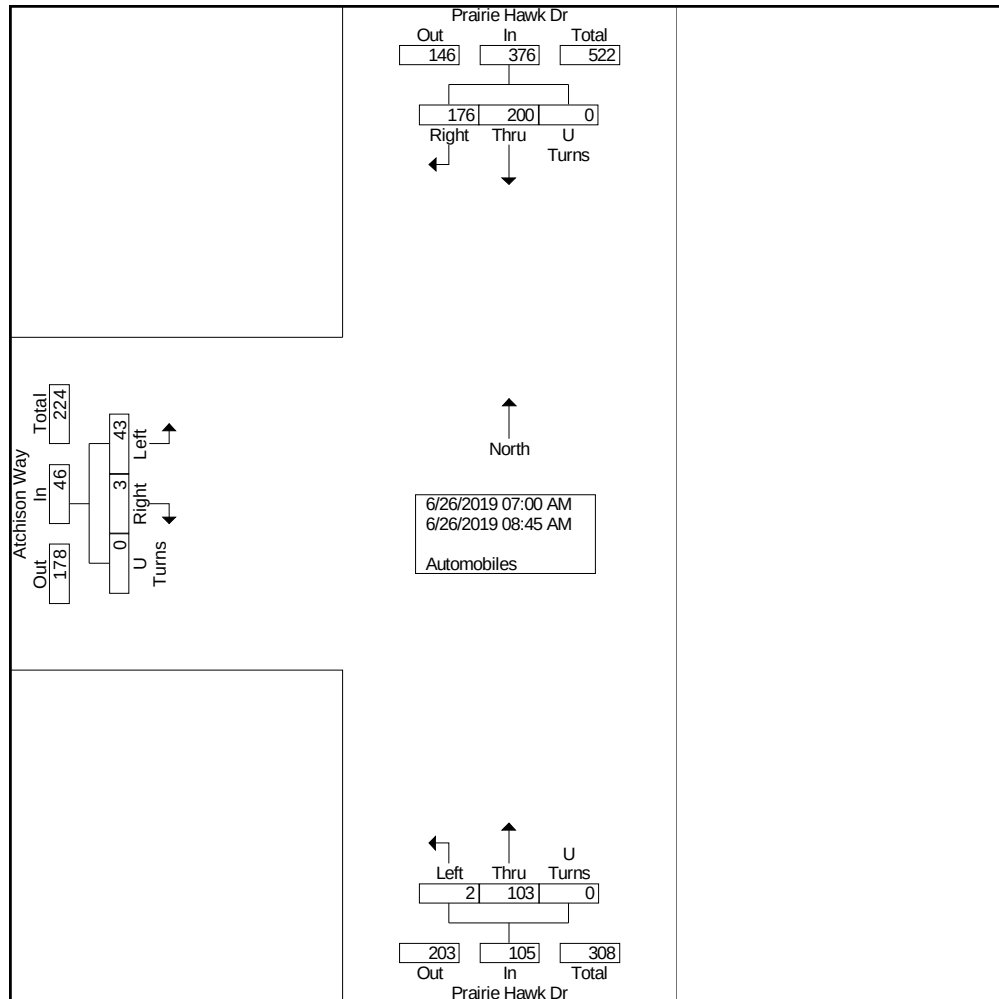
Groups Printed- Automobiles

Start Time	Atchison Way Eastbound				Prairie Hawk Dr Northbound				Prairie Hawk Dr Southbound				Int. Total
	Left	Right	U Turns	App. Total	Left	Thru	U Turns	App. Total	Thru	Right	U Turns	App. Total	
07:00 AM	2	0	0	2	0	12	0	12	13	28	0	41	55
07:15 AM	3	0	0	3	0	13	0	13	20	16	0	36	52
07:30 AM	5	0	0	5	0	8	0	8	27	19	0	46	59
07:45 AM	7	0	0	7	0	15	0	15	31	30	0	61	83
Total	17	0	0	17	0	48	0	48	91	93	0	184	249
08:00 AM	6	0	0	6	0	18	0	18	22	29	0	51	75
08:15 AM	10	0	0	10	0	12	0	12	25	15	0	40	62
08:30 AM	8	2	0	10	2	11	0	13	27	16	0	43	66
08:45 AM	2	1	0	3	0	14	0	14	35	23	0	58	75
Total	26	3	0	29	2	55	0	57	109	83	0	192	278
Grand Total	43	3	0	46	2	103	0	105	200	176	0	376	527
Apprch %	93.5	6.5	0		1.9	98.1	0		53.2	46.8	0		
Total %	8.2	0.6	0	8.7	0.4	19.5	0	19.9	38	33.4	0	71.3	



Castle Rock, CO
Acme Redevelopment
AM Peak
Prairie Hawk Dr and Atchison Way

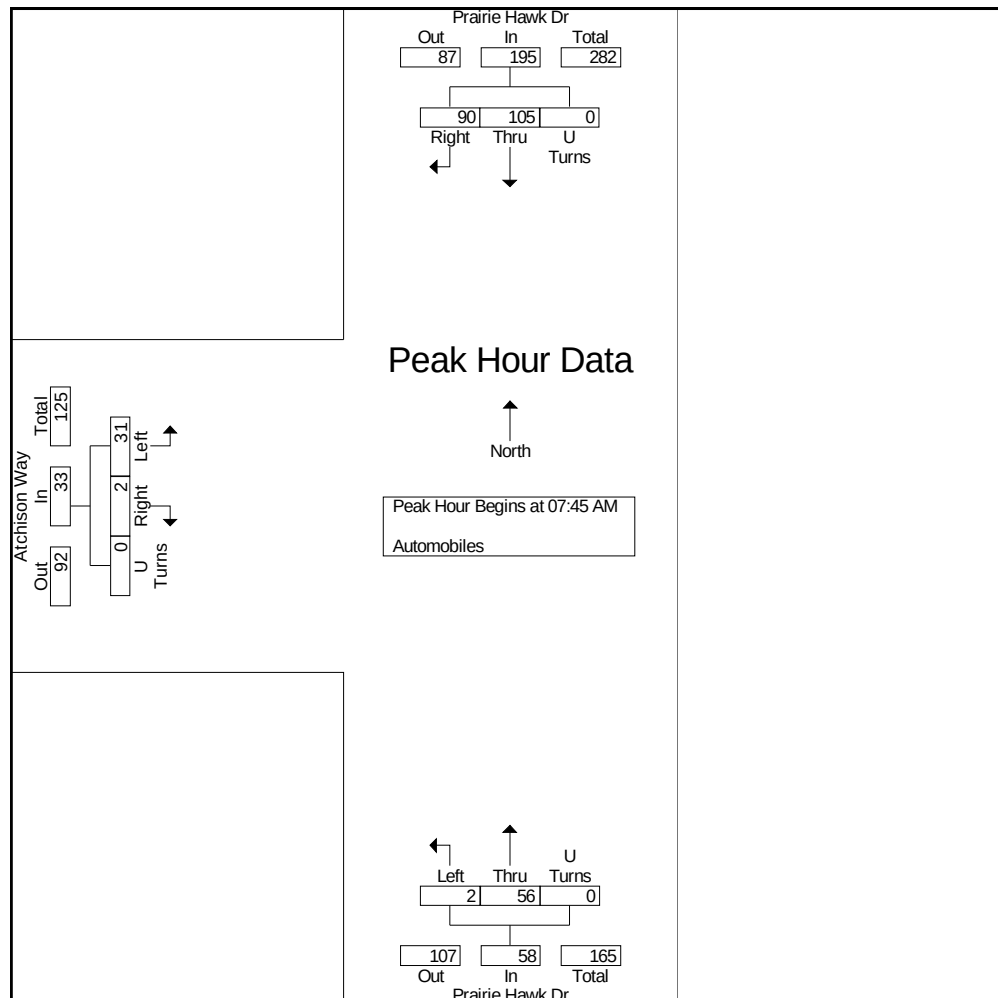
File Name : Prairie Hawk and Atchison AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 2



Castle Rock, CO
Acme Redevelopment
AM Peak
Prairie Hawk Dr and Atchison Way

File Name : Prairie Hawk and Atchison AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 3

	Atchison Way Eastbound				Prairie Hawk Dr Northbound				Prairie Hawk Dr Southbound				
Start Time	Left	Right	U Turns	App. Total	Left	Thru	U Turns	App. Total	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	7	0	0	7	0	15	0	15	31	30	0	61	83
08:00 AM	6	0	0	6	0	18	0	18	22	29	0	51	75
08:15 AM	10	0	0	10	0	12	0	12	25	15	0	40	62
08:30 AM	8	2	0	10	2	11	0	13	27	16	0	43	66
Total Volume	31	2	0	33	2	56	0	58	105	90	0	195	286
% App. Total	93.9	6.1	0		3.4	96.6	0		53.8	46.2	0		
PHF	.775	.250	.000	.825	.250	.778	.000	.806	.847	.750	.000	.799	.861





Castle Rock, CO
Acme Redevelopment
PM Peak
Prairie Hawk Dr and Atchison Way

File Name : Prairie Hawk and Atchison PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 1

Groups Printed- Automobiles

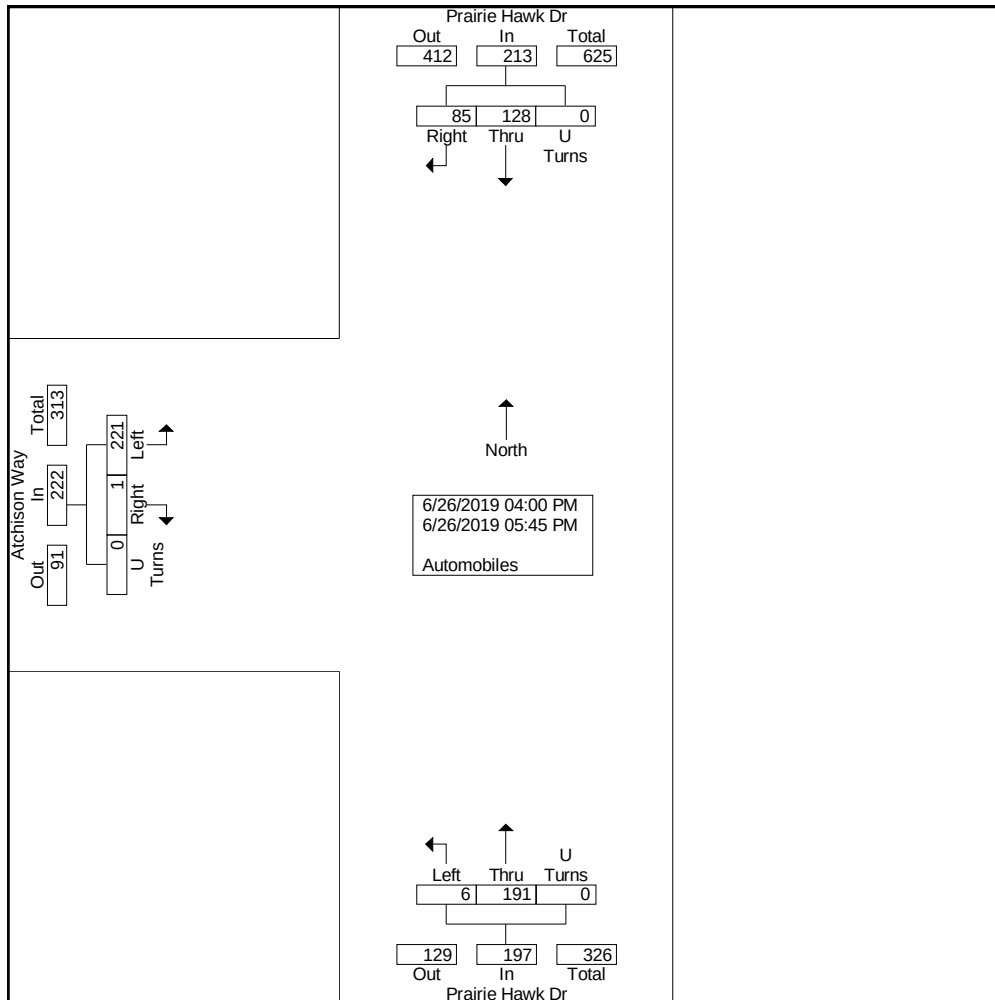
Start Time	Atchison Way Eastbound				Prairie Hawk Dr Northbound				Prairie Hawk Dr Southbound				Int. Total
	Left	Right	U Turns	App. Total	Left	Thru	U Turns	App. Total	Thru	Right	U Turns	App. Total	
04:00 PM	29	0	0	29	1	27	0	28	23	11	0	34	91
04:15 PM	26	1	0	27	0	28	0	28	21	18	0	39	94
04:30 PM	48	0	0	48	3	30	0	33	17	7	0	24	105
04:45 PM	26	0	0	26	1	23	0	24	18	10	0	28	78
Total	129	1	0	130	5	108	0	113	79	46	0	125	368
05:00 PM	43	0	0	43	1	27	0	28	14	10	0	24	95
05:15 PM	16	0	0	16	0	18	0	18	9	9	0	18	52
05:30 PM	15	0	0	15	0	21	0	21	11	15	0	26	62
05:45 PM	18	0	0	18	0	17	0	17	15	5	0	20	55
Total	92	0	0	92	1	83	0	84	49	39	0	88	264
Grand Total	221	1	0	222	6	191	0	197	128	85	0	213	632
Apprch %	99.5	0.5	0		3	97	0		60.1	39.9	0		
Total %	35	0.2	0	35.1	0.9	30.2	0	31.2	20.3	13.4	0	33.7	



Ridgeview Data
Collection

Castle Rock, CO
Acme Redevelopment
PM Peak
Prairie Hawk Dr and Atchison Way

File Name : Prairie Hawk and Atchison PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 2

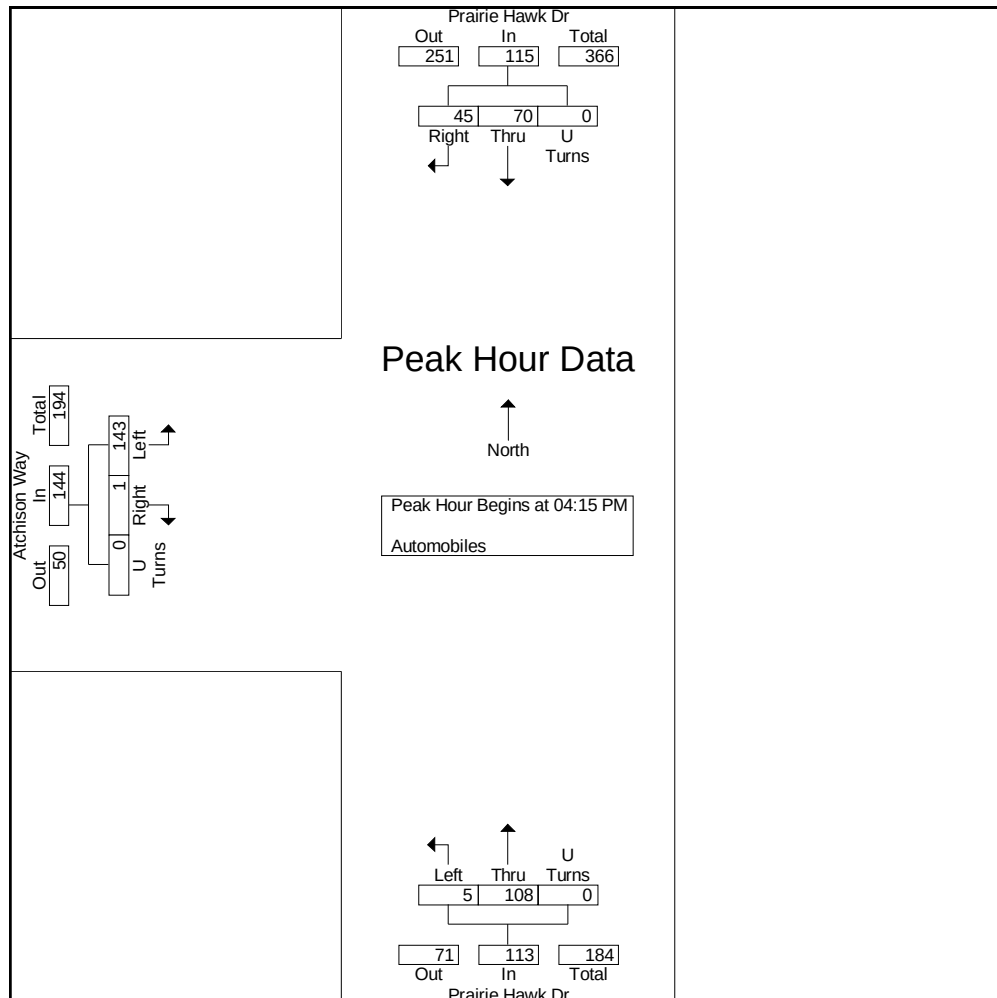




Castle Rock, CO
Acme Redevelopment
PM Peak
Prairie Hawk Dr and Atchison Way

File Name : Prairie Hawk and Atchison PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 3

	Atchison Way Eastbound				Prairie Hawk Dr Northbound				Prairie Hawk Dr Southbound				
Start Time	Left	Right	U Turns	App. Total	Left	Thru	U Turns	App. Total	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	26	1	0	27	0	28	0	28	21	18	0	39	94
04:30 PM	48	0	0	48	3	30	0	33	17	7	0	24	105
04:45 PM	26	0	0	26	1	23	0	24	18	10	0	28	78
05:00 PM	43	0	0	43	1	27	0	28	14	10	0	24	95
Total Volume	143	1	0	144	5	108	0	113	70	45	0	115	372
% App. Total	99.3	0.7	0		4.4	95.6	0		60.9	39.1	0		
PHF	.745	.250	.000	.750	.417	.900	.000	.856	.833	.625	.000	.737	.886





Castle Rock, CO
Acme Redevelopment
AM Peak
Wolfensberger and Prairie Hawk Dr

File Name : Wolfensberger and Prairie Hawk AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 1

Groups Printed- Automobiles

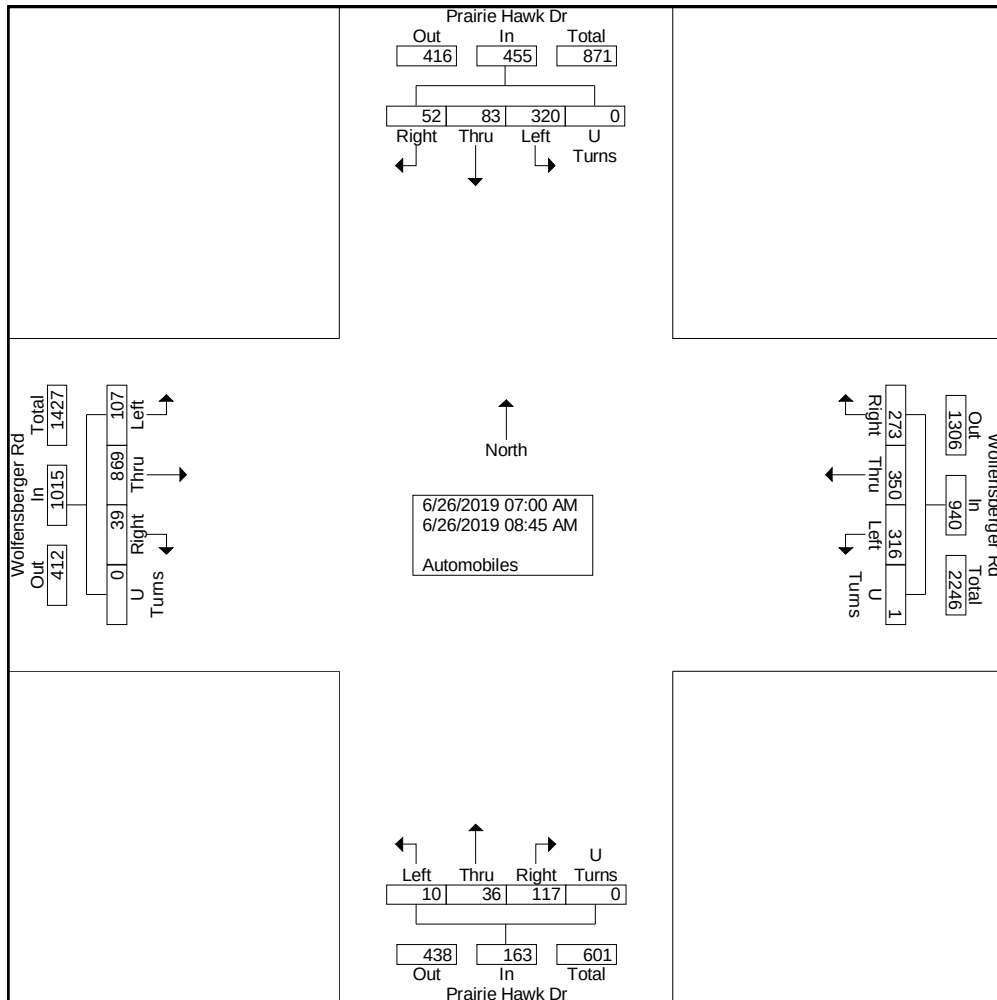
	Wolfensberger Rd Eastbound					Wolfensberger Rd Westbound					Prairie Hawk Dr Northbound					Prairie Hawk Dr Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
07:00 AM	7	90	3	0	100	26	29	31	0	86	1	3	11	0	15	34	7	7	0	48	249
07:15 AM	12	112	3	0	127	42	32	31	1	106	2	4	11	0	17	30	5	4	0	39	289
07:30 AM	10	116	5	0	131	40	44	28	0	112	2	1	8	0	11	44	11	4	0	59	313
07:45 AM	16	120	8	0	144	53	36	44	0	133	1	8	14	0	23	40	17	5	0	62	362
Total	45	438	19	0	502	161	141	134	1	437	6	16	44	0	66	148	40	20	0	208	1213
08:00 AM	11	109	4	0	124	46	40	29	0	115	1	5	19	0	25	38	8	4	0	50	314
08:15 AM	15	97	6	0	118	30	55	30	0	115	1	6	19	0	26	41	15	7	0	63	322
08:30 AM	14	115	6	0	135	32	45	32	0	109	2	3	18	0	23	45	7	9	0	61	328
08:45 AM	22	110	4	0	136	47	69	48	0	164	0	6	17	0	23	48	13	12	0	73	396
Total	62	431	20	0	513	155	209	139	0	503	4	20	73	0	97	172	43	32	0	247	1360
Grand Total	107	869	39	0	1015	316	350	273	1	940	10	36	117	0	163	320	83	52	0	455	2573
Apprch %	10.5	85.6	3.8	0		33.6	37.2	29	0.1		6.1	22.1	71.8	0		70.3	18.2	11.4	0		
Total %	4.2	33.8	1.5	0	39.4	12.3	13.6	10.6	0	36.5	0.4	1.4	4.5	0	6.3	12.4	3.2	2	0	17.7	



Ridgeview Data
Collection

Castle Rock, CO
Acme Redevelopment
AM Peak
Wolfensberger and Prairie Hawk Dr

File Name : Wolfensberger and Prairie Hawk AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 2

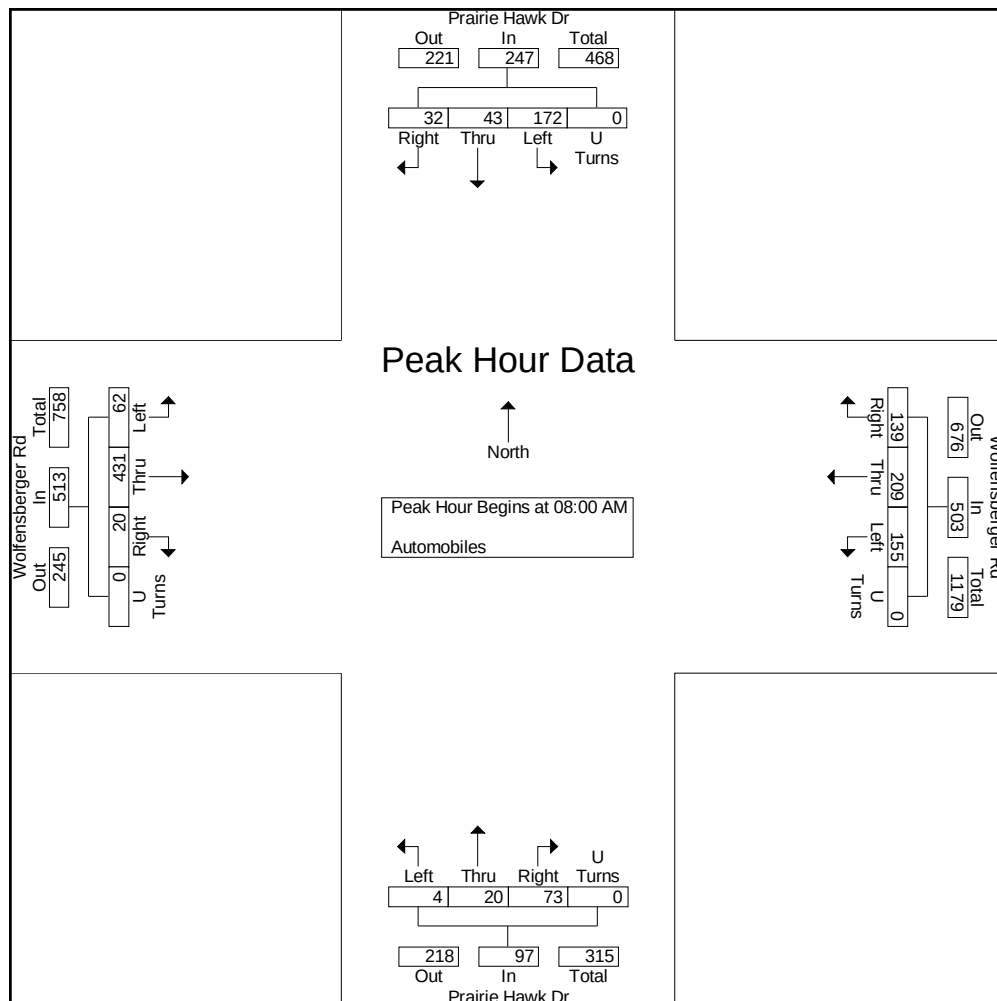




Castle Rock, CO
Acme Redevelopment
AM Peak
Wolfensberger and Prairie Hawk Dr

File Name : Wolfensberger and Prairie Hawk AM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 3

	Wolfensberger Rd Eastbound					Wolfensberger Rd Westbound					Prairie Hawk Dr Northbound					Prairie Hawk Dr Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	11	109	4	0	124	46	40	29	0	115	1	5	19	0	25	38	8	4	0	50	314
08:15 AM	15	97	6	0	118	30	55	30	0	115	1	6	19	0	26	41	15	7	0	63	322
08:30 AM	14	115	6	0	135	32	45	32	0	109	2	3	18	0	23	45	7	9	0	61	328
08:45 AM	22	110	4	0	136	47	69	48	0	164	0	6	17	0	23	48	13	12	0	73	396
Total Volume	62	431	20	0	513	155	209	139	0	503	4	20	73	0	97	172	43	32	0	247	1360
% App. Total	12.1	84	3.9	0		30.8	41.6	27.6	0		4.1	20.6	75.3	0		69.6	17.4	13	0		
PHF	.705	.937	.833	.000	.943	.824	.757	.724	.000	.767	.500	.833	.961	.000	.933	.896	.717	.667	.000	.846	.859





Castle Rock, CO
Acme Redevelopment
PM Peak
Wolfensberger and Prairie Hawk Dr

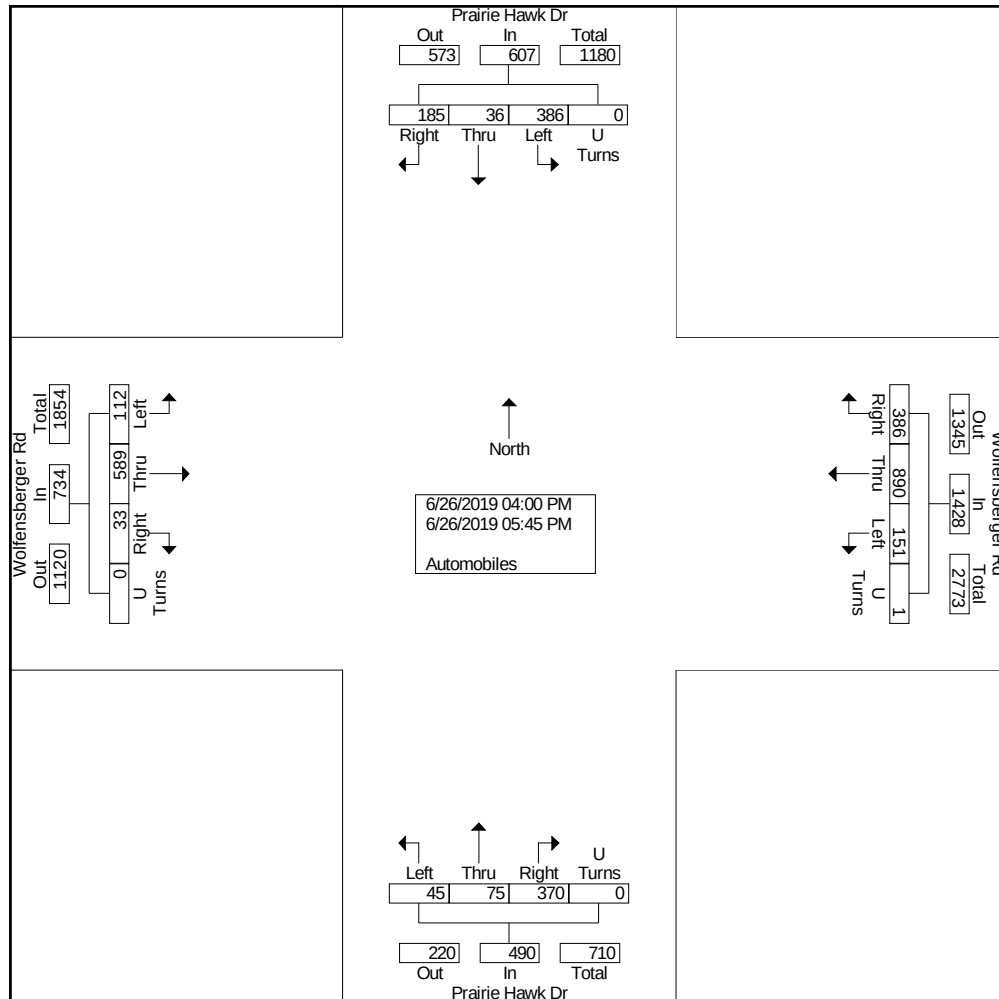
File Name : Wolfensberger and Prairie Hawk PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 1

Groups Printed- Automobiles

	Wolfensberger Rd Eastbound					Wolfensberger Rd Westbound					Prairie Hawk Dr Northbound					Prairie Hawk Dr Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
04:00 PM	13	57	5	0	75	19	79	52	0	150	4	10	61	0	75	44	7	28	0	79	379
04:15 PM	17	67	6	0	90	27	101	47	0	175	13	11	46	0	70	50	8	27	0	85	420
04:30 PM	17	67	4	0	88	18	108	55	0	181	3	20	69	0	92	50	9	21	0	80	441
04:45 PM	12	78	2	0	92	22	131	46	1	200	8	8	44	0	60	49	1	24	0	74	426
Total	59	269	17	0	345	86	419	200	1	706	28	49	220	0	297	193	25	100	0	318	1666
05:00 PM	17	85	4	0	106	18	122	49	0	189	9	12	54	0	75	40	1	20	0	61	431
05:15 PM	8	81	3	0	92	11	103	54	0	168	3	5	28	0	36	49	5	22	0	76	372
05:30 PM	12	78	4	0	94	21	128	49	0	198	4	5	31	0	40	44	1	25	0	70	402
05:45 PM	16	76	5	0	97	15	118	34	0	167	1	4	37	0	42	60	4	18	0	82	388
Total	53	320	16	0	389	65	471	186	0	722	17	26	150	0	193	193	11	85	0	289	1593
Grand Total	112	589	33	0	734	151	890	386	1	1428	45	75	370	0	490	386	36	185	0	607	3259
Apprch %	15.3	80.2	4.5	0		10.6	62.3	27	0.1		9.2	15.3	75.5	0		63.6	5.9	30.5	0		
Total %	3.4	18.1	1	0	22.5	4.6	27.3	11.8	0	43.8	1.4	2.3	11.4	0	15	11.8	1.1	5.7	0	18.6	

Castle Rock, CO
Acme Redevelopment
PM Peak
Wolfensberger and Prairie Hawk Dr

File Name : Wolfensberger and Prairie Hawk PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 2

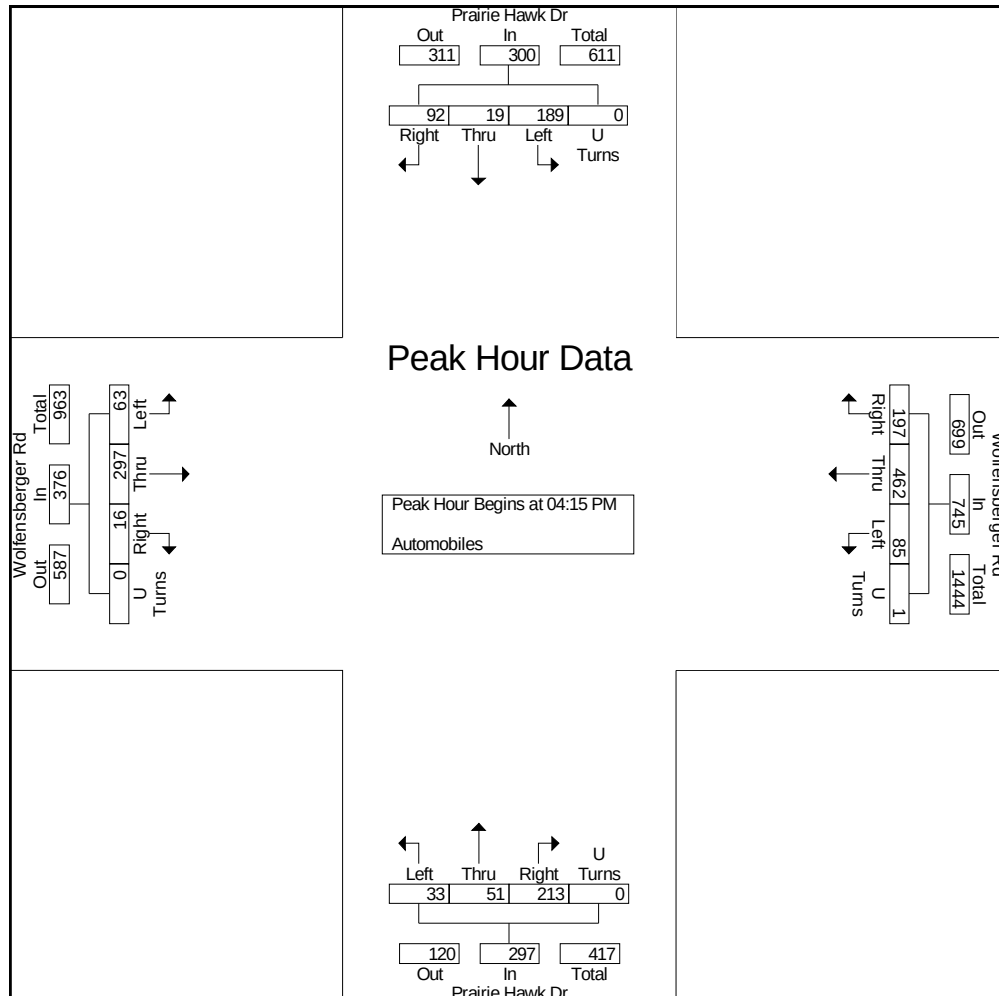




Castle Rock, CO
Acme Redevelopment
PM Peak
Wolfensberger and Prairie Hawk Dr

File Name : Wolfensberger and Prairie Hawk PM
Site Code : IPO 52
Start Date : 6/26/2019
Page No : 3

	Wolfensberger Rd Eastbound					Wolfensberger Rd Westbound					Prairie Hawk Dr Northbound					Prairie Hawk Dr Southbound					
Start Time	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Left	Thru	Right	U Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	17	67	6	0	90	27	101	47	0	175	13	11	46	0	70	50	8	27	0	85	420
04:30 PM	17	67	4	0	88	18	108	55	0	181	3	20	69	0	92	50	9	21	0	80	441
04:45 PM	12	78	2	0	92	22	131	46	1	200	8	8	44	0	60	49	1	24	0	74	426
05:00 PM	17	85	4	0	106	18	122	49	0	189	9	12	54	0	75	40	1	20	0	61	431
Total Volume	63	297	16	0	376	85	462	197	1	745	33	51	213	0	297	189	19	92	0	300	1718
% App. Total	16.8	79	4.3	0		11.4	62	26.4	0.1		11.1	17.2	71.7	0		63	6.3	30.7	0		
PHF	.926	.874	.667	.000	.887	.787	.882	.895	.250	.931	.635	.638	.772	.000	.807	.945	.528	.852	.000	.882	.974



Daily Vehicle Volume Report

Study Date: Wednesday, 03/06/2019

Unit ID: RDC 12

Location: Plum Creek Parkway, Castle Rock, CO

Comments: West of I-25

	Westbound Volume	Eastbound Volume	Total Volume
00:00 - 00:59	3	8	11
01:00 - 01:59	5	0	5
02:00 - 02:59	5	4	9
03:00 - 03:59	1	1	2
04:00 - 04:59	8	8	16
05:00 - 05:59	8	32	40
06:00 - 06:59	71	117	188
07:00 - 07:59	253	246	499
08:00 - 08:59	177	234	411
09:00 - 09:59	148	180	328
10:00 - 10:59	154	164	318
11:00 - 11:59	178	210	388
12:00 - 12:59	173	196	369
13:00 - 13:59	182	169	351
14:00 - 14:59	204	199	403
15:00 - 15:59	352	338	690
16:00 - 16:59	328	280	608
17:00 - 17:59	354	257	611
18:00 - 18:59	305	191	496
19:00 - 19:59	186	147	333
20:00 - 20:59	152	120	272
21:00 - 21:59	82	60	142
22:00 - 22:59	27	28	55
23:00 - 23:59	13	8	21
Totals	3369	3197	6566
AM Peak Time	07:18 - 08:17	07:18 - 08:17	07:18 - 08:17
AM Peak Volume	286	280	566
PM Peak Time	16:33 - 17:32	15:17 - 16:16	15:00 - 15:59
PM Peak Volume	372	359	690

Daily Vehicle Volume Report

Study Date: Wednesday, 06/26/2019

Unit ID: RDC 18

Location: Plum Creek Pkwy, Castle Rock, CO

Comments: West of I-25

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	6	12	18
01:00 - 01:59	8	3	11
02:00 - 02:59	5	4	9
03:00 - 03:59	0	3	3
04:00 - 04:59	12	8	20
05:00 - 05:59	36	42	78
06:00 - 06:59	139	82	221
07:00 - 07:59	210	143	353
08:00 - 08:59	293	249	542
09:00 - 09:59	226	221	447
10:00 - 10:59	228	254	482
11:00 - 11:59	219	259	478
12:00 - 12:59	307	247	554
13:00 - 13:59	279	234	513
14:00 - 14:59	219	238	457
15:00 - 15:59	279	275	554
16:00 - 16:59	320	336	656
17:00 - 17:59	329	374	703
18:00 - 18:59	252	335	587
19:00 - 19:59	222	213	435
20:00 - 20:59	184	178	362
21:00 - 21:59	111	139	250
22:00 - 22:59	59	42	101
23:00 - 23:59	27	29	56
Totals	3970	3920	7890
AM Peak Time	08:25 - 09:24	10:38 - 11:37	08:24 - 09:23
AM Peak Volume	311	272	574
PM Peak Time	16:52 - 17:51	16:40 - 17:39	16:40 - 17:39
PM Peak Volume	337	411	746

Daily Vehicle Volume Report

Study Date: Thursday, 06/27/2019

Unit ID: RDC 18

Location: Plum Creek Pkwy, Castle Rock, CO

Comments: West of I-25

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	10	15	25
01:00 - 01:59	3	3	6
02:00 - 02:59	3	3	6
03:00 - 03:59	2	1	3
04:00 - 04:59	11	7	18
05:00 - 05:59	29	25	54
06:00 - 06:59	103	111	214
07:00 - 07:59	253	163	416
08:00 - 08:59	282	226	508
09:00 - 09:59	285	221	506
10:00 - 10:59	243	244	487
11:00 - 11:59	253	267	520
12:00 - 12:59	271	261	532
13:00 - 13:59	274	242	516
14:00 - 14:59	243	241	484
15:00 - 15:59	271	273	544
16:00 - 16:59	347	375	722
17:00 - 17:59	323	402	725
18:00 - 18:59	267	304	571
19:00 - 19:59	171	226	397
20:00 - 20:59	168	149	317
21:00 - 21:59	109	105	214
22:00 - 22:59	36	49	85
23:00 - 23:59	34	30	64
Totals	3991	3943	7934
AM Peak Time	08:32 - 09:31	10:49 - 11:48	08:37 - 09:36
AM Peak Volume	321	276	555
PM Peak Time	16:17 - 17:16	16:57 - 17:56	16:06 - 17:05
PM Peak Volume	363	410	749

Daily Vehicle Volume Report

Study Date: Friday, 06/28/2019

Unit ID: RDC 18

Location: Plum Creek Pkwy, Castle Rock, CO

Comments: West of I-25

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	11	12	23
01:00 - 01:59	11	10	21
02:00 - 02:59	8	9	17
03:00 - 03:59	3	4	7
04:00 - 04:59	11	8	19
05:00 - 05:59	27	14	41
06:00 - 06:59	92	77	169
07:00 - 07:59	230	172	402
08:00 - 08:59	259	221	480
09:00 - 09:59	302	229	531
10:00 - 10:59	222	253	475
11:00 - 11:59	228	254	482
12:00 - 12:59	287	274	561
13:00 - 13:59	242	235	477
14:00 - 14:59	246	238	484
15:00 - 15:59	284	277	561
16:00 - 16:59	304	312	616
17:00 - 17:59	261	306	567
18:00 - 18:59	188	250	438
19:00 - 19:59	157	208	365
20:00 - 20:59	148	146	294
21:00 - 21:59	75	107	182
22:00 - 22:59	52	57	109
23:00 - 23:59	21	30	51
Totals	3669	3703	7372
AM Peak Time	08:40 - 09:39	10:38 - 11:37	08:16 - 09:15
AM Peak Volume	318	272	548
PM Peak Time	15:48 - 16:47	16:40 - 17:39	15:49 - 16:48
PM Peak Volume	326	327	647

Daily Vehicle Volume Report

Study Date: Saturday, 06/29/2019

Unit ID: RDC 18

Location: Plum Creek Pkwy, Castle Rock, CO

Comments: West of I-25

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	18	19	37
01:00 - 01:59	8	8	16
02:00 - 02:59	6	9	15
03:00 - 03:59	4	4	8
04:00 - 04:59	8	7	15
05:00 - 05:59	22	19	41
06:00 - 06:59	52	73	125
07:00 - 07:59	129	103	232
08:00 - 08:59	214	179	393
09:00 - 09:59	259	260	519
10:00 - 10:59	284	294	578
11:00 - 11:59	344	271	615
12:00 - 12:59	282	262	544
13:00 - 13:59	302	301	603
14:00 - 14:59	225	244	469
15:00 - 15:59	281	192	473
16:00 - 16:59	226	246	472
17:00 - 17:59	228	551	779
18:00 - 18:59	210	524	734
19:00 - 19:59	143	222	365
20:00 - 20:59	135	144	279
21:00 - 21:59	71	104	175
22:00 - 22:59	47	53	100
23:00 - 23:59	31	37	68
Totals	3529	4126	7655
AM Peak Time	11:00 - 11:59	09:50 - 10:49	11:00 - 11:59
AM Peak Volume	344	311	615
PM Peak Time	12:45 - 13:44	17:28 - 18:27	17:28 - 18:27
PM Peak Volume	323	646	880

Daily Vehicle Volume Report

Study Date: Sunday, 06/30/2019

Unit ID: RDC 18

Location: Plum Creek Pkwy, Castle Rock, CO

Comments: West of I-25

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	20	30	50
01:00 - 01:59	14	7	21
02:00 - 02:59	7	10	17
03:00 - 03:59	3	4	7
04:00 - 04:59	4	4	8
05:00 - 05:59	18	9	27
06:00 - 06:59	38	50	88
07:00 - 07:59	81	72	153
08:00 - 08:59	192	172	364
09:00 - 09:59	235	230	465
10:00 - 10:59	377	228	605
11:00 - 11:59	519	268	787
12:00 - 12:59	297	263	560
13:00 - 13:59	254	267	521
14:00 - 14:59	228	236	464
15:00 - 15:59	270	241	511
16:00 - 16:59	194	177	371
17:00 - 17:59	141	157	298
18:00 - 18:59	166	189	355
19:00 - 19:59	92	145	237
20:00 - 20:59	96	98	194
21:00 - 21:59	38	50	88
22:00 - 22:59	0	0	0
23:00 - 23:59	0	0	0
Totals	3284	2907	6191
AM Peak Time	10:42 - 11:41	10:35 - 11:34	10:42 - 11:41
AM Peak Volume	575	286	856
PM Peak Time	12:05 - 13:04	12:41 - 13:40	12:43 - 13:42
PM Peak Volume	303	306	570

Daily Vehicle Volume Report

Study Date: Wednesday, 06/26/2019

Unit ID: RDC 8

Location: Prairie Hawk Dr, Castle Rock, CO

Comments: South of Wolfensberger

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:59	2	8	10
01:00 - 01:59	7	4	11
02:00 - 02:59	4	2	6
03:00 - 03:59	4	14	18
04:00 - 04:59	7	33	40
05:00 - 05:59	51	86	137
06:00 - 06:59	55	166	221
07:00 - 07:59	87	249	336
08:00 - 08:59	134	263	397
09:00 - 09:59	167	268	435
10:00 - 10:59	207	233	440
11:00 - 11:59	219	230	449
12:00 - 12:59	244	295	539
13:00 - 13:59	207	238	445
14:00 - 14:59	183	193	376
15:00 - 15:59	236	181	417
16:00 - 16:59	309	180	489
17:00 - 17:59	196	108	304
18:00 - 18:59	108	104	212
19:00 - 19:59	96	72	168
20:00 - 20:59	66	27	93
21:00 - 21:59	58	11	69
22:00 - 22:59	11	3	14
23:00 - 23:59	3	1	4
Totals	2661	2969	5630
AM Peak Time	10:46 - 11:45	07:40 - 08:39	09:26 - 10:25
AM Peak Volume	235	292	459
PM Peak Time	15:48 - 16:47	12:15 - 13:14	12:13 - 13:12
PM Peak Volume	322	308	545

Daily Vehicle Volume Report

Study Date: Thursday, 06/27/2019

Unit ID: RDC 8

Location: Prairie Hawk Dr, Castle Rock, CO

Comments: South of Wolfensberger

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:59	3	5	8
01:00 - 01:59	5	14	19
02:00 - 02:59	14	3	17
03:00 - 03:59	2	16	18
04:00 - 04:59	12	33	45
05:00 - 05:59	42	69	111
06:00 - 06:59	60	173	233
07:00 - 07:59	71	223	294
08:00 - 08:59	136	270	406
09:00 - 09:59	177	254	431
10:00 - 10:59	183	205	388
11:00 - 11:59	245	260	505
12:00 - 12:59	235	258	493
13:00 - 13:59	228	289	517
14:00 - 14:59	201	228	429
15:00 - 15:59	240	171	411
16:00 - 16:59	284	183	467
17:00 - 17:59	222	105	327
18:00 - 18:59	93	65	158
19:00 - 19:59	65	70	135
20:00 - 20:59	46	40	86
21:00 - 21:59	41	22	63
22:00 - 22:59	37	10	47
23:00 - 23:59	23	3	26
Totals	2665	2969	5634
AM Peak Time	10:59 - 11:58	08:07 - 09:06	11:00 - 11:59
AM Peak Volume	246	291	505
PM Peak Time	15:36 - 16:35	12:53 - 13:52	13:04 - 14:03
PM Peak Volume	287	297	526

Daily Vehicle Volume Report

Study Date: Friday, 06/28/2019

Unit ID: RDC 8

Location: Prairie Hawk Dr, Castle Rock, CO

Comments: South of Wolfensberger

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:59	3	7	10
01:00 - 01:59	9	7	16
02:00 - 02:59	5	7	12
03:00 - 03:59	5	11	16
04:00 - 04:59	15	33	48
05:00 - 05:59	39	77	116
06:00 - 06:59	64	162	226
07:00 - 07:59	104	234	338
08:00 - 08:59	162	264	426
09:00 - 09:59	171	239	410
10:00 - 10:59	206	213	419
11:00 - 11:59	243	241	484
12:00 - 12:59	266	271	537
13:00 - 13:59	212	241	453
14:00 - 14:59	214	223	437
15:00 - 15:59	274	193	467
16:00 - 16:59	271	168	439
17:00 - 17:59	194	109	303
18:00 - 18:59	103	73	176
19:00 - 19:59	51	37	88
20:00 - 20:59	52	36	88
21:00 - 21:59	25	20	45
22:00 - 22:59	18	10	28
23:00 - 23:59	13	6	19
Totals	2719	2882	5601
AM Peak Time	10:45 - 11:44	07:45 - 08:44	10:43 - 11:42
AM Peak Volume	255	282	504
PM Peak Time	15:05 - 16:04	12:01 - 13:00	12:00 - 12:59
PM Peak Volume	286	273	537

Daily Vehicle Volume Report

Study Date: Saturday, 06/29/2019

Unit ID: RDC 8

Location: Prairie Hawk Dr, Castle Rock, CO

Comments: South of Wolfensberger

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:59	6	3	9
01:00 - 01:59	2	4	6
02:00 - 02:59	10	10	20
03:00 - 03:59	5	13	18
04:00 - 04:59	13	25	38
05:00 - 05:59	20	15	35
06:00 - 06:59	16	11	27
07:00 - 07:59	27	28	55
08:00 - 08:59	53	59	112
09:00 - 09:59	79	112	191
10:00 - 10:59	184	198	382
11:00 - 11:59	128	142	270
12:00 - 12:59	100	84	184
13:00 - 13:59	85	73	158
14:00 - 14:59	61	78	139
15:00 - 15:59	68	55	123
16:00 - 16:59	67	50	117
17:00 - 17:59	60	88	148
18:00 - 18:59	85	75	160
19:00 - 19:59	60	26	86
20:00 - 20:59	33	15	48
21:00 - 21:59	17	11	28
22:00 - 22:59	21	5	26
23:00 - 23:59	4	3	7
Totals	1204	1183	2387
AM Peak Time	09:50 - 10:49	09:40 - 10:39	09:40 - 10:39
AM Peak Volume	205	220	421
PM Peak Time	12:00 - 12:59	17:12 - 18:11	12:06 - 13:05
PM Peak Volume	100	103	188

Daily Vehicle Volume Report

Study Date: Sunday, 06/30/2019

Unit ID: RDC 8

Location: Prairie Hawk Dr, Castle Rock, CO

Comments: South of Wolfensberger

	Northbound Volume	Southbound Volume	Total Volume
00:00 - 00:59	5	7	12
01:00 - 01:59	4	4	8
02:00 - 02:59	6	3	9
03:00 - 03:59	3	3	6
04:00 - 04:59	3	6	9
05:00 - 05:59	5	2	7
06:00 - 06:59	4	4	8
07:00 - 07:59	6	7	13
08:00 - 08:59	7	13	20
09:00 - 09:59	10	11	21
10:00 - 10:59	17	17	34
11:00 - 11:59	22	35	57
12:00 - 12:59	31	50	81
13:00 - 13:59	38	47	85
14:00 - 14:59	43	39	82
15:00 - 15:59	44	36	80
16:00 - 16:59	32	24	56
17:00 - 17:59	28	32	60
18:00 - 18:59	32	22	54
19:00 - 19:59	34	29	63
20:00 - 20:59	16	9	25
21:00 - 21:59	23	6	29
22:00 - 22:59	3	4	7
23:00 - 23:59	3	4	7
Totals	419	414	833
AM Peak Time	10:42 - 11:41	11:00 - 11:59	10:52 - 11:51
AM Peak Volume	27	35	57
PM Peak Time	14:15 - 15:14	12:21 - 13:20	12:40 - 13:39
PM Peak Volume	51	57	97

COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: I-25 WEST RAMPS/FRONTAGE RD
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16W
Site Code : 00000016
Start Date : 1/9/2018
Page No : 1

Groups Printed- VEHICLES

	I-25 WEST RAMPS Southbound				PLUM CREEK PKWY Westbound				FRONTAGE RD Northbound				PLUM CREEK PKWY Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	71	7	1	0	32	2	0	0	1	0	58	0	0	26	8	0	206
06:45 AM	81	5	0	0	29	25	0	0	5	0	84	0	0	34	7	0	270
Total	152	12	1	0	61	27	0	0	6	0	142	0	0	60	15	0	476
07:00 AM	87	12	0	0	36	17	0	0	13	0	71	0	0	33	19	0	288
07:15 AM	107	18	1	0	40	25	0	0	9	0	74	0	0	39	13	0	326
07:30 AM	113	12	1	0	37	28	0	0	5	0	66	0	0	67	12	0	341
07:45 AM	145	9	3	0	38	47	0	0	5	0	61	0	0	82	16	0	406
Total	452	51	5	0	151	117	0	0	32	0	272	0	0	221	60	0	1361
08:00 AM	145	13	1	0	34	49	0	0	2	0	63	0	0	50	9	0	366
08:15 AM	117	16	6	0	34	35	0	0	3	0	65	0	0	38	14	0	328
Total	262	29	7	0	68	84	0	0	5	0	128	0	0	88	23	0	694
04:00 PM	228	50	20	0	83	32	0	0	2	0	27	0	0	55	8	0	505
04:15 PM	277	68	18	0	66	81	0	0	4	0	29	0	0	95	9	0	647
04:30 PM	260	67	16	0	81	48	0	0	2	0	19	0	0	75	3	0	571
04:45 PM	274	88	16	0	50	77	0	0	4	0	49	0	0	91	7	0	656
Total	1039	273	70	0	280	238	0	0	12	0	124	0	0	316	27	0	2379
05:00 PM	270	74	10	0	67	92	0	0	3	0	28	0	0	88	7	0	639
05:15 PM	273	82	12	0	70	73	0	0	2	0	37	0	0	95	11	0	655
05:30 PM	269	56	15	0	51	60	0	0	2	0	35	0	0	111	14	0	613
05:45 PM	317	99	12	0	48	57	0	0	5	0	33	0	0	89	12	0	672
Total	1129	311	49	0	236	282	0	0	12	0	133	0	0	383	44	0	2579
Grand Total	3034	676	132	0	796	748	0	0	67	0	799	0	0	1068	169	0	7489
Apprch %	79.0	17.6	3.4	0.0	51.6	48.4	0.0	0.0	7.7	0.0	92.3	0.0	0.0	86.3	13.7	0.0	
Total %	40.5	9.0	1.8	0.0	10.6	10.0	0.0	0.0	0.9	0.0	10.7	0.0	0.0	14.3	2.3	0.0	

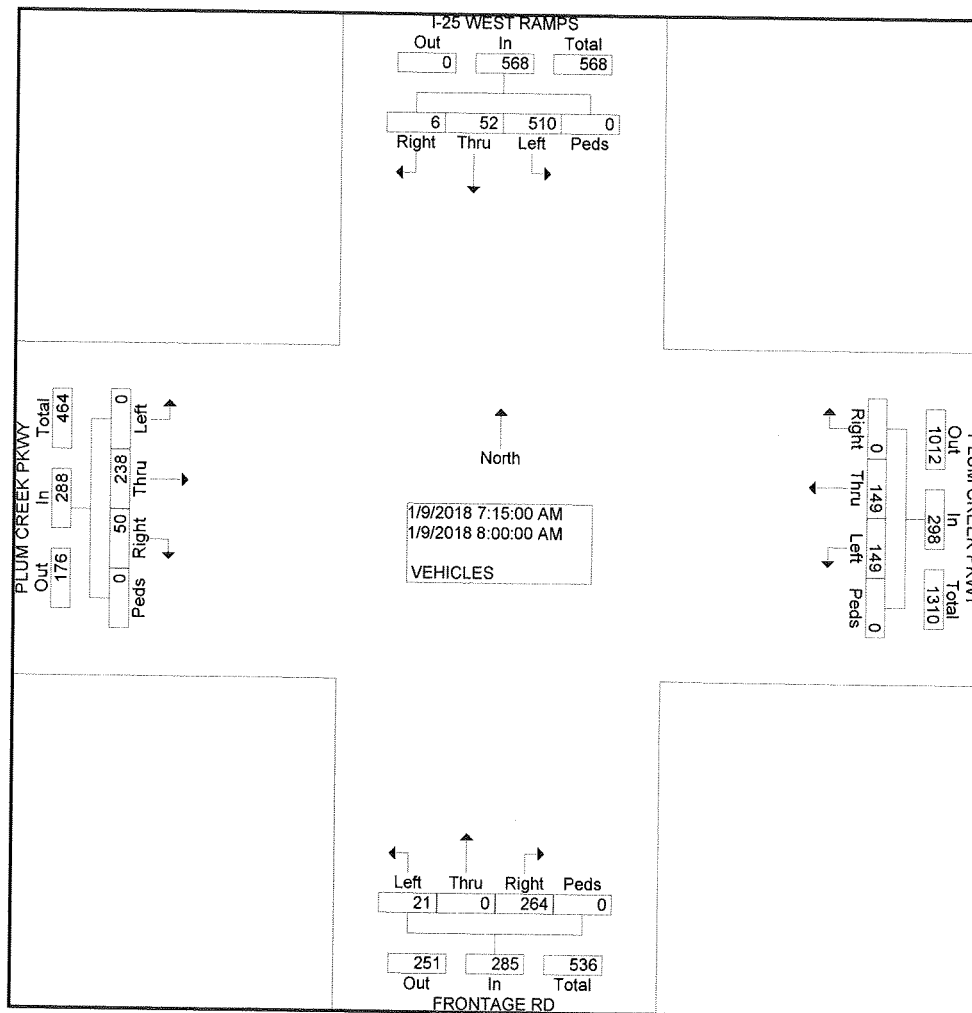
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: I-25 WEST RAMPS/FRONTAGE RD
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16W
Site Code : 00000016
Start Date : 1/9/2018
Page No : 2

Start Time	I-25 WEST RAMPS Southbound					PLUM CREEK PKWY Westbound					FRONTAGE RD Northbound					PLUM CREEK PKWY Eastbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection 07:15 AM																					
Volume	510	52	6	0	568	149	149	0	0	298	21	0	264	0	285	0	238	50	0	288	1439
Percent	89.8	9.2	1.1	0.0		50.0	50.0	0.0	0.0		7.4	0.0	92.6	0.0		0.0	82.6	17.4	0.0		
07:45 Volume	145	9	3	0	157	38	47	0	0	85	5	0	61	0	66	0	82	16	0	98	406
Peak Factor																					0.886
High Int. 08:00 AM																					
Volume	145	13	1	0	159	38	47	0	0	85	9	0	74	0	83	0	82	16	0	98	
Peak Factor																					0.735



COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: I-25 WEST RAMPS/FRONTAGE RD
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16W
Site Code : 00000016
Start Date : 1/9/2018
Page No : 2

	I-25 WEST RAMPS Southbound					PLUM CREEK PKWY Westbound					FRONTAGE RD Northbound					PLUM CREEK PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	107	311	54	0	1442	268	290	0	0	558	11	0	133	0	144	0	349	28	0	377	2521
Percent	74.	21.	3.7	0.0		48.	52.	0.0	0.0		7.6	0.0	92.	0.0		0.0	92.	7.4	0.0		
	7	6				0	0						4				6				
04:45 Volume	274	88	16	0	378	50	77	0	0	127	4	0	49	0	53	0	91	7	0	98	656
Peak Factor																					0.961
High Int. Volume	04:45 PM					05:00 PM					04:45 PM					05:15 PM					
Peak Factor	274	88	16	0	378	67	92	0	0	159	4	0	49	0	53	0	95	11	0	106	
																					0.889

COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: I-25 EAST RAMPS
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16E
Site Code : 00000016
Start Date : 1/9/2018
Page No : 1

Groups Printed- VEHICLES

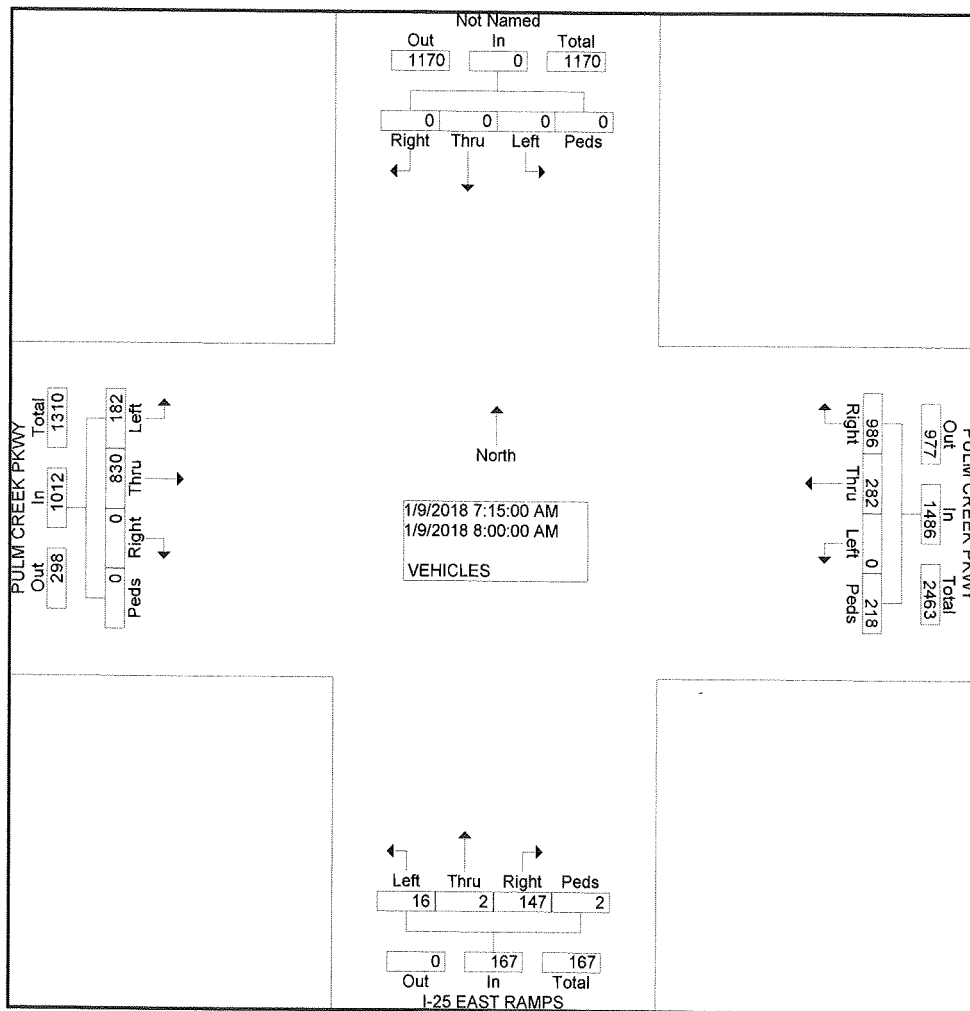
Start Time	Southbound				PULM CREEK PKWY Westbound				I-25 EAST RAMPS Northbound				PULM CREEK PKWY Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	0	33	327	0	1	0	22	1	62	93	0	0	539
06:45 AM	0	0	0	0	0	47	307	0	7	2	30	0	48	151	0	0	592
Total	0	0	0	0	0	80	634	0	8	2	52	1	110	244	0	0	1131
07:00 AM	0	0	0	0	0	51	341	0	2	1	30	0	59	132	0	0	616
07:15 AM	0	0	0	0	0	62	325	0	3	2	38	1	49	171	0	0	651
07:30 AM	0	0	0	0	0	60	115	218	5	0	35	1	50	196	0	0	680
07:45 AM	0	0	0	0	0	80	314	0	5	0	43	0	45	243	0	0	730
Total	0	0	0	0	0	253	1095	218	15	3	146	2	203	742	0	0	2677
08:00 AM	0	0	0	0	0	80	232	0	3	0	31	0	38	220	0	0	604
08:15 AM	0	0	0	0	0	66	225	0	3	1	36	0	42	178	0	0	551
Total	0	0	0	0	0	146	457	0	6	1	67	0	80	398	0	0	1155
04:00 PM	0	0	0	0	0	112	206	0	3	1	29	0	20	290	0	0	661
04:15 PM	0	0	0	0	0	136	145	0	11	0	42	0	29	372	0	0	735
04:30 PM	0	0	0	0	0	118	190	0	11	0	39	0	18	336	0	0	712
04:45 PM	0	0	0	0	0	113	156	0	14	0	43	0	23	391	0	0	740
Total	0	0	0	0	0	479	697	0	39	1	153	0	90	1389	0	0	2848
05:00 PM	0	0	0	0	0	146	210	0	13	0	24	0	20	366	0	0	779
05:15 PM	0	0	0	0	0	137	191	0	6	0	36	0	22	383	0	0	775
05:30 PM	0	0	0	0	0	101	144	0	10	0	28	0	20	395	0	0	698
05:45 PM	0	0	0	0	0	95	126	0	10	0	40	0	13	426	0	0	710
Total	0	0	0	0	0	479	671	0	39	0	128	0	75	1570	0	0	2962
Grand Total	0	0	0	0	0	1437	3554	218	107	7	546	3	558	4343	0	0	10773
Apprch %	0.0	0.0	0.0	0.0	0.0	27.6	68.2	4.2	16.1	1.1	82.4	0.5	11.4	88.6	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	13.3	33.0	2.0	1.0	0.1	5.1	0.0	5.2	40.3	0.0	0.0	

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: I-25 EAST RAMPS
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16E
Site Code : 00000016
Start Date : 1/9/2018
Page No : 2

	Southbound					PULM CREEK PKWY Westbound					I-25 EAST RAMPS Northbound					PULM CREEK PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	0	0	0	0	0	282	986	218	1486	16	2	147	2	167	182	830	0	0	1012	2665
Percent	0.0	0.0	0.0	0.0		0.0	19.0	66.4	14.7		9.6	1.2	88.0	1.2		18.0	82.0	0.0	0.0		
07:45																					
Volume	0	0	0	0	0	0	80	314	0	394	5	0	43	0	48	45	243	0	0	288	730
Peak Factor																					0.913
High Int.																					
Volume	0	0	0	0	0	0	80	314	0	394	5	0	43	0	48	45	243	0	0	288	
Peak Factor																					0.873



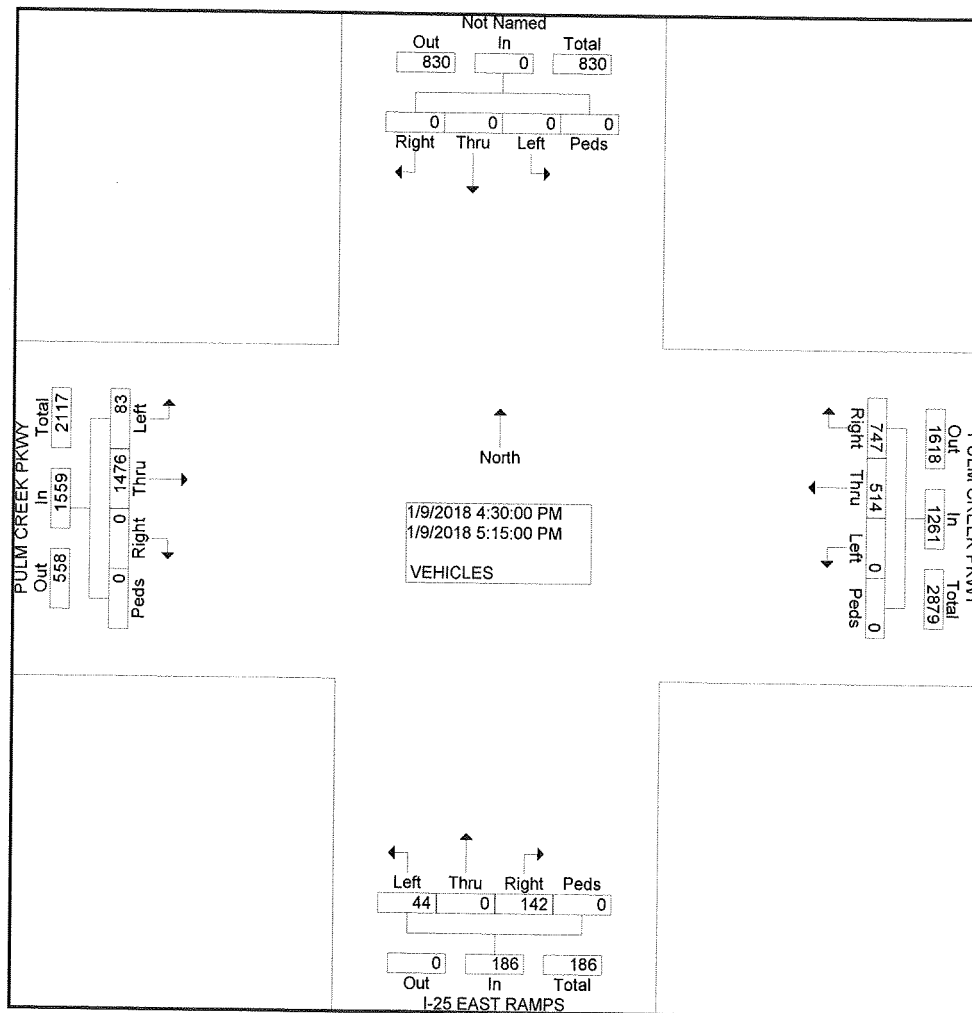
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

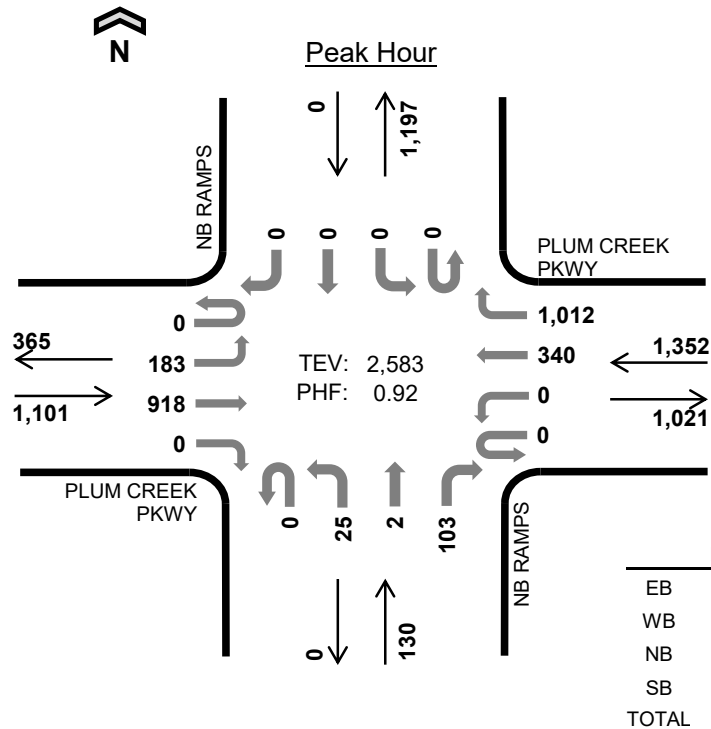
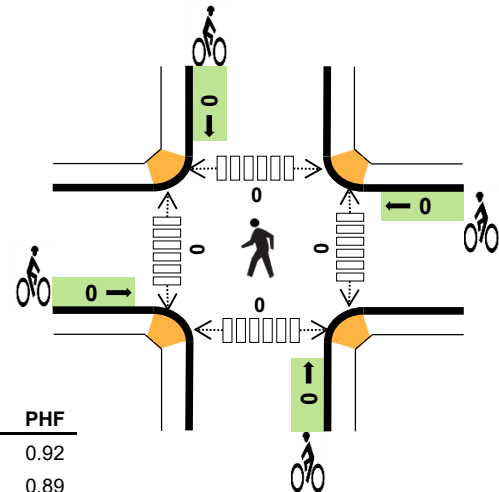
N/S STREET: I-25 EAST RAMPS
E/W STREET: PLUM CREEK PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : RON16E
Site Code : 00000016
Start Date : 1/9/2018
Page No : 2

	Southbound					PULM CREEK PKWY Westbound					I-25 EAST RAMPS Northbound					PULM CREEK PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour	From 04:00 PM to 05:45 PM - Peak 1 of 1																				
Intersection	04:30 PM																				
Volume	0	0	0	0	0	0	514	747	0	1261	44	0	142	0	186	83	1476	0	0	1559	3006
Percent	0.0	0.0	0.0	0.0		0.0	40.8	59.2	0.0		23.7	0.0	76.3	0.0		5.3	94.7	0.0	0.0		
05:00																					
Volume	0	0	0	0	0	0	146	210	0	356	13	0	24	0	37	20	366	0	0	386	779
Peak Factor						05:00 PM					04:45 PM					04:45 PM					0.965
High Int. Volume	0	0	0	0	0	0	146	210	0	356	14	0	43	0	57	23	391	0	0	414	
Peak Factor																					0.941



NB RAMPS PLUM CREEK PKWY



	HV %:	PHF
EB	6.4%	0.92
WB	3.6%	0.89
NB	11.5%	0.81
SB	-	-
TOTAL	5.1%	0.92

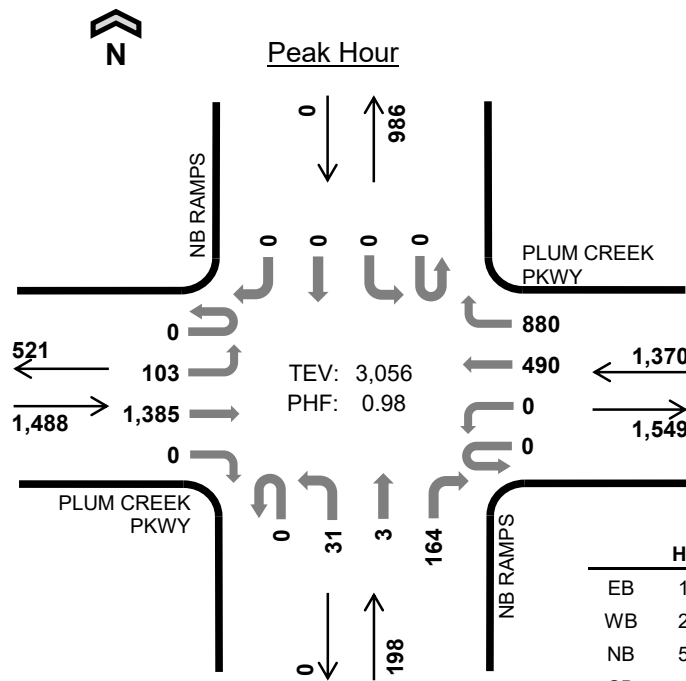
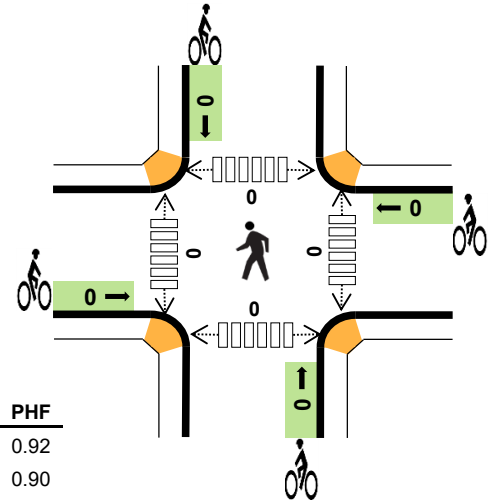
Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				NB RAMPS Northbound				NB RAMPS Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	46	158	0	0	0	46	222	0	5	0	28	0	0	0	0	505	0
7:15 AM	0	50	201	0	0	0	63	278	0	1	0	18	0	0	0	0	611	0
7:30 AM	0	58	240	0	0	0	88	268	0	7	1	30	0	0	0	0	692	0
7:45 AM	0	38	255	0	0	0	120	258	0	4	1	28	0	0	0	0	704	2,512
8:00 AM	0	37	222	0	0	0	69	208	0	13	0	27	0	0	0	0	576	2,583
8:15 AM	0	36	225	0	0	0	66	196	0	7	2	25	0	0	0	0	557	2,529
8:30 AM	0	40	206	0	0	0	66	172	0	3	1	20	0	0	0	0	508	2,345
8:45 AM	0	50	219	0	0	0	68	167	0	9	0	34	0	0	0	0	547	2,188
Count Total	0	355	1,726	0	0	0	586	1,769	0	49	5	210	0	0	0	0	4,700	0
Peak Hour	0	183	918	0	0	0	340	1,012	0	25	2	103	0	0	0	0	2,583	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	18	4	3	0	25	0	0	0	0	0	0	0	0	0	0
7:15 AM	22	11	4	0	37	0	0	0	0	0	0	0	0	0	0
7:30 AM	16	7	3	0	26	0	0	0	0	0	0	0	0	0	0
7:45 AM	16	24	1	0	41	0	0	0	0	0	0	0	0	0	0
8:00 AM	16	6	7	0	29	0	0	0	0	0	0	0	0	0	0
8:15 AM	27	18	4	0	49	0	0	0	0	0	0	0	0	1	1
8:30 AM	22	16	2	0	40	0	0	0	0	0	0	0	0	0	0
8:45 AM	24	18	2	0	44	0	0	0	0	0	0	0	0	0	0
Count Total	161	104	26	0	291	0	0	0	0	0	0	0	0	1	1
Peak Hour	70	48	15	0	133	0	0	0	0	0	0	0	0	0	0

NB RAMPS PLUM CREEK PKWY



	HV %:	PHF
EB	1.9%	0.92
WB	2.3%	0.90
NB	5.1%	0.90
SB	-	-
TOTAL	2.3%	0.98

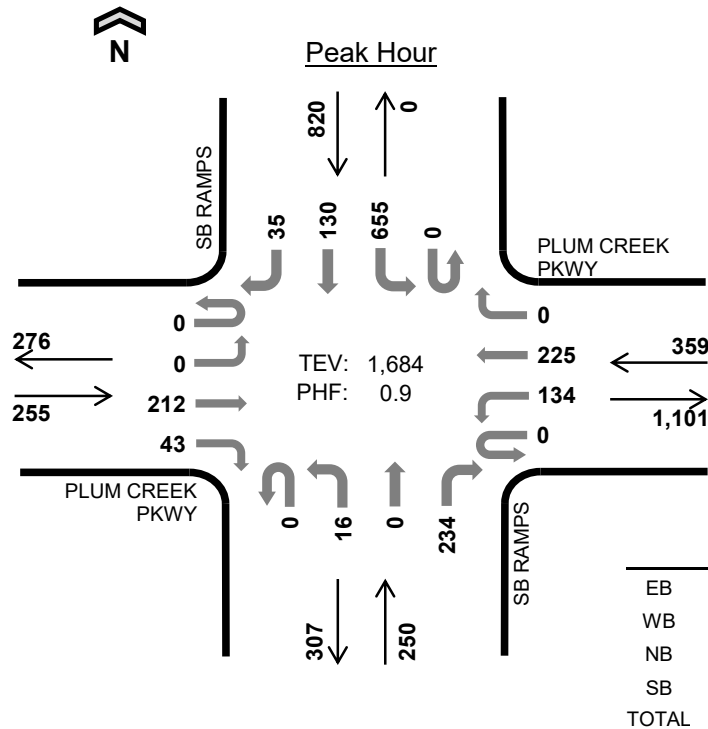
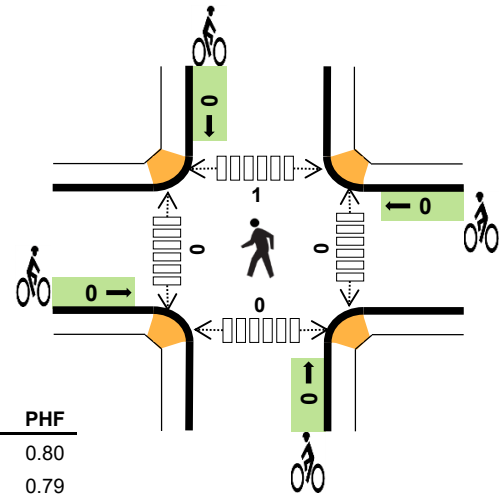
Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				NB RAMPS Northbound				NB RAMPS Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	31	367	0	0	0	93	205	0	7	0	33	0	0	0	0	736	0
4:15 PM	0	27	376	0	0	0	102	208	0	5	1	24	0	0	0	0	743	0
4:30 PM	1	22	374	0	0	0	129	205	0	4	0	31	0	0	0	0	766	0
4:45 PM	0	25	343	0	0	0	114	199	0	5	1	49	0	0	0	0	736	2,981
5:00 PM	0	27	337	0	0	0	114	235	0	14	1	32	0	0	0	0	760	3,005
5:15 PM	0	23	380	0	0	0	104	225	0	4	1	46	0	0	0	0	783	3,045
5:30 PM	0	28	325	0	0	0	158	221	0	8	0	37	0	0	0	0	777	3,056
5:45 PM	0	26	308	0	0	0	113	194	0	9	1	33	0	0	0	0	684	3,004
Count Total	1	209	2,810	0	0	0	927	1,692	0	56	5	285	0	0	0	0	5,985	0
Peak Hour	0	103	1,385	0	0	0	490	880	0	31	3	164	0	0	0	0	3,056	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	10	1	0	14	0	0	0	0	0	0	0	0	0	0
4:15 PM	2	13	3	0	18	0	0	0	0	0	0	0	0	0	0
4:30 PM	4	10	0	0	14	0	0	0	0	0	0	0	0	0	0
4:45 PM	4	5	2	0	11	0	0	0	0	0	0	0	0	0	0
5:00 PM	6	10	3	0	19	0	0	0	0	0	0	0	0	0	0
5:15 PM	10	8	2	0	20	0	0	0	0	0	0	0	0	0	0
5:30 PM	9	9	3	0	21	0	0	0	0	0	0	0	0	0	0
5:45 PM	5	4	2	0	11	0	0	0	0	0	0	0	0	0	0
Count Total	43	69	16	0	128	0	0	0	0	0	0	0	0	0	0
Peak Hour	29	32	10	0	71	0	0	0	0	0	0	0	0	0	0

SB RAMPS PLUM CREEK PKWY



Two-Hour Count Summaries

Interval Start	PLUM CREEK PKWY Eastbound				PLUM CREEK PKWY Westbound				SB RAMPS Northbound				SB RAMPS Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	30	13	0	34	22	0	0	5	0	47	0	127	60	4	342	0
7:15 AM	0	0	35	8	0	25	34	0	0	4	0	58	0	157	59	8	388	0
7:30 AM	0	0	57	13	0	42	63	0	0	5	0	72	0	167	31	8	458	0
7:45 AM	0	0	68	12	0	33	81	0	0	4	0	59	0	185	16	8	466	1,654
8:00 AM	0	0	52	10	0	34	47	0	0	3	0	45	0	146	24	11	372	1,684
8:15 AM	0	0	54	8	0	36	42	0	0	1	0	51	0	156	28	8	384	1,680
8:30 AM	0	0	47	11	0	40	27	0	0	3	0	48	0	152	14	7	349	1,571
8:45 AM	0	0	43	7	0	34	41	0	0	2	0	61	0	165	18	15	386	1,491
Count Total	0	0	386	82	0	278	357	0	0	27	0	441	0	1,255	250	69	3,145	0
Peak Hour	0	0	212	43	0	134	225	0	0	16	0	234	0	655	130	35	1,684	0

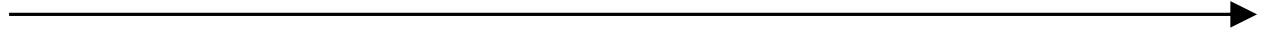
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	2	1	17	22	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	3	0	24	27	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	4	1	16	21	0	0	0	0	0	0	0	1	0	1
7:45 AM	3	10	0	15	28	0	0	0	0	0	0	0	0	0	0
8:00 AM	1	8	1	15	25	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	5	2	25	33	0	0	0	0	0	0	0	0	0	0
8:30 AM	2	4	1	21	28	0	0	0	0	0	0	0	1	1	2
8:45 AM	1	5	1	25	32	0	0	0	0	0	0	0	0	0	0
Count Total	10	41	7	158	216	0	0	0	0	0	0	0	2	1	3
Peak Hour	4	25	2	70	101	0	0	0	0	0	0	0	1	0	1

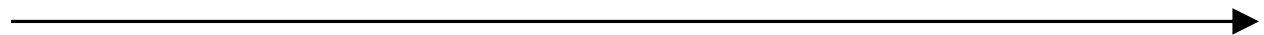


Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

[illegible]



Level of Service Definitions



LEVEL OF SERVICE DEFINITIONS

In rating roadway and intersection operating conditions with existing or future traffic volumes, “Levels of Service” (LOS) A through F are used, with LOS A indicating very good operation and LOS F indicating poor operation. Levels of service at signalized and unsignalized intersections are closely associated with vehicle delays experienced in seconds per vehicle. More complete level of service definitions and delay data for signal and stop sign controlled intersections are contained in the following table for reference.

Level of Service Rating	Delay in seconds per vehicle (a)		Definition
	Signalized	Unsignalized	
A	0.0 to 10.0	0.0 to 10.0	Low vehicular traffic volumes; primarily free flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers are able to maintain their desired speeds with little or no delay.
B	10.1 to 20.0	10.1 to 15.0	Stable vehicular traffic volume flow with potential for some restriction of operating speeds due to traffic conditions. Vehicle maneuvering is only slightly restricted. The stopped delays are not bothersome and drivers are not subject to appreciable tension.
C	20.1 to 35.0	15.1 to 25.0	Stable traffic operations, however the ability for vehicles to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signal coordination or longer vehicle queues cause delays along the corridor.
D	35.1 to 55.0	25.1 to 35.0	Approaching unstable vehicular traffic flow where small increases in volume could cause substantial delays. Most drivers are restricted in ability to maneuver and selection of travel speeds due to congestion. Driver comfort and convenience are low, but tolerable.
E	55.1 to 80.0	35.1 to 50.0	Traffic operations characterized by significant approach delays and average travel speeds of one-half to one-third the free flow speed. Vehicular flow is unstable and there is potential for stoppages of brief duration. High signal density, extensive vehicle queuing, or corridor signal progression/timing are the typical causes of vehicle delays at signalized corridors.
F	> 80.0	> 50.0	Forced vehicular traffic flow and operations with high approach delays at critical intersections. Vehicle speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.

(a) Delay ranges based on Highway Capacity Manual (6th Edition, 2016) criteria.

Intersection Capacity Worksheets (HCM)

Timings

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Existing

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	183	918	340	1012	25	2	103
Future Volume (vph)	183	918	340	1012	25	2	103
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	42.4	42.4	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.47	0.47	0.24	0.24	0.24
v/c Ratio	0.53	0.31	0.53	0.57	0.06	0.15	0.13
Control Delay	20.3	7.8	8.1	4.0	26.7	10.0	2.7
Queue Delay	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	8.2	8.1	4.0	26.7	10.0	2.7
LOS	C	A	A	A	C	B	A
Approach Delay		10.3	6.6			9.8	
Approach LOS		B	A			A	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 8.3

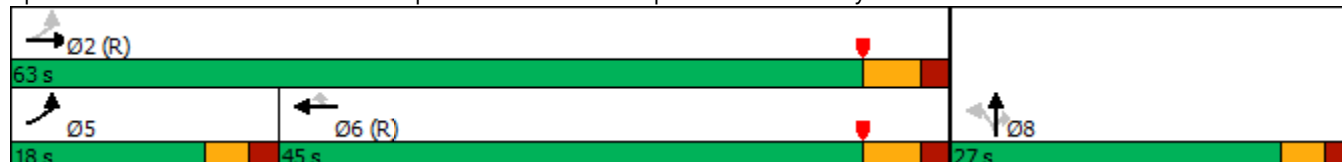
Intersection LOS: A

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Existing

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	199	998	920	550	24	59	58
v/c Ratio	0.53	0.31	0.53	0.57	0.06	0.15	0.13
Control Delay	20.3	7.8	8.1	4.0	26.7	10.0	2.7
Queue Delay	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	8.2	8.1	4.0	26.7	10.0	2.7
Queue Length 50th (ft)	57	57	71	0	11	2	0
Queue Length 95th (ft)	m98	95	136	62	32	35	11
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	429	3220	1731	969	410	397	440
Starvation Cap Reductn	49	1623	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.62	0.53	0.57	0.06	0.15	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Existing

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	183	918	0	0	340	1012	25	2	103	0	0	0
Future Volume (veh/h)	183	918	0	0	340	1012	25	2	103	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	199	998	0	0	370	1100	19	0	122			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	354	3234	0	0	936	1586	435	0	775			
Arrive On Green	0.15	1.00	0.00	0.00	0.50	0.50	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	199	998	0	0	370	1100	19	0	122			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	4.7	0.0	0.0	0.0	11.1	23.9	0.7	0.0	2.7			
Cycle Q Clear(g_c), s	4.7	0.0	0.0	0.0	11.1	23.9	0.7	0.0	2.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	354	3234	0	0	936	1586	435	0	775			
V/C Ratio(X)	0.56	0.31	0.00	0.00	0.40	0.69	0.04	0.00	0.16			
Avail Cap(c_a), veh/h	473	3234	0	0	936	1586	435	0	775			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.80	0.80	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.2	0.0	0.0	0.0	14.0	17.2	26.0	0.0	26.7			
Incr Delay (d2), s/veh	1.1	0.2	0.0	0.0	1.3	2.5	0.2	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	0.1	0.0	0.0	4.8	8.6	0.3	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.2	0.0	0.0	15.3	19.7	26.2	0.0	27.2			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1197			1470			141					
Approach Delay, s/veh	1.9			18.6			27.0					
Approach LOS	A			B			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	63.0			12.0			51.0			27.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	57.0			13.0			39.0			22.0		
Max Q Clear Time (g_c+I1), s	2.0			6.7			25.9			4.7		
Green Ext Time (p_c), s	9.2			0.3			6.3			0.4		
Intersection Summary												
HCM 6th Ctrl Delay	11.9											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Existing

AM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↵	↑↑	↵	↵	↵↵	↵↵
Traffic Volume (vph)	212	134	225	16	234	655	130
Future Volume (vph)	212	134	225	16	234	655	130
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	32.0	11.0	43.0	10.0	10.0	37.0	37.0
Total Split (%)	35.6%	12.2%	47.8%	11.1%	11.1%	41.1%	41.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None
Act Effect Green (s)	32.0	44.9	44.9	5.0	5.0	25.1	25.1
Actuated g/C Ratio	0.36	0.50	0.50	0.06	0.06	0.28	0.28
v/c Ratio	0.16	0.28	0.14	0.18	0.78	0.67	0.67
Control Delay	17.9	23.0	20.4	45.1	23.3	32.2	34.6
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	24.6	20.4	45.1	23.3	32.2	34.6
LOS	B	C	C	D	C	C	C
Approach Delay	17.9		22.0				33.0
Approach LOS	B		C				C

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 27.1

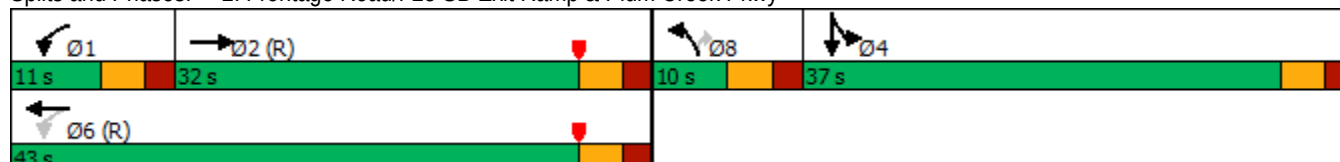
Intersection LOS: C

Intersection Capacity Utilization 50.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



Queues

Existing

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	284	149	250	18	260	604	307
v/c Ratio	0.16	0.28	0.14	0.18	0.78	0.67	0.67
Control Delay	17.9	23.0	20.4	45.1	23.3	32.2	34.6
Queue Delay	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	24.6	20.4	45.1	23.3	32.2	34.6
Queue Length 50th (ft)	34	52	45	10	0	166	163
Queue Length 95th (ft)	57	126	98	32	#109	202	234
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	1795	534	1767	98	333	1145	585
Starvation Cap Reductn	0	244	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.51	0.14	0.18	0.78	0.53	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Existing
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑		↑		↑	↑↑	↑	
Traffic Volume (vph)	0	212	43	134	225	0	16	0	234	655	130	35
Future Volume (vph)	0	212	43	134	225	0	16	0	234	655	130	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4956		1770	3539		1770		1583	3221	1630	
Flt Permitted		1.00		0.49	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4956		919	3539		1770		1583	3221	1630	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	236	48	149	250	0	18	0	260	728	144	39
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	246	0	6	0
Lane Group Flow (vph)	0	253	0	149	250	0	18	0	14	604	301	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		32.0		44.9	44.9		5.0		5.0	25.1	25.1	
Effective Green, g (s)		32.0		44.9	44.9		5.0		5.0	25.1	25.1	
Actuated g/C Ratio		0.36		0.50	0.50		0.06		0.06	0.28	0.28	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1762		533	1765		98		87	898	454	
v/s Ratio Prot		0.05		c0.02	0.07		c0.01			c0.19	0.18	
v/s Ratio Perm				c0.11					0.01			
v/c Ratio		0.14		0.28	0.14		0.18		0.17	0.67	0.66	
Uniform Delay, d1		19.7		12.5	12.2		40.6		40.5	28.8	28.7	
Progression Factor		1.00		1.54	1.51		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.2		0.3	0.1		0.9		0.9	2.0	3.6	
Delay (s)		19.9		19.5	18.5		41.5		41.4	30.8	32.3	
Level of Service		B		B	B		D		D	C	C	
Approach Delay (s)		19.9			18.9			41.4			31.3	
Approach LOS		B			B			D			C	
Intersection Summary												
HCM 2000 Control Delay			28.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.43									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			50.4%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Existing
AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	62	431	155	209	139	4	20	172	43	32
Future Volume (vph)	62	431	155	209	139	4	20	172	43	32
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	9.5	32.0	32.0
Total Split (s)	13.0	15.0	28.0	30.0	30.0	15.0	26.0	11.0	22.0	22.0
Total Split (%)	16.3%	18.8%	35.0%	37.5%	37.5%	18.8%	32.5%	13.8%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	15.9	9.9	23.8	20.3	20.3	10.4	8.8	15.7	15.1	15.1
Actuated g/C Ratio	0.33	0.21	0.50	0.42	0.42	0.22	0.18	0.33	0.32	0.32
v/c Ratio	0.15	0.66	0.41	0.18	0.24	0.01	0.28	0.49	0.09	0.06
Control Delay	10.4	26.9	12.1	15.7	4.6	11.8	10.9	17.2	15.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	26.9	12.1	15.7	4.6	11.8	10.9	17.2	15.5	0.2
LOS	B	C	B	B	A	B	B	B	B	A
Approach Delay		24.9		11.5			10.9		14.7	
Approach LOS		C		B			B		B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 47.9

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 16.6

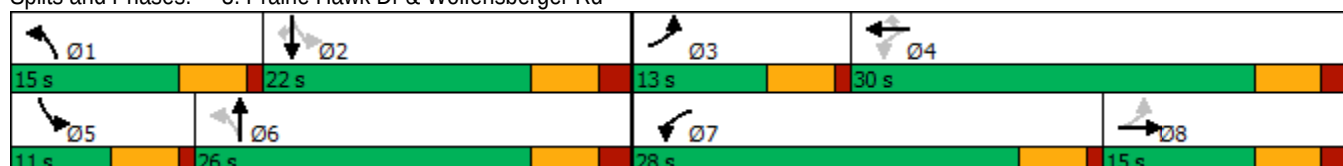
Intersection LOS: B

Intersection Capacity Utilization 52.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Existing
AM



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	66	480	201	271	181	4	100	200	50	37
v/c Ratio	0.15	0.66	0.41	0.18	0.24	0.01	0.28	0.49	0.09	0.06
Control Delay	10.4	26.9	12.1	15.7	4.6	11.8	10.9	17.2	15.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	26.9	12.1	15.7	4.6	11.8	10.9	17.2	15.5	0.2
Queue Length 50th (ft)	11	75	38	37	0	1	6	42	10	0
Queue Length 95th (ft)	29	#154	60	55	25	6	41	85	37	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	574	728	940	1948	941	587	789	423	747	773
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.66	0.21	0.14	0.19	0.01	0.13	0.47	0.07	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

Existing
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	431	20	155	209	139	4	20	73	172	43	32
Future Volume (veh/h)	62	431	20	155	209	139	4	20	73	172	43	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	66	459	21	201	271	181	4	22	78	200	50	37
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	591	27	399	887	395	347	55	194	480	500	424
Arrive On Green	0.04	0.17	0.17	0.12	0.25	0.25	0.00	0.15	0.15	0.12	0.27	0.27
Sat Flow, veh/h	1781	3460	158	1781	3554	1581	1781	360	1277	1781	1870	1583
Grp Volume(v), veh/h	66	235	245	201	271	181	4	0	100	200	50	37
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1581	1781	0	1638	1781	1870	1583
Q Serve(g_s), s	1.5	6.4	6.4	4.4	3.1	4.9	0.1	0.0	2.8	4.4	1.0	0.9
Cycle Q Clear(g_c), s	1.5	6.4	6.4	4.4	3.1	4.9	0.1	0.0	2.8	4.4	1.0	0.9
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.78	1.00		1.00
Lane Grp Cap(c), veh/h	378	303	314	399	887	395	347	0	248	480	500	424
V/C Ratio(X)	0.17	0.78	0.78	0.50	0.31	0.46	0.01	0.00	0.40	0.42	0.10	0.09
Avail Cap(c_a), veh/h	586	318	329	998	1696	755	696	0	651	480	595	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	19.9	19.9	14.1	15.3	16.0	18.0	0.0	19.3	13.7	13.9	13.8
Incr Delay (d2), s/veh	0.1	10.9	10.8	0.4	0.2	0.8	0.0	0.0	0.4	0.2	0.0	0.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.5	3.2	3.3	1.5	1.1	1.6	0.0	0.0	1.0	1.5	0.4	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	30.9	30.8	14.5	15.5	16.8	18.0	0.0	19.7	13.9	13.9	13.8
LnGrp LOS	B	C	C	B	B	B	B	A	B	B	B	B
Approach Vol, veh/h		546			653			104			287	
Approach Delay, s/veh		29.1			15.6			19.6			13.9	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	19.5	7.1	18.6	11.0	13.6	11.1	14.6				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	16.0	8.0	24.0	6.0	20.0	23.0	9.0				
Max Q Clear Time (g_c+I1), s	2.1	3.0	3.5	6.9	6.4	4.8	6.4	8.4				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.1	0.0	0.2	0.1	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.2									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

Existing
AM

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	31	2	2	56	105	90
Future Vol, veh/h	31	2	2	56	105	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	2	2	65	122	105
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	244	175	227	0	-	0
Stage 1	175	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	744	868	1341	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	743	868	1341	-	-	-
Mov Cap-2 Maneuver	743	-	-	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.1	0.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1341	-	750	-	-	
HCM Lane V/C Ratio	0.002	-	0.051	-	-	
HCM Control Delay (s)	7.7	0	10.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Timings

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Existing

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	103	1385	490	880	31	3	164
Future Volume (vph)	103	1385	490	880	31	3	164
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	12.0	73.0	61.0	61.0	27.0	27.0	27.0
Total Split (%)	12.0%	73.0%	61.0%	61.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	68.0	67.0	57.4	57.4	22.0	22.0	22.0
Actuated g/C Ratio	0.68	0.67	0.57	0.57	0.22	0.22	0.22
v/c Ratio	0.29	0.41	0.48	0.44	0.08	0.23	0.22
Control Delay	4.1	3.5	8.6	2.6	31.8	13.6	8.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	3.8	8.6	2.6	31.8	13.6	8.6
LOS	A	A	A	A	C	B	A
Approach Delay		3.8	6.7			14.1	
Approach LOS		A	A			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 5.8

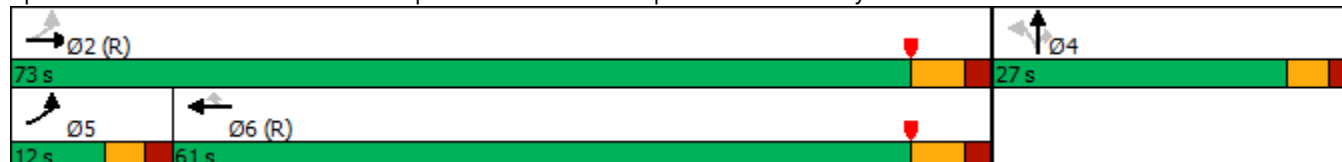
Intersection LOS: A

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Existing

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	105	1413	949	449	29	86	87
v/c Ratio	0.29	0.41	0.48	0.44	0.08	0.23	0.22
Control Delay	4.1	3.5	8.6	2.6	31.8	13.6	8.6
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	3.8	8.6	2.6	31.8	13.6	8.6
Queue Length 50th (ft)	15	79	114	0	15	12	0
Queue Length 95th (ft)	m20	86	165	47	41	56	41
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	362	3406	1961	1018	369	370	398
Starvation Cap Reductn	0	1086	0	0	0	0	0
Spillback Cap Reductn	0	0	36	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.61	0.49	0.44	0.08	0.23	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Existing

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	103	1385	0	0	490	880	31	3	164	0	0	0
Future Volume (veh/h)	103	1385	0	0	490	880	31	3	164	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	105	1413	0	0	500	898	22	0	179			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	317	3421	0	0	1071	1816	392	0	697			
Arrive On Green	0.05	0.67	0.00	0.00	0.57	0.57	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	105	1413	0	0	500	898	22	0	179			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	2.3	12.6	0.0	0.0	15.6	16.9	1.0	0.0	4.7			
Cycle Q Clear(g_c), s	2.3	12.6	0.0	0.0	15.6	16.9	1.0	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	317	3421	0	0	1071	1816	392	0	697			
V/C Ratio(X)	0.33	0.41	0.00	0.00	0.47	0.49	0.06	0.00	0.26			
Avail Cap(c_a), veh/h	358	3421	0	0	1071	1816	392	0	697			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.0	7.5	0.0	0.0	12.5	12.7	30.8	0.0	32.2			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	1.5	1.0	0.3	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	4.2	0.0	0.0	6.6	5.9	0.4	0.0	4.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	7.8	0.0	0.0	13.9	13.7	31.1	0.0	33.1			
LnGrp LOS	A	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1518			1398			201					
Approach Delay, s/veh	7.9			13.8			32.9					
Approach LOS	A			B			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	73.0			27.0		9.7	63.3					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	67.0			22.0		7.0	55.0					
Max Q Clear Time (g_c+I1), s	14.6			6.7		4.3	18.9					
Green Ext Time (p_c), s	15.5			0.6		0.1	9.1					
Intersection Summary												
HCM 6th Ctrl Delay				12.2								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Existing

PM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↑	↑↑	↑	↑	↑↑	↑↑
Traffic Volume (vph)	299	201	286	20	155	1080	179
Future Volume (vph)	299	201	286	20	155	1080	179
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	18.0	22.0	40.0	13.0	13.0	47.0	47.0
Total Split (%)	18.0%	22.0%	40.0%	13.0%	13.0%	47.0%	47.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	C-Max	C-Max
Act Effect Green (s)	16.2	35.0	35.0	6.8	6.8	43.2	43.2
Actuated g/C Ratio	0.16	0.35	0.35	0.07	0.07	0.43	0.43
v/c Ratio	0.43	0.54	0.24	0.18	0.63	0.65	0.64
Control Delay	38.1	31.7	25.9	46.9	18.7	25.5	27.3
Queue Delay	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.3	25.9	46.9	18.7	25.5	27.3
LOS	D	C	C	D	B	C	C
Approach Delay	38.1		29.4				26.1
Approach LOS	D		C				C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 71 (71%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 28.2

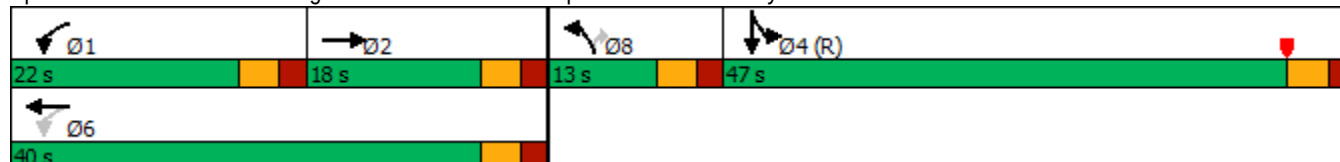
Intersection LOS: C

Intersection Capacity Utilization 62.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



Queues

Existing

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	353	209	298	21	161	911	455
v/c Ratio	0.43	0.54	0.24	0.18	0.63	0.65	0.64
Control Delay	38.1	31.7	25.9	46.9	18.7	25.5	27.3
Queue Delay	0.0	2.6	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.3	25.9	46.9	18.7	25.5	27.3
Queue Length 50th (ft)	71	113	81	13	0	245	238
Queue Length 95th (ft)	105	187	122	36	61	326	370
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	826	424	1238	141	274	1391	707
Starvation Cap Reductn	0	121	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.69	0.24	0.15	0.59	0.65	0.64
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Existing
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↖	↑↑		↖		↖	↖↖	↖	
Traffic Volume (vph)	0	299	40	201	286	0	20	0	155	1080	179	53
Future Volume (vph)	0	299	40	201	286	0	20	0	155	1080	179	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4995		1770	3539		1770		1583	3221	1626	
Flt Permitted		1.00		0.37	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4995		688	3539		1770		1583	3221	1626	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	311	42	209	298	0	21	0	161	1125	186	55
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	150	0	5	0
Lane Group Flow (vph)	0	336	0	209	298	0	21	0	11	911	450	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		16.2		35.0	35.0		6.8		6.8	43.2	43.2	
Effective Green, g (s)		16.2		35.0	35.0		6.8		6.8	43.2	43.2	
Actuated g/C Ratio		0.16		0.35	0.35		0.07		0.07	0.43	0.43	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		809		390	1238		120		107	1391	702	
v/s Ratio Prot		0.07		c0.07	0.08		c0.01			c0.28	0.28	
v/s Ratio Perm				c0.11					0.01			
v/c Ratio		0.42		0.54	0.24		0.17		0.10	0.65	0.64	
Uniform Delay, d1		37.6		24.2	23.1		44.0		43.7	22.5	22.3	
Progression Factor		1.00		1.10	1.10		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.6		1.3	0.4		0.7		0.4	2.4	4.5	
Delay (s)		39.2		28.0	25.7		44.7		44.2	24.9	26.8	
Level of Service		D		C	C		D		D	C	C	
Approach Delay (s)		39.2			26.7			44.2			25.5	
Approach LOS		D			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			29.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			62.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Existing
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	63	297	85	462	197	33	51	189	19	92
Future Volume (vph)	63	297	85	462	197	33	51	189	19	92
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	9.5	32.0	32.0
Total Split (s)	11.0	16.0	37.0	42.0	42.0	11.0	36.0	11.0	36.0	36.0
Total Split (%)	11.0%	16.0%	37.0%	42.0%	42.0%	11.0%	36.0%	11.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	16.6	12.9	22.3	17.7	17.7	16.6	11.4	20.8	19.1	19.1
Actuated g/C Ratio	0.28	0.22	0.38	0.30	0.30	0.28	0.19	0.35	0.32	0.32
v/c Ratio	0.22	0.46	0.21	0.47	0.34	0.10	0.67	0.69	0.04	0.16
Control Delay	13.4	23.6	12.3	19.9	5.1	14.4	16.5	32.5	20.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	23.6	12.3	19.9	5.1	14.4	16.5	32.5	20.0	0.5
LOS	B	C	B	B	A	B	B	C	B	A
Approach Delay		21.9		15.1			16.3		21.9	
Approach LOS		C		B			B		C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 58.9

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.0

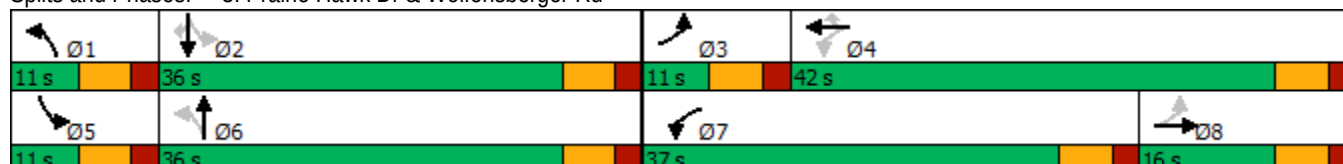
Intersection LOS: B

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Existing
PM



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	71	352	91	497	212	41	326	215	22	105
v/c Ratio	0.22	0.46	0.21	0.47	0.34	0.10	0.67	0.69	0.04	0.16
Control Delay	13.4	23.6	12.3	19.9	5.1	14.4	16.5	32.5	20.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	23.6	12.3	19.9	5.1	14.4	16.5	32.5	20.0	0.5
Queue Length 50th (ft)	14	57	18	80	0	9	36	55	5	0
Queue Length 95th (ft)	40	110	49	142	45	27	91	#156	24	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	326	770	976	2253	1071	423	960	311	988	936
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.46	0.09	0.22	0.20	0.10	0.34	0.69	0.02	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

Existing
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	297	16	85	462	197	33	51	213	189	19	92
Future Volume (veh/h)	63	297	16	85	462	197	33	51	213	189	19	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	334	18	91	497	212	41	63	263	215	22	105
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	738	40	364	834	371	480	80	333	330	577	488
Arrive On Green	0.04	0.22	0.22	0.06	0.23	0.23	0.03	0.25	0.25	0.08	0.31	0.31
Sat Flow, veh/h	1781	3429	184	1781	3554	1581	1781	315	1316	1781	1870	1584
Grp Volume(v), veh/h	71	172	180	91	497	212	41	0	326	215	22	105
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1777	1581	1781	0	1632	1781	1870	1584
Q Serve(g_s), s	1.9	5.2	5.3	2.4	7.7	7.3	1.1	0.0	11.6	5.0	0.5	3.0
Cycle Q Clear(g_c), s	1.9	5.2	5.3	2.4	7.7	7.3	1.1	0.0	11.6	5.0	0.5	3.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.81	1.00		1.00
Lane Grp Cap(c), veh/h	277	383	395	364	834	371	480	0	412	330	577	488
V/C Ratio(X)	0.26	0.45	0.45	0.25	0.60	0.57	0.09	0.00	0.79	0.65	0.04	0.21
Avail Cap(c_a), veh/h	341	383	395	1141	2065	919	579	0	790	330	906	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	21.1	21.1	17.2	21.1	21.0	16.5	0.0	21.6	18.2	15.0	15.9
Incr Delay (d2), s/veh	0.5	0.8	0.8	0.4	0.7	1.4	0.1	0.0	3.4	4.5	0.0	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	2.1	2.2	0.9	3.0	0.1	0.4	0.0	4.5	2.5	0.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.5	22.0	22.0	17.6	21.8	22.3	16.6	0.0	25.0	22.7	15.0	16.1
LnGrp LOS	B	C	C	B	C	C	B	A	C	C	B	B
Approach Vol, veh/h	423		800				367			342		
Approach Delay, s/veh	21.4		21.5				24.1			20.2		
Approach LOS	C		C				C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	25.1	8.8	20.5	11.0	21.7	10.0	19.3				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	30.0	5.0	36.0	5.0	30.0	31.0	10.0				
Max Q Clear Time (g_c+I1), s	3.1	5.0	3.9	9.7	7.0	13.6	4.4	7.3				
Green Ext Time (p_c), s	0.0	0.4	0.0	4.1	0.0	1.9	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay	21.7											
HCM 6th LOS	C											
Notes												

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

Existing
PM

Intersection

Int Delay, s/veh 5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	143	1	5	108	70	45
Future Vol, veh/h	143	1	5	108	70	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	25	42	90	83	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	4	12	120	84	71

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	264	120	155
Stage 1	120	-	-
Stage 2	144	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	725	931	1425
Stage 1	905	-	-
Stage 2	883	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	718	931	1425
Mov Cap-2 Maneuver	718	-	-
Stage 1	897	-	-
Stage 2	883	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.8	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1425	-	721	-	-
HCM Lane V/C Ratio	0.008	-	0.27	-	-
HCM Control Delay (s)	7.5	0	11.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	1.1	-	-

Timings

Year 2023 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	105	1435	510	910	30	5	170
Future Volume (vph)	105	1435	510	910	30	5	170
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	12.0	73.0	61.0	61.0	27.0	27.0	27.0
Total Split (%)	12.0%	73.0%	61.0%	61.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	68.0	67.0	55.3	55.3	22.0	22.0	22.0
Actuated g/C Ratio	0.68	0.67	0.55	0.55	0.22	0.22	0.22
v/c Ratio	0.31	0.43	0.52	0.46	0.08	0.25	0.23
Control Delay	4.3	3.5	9.5	2.7	31.7	15.9	9.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	3.8	9.5	2.7	31.7	15.9	9.2
LOS	A	A	A	A	C	B	A
Approach Delay		3.8	7.3			15.1	
Approach LOS		A	A			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 6.1

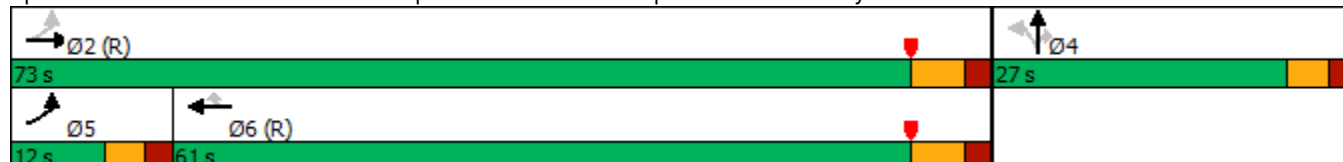
Intersection LOS: A

Intersection Capacity Utilization 60.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2023 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	107	1464	985	464	28	91	90
v/c Ratio	0.31	0.43	0.52	0.46	0.08	0.25	0.23
Control Delay	4.3	3.5	9.5	2.7	31.7	15.9	9.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	3.8	9.5	2.7	31.7	15.9	9.2
Queue Length 50th (ft)	15	82	124	0	14	17	2
Queue Length 95th (ft)	m20	89	178	48	40	63	44
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	344	3406	1900	1004	369	367	398
Starvation Cap Reductn	0	1085	0	0	0	0	0
Spillback Cap Reductn	0	0	50	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.63	0.53	0.46	0.08	0.25	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

Year 2023 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	105	1435	0	0	510	910	30	5	170	0	0	0
Future Volume (veh/h)	105	1435	0	0	510	910	30	5	170	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	107	1464	0	0	520	929	22	0	186			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	306	3421	0	0	1071	1815	392	0	697			
Arrive On Green	0.05	0.67	0.00	0.00	0.57	0.57	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	107	1464	0	0	520	929	22	0	186			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	2.3	13.3	0.0	0.0	16.5	17.7	1.0	0.0	4.9			
Cycle Q Clear(g_c), s	2.3	13.3	0.0	0.0	16.5	17.7	1.0	0.0	4.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	306	3421	0	0	1071	1815	392	0	697			
V/C Ratio(X)	0.35	0.43	0.00	0.00	0.49	0.51	0.06	0.00	0.27			
Avail Cap(c_a), veh/h	347	3421	0	0	1071	1815	392	0	697			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.3	7.6	0.0	0.0	12.7	12.9	30.8	0.0	32.3			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	1.6	1.0	0.3	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	4.4	0.0	0.0	6.9	6.2	0.4	0.0	4.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.8	7.9	0.0	0.0	14.2	14.0	31.1	0.0	33.3			
LnGrp LOS	A	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1571			1449			208					
Approach Delay, s/veh	8.1			14.1			33.0					
Approach LOS	A			B			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	73.0			27.0		9.7	63.3					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	67.0			22.0		7.0	55.0					
Max Q Clear Time (g_c+I1), s	15.3			6.9		4.3	19.7					
Green Ext Time (p_c), s	16.4			0.6		0.1	9.5					
Intersection Summary												
HCM 6th Ctrl Delay	12.4											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

Year 2023 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM

	→	↖	←	↗	↘	↓	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↖	↑↑	↖	↖	↖↖	↖
Traffic Volume (vph)	310	210	295	20	160	1120	185
Future Volume (vph)	310	210	295	20	160	1120	185
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	18.0	22.0	40.0	13.0	13.0	47.0	47.0
Total Split (%)	18.0%	22.0%	40.0%	13.0%	13.0%	47.0%	47.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	C-Max	C-Max
Act Effect Green (s)	15.9	35.0	35.0	6.8	6.8	43.2	43.2
Actuated g/C Ratio	0.16	0.35	0.35	0.07	0.07	0.43	0.43
v/c Ratio	0.45	0.56	0.25	0.18	0.63	0.68	0.67
Control Delay	38.8	32.2	25.8	46.9	18.7	26.1	28.1
Queue Delay	0.0	3.2	1.1	0.0	0.0	0.0	0.0
Total Delay	38.8	35.5	26.9	46.9	18.7	26.1	28.1
LOS	D	D	C	D	B	C	C
Approach Delay	38.8		30.5				26.8
Approach LOS	D		C				C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 71 (71%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 28.9

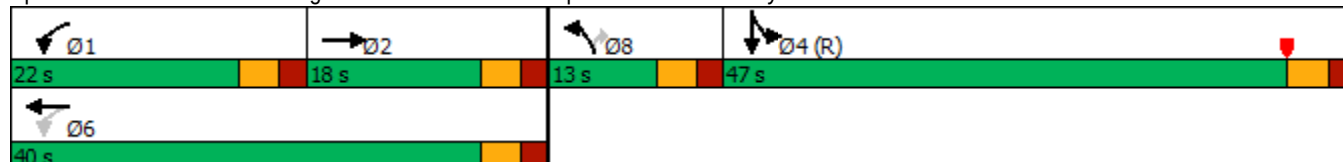
Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	365	219	307	21	167	945	472
v/c Ratio	0.45	0.56	0.25	0.18	0.63	0.68	0.67
Control Delay	38.8	32.2	25.8	46.9	18.7	26.1	28.1
Queue Delay	0.0	3.2	1.1	0.0	0.0	0.0	0.0
Total Delay	38.8	35.5	26.9	46.9	18.7	26.1	28.1
Queue Length 50th (ft)	74	120	85	13	0	258	251
Queue Length 95th (ft)	109	198	126	36	63	342	389
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	811	420	1238	141	280	1391	707
Starvation Cap Reductn	0	119	693	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.73	0.56	0.15	0.60	0.68	0.67
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2023 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↰	↑↑		↰		↰	↰↰	↰	↰
Traffic Volume (vph)	0	310	40	210	295	0	20	0	160	1120	185	55
Future Volume (vph)	0	310	40	210	295	0	20	0	160	1120	185	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4998		1770	3539		1770		1583	3221	1626	
Flt Permitted		1.00		0.36	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4998		663	3539		1770		1583	3221	1626	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	323	42	219	307	0	21	0	167	1167	193	57
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	156	0	5	0
Lane Group Flow (vph)	0	349	0	219	307	0	21	0	11	945	467	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		15.9		35.0	35.0		6.8		6.8	43.2	43.2	
Effective Green, g (s)		15.9		35.0	35.0		6.8		6.8	43.2	43.2	
Actuated g/C Ratio		0.16		0.35	0.35		0.07		0.07	0.43	0.43	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		794		388	1238		120		107	1391	702	
v/s Ratio Prot		0.07		c0.08	0.09		c0.01			c0.29	0.29	
v/s Ratio Perm				c0.12					0.01			
v/c Ratio		0.44		0.56	0.25		0.17		0.11	0.68	0.67	
Uniform Delay, d1		38.0		24.4	23.1		44.0		43.7	22.8	22.6	
Progression Factor		1.00		1.10	1.09		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.8		1.7	0.4		0.7		0.4	2.7	4.9	
Delay (s)		39.8		28.5	25.6		44.7		44.2	25.5	27.6	
Level of Service		D		C	C		D		D	C	C	
Approach Delay (s)		39.8			26.8			44.2			26.2	
Approach LOS		D			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			29.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			64.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2023 Background
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	315	90	490	210	35	55	200	20	100
Future Volume (vph)	70	315	90	490	210	35	55	200	20	100
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	9.5	32.0	32.0
Total Split (s)	11.0	16.0	37.0	42.0	42.0	11.0	36.0	11.0	36.0	36.0
Total Split (%)	11.0%	16.0%	37.0%	42.0%	42.0%	11.0%	36.0%	11.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	17.6	13.9	22.6	16.4	16.4	17.8	12.6	20.9	18.3	18.3
Actuated g/C Ratio	0.29	0.23	0.37	0.27	0.27	0.29	0.21	0.34	0.30	0.30
v/c Ratio	0.25	0.47	0.23	0.56	0.39	0.10	0.69	0.77	0.04	0.18
Control Delay	14.5	24.3	13.2	22.8	5.5	14.6	18.2	39.8	21.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	24.3	13.2	22.8	5.5	14.6	18.2	39.8	21.5	0.6
LOS	B	C	B	C	A	B	B	D	C	A
Approach Delay		22.6		17.1			17.8		26.4	
Approach LOS		C		B			B		C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 61.4

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 20.1

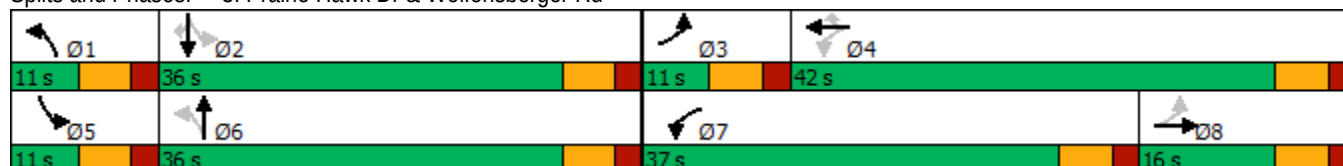
Intersection LOS: C

Intersection Capacity Utilization 66.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Year 2023 Background
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	79	376	97	527	226	43	346	227	23	114
v/c Ratio	0.25	0.47	0.23	0.56	0.39	0.10	0.69	0.77	0.04	0.18
Control Delay	14.5	24.3	13.2	22.8	5.5	14.6	18.2	39.8	21.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	24.3	13.2	22.8	5.5	14.6	18.2	39.8	21.5	0.6
Queue Length 50th (ft)	16	63	20	89	0	10	46	60	7	0
Queue Length 95th (ft)	47	124	56	160	48	28	107	#175	25	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	318	796	949	2183	1050	433	934	294	957	914
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.47	0.10	0.24	0.22	0.10	0.37	0.77	0.02	0.12

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2023 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	315	20	90	490	210	35	55	225	200	20	100
Future Volume (veh/h)	70	315	20	90	490	210	35	55	225	200	20	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	354	22	97	527	226	43	68	278	227	23	114
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	276	770	48	362	858	382	486	84	344	315	586	496
Arrive On Green	0.05	0.23	0.23	0.06	0.24	0.24	0.03	0.26	0.26	0.08	0.31	0.31
Sat Flow, veh/h	1781	3398	210	1781	3554	1581	1781	321	1312	1781	1870	1584
Grp Volume(v), veh/h	79	184	192	97	527	226	43	0	346	227	23	114
Grp Sat Flow(s),veh/h/ln	1781	1777	1831	1781	1777	1581	1781	0	1632	1781	1870	1584
Q Serve(g_s), s	2.2	5.8	5.9	2.7	8.6	8.2	1.1	0.0	12.9	5.0	0.6	3.5
Cycle Q Clear(g_c), s	2.2	5.8	5.9	2.7	8.6	8.2	1.1	0.0	12.9	5.0	0.6	3.5
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	276	403	415	362	858	382	486	0	428	315	586	496
V/C Ratio(X)	0.29	0.46	0.46	0.27	0.61	0.59	0.09	0.00	0.81	0.72	0.04	0.23
Avail Cap(c_a), veh/h	326	403	415	1100	1973	878	577	0	755	315	865	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	21.6	21.7	17.6	21.9	21.8	16.8	0.0	22.4	20.0	15.5	16.5
Incr Delay (d2), s/veh	0.6	0.8	0.8	0.4	0.7	1.5	0.1	0.0	3.7	7.9	0.0	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	2.3	2.4	1.0	3.4	2.9	0.4	0.0	5.0	3.0	0.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	22.4	22.5	18.0	22.6	23.2	16.9	0.0	26.0	27.9	15.5	16.7
LnGrp LOS	B	C	C	B	C	C	B	A	C	C	B	B
Approach Vol, veh/h		455			850			389			364	
Approach Delay, s/veh		21.8			22.3			25.0			23.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	26.3	9.2	21.7	11.0	23.0	10.1	20.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	30.0	5.0	36.0	5.0	30.0	31.0	10.0				
Max Q Clear Time (g_c+I1), s	3.1	5.5	4.2	10.6	7.0	14.9	4.7	7.9				
Green Ext Time (p_c), s	0.0	0.4	0.0	4.4	0.0	2.0	0.2	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			22.9									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

Year 2023 Background
PM

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	155	5	10	115	75	50
Future Vol, veh/h	155	5	10	115	75	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	25	42	90	83	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	207	20	24	128	90	79
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	306	130	169	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	176	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	686	920	1409	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	674	920	1409	-	-	-
Mov Cap-2 Maneuver	674	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.7	1.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1409	-	690	-	-	
HCM Lane V/C Ratio	0.017	-	0.329	-	-	
HCM Control Delay (s)	7.6	0	12.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile O(veh)	0.1	-	1.4	-	-	

Timings

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	209	970	375	1050	42	2	105
Future Volume (vph)	209	970	375	1050	42	2	105
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	41.8	41.8	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.46	0.46	0.24	0.24	0.24
v/c Ratio	0.63	0.33	0.57	0.59	0.10	0.15	0.14
Control Delay	24.0	9.8	9.8	4.3	27.2	10.4	2.9
Queue Delay	0.5	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	10.4	9.8	4.3	27.2	10.4	2.9
LOS	C	B	A	A	C	B	A
Approach Delay		12.9	7.7			11.9	
Approach LOS		B	A			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 10.2

Intersection LOS: B

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	227	1054	979	570	41	61	60
v/c Ratio	0.63	0.33	0.57	0.59	0.10	0.15	0.14
Control Delay	24.0	9.8	9.8	4.3	27.2	10.4	2.9
Queue Delay	0.5	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	10.4	9.8	4.3	27.2	10.4	2.9
Queue Length 50th (ft)	74	78	96	0	18	3	0
Queue Length 95th (ft)	m128	133	169	64	46	37	13
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	407	3220	1703	974	410	398	440
Starvation Cap Reductn	29	1632	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.66	0.57	0.59	0.10	0.15	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	209	970	0	0	375	1050	42	2	105	0	0	0
Future Volume (veh/h)	209	970	0	0	375	1050	42	2	105	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	227	1054	0	0	408	1141	31	0	131			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	352	3234	0	0	918	1555	435	0	775			
Arrive On Green	0.17	1.00	0.00	0.00	0.49	0.49	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	227	1054	0	0	408	1141	31	0	131			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.6	0.0	0.0	0.0	12.8	25.8	1.2	0.0	2.9			
Cycle Q Clear(g_c), s	5.6	0.0	0.0	0.0	12.8	25.8	1.2	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	352	3234	0	0	918	1555	435	0	775			
V/C Ratio(X)	0.65	0.33	0.00	0.00	0.44	0.73	0.07	0.00	0.17			
Avail Cap(c_a), veh/h	454	3234	0	0	918	1555	435	0	775			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.4	0.0	0.0	0.0	14.9	18.2	26.1	0.0	26.8			
Incr Delay (d2), s/veh	1.6	0.2	0.0	0.0	1.6	3.1	0.3	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.8	0.1	0.0	0.0	5.5	9.5	0.5	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.0	0.2	0.0	0.0	16.5	21.3	26.5	0.0	27.3			
LnGrp LOS	B	A	A	A	B	C	C	A	C			
Approach Vol, veh/h	1281			1549			162					
Approach Delay, s/veh	2.3			20.1			27.1					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	63.0			12.8			50.2			27.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	57.0			13.0			39.0			22.0		
Max Q Clear Time (g_c+I1), s	2.0			7.6			27.8			4.9		
Green Ext Time (p_c), s	10.0			0.3			6.0			0.5		
Intersection Summary												
HCM 6th Ctrl Delay	12.8											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

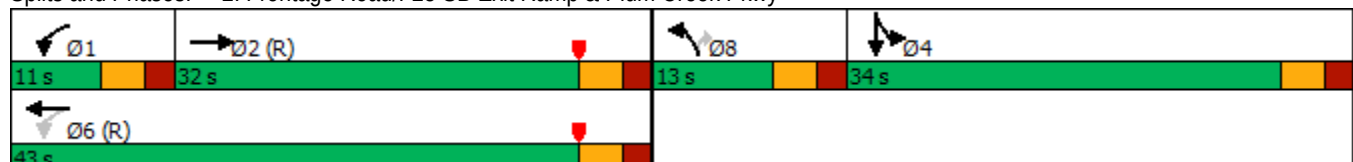
2023 w/Project
AM

	→	↖	←	↗	↘	↓	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↖	↑↑	↖	↗	↖↗	↕
Traffic Volume (vph)	254	140	277	18	245	680	135
Future Volume (vph)	254	140	277	18	245	680	135
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	32.0	11.0	43.0	13.0	13.0	34.0	34.0
Total Split (%)	35.6%	12.2%	47.8%	14.4%	14.4%	37.8%	37.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None
Act Effect Green (s)	30.5	42.9	42.9	6.8	6.8	25.3	25.3
Actuated g/C Ratio	0.34	0.48	0.48	0.08	0.08	0.28	0.28
v/c Ratio	0.20	0.32	0.18	0.15	0.74	0.72	0.71
Control Delay	15.1	26.0	22.9	40.9	19.0	33.7	35.9
Queue Delay	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	28.2	22.9	40.9	19.0	33.7	35.9
LOS	B	C	C	D	B	C	D
Approach Delay	15.1		24.7				34.4
Approach LOS	B		C				C

Intersection Summary

Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 27.1	Intersection LOS: C
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	346	156	308	20	272	650	329
v/c Ratio	0.20	0.32	0.18	0.15	0.74	0.72	0.71
Control Delay	15.1	26.0	22.9	40.9	19.0	33.7	35.9
Queue Delay	0.0	2.2	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	28.2	22.9	40.9	19.0	33.7	35.9
Queue Length 50th (ft)	36	66	68	11	2	179	171
Queue Length 95th (ft)	54	137	122	33	#96	232	263
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	1711	484	1687	157	384	1037	531
Starvation Cap Reductn	0	216	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.58	0.18	0.13	0.71	0.63	0.62

Intersection Summary

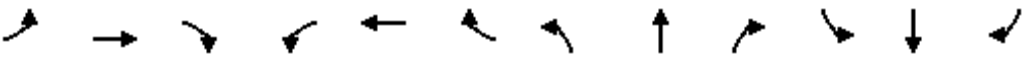
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2023 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↖	↑↑		↖		↖	↖↖	↖	
Traffic Volume (vph)	0	254	58	140	277	0	18	0	245	680	135	66
Future Volume (vph)	0	254	58	140	277	0	18	0	245	680	135	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.97	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4944		1770	3539		1770		1583	3221	1613	
Flt Permitted		1.00		0.46	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4944		858	3539		1770		1583	3221	1613	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	282	64	156	308	0	20	0	272	756	150	73
RTOR Reduction (vph)	0	38	0	0	0	0	0	0	248	0	12	0
Lane Group Flow (vph)	0	308	0	156	308	0	20	0	24	650	317	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		30.4		42.9	42.9		6.8		6.8	25.3	25.3	
Effective Green, g (s)		30.4		42.9	42.9		6.8		6.8	25.3	25.3	
Actuated g/C Ratio		0.34		0.48	0.48		0.08		0.08	0.28	0.28	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1669		484	1686		133		119	905	453	
v/s Ratio Prot		0.06		c0.03	0.09		0.01			c0.20	0.20	
v/s Ratio Perm				c0.13					c0.02			
v/c Ratio		0.18		0.32	0.18		0.15		0.20	0.72	0.70	
Uniform Delay, d1		21.0		13.7	13.5		38.9		39.1	29.1	28.9	
Progression Factor		0.80		1.60	1.55		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.2		0.3	0.2		0.5		0.8	2.7	4.7	
Delay (s)		17.1		22.2	21.2		39.4		39.9	31.9	33.6	
Level of Service		B		C	C		D		D	C	C	
Approach Delay (s)		17.1			21.5			39.9			32.5	
Approach LOS		B			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			28.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			52.3%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	73	460	165	228	150	5	25	185	50	41
Future Volume (vph)	73	460	165	228	150	5	25	185	50	41
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	9.5	32.0	32.0
Total Split (s)	13.0	15.0	28.0	30.0	30.0	15.0	26.0	11.0	22.0	22.0
Total Split (%)	16.3%	18.8%	35.0%	37.5%	37.5%	18.8%	32.5%	13.8%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	15.0	9.2	22.7	16.4	16.4	10.5	8.1	16.9	14.8	14.8
Actuated g/C Ratio	0.29	0.18	0.45	0.32	0.32	0.21	0.16	0.33	0.29	0.29
v/c Ratio	0.21	0.81	0.51	0.26	0.31	0.02	0.34	0.54	0.11	0.08
Control Delay	10.9	34.8	14.0	16.4	5.0	12.0	11.9	19.5	15.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	34.8	14.0	16.4	5.0	12.0	11.9	19.5	15.9	0.2
LOS	B	C	B	B	A	B	B	B	B	A
Approach Delay		31.7		12.5			11.9		16.0	
Approach LOS		C		B			B		B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 51

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 19.7

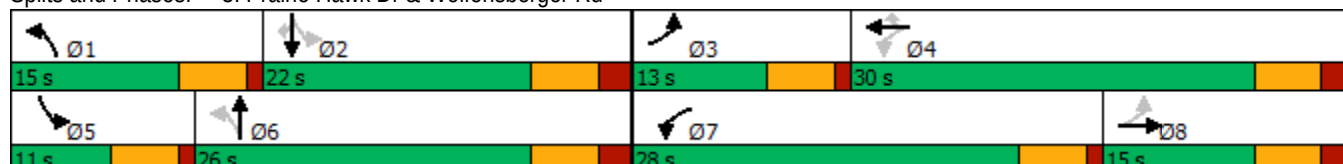
Intersection LOS: B

Intersection Capacity Utilization 54.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	78	516	214	296	195	5	113	215	58	48
v/c Ratio	0.21	0.81	0.51	0.26	0.31	0.02	0.34	0.54	0.11	0.08
Control Delay	10.9	34.8	14.0	16.4	5.0	12.0	11.9	19.5	15.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	34.8	14.0	16.4	5.0	12.0	11.9	19.5	15.9	0.2
Queue Length 50th (ft)	14	82	41	41	0	1	7	46	12	0
Queue Length 95th (ft)	32	#172	63	60	26	7	46	#94	41	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	495	635	819	1694	849	531	703	397	657	710
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.81	0.26	0.17	0.23	0.01	0.16	0.54	0.09	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

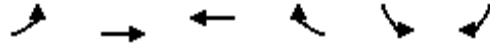
3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	460	25	165	228	150	5	25	80	185	50	41
Future Volume (veh/h)	73	460	25	165	228	150	5	25	80	185	50	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	489	27	214	296	195	5	27	86	215	58	48
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	388	600	33	399	896	399	344	60	191	464	497	421
Arrive On Green	0.05	0.18	0.18	0.13	0.25	0.25	0.00	0.15	0.15	0.12	0.27	0.27
Sat Flow, veh/h	1781	3423	189	1781	3554	1581	1781	392	1250	1781	1870	1583
Grp Volume(v), veh/h	78	253	263	214	296	195	5	0	113	215	58	48
Grp Sat Flow(s),veh/h/ln	1781	1777	1835	1781	1777	1581	1781	0	1643	1781	1870	1583
Q Serve(g_s), s	1.8	7.0	7.1	4.8	3.5	5.4	0.1	0.0	3.2	4.9	1.2	1.2
Cycle Q Clear(g_c), s	1.8	7.0	7.1	4.8	3.5	5.4	0.1	0.0	3.2	4.9	1.2	1.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	388	311	322	399	896	399	344	0	251	464	497	421
V/C Ratio(X)	0.20	0.81	0.82	0.54	0.33	0.49	0.01	0.00	0.45	0.46	0.12	0.11
Avail Cap(c_a), veh/h	576	311	322	971	1660	739	683	0	639	464	583	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.1	20.4	20.4	14.3	15.7	16.4	18.3	0.0	19.8	14.3	14.3	14.3
Incr Delay (d2), s/veh	0.1	15.1	15.1	0.4	0.2	0.9	0.0	0.0	0.5	0.3	0.0	0.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	3.9	4.0	1.6	1.2	1.8	0.0	0.0	1.2	1.7	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	35.5	35.5	14.7	15.9	17.3	18.3	0.0	20.3	14.6	14.3	14.3
LnGrp LOS	B	D	D	B	B	B	B	A	C	B	B	B
Approach Vol, veh/h		594			705			118			321	
Approach Delay, s/veh		33.0			15.9			20.2			14.5	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	19.6	7.6	18.9	11.0	13.9	11.5	15.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	16.0	8.0	24.0	6.0	20.0	23.0	9.0				
Max Q Clear Time (g_c+I1), s	2.1	3.2	3.8	7.4	6.9	5.2	6.8	9.1				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.3	0.0	0.2	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings 4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	68	234	346	15	65	3
Future Volume (vph)	68	234	346	15	65	3
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	54.5	54.5	45.0	45.0	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.50	0.50	0.29	0.29
v/c Ratio	0.12	0.12	0.21	0.02	0.07	0.01
Control Delay	7.9	7.7	7.3	0.8	23.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	7.7	7.3	0.8	23.2	15.7
LOS	A	A	A	A	C	B
Approach Delay		7.8	7.0		22.9	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.21

Intersection Signal Delay: 8.8

Intersection LOS: A

Intersection Capacity Utilization 29.1%

ICU Level of Service A

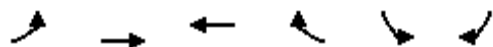
Analysis Period (min) 15

Splits and Phases: 4: Plum Creek Pkwy & Prairie Hawk Dr



Queues
4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	74	254	376	16	71	3
v/c Ratio	0.12	0.12	0.21	0.02	0.07	0.01
Control Delay	7.9	7.7	7.3	0.8	23.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	7.7	7.3	0.8	23.2	15.7
Queue Length 50th (ft)	16	29	38	0	14	0
Queue Length 95th (ft)	33	45	34	m1	30	7
Internal Link Dist (ft)		574	922		375	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	691	2143	1768	799	1010	468
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.12	0.21	0.02	0.07	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	234	346	15	65	3
Future Volume (veh/h)	68	234	346	15	65	3
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	254	376	0	71	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	617	2152	1808		1018	467
Arrive On Green	0.05	0.61	0.51	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	74	254	376	0	71	3
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	1.6	2.7	5.2	0.0	1.3	0.1
Cycle Q Clear(g_c), s	1.6	2.7	5.2	0.0	1.3	0.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	617	2152	1808		1018	467
V/C Ratio(X)	0.12	0.12	0.21		0.07	0.01
Avail Cap(c_a), veh/h	860	2152	1808		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.7	7.5	12.1	0.0	22.9	22.4
Incr Delay (d2), s/veh	0.1	0.1	0.3	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.9	1.9	0.0	0.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.8	7.7	12.4	0.0	23.0	22.5
LnGrp LOS	A	A	B		C	C
Approach Vol, veh/h		328	376	A	74	
Approach Delay, s/veh		7.9	12.4		23.0	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	8.7	50.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		4.7		3.3	3.6	7.2
Green Ext Time (p_c), s		1.6		0.2	0.1	2.2
Intersection Summary						
HCM 6th Ctrl Delay			11.5			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

2023 w/Project
AM

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	5	5	65	120	100
Future Vol, veh/h	35	5	5	65	120	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	6	6	76	140	116
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	286	198	256	0	-	0
Stage 1	198	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	704	843	1309	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	700	843	1309	-	-	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1309	-	715	-	-	
HCM Lane V/C Ratio	0.004	-	0.065	-	-	
HCM Control Delay (s)	7.8	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	303	257	92	0	39
Future Vol, veh/h	0	303	257	92	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	329	279	100	0	42
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	140
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	882
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	882
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	882		
HCM Lane V/C Ratio	-	-	-	0.048		
HCM Control Delay (s)	-	-	-	9.3		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile O(veh)	-	-	-	0.2		

Timings

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	209	1565	589	910	84	5	170
Future Volume (vph)	209	1565	589	910	84	5	170
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	14.0	72.0	58.0	58.0	28.0	28.0	28.0
Total Split (%)	14.0%	72.0%	58.0%	58.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	67.0	66.0	52.3	52.3	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.52	0.52	0.23	0.23	0.23
v/c Ratio	0.64	0.48	0.59	0.49	0.20	0.25	0.23
Control Delay	21.7	11.4	13.5	3.1	32.8	20.7	9.4
Queue Delay	1.6	0.8	0.0	0.0	0.1	0.1	0.0
Total Delay	23.3	12.1	13.5	3.1	32.8	20.8	9.4
LOS	C	B	B	A	C	C	A
Approach Delay		13.5	10.2			20.3	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.6

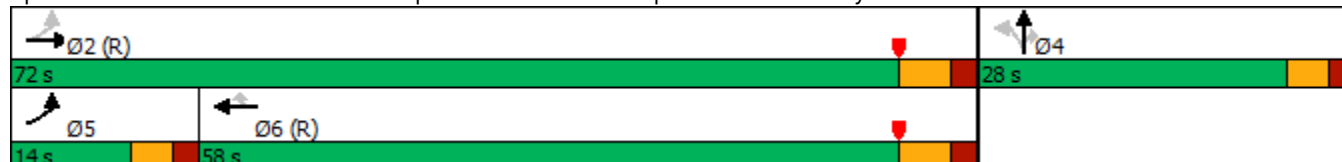
Intersection LOS: B

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	213	1597	1047	483	77	94	93
v/c Ratio	0.64	0.48	0.59	0.49	0.20	0.25	0.23
Control Delay	21.7	11.4	13.5	3.1	32.8	20.7	9.4
Queue Delay	1.6	0.8	0.0	0.0	0.1	0.1	0.0
Total Delay	23.3	12.1	13.5	3.1	32.8	20.8	9.4
Queue Length 50th (ft)	69	158	179	0	42	29	3
Queue Length 95th (ft)	m99	193	244	52	84	76	45
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	336	3356	1784	984	386	370	412
Starvation Cap Reductn	37	1307	0	0	0	0	0
Spillback Cap Reductn	0	0	5	0	31	27	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.78	0.59	0.49	0.22	0.27	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

2023 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	209	1565	0	0	589	910	84	5	170	0	0	0
Future Volume (veh/h)	209	1565	0	0	589	910	84	5	170	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	213	1597	0	0	601	929	59	0	205			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	312	3370	0	0	1002	1698	410	0	729			
Arrive On Green	0.15	1.00	0.00	0.00	0.54	0.54	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	213	1597	0	0	601	929	59	0	205			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.3	0.0	0.0	0.0	22.0	19.2	2.6	0.0	5.3			
Cycle Q Clear(g_c), s	5.3	0.0	0.0	0.0	22.0	19.2	2.6	0.0	5.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	312	3370	0	0	1002	1698	410	0	729			
V/C Ratio(X)	0.68	0.47	0.00	0.00	0.60	0.55	0.14	0.00	0.28			
Avail Cap(c_a), veh/h	340	3370	0	0	1002	1698	410	0	729			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.4	0.0	0.0	0.0	15.9	15.2	30.7	0.0	31.7			
Incr Delay (d2), s/veh	3.3	0.3	0.0	0.0	2.7	1.3	0.7	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.0	0.1	0.0	0.0	9.6	6.9	1.2	0.0	5.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.7	0.3	0.0	0.0	18.5	16.5	31.4	0.0	32.7			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1810			1530			264					
Approach Delay, s/veh	2.2			17.3			32.4					
Approach LOS	A			B			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	72.0			28.0		12.4	59.6					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	66.0			23.0		9.0	52.0					
Max Q Clear Time (g_c+I1), s	2.0			7.3		7.3	24.0					
Green Ext Time (p_c), s	19.9			0.8		0.1	9.9					
Intersection Summary												
HCM 6th Ctrl Delay				10.8								
HCM 6th LOS				B								
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2023 w/Project
PM

	→	↖	←	↗	↘	↓	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↑	↑↑	↑	↑	↑↑	↑↑
Traffic Volume (vph)	494	210	427	31	160	1120	155
Future Volume (vph)	494	210	427	31	160	1120	155
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	10.0	10.0
Total Split (s)	28.3	18.0	46.3	12.0	12.0	41.7	41.7
Total Split (%)	28.3%	18.0%	46.3%	12.0%	12.0%	41.7%	41.7%
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	C-Max	C-Max
Act Effect Green (s)	24.5	41.8	41.3	6.5	6.5	37.2	37.2
Actuated g/C Ratio	0.24	0.42	0.41	0.06	0.06	0.37	0.37
v/c Ratio	0.50	0.61	0.30	0.28	0.64	0.83	0.81
Control Delay	31.9	36.4	26.6	50.6	19.4	35.9	39.4
Queue Delay	0.0	2.8	1.8	0.0	0.6	0.1	0.2
Total Delay	32.0	39.2	28.4	50.6	20.0	36.0	39.5
LOS	C	D	C	D	B	D	D
Approach Delay	32.0		31.9				37.2
Approach LOS	C		C				D

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 34.1

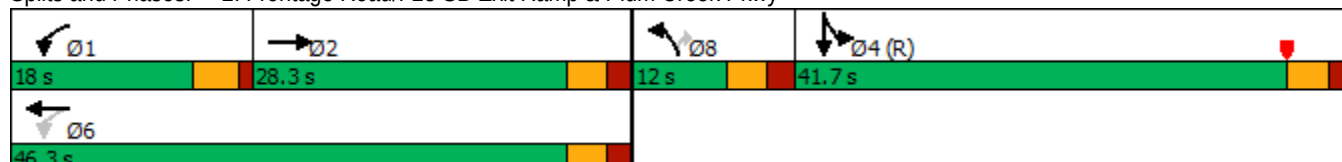
Intersection LOS: C

Intersection Capacity Utilization 68.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



Queues

2023 w/Project

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	629	219	445	32	167	992	493
v/c Ratio	0.50	0.61	0.30	0.28	0.64	0.83	0.81
Control Delay	31.9	36.4	26.6	50.6	19.4	35.9	39.4
Queue Delay	0.0	2.8	1.8	0.0	0.6	0.1	0.2
Total Delay	32.0	39.2	28.4	50.6	20.0	36.0	39.5
Queue Length 50th (ft)	119	108	109	20	0	313	293
Queue Length 95th (ft)	158	186	160	50	64	403	#489
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	1249	373	1461	123	266	1197	606
Starvation Cap Reductn	0	75	826	0	0	0	0
Spillback Cap Reductn	39	0	0	0	11	5	4
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.73	0.70	0.26	0.65	0.83	0.82

Intersection Summary

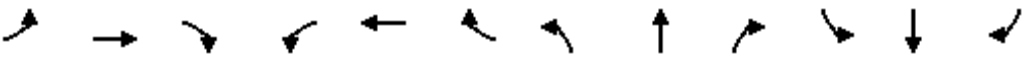
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2023 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↰	↑↑		↰		↰	↰↰	↰	↰
Traffic Volume (vph)	0	494	109	210	427	0	31	0	160	1120	155	151
Future Volume (vph)	0	494	109	210	427	0	31	0	160	1120	155	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.97		1.00	1.00		1.00		0.85	1.00	0.95	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4947		1770	3539		1770		1583	3221	1586	
Flt Permitted		1.00		0.26	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4947		476	3539		1770		1583	3221	1586	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	515	114	219	445	0	32	0	167	1167	161	157
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	156	0	17	0
Lane Group Flow (vph)	0	594	0	219	445	0	32	0	11	992	476	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		24.5		41.3	41.3		6.5		6.5	37.2	37.2	
Effective Green, g (s)		24.5		41.3	41.3		6.5		6.5	37.2	37.2	
Actuated g/C Ratio		0.24		0.41	0.41		0.06		0.06	0.37	0.37	
Clearance Time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1212		355	1461		115		102	1198	589	
v/s Ratio Prot		0.12		c0.08	0.13		c0.02			c0.31	0.30	
v/s Ratio Perm				c0.18					0.01			
v/c Ratio		0.49		0.62	0.30		0.28		0.11	0.83	0.81	
Uniform Delay, d1		32.4		20.5	19.7		44.5		44.0	28.5	28.2	
Progression Factor		1.00		1.51	1.31		1.00		1.00	1.00	1.00	
Incremental Delay, d2		1.4		2.7	0.5		1.3		0.5	6.7	11.4	
Delay (s)		33.8		33.7	26.3		45.8		44.5	35.2	39.6	
Level of Service		C		C	C		D		D	D	D	
Approach Delay (s)		33.8			28.8			44.7			36.6	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			34.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			19.5			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	89	342	90	515	210	35	55	200	20	118
Future Volume (vph)	89	342	90	515	210	35	55	200	20	118
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	9.5	32.0	32.0
Total Split (s)	11.0	16.0	37.0	42.0	42.0	11.0	36.0	11.0	36.0	36.0
Total Split (%)	11.0%	16.0%	37.0%	42.0%	42.0%	11.0%	36.0%	11.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	18.1	14.3	23.1	16.8	16.8	17.9	12.6	21.1	18.4	18.4
Actuated g/C Ratio	0.29	0.23	0.37	0.27	0.27	0.29	0.20	0.34	0.30	0.30
v/c Ratio	0.32	0.50	0.23	0.58	0.38	0.10	0.70	0.78	0.04	0.21
Control Delay	15.6	24.5	13.2	23.0	5.4	14.9	18.4	40.9	21.8	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	24.5	13.2	23.0	5.4	14.9	18.4	40.9	21.8	0.9
LOS	B	C	B	C	A	B	B	D	C	A
Approach Delay		22.8		17.4			18.0		25.8	
Approach LOS		C		B			B		C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 62

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.3

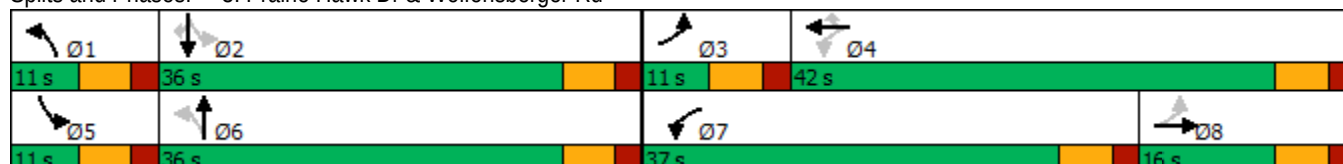
Intersection LOS: C

Intersection Capacity Utilization 68.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	100	406	97	554	226	43	346	227	23	134
v/c Ratio	0.32	0.50	0.23	0.58	0.38	0.10	0.70	0.78	0.04	0.21
Control Delay	15.6	24.5	13.2	23.0	5.4	14.9	18.4	40.9	21.8	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	24.5	13.2	23.0	5.4	14.9	18.4	40.9	21.8	0.9
Queue Length 50th (ft)	21	70	20	94	0	10	46	61	7	0
Queue Length 95th (ft)	57	133	56	168	47	29	108	#179	25	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	309	816	943	2166	1044	432	929	291	950	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.50	0.10	0.26	0.22	0.10	0.37	0.78	0.02	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

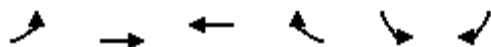
3: Prairie Hawk Dr & Wolfensberger Rd

2023 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	342	20	90	515	210	35	55	225	200	20	118
Future Volume (veh/h)	89	342	20	90	515	210	35	55	225	200	20	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	384	22	97	554	226	43	68	278	227	23	134
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	837	48	364	879	391	474	84	342	304	577	489
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.03	0.26	0.26	0.07	0.31	0.31
Sat Flow, veh/h	1781	3416	195	1781	3554	1581	1781	321	1312	1781	1870	1584
Grp Volume(v), veh/h	100	199	207	97	554	226	43	0	346	227	23	134
Grp Sat Flow(s),veh/h/ln	1781	1777	1834	1781	1777	1581	1781	0	1632	1781	1870	1584
Q Serve(g_s), s	2.8	6.4	6.4	2.7	9.3	8.4	1.2	0.0	13.3	5.0	0.6	4.3
Cycle Q Clear(g_c), s	2.8	6.4	6.4	2.7	9.3	8.4	1.2	0.0	13.3	5.0	0.6	4.3
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	289	435	450	364	879	391	474	0	425	304	577	489
V/C Ratio(X)	0.35	0.46	0.46	0.27	0.63	0.58	0.09	0.00	0.81	0.75	0.04	0.27
Avail Cap(c_a), veh/h	315	435	450	1076	1907	848	560	0	730	304	836	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	21.5	21.5	17.4	22.5	22.2	17.5	0.0	23.3	21.3	16.2	17.5
Incr Delay (d2), s/veh	0.7	0.7	0.7	0.4	0.8	1.4	0.1	0.0	3.8	9.8	0.0	0.3
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.1	2.5	2.6	1.0	3.7	3.0	0.5	0.0	5.2	3.3	0.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	22.3	22.3	17.8	23.3	23.5	17.6	0.0	27.1	31.1	16.3	17.8
LnGrp LOS	B	C	C	B	C	C	B	A	C	C	B	B
Approach Vol, veh/h		506			877			389			384	
Approach Delay, s/veh		21.6			22.7			26.1			25.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	26.7	10.0	22.6	11.0	23.5	10.2	22.4				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	30.0	5.0	36.0	5.0	30.0	31.0	10.0				
Max Q Clear Time (g_c+I1), s	3.2	6.3	4.8	11.3	7.0	15.3	4.7	8.4				
Green Ext Time (p_c), s	0.0	0.5	0.0	4.6	0.0	1.9	0.2	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			23.6									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings 4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	214	249	621	48	363	15
Future Volume (vph)	214	249	621	48	363	15
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	54.5	54.5	39.1	39.1	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.43	0.43	0.29	0.29
v/c Ratio	0.50	0.13	0.44	0.07	0.39	0.03
Control Delay	12.0	7.8	19.4	5.3	26.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	7.8	19.4	5.3	26.7	10.8
LOS	B	A	B	A	C	B
Approach Delay		9.7	18.4		26.1	
Approach LOS		A	B		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 17.7

Intersection LOS: B

Intersection Capacity Utilization 50.6%

ICU Level of Service A

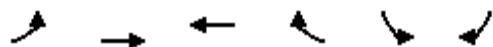
Analysis Period (min) 15

Splits and Phases: 4: Plum Creek Pkwy & Prairie Hawk Dr



Queues
4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	233	271	675	52	395	16
v/c Ratio	0.50	0.13	0.44	0.07	0.39	0.03
Control Delay	12.0	7.8	19.4	5.3	26.7	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	7.8	19.4	5.3	26.7	10.8
Queue Length 50th (ft)	55	31	136	0	91	0
Queue Length 95th (ft)	90	48	198	22	132	15
Internal Link Dist (ft)		574	922		375	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	546	2143	1535	716	1010	477
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.13	0.44	0.07	0.39	0.03
Intersection Summary						

HCM 6th Signalized Intersection Summary

4: Plum Creek Pkwy & Prairie Hawk Dr

2023 w/Project
PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	214	249	621	48	363	15
Future Volume (veh/h)	214	249	621	48	363	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	233	271	675	0	395	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	500	2152	1654		1018	467
Arrive On Green	0.09	0.61	0.47	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	233	271	675	0	395	16
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	5.7	2.9	11.3	0.0	8.2	0.6
Cycle Q Clear(g_c), s	5.7	2.9	11.3	0.0	8.2	0.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	500	2152	1654		1018	467
V/C Ratio(X)	0.47	0.13	0.41		0.39	0.03
Avail Cap(c_a), veh/h	666	2152	1654		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.6	7.6	15.9	0.0	25.3	22.6
Incr Delay (d2), s/veh	0.7	0.1	0.7	0.0	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.0	4.3	0.0	3.4	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	7.7	16.6	0.0	26.4	22.8
LnGrp LOS	B	A	B		C	C
Approach Vol, veh/h		504	675	A	411	
Approach Delay, s/veh		9.4	16.6		26.3	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	12.6	46.4
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		4.9		10.2	7.7	13.3
Green Ext Time (p_c), s		1.7		1.3	0.4	4.1
Intersection Summary						
HCM 6th Ctrl Delay			16.8			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

2023 w/Project
PM

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	5	10	120	80	50
Future Vol, veh/h	160	5	10	120	80	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	25	42	90	83	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	20	24	133	96	79
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	317	136	175	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	676	913	1401	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	663	913	1401	-	-	-
Mov Cap-2 Maneuver	663	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.1	1.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1401	-	679	-	-	
HCM Lane V/C Ratio	0.017	-	0.344	-	-	
HCM Control Delay (s)	7.6	0	13.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile O(veh)	0.1	-	1.5	-	-	

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	463	349	287	0	216
Future Vol, veh/h	0	463	349	287	0	216
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	503	379	312	0	235

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	820
HCM Lane V/C Ratio	-	-	-	0.286
HCM Control Delay (s)	-	-	-	11.1
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	1.2

Timings

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	200	1000	370	1100	25	2	110
Future Volume (vph)	200	1000	370	1100	25	2	110
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	42.0	42.0	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.47	0.47	0.24	0.24	0.24
v/c Ratio	0.61	0.34	0.58	0.60	0.06	0.16	0.14
Control Delay	23.9	11.1	9.4	4.4	26.7	9.7	3.1
Queue Delay	0.4	0.7	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	11.7	9.4	4.4	26.7	9.7	3.1
LOS	C	B	A	A	C	A	A
Approach Delay		13.8	7.5			9.7	
Approach LOS		B	A			A	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 10.3

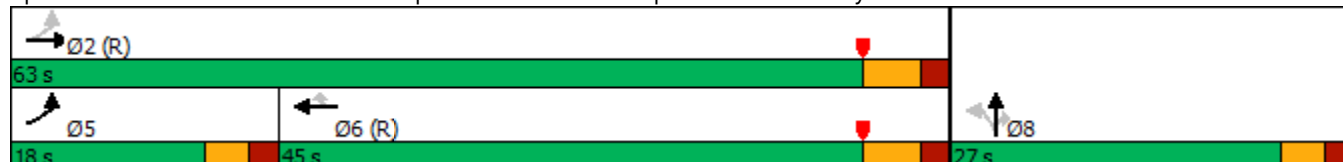
Intersection LOS: B

Intersection Capacity Utilization 74.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	217	1087	1000	598	24	63	62
v/c Ratio	0.61	0.34	0.58	0.60	0.06	0.16	0.14
Control Delay	23.9	11.1	9.4	4.4	26.7	9.7	3.1
Queue Delay	0.4	0.7	0.0	0.0	0.0	0.0	0.0
Total Delay	24.3	11.7	9.4	4.4	26.7	9.7	3.1
Queue Length 50th (ft)	72	82	93	0	11	2	0
Queue Length 95th (ft)	m118	165	167	65	32	36	15
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	401	3220	1720	991	410	400	440
Starvation Cap Reductn	29	1643	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.69	0.58	0.60	0.06	0.16	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	200	1000	0	0	370	1100	25	2	110	0	0	0
Future Volume (veh/h)	200	1000	0	0	370	1100	25	2	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	217	1087	0	0	402	1196	19	0	130			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	342	3234	0	0	924	1566	435	0	775			
Arrive On Green	0.17	1.00	0.00	0.00	0.49	0.49	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	217	1087	0	0	402	1196	19	0	130			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.3	0.0	0.0	0.0	12.5	27.6	0.7	0.0	2.9			
Cycle Q Clear(g_c), s	5.3	0.0	0.0	0.0	12.5	27.6	0.7	0.0	2.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	342	3234	0	0	924	1566	435	0	775			
V/C Ratio(X)	0.63	0.34	0.00	0.00	0.43	0.76	0.04	0.00	0.17			
Avail Cap(c_a), veh/h	451	3234	0	0	924	1566	435	0	775			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.76	0.76	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.3	0.0	0.0	0.0	14.7	18.5	26.0	0.0	26.8			
Incr Delay (d2), s/veh	1.5	0.2	0.0	0.0	1.5	3.6	0.2	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	0.1	0.0	0.0	5.4	10.2	0.3	0.0	1.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.8	0.2	0.0	0.0	16.2	22.1	26.2	0.0	27.3			
LnGrp LOS	B	A	A	A	B	C	C	A	C			
Approach Vol, veh/h	1304			1598			149					
Approach Delay, s/veh	2.1			20.6			27.1					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	63.0			12.5			50.5			27.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	57.0			13.0			39.0			22.0		
Max Q Clear Time (g_c+I1), s	2.0			7.3			29.6			4.9		
Green Ext Time (p_c), s	10.4			0.3			5.5			0.4		
Intersection Summary												
HCM 6th Ctrl Delay	13.0											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

Year 2027 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↵	↑↑	↵	↵	↵↵	↵↵
Traffic Volume (vph)	230	145	245	15	255	710	140
Future Volume (vph)	230	145	245	15	255	710	140
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	30.0	14.0	44.0	16.0	16.0	30.0	30.0
Total Split (%)	33.3%	15.6%	48.9%	17.8%	17.8%	33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None
Act Effect Green (s)	29.6	43.3	43.3	7.5	7.5	24.2	24.2
Actuated g/C Ratio	0.33	0.48	0.48	0.08	0.08	0.27	0.27
v/c Ratio	0.18	0.31	0.16	0.12	0.72	0.76	0.75
Control Delay	19.9	25.4	22.7	38.3	16.3	36.3	41.1
Queue Delay	0.0	1.8	0.0	0.0	0.1	0.0	0.0
Total Delay	19.9	27.2	22.7	38.3	16.4	36.3	41.1
LOS	B	C	C	D	B	D	D
Approach Delay	19.9		24.3				37.9
Approach LOS	B		C				D

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 29.3

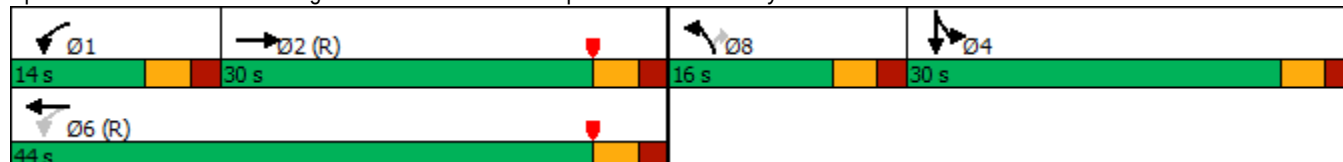
Intersection LOS: C

Intersection Capacity Utilization 53.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	306	161	272	17	283	655	334
v/c Ratio	0.18	0.31	0.16	0.12	0.72	0.76	0.75
Control Delay	19.9	25.4	22.7	38.3	16.3	36.3	41.1
Queue Delay	0.0	1.8	0.0	0.0	0.1	0.0	0.0
Total Delay	19.9	27.2	22.7	38.3	16.4	36.3	41.1
Queue Length 50th (ft)	39	67	58	9	0	180	180
Queue Length 95th (ft)	64	138	107	28	73	251	#315
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	1658	518	1701	216	441	917	469
Starvation Cap Reductn	0	227	0	0	0	0	0
Spillback Cap Reductn	78	0	0	0	4	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.55	0.16	0.08	0.65	0.71	0.71

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2027 Background

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↰	↑↑		↰		↰	↰↰	↰	↰
Traffic Volume (vph)	0	230	45	145	245	0	15	0	255	710	140	40
Future Volume (vph)	0	230	45	145	245	0	15	0	255	710	140	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4961		1770	3539		1770		1583	3221	1629	
Flt Permitted		1.00		0.48	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4961		890	3539		1770		1583	3221	1629	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	256	50	161	272	0	17	0	283	789	156	44
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	259	0	6	0
Lane Group Flow (vph)	0	276	0	161	272	0	17	0	24	655	328	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		29.6		43.3	43.3		7.5		7.5	24.2	24.2	
Effective Green, g (s)		29.6		43.3	43.3		7.5		7.5	24.2	24.2	
Actuated g/C Ratio		0.33		0.48	0.48		0.08		0.08	0.27	0.27	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1631		513	1702		147		131	866	438	
v/s Ratio Prot		0.06		c0.03	0.08		0.01			c0.20	0.20	
v/s Ratio Perm				c0.12					c0.01			
v/c Ratio		0.17		0.31	0.16		0.12		0.18	0.76	0.75	
Uniform Delay, d1		21.5		13.5	13.1		38.2		38.4	30.2	30.1	
Progression Factor		1.00		1.62	1.59		1.00		1.00	1.00	1.00	
Incremental Delay, d2		0.2		0.3	0.2		0.4		0.7	3.8	6.9	
Delay (s)		21.7		22.1	21.0		38.5		39.1	34.0	37.0	
Level of Service		C		C	C		D		D	C	D	
Approach Delay (s)		21.7			21.4			39.0			35.0	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			53.0%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Year 2027 Background
AM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	480	175	235	155	5	25	190	50	40
Future Volume (vph)	70	480	175	235	155	5	25	190	50	40
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	9.5	32.0	32.0
Total Split (s)	13.0	15.0	28.0	30.0	30.0	15.0	26.0	11.0	22.0	22.0
Total Split (%)	16.3%	18.8%	35.0%	37.5%	37.5%	18.8%	32.5%	13.8%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	14.9	9.2	23.2	16.8	16.8	10.5	8.1	16.9	14.8	14.8
Actuated g/C Ratio	0.29	0.18	0.45	0.33	0.33	0.20	0.16	0.33	0.29	0.29
v/c Ratio	0.20	0.86	0.54	0.26	0.31	0.02	0.35	0.56	0.11	0.08
Control Delay	10.9	38.9	14.6	16.2	4.9	12.0	11.8	20.6	16.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	38.9	14.6	16.2	4.9	12.0	11.8	20.6	16.0	0.2
LOS	B	D	B	B	A	B	B	C	B	A
Approach Delay		35.5		12.6			11.9		16.9	
Approach LOS		D		B			B		B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 51.3

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.1

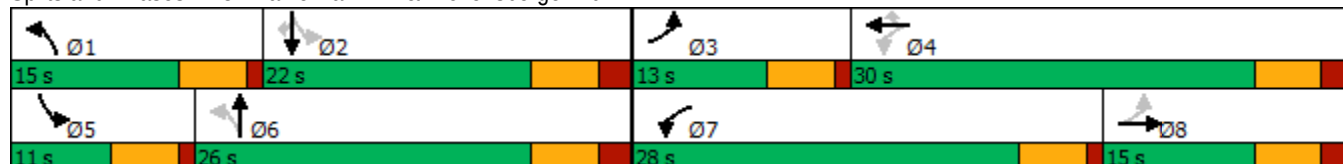
Intersection LOS: C

Intersection Capacity Utilization 55.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues

Year 2027 Background

3: Prairie Hawk Dr & Wolfensberger Rd

AM



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	538	227	305	201	5	118	221	58	47
v/c Ratio	0.20	0.86	0.54	0.26	0.31	0.02	0.35	0.56	0.11	0.08
Control Delay	10.9	38.9	14.6	16.2	4.9	12.0	11.8	20.6	16.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	38.9	14.6	16.2	4.9	12.0	11.8	20.6	16.0	0.2
Queue Length 50th (ft)	13	87	43	42	0	1	8	48	12	0
Queue Length 95th (ft)	31	#186	67	61	26	7	46	#102	41	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	489	629	815	1683	848	528	701	394	653	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.86	0.28	0.18	0.24	0.01	0.17	0.56	0.09	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2027 Background

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	480	25	175	235	155	5	25	85	190	50	40
Future Volume (veh/h)	70	480	25	175	235	155	5	25	85	190	50	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	511	27	227	305	201	5	27	91	221	58	47
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	379	597	31	400	920	409	342	57	193	456	494	418
Arrive On Green	0.05	0.17	0.17	0.13	0.26	0.26	0.00	0.15	0.15	0.12	0.26	0.26
Sat Flow, veh/h	1781	3432	181	1781	3554	1581	1781	375	1265	1781	1870	1583
Grp Volume(v), veh/h	74	264	274	227	305	201	5	0	118	221	58	47
Grp Sat Flow(s),veh/h/ln	1781	1777	1837	1781	1777	1581	1781	0	1640	1781	1870	1583
Q Serve(g_s), s	1.7	7.5	7.5	5.0	3.6	5.6	0.1	0.0	3.4	5.1	1.2	1.2
Cycle Q Clear(g_c), s	1.7	7.5	7.5	5.0	3.6	5.6	0.1	0.0	3.4	5.1	1.2	1.2
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.77	1.00		1.00
Lane Grp Cap(c), veh/h	379	309	320	400	920	409	342	0	250	456	494	418
V/C Ratio(X)	0.20	0.85	0.86	0.57	0.33	0.49	0.01	0.00	0.47	0.48	0.12	0.11
Avail Cap(c_a), veh/h	570	309	320	957	1649	734	680	0	634	456	579	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	20.7	20.7	14.1	15.5	16.3	18.5	0.0	20.0	14.5	14.4	14.4
Incr Delay (d2), s/veh	0.1	20.1	20.0	0.5	0.2	0.9	0.0	0.0	0.5	0.3	0.0	0.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.6	4.4	4.6	1.7	1.3	1.8	0.0	0.0	1.2	1.8	0.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	40.8	40.7	14.6	15.7	17.2	18.5	0.0	20.5	14.8	14.5	14.5
LnGrp LOS	B	D	D	B	B	B	B	A	C	B	B	B
Approach Vol, veh/h		612			733			123			326	
Approach Delay, s/veh		37.8			15.8			20.5			14.7	
Approach LOS		D			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	19.7	7.5	19.4	11.0	13.9	11.8	15.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	16.0	8.0	24.0	6.0	20.0	23.0	9.0				
Max Q Clear Time (g_c+I1), s	2.1	3.2	3.7	7.6	7.1	5.4	7.0	9.5				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.3	0.0	0.2	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

Year 2027 Background
AM

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	5	5	65	120	100
Future Vol, veh/h	35	5	5	65	120	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	6	6	76	140	116
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	286	198	256	0	-	0
Stage 1	198	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	704	843	1309	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	700	843	1309	-	-	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1309	-	715	-	-	
HCM Lane V/C Ratio	0.004	-	0.065	-	-	
HCM Control Delay (s)	7.8	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Timings

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	110	1505	535	955	35	5	180
Future Volume (vph)	110	1505	535	955	35	5	180
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	12.0	73.0	61.0	61.0	27.0	27.0	27.0
Total Split (%)	12.0%	73.0%	61.0%	61.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	68.0	67.0	55.2	55.2	22.0	22.0	22.0
Actuated g/C Ratio	0.68	0.67	0.55	0.55	0.22	0.22	0.22
v/c Ratio	0.35	0.45	0.54	0.48	0.09	0.27	0.24
Control Delay	5.0	3.5	10.0	2.8	31.9	19.5	10.3
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	3.8	10.1	2.8	31.9	19.5	10.3
LOS	A	A	B	A	C	B	B
Approach Delay		3.9	7.7			17.3	
Approach LOS		A	A			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 6.5

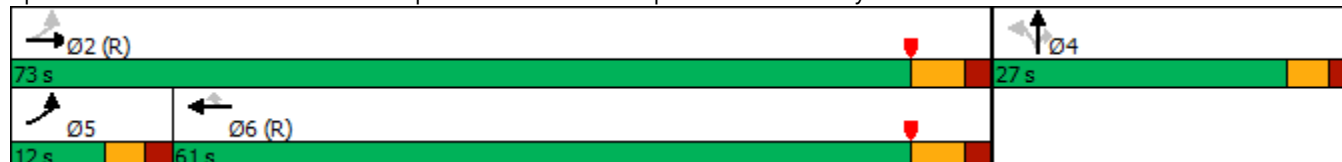
Intersection LOS: A

Intersection Capacity Utilization 63.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	112	1536	1033	487	32	97	96
v/c Ratio	0.35	0.45	0.54	0.48	0.09	0.27	0.24
Control Delay	5.0	3.5	10.0	2.8	31.9	19.5	10.3
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	3.8	10.1	2.8	31.9	19.5	10.3
Queue Length 50th (ft)	16	87	137	0	16	26	5
Queue Length 95th (ft)	m19	93	195	49	43	75	48
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	327	3406	1898	1013	369	360	398
Starvation Cap Reductn	0	1084	0	0	0	0	0
Spillback Cap Reductn	0	0	58	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.66	0.56	0.48	0.09	0.27	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

Year 2027 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	110	1505	0	0	535	955	35	5	180	0	0	0
Future Volume (veh/h)	110	1505	0	0	535	955	35	5	180	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	112	1536	0	0	546	974	26	0	198			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	293	3421	0	0	1070	1814	392	0	697			
Arrive On Green	0.05	0.67	0.00	0.00	0.57	0.57	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	112	1536	0	0	546	974	26	0	198			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	2.4	14.2	0.0	0.0	17.6	19.0	1.2	0.0	5.2			
Cycle Q Clear(g_c), s	2.4	14.2	0.0	0.0	17.6	19.0	1.2	0.0	5.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	293	3421	0	0	1070	1814	392	0	697			
V/C Ratio(X)	0.38	0.45	0.00	0.00	0.51	0.54	0.07	0.00	0.28			
Avail Cap(c_a), veh/h	333	3421	0	0	1070	1814	392	0	697			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.71	0.71	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.8	7.8	0.0	0.0	12.9	13.2	30.9	0.0	32.4			
Incr Delay (d2), s/veh	0.6	0.3	0.0	0.0	1.7	1.1	0.3	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.9	4.7	0.0	0.0	7.4	6.6	0.5	0.0	5.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	8.1	0.0	0.0	14.7	14.4	31.2	0.0	33.5			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1648			1520			224					
Approach Delay, s/veh	8.2			14.5			33.2					
Approach LOS	A			B			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	73.0			27.0		9.8	63.2					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	67.0			22.0		7.0	55.0					
Max Q Clear Time (g_c+I1), s	16.2			7.2		4.4	21.0					
Green Ext Time (p_c), s	17.6			0.7		0.1	10.2					
Intersection Summary												
HCM 6th Ctrl Delay	12.7											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

Year 2027 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM

	→	↖	←	↗	↘	↓	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Configurations	↑↑↑	↖	↑↑	↖	↖	↖↖	↖↖
Traffic Volume (vph)	325	220	310	20	170	1175	195
Future Volume (vph)	325	220	310	20	170	1175	195
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA
Protected Phases	2	1	6	8		4	4
Permitted Phases		6			8		
Detector Phase	2	1	6	8	8	4	4
Switch Phase							
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0
Total Split (s)	18.0	22.0	40.0	13.0	13.0	47.0	47.0
Total Split (%)	18.0%	22.0%	40.0%	13.0%	13.0%	47.0%	47.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	Max	None	Max	None	None	C-Max	C-Max
Act Effect Green (s)	15.6	35.0	35.0	6.8	6.8	43.2	43.2
Actuated g/C Ratio	0.16	0.35	0.35	0.07	0.07	0.43	0.43
v/c Ratio	0.48	0.60	0.26	0.18	0.65	0.71	0.71
Control Delay	39.4	33.0	25.8	46.9	18.8	27.0	29.7
Queue Delay	0.0	4.0	1.3	0.0	0.0	0.0	0.0
Total Delay	39.4	37.0	27.0	46.9	18.8	27.0	29.7
LOS	D	D	C	D	B	C	C
Approach Delay	39.4		31.2				27.9
Approach LOS	D		C				C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 71 (71%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 29.8

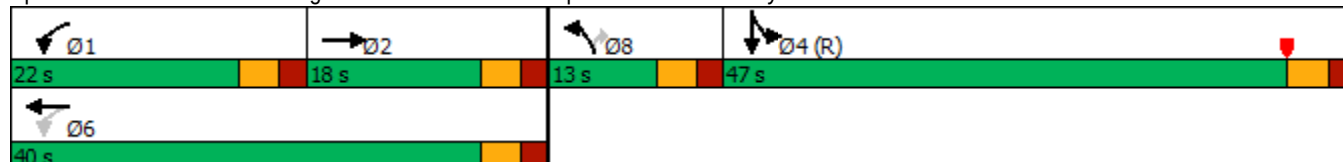
Intersection LOS: C

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT
Lane Group Flow (vph)	386	229	323	21	177	991	499
v/c Ratio	0.48	0.60	0.26	0.18	0.65	0.71	0.71
Control Delay	39.4	33.0	25.8	46.9	18.8	27.0	29.7
Queue Delay	0.0	4.0	1.3	0.0	0.0	0.0	0.0
Total Delay	39.4	37.0	27.0	46.9	18.8	27.0	29.7
Queue Length 50th (ft)	79	126	90	13	0	276	272
Queue Length 95th (ft)	115	205	132	36	64	365	420
Internal Link Dist (ft)	437		181				388
Turn Bay Length (ft)				350			
Base Capacity (vph)	797	413	1238	141	289	1391	707
Starvation Cap Reductn	0	114	690	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.77	0.59	0.15	0.61	0.71	0.71
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2027 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↖	↑↑		↖		↖	↖↖	↖	↖
Traffic Volume (vph)	0	325	45	220	310	0	20	0	170	1175	195	60
Future Volume (vph)	0	325	45	220	310	0	20	0	170	1175	195	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	
Frt		0.98		1.00	1.00		1.00		0.85	1.00	0.98	
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (prot)		4992		1770	3539		1770		1583	3221	1625	
Flt Permitted		1.00		0.34	1.00		0.95		1.00	0.95	0.98	
Satd. Flow (perm)		4992		624	3539		1770		1583	3221	1625	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	339	47	229	323	0	21	0	177	1224	203	62
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	165	0	5	0
Lane Group Flow (vph)	0	368	0	229	323	0	21	0	12	991	494	0
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			
Actuated Green, G (s)		15.6		35.0	35.0		6.8		6.8	43.2	43.2	
Effective Green, g (s)		15.6		35.0	35.0		6.8		6.8	43.2	43.2	
Actuated g/C Ratio		0.16		0.35	0.35		0.07		0.07	0.43	0.43	
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		778		383	1238		120		107	1391	702	
v/s Ratio Prot		0.07		c0.09	0.09		c0.01			c0.31	0.30	
v/s Ratio Perm				c0.12					0.01			
v/c Ratio		0.47		0.60	0.26		0.17		0.11	0.71	0.70	
Uniform Delay, d1		38.5		24.6	23.2		44.0		43.8	23.3	23.2	
Progression Factor		1.00		1.09	1.08		1.00		1.00	1.00	1.00	
Incremental Delay, d2		2.1		2.2	0.4		0.7		0.5	3.1	5.8	
Delay (s)		40.5		29.1	25.6		44.7		44.2	26.4	29.0	
Level of Service		D		C	C		D		D	C	C	
Approach Delay (s)		40.5			27.0			44.3			27.3	
Approach LOS		D			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			30.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			66.0%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Year 2027 Background
PM

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	330	95	510	220	40	60	210	25	105
Future Volume (vph)	70	330	95	510	220	40	60	210	25	105
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	5	2	
Permitted Phases	8		4		4	6		2		2
Detector Phase	3	8	7	4	4	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	9.5	32.0	32.0
Total Split (s)	11.0	16.0	37.0	42.0	42.0	11.0	36.0	11.0	36.0	36.0
Total Split (%)	11.0%	16.0%	37.0%	42.0%	42.0%	11.0%	36.0%	11.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	18.1	14.3	23.4	17.0	17.0	19.0	13.7	22.2	19.5	19.5
Actuated g/C Ratio	0.29	0.23	0.37	0.27	0.27	0.30	0.22	0.35	0.31	0.31
v/c Ratio	0.26	0.49	0.25	0.58	0.40	0.11	0.72	0.83	0.05	0.19
Control Delay	15.2	25.3	13.9	23.7	5.5	14.8	19.9	46.8	21.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	25.3	13.9	23.7	5.5	14.8	19.9	46.8	21.4	0.6
LOS	B	C	B	C	A	B	B	D	C	A
Approach Delay		23.6		17.7			19.3		30.7	
Approach LOS		C		B			B		C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 63.3

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 21.6

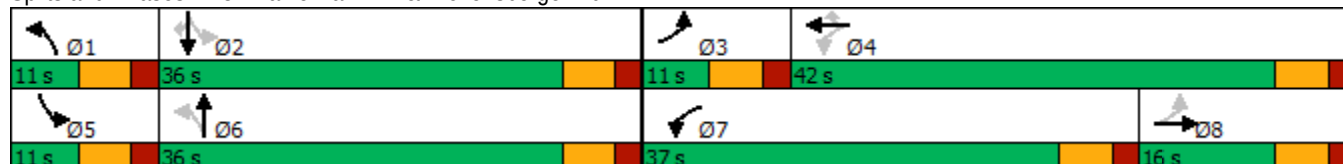
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues

Year 2027 Background

3: Prairie Hawk Dr & Wolfensberger Rd

PM



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	79	393	102	548	237	49	364	239	28	119
v/c Ratio	0.26	0.49	0.25	0.58	0.40	0.11	0.72	0.83	0.05	0.19
Control Delay	15.2	25.3	13.9	23.7	5.5	14.8	19.9	46.8	21.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	25.3	13.9	23.7	5.5	14.8	19.9	46.8	21.4	0.6
Queue Length 50th (ft)	17	69	22	96	0	12	56	65	9	0
Queue Length 95th (ft)	49	134	61	172	49	32	124	#197	29	0
Internal Link Dist (ft)		961		958			573		879	
Turn Bay Length (ft)	315		115		110	75		340		340
Base Capacity (vph)	306	798	929	2131	1035	445	914	288	934	898
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.49	0.11	0.26	0.23	0.11	0.40	0.83	0.03	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2027 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	330	20	95	510	220	40	60	235	210	25	105
Future Volume (veh/h)	70	330	20	95	510	220	40	60	235	210	25	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	371	22	102	548	237	49	74	290	239	28	119
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	784	46	358	875	389	497	90	353	305	592	501
Arrive On Green	0.05	0.23	0.23	0.06	0.25	0.25	0.03	0.27	0.27	0.07	0.32	0.32
Sat Flow, veh/h	1781	3409	201	1781	3554	1581	1781	332	1302	1781	1870	1584
Grp Volume(v), veh/h	79	193	200	102	548	237	49	0	364	239	28	119
Grp Sat Flow(s),veh/h/ln	1781	1777	1833	1781	1777	1581	1781	0	1634	1781	1870	1584
Q Serve(g_s), s	2.2	6.3	6.3	2.9	9.2	8.9	1.3	0.0	14.0	5.0	0.7	3.7
Cycle Q Clear(g_c), s	2.2	6.3	6.3	2.9	9.2	8.9	1.3	0.0	14.0	5.0	0.7	3.7
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	270	409	422	358	875	389	497	0	444	305	592	501
V/C Ratio(X)	0.29	0.47	0.47	0.29	0.63	0.61	0.10	0.00	0.82	0.78	0.05	0.24
Avail Cap(c_a), veh/h	316	409	422	1068	1913	851	577	0	733	305	839	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	22.2	22.3	18.0	22.5	22.4	16.8	0.0	22.8	21.4	15.9	16.9
Incr Delay (d2), s/veh	0.6	0.8	0.8	0.4	0.7	1.5	0.1	0.0	3.8	12.6	0.0	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	2.5	2.6	1.1	3.6	3.2	0.5	0.0	5.5	2.3	0.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	23.1	23.1	18.4	23.2	23.9	16.9	0.0	26.7	34.0	15.9	17.1
LnGrp LOS	B	C	C	B	C	C	B	A	C	C	B	B
Approach Vol, veh/h	472			887			413			386		
Approach Delay, s/veh	22.5			22.8			25.5			27.5		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	27.2	9.3	22.5	11.0	24.2	10.3	21.4				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	30.0	5.0	36.0	5.0	30.0	31.0	10.0				
Max Q Clear Time (g_c+I1), s	3.3	5.7	4.2	11.2	7.0	16.0	4.9	8.3				
Green Ext Time (p_c), s	0.0	0.5	0.0	4.6	0.0	2.0	0.2	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	24.1											
HCM 6th LOS	C											
Notes												

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

Year 2027 Background
PM

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	160	5	10	120	80	50
Future Vol, veh/h	160	5	10	120	80	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	25	42	90	83	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	20	24	133	96	79
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	317	136	175	0	-	0
Stage 1	136	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	676	913	1401	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	663	913	1401	-	-	-
Mov Cap-2 Maneuver	663	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.1	1.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1401	-	679	-	-	
HCM Lane V/C Ratio	0.017	-	0.344	-	-	
HCM Control Delay (s)	7.6	0	13.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile O(veh)	0.1	-	1.5	-	-	

Timings

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	250	1079	468	1100	92	2	110
Future Volume (vph)	250	1079	468	1100	92	2	110
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	40.2	40.2	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.45	0.45	0.24	0.24	0.24
v/c Ratio	0.80	0.36	0.68	0.61	0.19	0.18	0.16
Control Delay	36.2	11.2	14.5	4.6	28.5	13.7	4.1
Queue Delay	1.4	0.8	0.0	0.0	0.1	0.1	0.0
Total Delay	37.6	12.0	14.5	4.6	28.5	13.8	4.1
LOS	D	B	B	A	C	B	A
Approach Delay		16.8	11.0			15.8	
Approach LOS		B	B			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 13.8

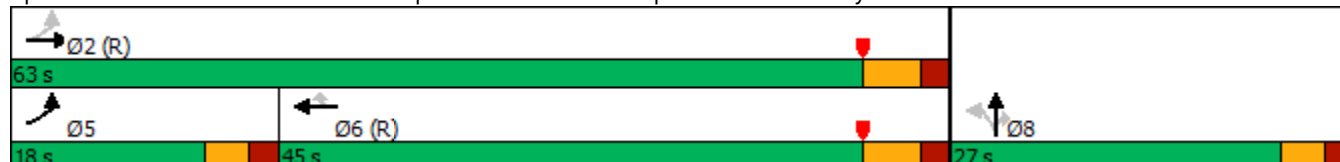
Intersection LOS: B

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	272	1173	1107	598	77	74	71
v/c Ratio	0.80	0.36	0.68	0.61	0.19	0.18	0.16
Control Delay	36.2	11.2	14.5	4.6	28.5	13.7	4.1
Queue Delay	1.4	0.8	0.0	0.0	0.1	0.1	0.0
Total Delay	37.6	12.0	14.5	4.6	28.5	13.8	4.1
Queue Length 50th (ft)	94	111	168	0	36	12	0
Queue Length 95th (ft)	m#187	145	247	65	75	49	21
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	360	3220	1622	974	410	404	440
Starvation Cap Reductn	19	1598	0	0	0	0	0
Spillback Cap Reductn	0	0	9	0	33	29	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.72	0.69	0.61	0.20	0.20	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	250	1079	0	0	468	1100	92	2	110	0	0	0
Future Volume (veh/h)	250	1079	0	0	468	1100	92	2	110	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	272	1173	0	0	509	1196	141	0	77			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	344	3234	0	0	887	1504	871	0	387			
Arrive On Green	0.21	1.00	0.00	0.00	0.47	0.47	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	272	1173	0	0	509	1196	141	0	77			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	7.0	0.0	0.0	0.0	17.7	28.7	2.8	0.0	3.5			
Cycle Q Clear(g_c), s	7.0	0.0	0.0	0.0	17.7	28.7	2.8	0.0	3.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	344	3234	0	0	887	1504	871	0	387			
V/C Ratio(X)	0.79	0.36	0.00	0.00	0.57	0.80	0.16	0.00	0.20			
Avail Cap(c_a), veh/h	417	3234	0	0	887	1504	871	0	387			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.78	0.78	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.8	0.0	0.0	0.0	17.1	20.0	26.7	0.0	27.0			
Incr Delay (d2), s/veh	6.6	0.2	0.0	0.0	2.7	4.4	0.4	0.0	1.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.9	0.1	0.0	0.0	7.8	10.8	1.2	0.0	1.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.2	0.0	0.0	19.8	24.4	27.1	0.0	28.1			
LnGrp LOS	C	A	A	A	B	C	C	A	C			
Approach Vol, veh/h	1445			1705			218					
Approach Delay, s/veh	4.0			23.0			27.5					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	63.0			14.3			48.7			27.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	57.0			13.0			39.0			22.0		
Max Q Clear Time (g_c+I1), s	2.0			9.0			30.7			5.5		
Green Ext Time (p_c), s	11.7			0.3			5.4			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	15.2											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2027 w/Project
AM

	→	↖	←	↗	↘	↓	↙	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑	↖	↑↑	↖	↖	↖↖	↖	↖
Traffic Volume (vph)	365	145	410	28	255	710	140	129
Future Volume (vph)	365	145	410	28	255	710	140	129
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Perm
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			4
Detector Phase	2	1	6	8	8	4	4	4
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	30.0	11.0	41.0	16.0	16.0	33.0	33.0	33.0
Total Split (%)	33.3%	12.2%	45.6%	17.8%	17.8%	36.7%	36.7%	36.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	None	C-Max	None	None	None	None	None
Act Effect Green (s)	28.5	40.5	40.5	9.5	9.5	25.0	25.0	25.0
Actuated g/C Ratio	0.32	0.45	0.45	0.11	0.11	0.28	0.28	0.28
v/c Ratio	0.33	0.42	0.29	0.17	0.83	0.70	0.70	0.26
Control Delay	17.2	32.3	28.5	37.9	34.4	33.3	37.7	5.4
Queue Delay	0.0	4.1	1.0	0.0	0.1	0.0	0.0	0.0
Total Delay	17.2	36.4	29.6	37.9	34.5	33.3	37.7	5.4
LOS	B	D	C	D	C	C	D	A
Approach Delay	17.2		31.4				30.9	
Approach LOS	B		C				C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 28.7

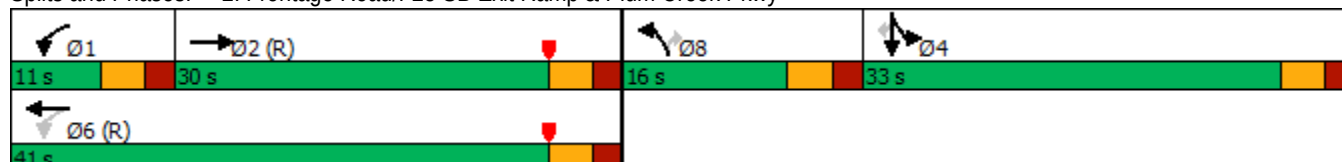
Intersection LOS: C

Intersection Capacity Utilization 53.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	524	161	456	31	283	623	322	143
v/c Ratio	0.33	0.42	0.29	0.17	0.83	0.70	0.70	0.26
Control Delay	17.2	32.3	28.5	37.9	34.4	33.3	37.7	5.4
Queue Delay	0.0	4.1	1.0	0.0	0.1	0.0	0.0	0.0
Total Delay	17.2	36.4	29.6	37.9	34.5	33.3	37.7	5.4
Queue Length 50th (ft)	39	84	127	16	47	169	175	0
Queue Length 95th (ft)	71	m134	181	42	#169	225	270	39
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	1609	380	1592	216	364	1002	514	592
Starvation Cap Reductn	0	149	855	0	0	0	0	0
Spillback Cap Reductn	57	0	0	0	2	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.70	0.62	0.14	0.78	0.62	0.63	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2027 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑		↑		↑	↑↑	↑	↑
Traffic Volume (vph)	0	365	106	145	410	0	28	0	255	710	140	129
Future Volume (vph)	0	365	106	145	410	0	28	0	255	710	140	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	5.0
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.91	1.00
Frt		0.97		1.00	1.00		1.00		0.85	1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		4914		1770	3539		1770		1583	3221	1653	1583
Flt Permitted		1.00		0.35	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		4914		651	3539		1770		1583	3221	1653	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	406	118	161	456	0	31	0	283	789	156	143
RTOR Reduction (vph)	0	55	0	0	0	0	0	0	174	0	0	103
Lane Group Flow (vph)	0	469	0	161	456	0	31	0	109	623	322	40
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Perm
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			4
Actuated Green, G (s)		28.5		40.5	40.5		9.5		9.5	25.0	25.0	25.0
Effective Green, g (s)		28.5		40.5	40.5		9.5		9.5	25.0	25.0	25.0
Actuated g/C Ratio		0.32		0.45	0.45		0.11		0.11	0.28	0.28	0.28
Clearance Time (s)		5.0		5.0	5.0		5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		1556		379	1592		186		167	894	459	439
v/s Ratio Prot		0.10		c0.03	0.13		0.02			0.19	c0.19	
v/s Ratio Perm				c0.16					c0.07			0.03
v/c Ratio		0.30		0.42	0.29		0.17		0.65	0.70	0.70	0.09
Uniform Delay, d1		23.2		15.3	15.6		36.6		38.7	29.1	29.2	24.1
Progression Factor		0.81		1.72	1.67		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5		0.6	0.4		0.4		8.7	2.4	4.8	0.1
Delay (s)		19.2		26.9	26.5		37.1		47.4	31.5	34.0	24.2
Level of Service		B		C	C		D		D	C	C	C
Approach Delay (s)		19.2			26.6			46.4			31.3	
Approach LOS		B			C			D			C	
Intersection Summary												
HCM 2000 Control Delay			29.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			53.3%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
AM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	480	206	235	155	22	59	125	190	95	40
Future Volume (vph)	70	480	206	235	155	22	59	125	190	95	40
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	13.0	18.0	25.0	30.0	30.0	15.0	26.0	26.0	11.0	22.0	22.0
Total Split (%)	16.3%	22.5%	31.3%	37.5%	37.5%	18.8%	32.5%	32.5%	13.8%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	18.0	12.2	28.6	21.7	21.7	11.2	8.4	8.4	17.0	14.9	14.9
Actuated g/C Ratio	0.32	0.22	0.51	0.38	0.38	0.20	0.15	0.15	0.30	0.26	0.26
v/c Ratio	0.19	0.74	0.57	0.22	0.28	0.08	0.23	0.30	0.60	0.22	0.08
Control Delay	10.5	29.5	14.0	14.8	4.1	14.9	25.8	1.8	25.3	19.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	29.5	14.0	14.8	4.1	14.9	25.8	1.8	25.3	19.8	0.2
LOS	B	C	B	B	A	B	C	A	C	B	A
Approach Delay		27.3		11.8			10.0			20.6	
Approach LOS		C		B			B			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 56.5

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 18.2

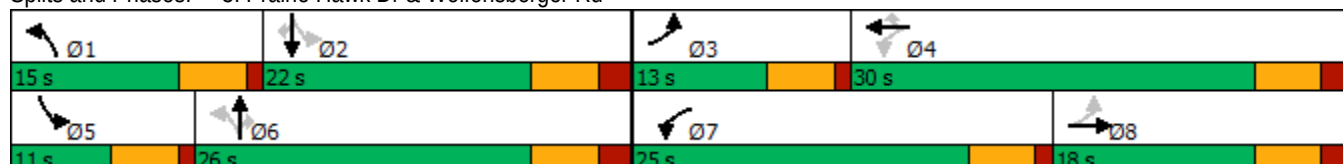
Intersection LOS: B

Intersection Capacity Utilization 58.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
AM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	74	561	268	305	201	24	63	134	221	110	47
v/c Ratio	0.19	0.74	0.57	0.22	0.28	0.08	0.23	0.30	0.60	0.22	0.08
Control Delay	10.5	29.5	14.0	14.8	4.1	14.9	25.8	1.8	25.3	19.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	29.5	14.0	14.8	4.1	14.9	25.8	1.8	25.3	19.8	0.2
Queue Length 50th (ft)	13	95	53	42	0	5	20	0	56	27	0
Queue Length 95th (ft)	31	#192	80	62	25	20	53	1	#127	77	0
Internal Link Dist (ft)		961		958			573			879	
Turn Bay Length (ft)	315		115		110	75		300	340		340
Base Capacity (vph)	502	763	706	1564	802	478	672	720	368	595	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.74	0.38	0.20	0.25	0.05	0.09	0.19	0.60	0.18	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

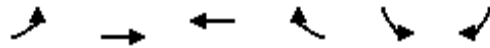
3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	480	47	206	235	155	22	59	125	190	95	40
Future Volume (veh/h)	70	480	47	206	235	155	22	59	125	190	95	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	511	50	268	305	201	24	63	134	221	110	47
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	390	645	63	431	1052	468	343	277	235	466	450	381
Arrive On Green	0.05	0.20	0.20	0.15	0.30	0.30	0.02	0.15	0.15	0.11	0.24	0.24
Sat Flow, veh/h	1781	3269	319	1781	3554	1582	1781	1870	1582	1781	1870	1583
Grp Volume(v), veh/h	74	277	284	268	305	201	24	63	134	221	110	47
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1582	1781	1870	1582	1781	1870	1583
Q Serve(g_s), s	1.8	8.2	8.2	6.0	3.6	5.6	0.6	1.6	4.3	5.5	2.6	1.3
Cycle Q Clear(g_c), s	1.8	8.2	8.2	6.0	3.6	5.6	0.6	1.6	4.3	5.5	2.6	1.3
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	390	351	357	431	1052	468	343	277	235	466	450	381
V/C Ratio(X)	0.19	0.79	0.79	0.62	0.29	0.43	0.07	0.23	0.57	0.47	0.24	0.12
Avail Cap(c_a), veh/h	566	387	395	819	1550	690	637	680	575	466	544	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	21.0	21.0	13.8	14.9	15.6	19.4	20.7	21.8	15.8	16.9	16.4
Incr Delay (d2), s/veh	0.1	9.7	9.9	0.5	0.2	0.6	0.0	0.2	0.8	0.3	0.1	0.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	3.9	4.1	2.1	1.3	1.8	0.2	0.7	1.5	2.0	1.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	30.7	30.9	14.3	15.1	16.2	19.5	20.8	22.6	16.1	17.0	16.4
LnGrp LOS	B	C	C	B	B	B	B	C	C	B	B	B
Approach Vol, veh/h		635			774			221			378	
Approach Delay, s/veh		29.1			15.1			21.8			16.4	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	19.2	7.6	22.3	11.0	14.2	13.0	16.9				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	10.0	16.0	8.0	24.0	6.0	20.0	20.0	12.0				
Max Q Clear Time (g_c+I1), s	2.6	4.6	3.8	7.6	7.5	6.3	8.0	10.2				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.3	0.0	0.2	0.1	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			20.5									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings 4: Plum Creek Pkwy & Prairie Hawk Dr

2027 w/Project
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Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	7	413	514	54	57	11
Future Volume (vph)	7	413	514	54	57	11
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	54.5	54.5	52.4	52.4	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.58	0.58	0.29	0.29
v/c Ratio	0.02	0.21	0.27	0.06	0.06	0.03
Control Delay	7.1	8.3	4.9	0.5	23.1	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	8.3	4.9	0.5	23.1	12.1
LOS	A	A	A	A	C	B
Approach Delay		8.3	4.4		21.3	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.27

Intersection Signal Delay: 7.1

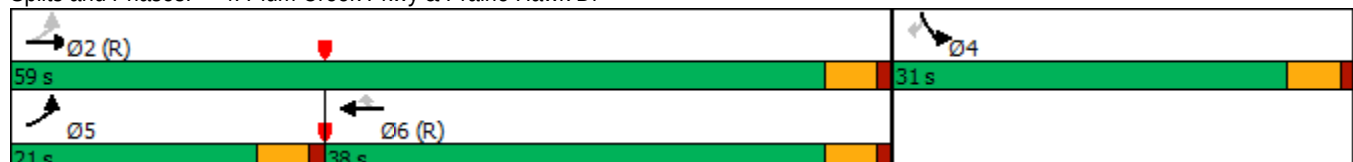
Intersection LOS: A

Intersection Capacity Utilization 25.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Plum Creek Pkwy & Prairie Hawk Dr



Queues

2027 w/Project

4: Plum Creek Pkwy & Prairie Hawk Dr

AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	8	449	559	59	62	12
v/c Ratio	0.02	0.21	0.27	0.06	0.06	0.03
Control Delay	7.1	8.3	4.9	0.5	23.1	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	8.3	4.9	0.5	23.1	12.1
Queue Length 50th (ft)	2	55	30	0	12	0
Queue Length 95th (ft)	7	78	51	0	27	13
Internal Link Dist (ft)		574	922		375	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	620	2143	2060	945	1010	474
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.21	0.27	0.06	0.06	0.03
Intersection Summary						

HCM 6th Signalized Intersection Summary

4: Plum Creek Pkwy & Prairie Hawk Dr

2027 w/Project
AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	413	514	54	57	11
Future Volume (veh/h)	7	413	514	54	57	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	449	559	0	62	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	490	2152	1938		1018	467
Arrive On Green	0.01	0.61	0.55	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	8	449	559	0	62	12
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.2	5.1	7.6	0.0	1.2	0.5
Cycle Q Clear(g_c), s	0.2	5.1	7.6	0.0	1.2	0.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	490	2152	1938		1018	467
V/C Ratio(X)	0.02	0.21	0.29		0.06	0.03
Avail Cap(c_a), veh/h	798	2152	1938		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	8.0	11.0	0.0	22.8	22.6
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.7	2.7	0.0	0.5	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.6	8.2	11.4	0.0	22.9	22.7
LnGrp LOS	A	A	B		C	C
Approach Vol, veh/h		457	559	A	74	
Approach Delay, s/veh		8.2	11.4		22.9	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	5.4	53.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		7.1		3.2	2.2	9.6
Green Ext Time (p_c), s		2.9		0.2	0.0	3.5
Intersection Summary						
HCM 6th Ctrl Delay			10.9			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

2027 w/Project
AM

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	5	5	65	120	198
Future Vol, veh/h	75	5	5	65	120	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	6	6	76	140	230
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	343	255	370	0	-	0
Stage 1	255	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	653	784	1189	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	650	784	1189	-	-	-
Mov Cap-2 Maneuver	650	-	-	-	-	-
Stage 1	784	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.4	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1189	-	657	-	-	
HCM Lane V/C Ratio	0.005	-	0.142	-	-	
HCM Control Delay (s)	8	0	11.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.5	-	-	

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	421	417	108	0	45
Future Vol, veh/h	0	421	417	108	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	458	453	117	0	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 227
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 776
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - 776
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	776
HCM Lane V/C Ratio	-	-	-	0.063
HCM Control Delay (s)	-	-	-	10
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Timings

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	248	1752	732	955	169	5	180
Future Volume (vph)	248	1752	732	955	169	5	180
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	17.0	72.0	55.0	55.0	28.0	28.0	28.0
Total Split (%)	17.0%	72.0%	55.0%	55.0%	28.0%	28.0%	28.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	67.0	66.0	49.9	49.9	23.0	23.0	23.0
Actuated g/C Ratio	0.67	0.66	0.50	0.50	0.23	0.23	0.23
v/c Ratio	0.81	0.53	0.71	0.54	0.33	0.33	0.28
Control Delay	38.0	10.2	19.8	3.6	34.9	27.3	12.5
Queue Delay	2.0	1.8	0.3	0.0	12.0	8.7	0.0
Total Delay	40.0	12.0	20.1	3.6	46.9	36.0	12.5
LOS	D	B	C	A	D	D	B
Approach Delay		15.5	15.0			32.4	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 16.7

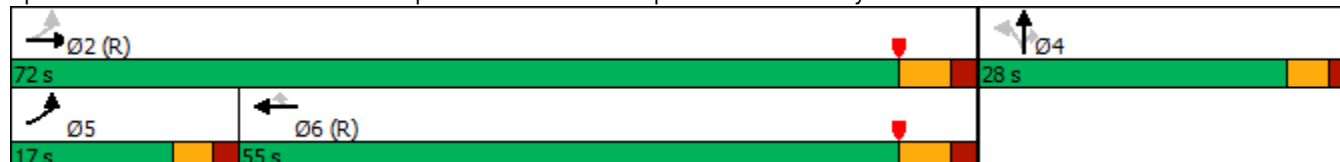
Intersection LOS: B

Intersection Capacity Utilization 73.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	253	1788	1185	536	126	121	114
v/c Ratio	0.81	0.53	0.71	0.54	0.33	0.33	0.28
Control Delay	38.0	10.2	19.8	3.6	34.9	27.3	12.5
Queue Delay	2.0	1.8	0.3	0.0	12.0	8.7	0.0
Total Delay	40.0	12.0	20.1	3.6	46.9	36.0	12.5
Queue Length 50th (ft)	94	159	278	0	70	53	14
Queue Length 95th (ft)	m#149	199	363	59	126	110	62
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	327	3356	1671	987	386	370	412
Starvation Cap Reductn	19	1340	0	0	0	0	0
Spillback Cap Reductn	0	0	106	0	230	209	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.89	0.76	0.54	0.81	0.75	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary

2027 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	248	1752	0	0	732	955	169	5	180	0	0	0
Future Volume (veh/h)	248	1752	0	0	732	955	169	5	180	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	253	1788	0	0	747	974	233	0	122			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	287	3370	0	0	975	1653	819	0	365			
Arrive On Green	0.18	1.00	0.00	0.00	0.52	0.52	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	253	1788	0	0	747	974	233	0	122			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	6.6	0.0	0.0	0.0	31.8	21.2	5.4	0.0	6.4			
Cycle Q Clear(g_c), s	6.6	0.0	0.0	0.0	31.8	21.2	5.4	0.0	6.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	287	3370	0	0	975	1653	819	0	365			
V/C Ratio(X)	0.88	0.53	0.00	0.00	0.77	0.59	0.28	0.00	0.33			
Avail Cap(c_a), veh/h	343	3370	0	0	975	1653	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	18.2	0.0	0.0	0.0	19.1	16.5	31.7	0.0	32.1			
Incr Delay (d2), s/veh	12.4	0.3	0.0	0.0	5.7	1.5	0.9	0.0	2.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.8	0.1	0.0	0.0	14.5	7.7	2.4	0.0	6.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.3	0.0	0.0	24.8	18.1	32.6	0.0	34.6			
LnGrp LOS	C	A	A	A	C	B	C	A	C			
Approach Vol, veh/h	2041			1721			355					
Approach Delay, s/veh	4.1			21.0			33.3					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	72.0			28.0		13.9	58.1					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	66.0			23.0		12.0	49.0					
Max Q Clear Time (g_c+I1), s	2.0			8.4		8.6	33.8					
Green Ext Time (p_c), s	24.6			1.1		0.2	8.7					
Intersection Summary												
HCM 6th Ctrl Delay	13.7											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2027 w/Project
PM

	→	↖	←	↗	↘	↓	↙	
Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations	↑↑↑	↖	↑↑	↖	↖	↖↖	↕	↖
Traffic Volume (vph)	655	220	641	47	170	1175	155	239
Future Volume (vph)	655	220	641	47	170	1175	155	239
Turn Type	NA	pm+pt	NA	Prot	Perm	Split	NA	Free
Protected Phases	2	1	6	8		4	4	
Permitted Phases		6			8			Free
Detector Phase	2	1	6	8	8	4	4	
Switch Phase								
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	9.5	30.0	10.0	10.0	10.0	10.0	
Total Split (s)	27.0	18.0	45.0	13.0	13.0	42.0	42.0	
Total Split (%)	27.0%	18.0%	45.0%	13.0%	13.0%	42.0%	42.0%	
Yellow Time (s)	3.0	3.5	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	1.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	4.5	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead		Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	
Recall Mode	Max	None	Max	None	None	C-Max	C-Max	
Act Effect Green (s)	22.9	40.5	40.0	7.3	7.3	37.7	37.7	100.0
Actuated g/C Ratio	0.23	0.40	0.40	0.07	0.07	0.38	0.38	1.00
v/c Ratio	0.77	0.77	0.47	0.38	0.63	0.78	0.80	0.15
Control Delay	38.2	51.3	36.1	52.7	17.8	32.9	40.2	0.2
Queue Delay	0.3	7.2	53.1	0.0	0.5	0.1	0.2	0.0
Total Delay	38.6	58.6	89.2	52.7	18.3	33.0	40.4	0.2
LOS	D	E	F	D	B	C	D	A
Approach Delay	38.6		81.4				30.6	
Approach LOS	D		F				C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 44.7

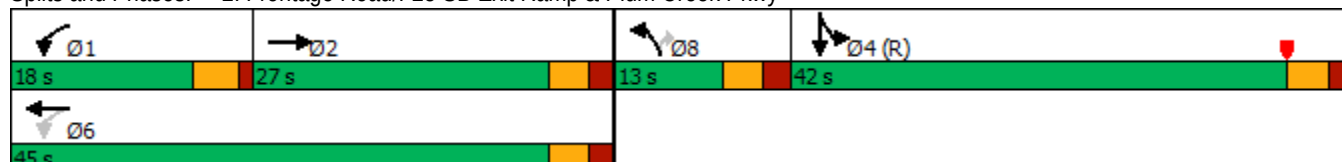
Intersection LOS: D

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



Lane Group	EBT	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	902	229	668	49	177	942	468	224
v/c Ratio	0.77	0.77	0.47	0.38	0.63	0.78	0.80	0.15
Control Delay	38.2	51.3	36.1	52.7	17.8	32.9	40.2	0.2
Queue Delay	0.3	7.2	53.1	0.0	0.5	0.1	0.2	0.0
Total Delay	38.6	58.6	89.2	52.7	18.3	33.0	40.4	0.2
Queue Length 50th (ft)	184	141	208	30	0	290	306	0
Queue Length 95th (ft)	234	m#222	271	67	64	374	#508	0
Internal Link Dist (ft)	437		181				388	
Turn Bay Length (ft)				350				160
Base Capacity (vph)	1177	312	1415	141	289	1214	583	1504
Starvation Cap Reductn	0	50	822	0	0	0	0	0
Spillback Cap Reductn	41	0	0	0	12	12	6	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.87	1.13	0.35	0.64	0.78	0.81	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2027 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑		↑		↑	↑↑	↑	↑
Traffic Volume (vph)	0	655	211	220	641	0	47	0	170	1175	155	239
Future Volume (vph)	0	655	211	220	641	0	47	0	170	1175	155	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95		1.00		1.00	0.91	0.86	0.95
Frt		0.96		1.00	1.00		1.00		0.85	1.00	0.99	0.85
Flt Protected		1.00		0.95	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (prot)		4899		1770	3539		1770		1583	3221	1543	1504
Flt Permitted		1.00		0.15	1.00		0.95		1.00	0.95	0.97	1.00
Satd. Flow (perm)		4899		272	3539		1770		1583	3221	1543	1504
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	682	220	229	668	0	49	0	177	1224	161	249
RTOR Reduction (vph)	0	58	0	0	0	0	0	0	164	0	2	0
Lane Group Flow (vph)	0	844	0	229	668	0	49	0	13	942	466	224
Turn Type		NA		pm+pt	NA		Prot		Perm	Split	NA	Free
Protected Phases		2		1	6		8			4	4	
Permitted Phases				6					8			Free
Actuated Green, G (s)		22.9		40.0	40.0		7.3		7.3	37.7	37.7	100.0
Effective Green, g (s)		22.9		40.0	40.0		7.3		7.3	37.7	37.7	100.0
Actuated g/C Ratio		0.23		0.40	0.40		0.07		0.07	0.38	0.38	1.00
Clearance Time (s)		5.0		4.5	5.0		5.0		5.0	5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)		1121		297	1415		129		115	1214	581	1504
v/s Ratio Prot		0.17		c0.10	0.19		c0.03			0.29	c0.30	
v/s Ratio Perm				c0.21					0.01			0.15
v/c Ratio		0.75		0.77	0.47		0.38		0.11	0.78	0.80	0.15
Uniform Delay, d1		35.9		22.8	22.2		44.2		43.3	27.4	27.8	0.0
Progression Factor		1.00		1.73	1.57		1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		4.7		9.2	0.9		1.9		0.4	4.9	11.2	0.2
Delay (s)		40.6		48.7	35.7		46.1		43.8	32.3	39.0	0.2
Level of Service		D		D	D		D		D	C	D	A
Approach Delay (s)		40.6			39.0			44.3			29.8	
Approach LOS		D			D			D			C	
Intersection Summary												
HCM 2000 Control Delay			35.6			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			19.5			
Intersection Capacity Utilization			74.3%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	330	158	510	220	86	152	345	210	114	105
Future Volume (vph)	70	330	158	510	220	86	152	345	210	114	105
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	33.0	9.5	32.0	32.0
Total Split (s)	11.0	16.0	37.0	42.0	42.0	11.0	36.0	36.0	11.0	36.0	36.0
Total Split (%)	11.0%	16.0%	37.0%	42.0%	42.0%	11.0%	36.0%	36.0%	11.0%	36.0%	36.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	17.4	12.3	27.7	19.9	19.9	18.3	13.2	13.2	19.7	15.9	15.9
Actuated g/C Ratio	0.27	0.19	0.43	0.31	0.31	0.28	0.20	0.20	0.30	0.24	0.24
v/c Ratio	0.27	0.66	0.40	0.51	0.37	0.27	0.50	0.65	0.63	0.29	0.22
Control Delay	15.3	29.8	15.1	21.9	5.0	16.8	28.4	8.0	25.8	24.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	29.8	15.1	21.9	5.0	16.8	28.4	8.0	25.8	24.5	0.9
LOS	B	C	B	C	A	B	C	A	C	C	A
Approach Delay		27.6		16.5			14.6			19.4	
Approach LOS		C		B			B			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 65.1

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 18.7

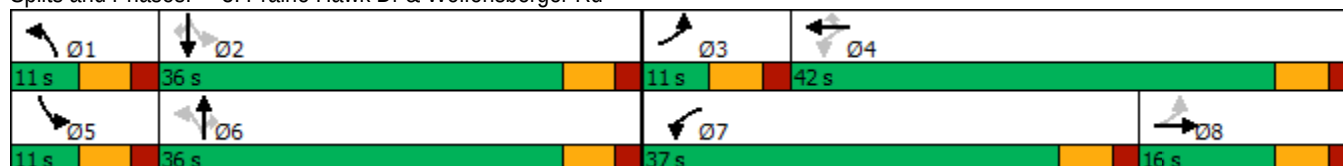
Intersection LOS: B

Intersection Capacity Utilization 60.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	444	170	548	237	106	188	426	239	130	119
v/c Ratio	0.27	0.66	0.40	0.51	0.37	0.27	0.50	0.65	0.63	0.29	0.22
Control Delay	15.3	29.8	15.1	21.9	5.0	16.8	28.4	8.0	25.8	24.5	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	29.8	15.1	21.9	5.0	16.8	28.4	8.0	25.8	24.5	0.9
Queue Length 50th (ft)	17	80	39	96	0	26	65	0	65	44	0
Queue Length 95th (ft)	45	147	87	161	47	57	118	41	132	94	0
Internal Link Dist (ft)		961		958			573			879	
Turn Bay Length (ft)	315		115		110	75		300	340		340
Base Capacity (vph)	296	669	864	1991	982	392	873	959	382	873	854
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.66	0.20	0.28	0.24	0.27	0.22	0.44	0.63	0.15	0.14
Intersection Summary											

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

2027 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	330	65	158	510	220	86	152	345	210	114	105
Future Volume (veh/h)	70	330	65	158	510	220	86	152	345	210	114	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	371	73	170	548	237	106	188	426	239	130	119
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	258	546	106	349	849	378	509	580	491	411	598	506
Arrive On Green	0.05	0.18	0.18	0.11	0.24	0.24	0.06	0.31	0.31	0.07	0.32	0.32
Sat Flow, veh/h	1781	2963	577	1781	3554	1581	1781	1870	1584	1781	1870	1584
Grp Volume(v), veh/h	79	221	223	170	548	237	106	188	426	239	130	119
Grp Sat Flow(s),veh/h/ln	1781	1777	1763	1781	1777	1581	1781	1870	1584	1781	1870	1584
Q Serve(g_s), s	2.6	8.4	8.6	5.4	10.0	9.7	2.9	5.6	18.4	5.0	3.7	4.0
Cycle Q Clear(g_c), s	2.6	8.4	8.6	5.4	10.0	9.7	2.9	5.6	18.4	5.0	3.7	4.0
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	327	325	349	849	378	509	580	491	411	598	506
V/C Ratio(X)	0.31	0.68	0.69	0.49	0.65	0.63	0.21	0.32	0.87	0.58	0.22	0.24
Avail Cap(c_a), veh/h	292	327	325	925	1768	787	526	775	656	411	775	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.5	27.5	27.6	20.8	24.8	24.7	15.4	19.2	23.6	18.1	18.0	18.1
Incr Delay (d2), s/veh	0.7	5.4	6.0	1.1	0.8	1.7	0.2	0.3	9.4	2.1	0.2	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.1	3.9	3.9	2.2	4.0	3.6	1.1	2.3	7.5	1.0	1.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	32.9	33.5	21.9	25.6	26.4	15.6	19.5	32.9	20.2	18.2	18.4
LnGrp LOS	C	C	C	C	C	C	B	B	C	C	B	B
Approach Vol, veh/h	523				955				720			
Approach Delay, s/veh	31.7				25.1				26.9			
Approach LOS	C				C				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	29.1	9.6	23.3	11.0	28.4	13.6	19.3				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	5.0	30.0	5.0	36.0	5.0	30.0	31.0	10.0				
Max Q Clear Time (g_c+I1), s	4.9	6.0	4.6	12.0	7.0	20.4	7.4	10.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	4.6	0.0	2.0	0.4	0.0				

Intersection Summary

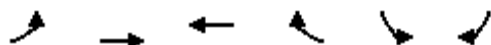
HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Timings 4: Plum Creek Pkwy & Prairie Hawk Dr

2027 w/Project
PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	22	626	924	63	240	23
Future Volume (vph)	22	626	924	63	240	23
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	21.0	59.0	38.0	38.0	31.0	31.0
Total Split (%)	23.3%	65.6%	42.2%	42.2%	34.4%	34.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
Act Effect Green (s)	54.5	54.5	50.1	50.1	26.5	26.5
Actuated g/C Ratio	0.61	0.61	0.56	0.56	0.29	0.29
v/c Ratio	0.08	0.32	0.51	0.07	0.26	0.05
Control Delay	7.7	9.2	14.5	3.6	25.1	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	9.2	14.5	3.6	25.1	9.6
LOS	A	A	B	A	C	A
Approach Delay		9.1	13.8		23.7	
Approach LOS		A	B		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 3 (3%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 39.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Plum Creek Pkwy & Prairie Hawk Dr



Queues
4: Plum Creek Pkwy & Prairie Hawk Dr

2027 w/Project
PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	24	680	1004	68	261	25
v/c Ratio	0.08	0.32	0.51	0.07	0.26	0.05
Control Delay	7.7	9.2	14.5	3.6	25.1	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	9.2	14.5	3.6	25.1	9.6
Queue Length 50th (ft)	5	91	151	0	58	0
Queue Length 95th (ft)	15	122	271	21	89	18
Internal Link Dist (ft)		574	922		375	
Turn Bay Length (ft)	230			230		250
Base Capacity (vph)	472	2143	1969	911	1010	483
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.32	0.51	0.07	0.26	0.05
Intersection Summary						

HCM 6th Signalized Intersection Summary

4: Plum Creek Pkwy & Prairie Hawk Dr

2027 w/Project
PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	626	924	63	240	23
Future Volume (veh/h)	22	626	924	63	240	23
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	680	1004	0	261	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	319	2152	1885		1018	467
Arrive On Green	0.03	0.61	0.53	0.00	0.29	0.29
Sat Flow, veh/h	1781	3647	3647	1585	3456	1585
Grp Volume(v), veh/h	24	680	1004	0	261	25
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1728	1585
Q Serve(g_s), s	0.5	8.4	16.6	0.0	5.2	1.0
Cycle Q Clear(g_c), s	0.5	8.4	16.6	0.0	5.2	1.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	319	2152	1885		1018	467
V/C Ratio(X)	0.08	0.32	0.53		0.26	0.05
Avail Cap(c_a), veh/h	601	2152	1885		1018	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.1	8.7	13.8	0.0	24.2	22.8
Incr Delay (d2), s/veh	0.1	0.4	1.1	0.0	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.8	6.0	0.0	2.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.2	9.0	14.9	0.0	24.8	23.0
LnGrp LOS	B	A	B		C	C
Approach Vol, veh/h		704	1004	A	286	
Approach Delay, s/veh		9.1	14.9		24.7	
Approach LOS		A	B		C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		31.0	6.8	52.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	16.5	33.5
Max Q Clear Time (g_c+I1), s		10.4		7.2	2.5	18.6
Green Ext Time (p_c), s		4.8		0.9	0.0	5.7
Intersection Summary						
HCM 6th Ctrl Delay			14.3			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC
5: Prairie Hawk Dr & Archison Way

2027 w/Project
PM

Intersection						
Int Delay, s/veh	9.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	270	5	10	120	80	247
Future Vol, veh/h	270	5	10	120	80	247
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	25	42	90	83	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	360	20	24	133	96	392
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	473	292	488	0	-	0
Stage 1	292	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	550	747	1075	-	-	-
Stage 1	758	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	537	747	1075	-	-	-
Mov Cap-2 Maneuver	537	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	25.4	1.3		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1075	-	545	-	-	
HCM Lane V/C Ratio	0.022	-	0.697	-	-	
HCM Control Delay (s)	8.4	0	25.4	-	-	
HCM Lane LOS	A	A	D	-	-	
HCM 95th %tile Q(veh)	0.1	-	5.5	-	-	

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	648	659	287	0	171
Future Vol, veh/h	0	648	659	287	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	704	716	312	0	186
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	358
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	638
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	638
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		12.9		
HCM LOS	B					
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	638		
HCM Lane V/C Ratio	-	-	-	0.291		
HCM Control Delay (s)	-	-	-	12.9		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile O(veh)	-	-	-	1.2		

Timings

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	215	910	520	975	90	2	115
Future Volume (vph)	215	910	520	975	90	2	115
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	41.7	41.7	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.46	0.46	0.24	0.24	0.24
v/c Ratio	0.72	0.31	0.67	0.56	0.19	0.19	0.16
Control Delay	24.4	7.8	15.3	4.1	28.5	12.9	4.2
Queue Delay	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	8.9	15.3	4.1	28.5	12.9	4.2
LOS	C	A	B	A	C	B	A
Approach Delay		11.8	11.7			15.5	
Approach LOS		B	B			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 12.0

Intersection LOS: B

Intersection Capacity Utilization 81.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	234	989	1095	530	78	75	72
v/c Ratio	0.72	0.31	0.67	0.56	0.19	0.19	0.16
Control Delay	24.4	7.8	15.3	4.1	28.5	12.9	4.2
Queue Delay	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	8.9	15.3	4.1	28.5	12.9	4.2
Queue Length 50th (ft)	49	84	178	0	36	10	0
Queue Length 95th (ft)	127	106	268	62	76	48	22
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	372	3220	1633	951	410	405	440
Starvation Cap Reductn	0	1876	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.74	0.67	0.56	0.19	0.19	0.16
Intersection Summary							

HCM 6th Signalized Intersection Summary

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

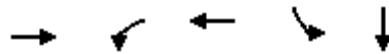
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	215	910	0	0	520	975	90	2	115	0	0	0
Future Volume (veh/h)	215	910	0	0	520	975	90	2	115	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	234	989	0	0	565	1060	142	0	80			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	318	3234	0	0	920	1559	871	0	387			
Arrive On Green	0.09	0.63	0.00	0.00	0.49	0.49	0.24	0.00	0.24			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	234	989	0	0	565	1060	142	0	80			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.4	7.9	0.0	0.0	19.8	23.0	2.8	0.0	3.6			
Cycle Q Clear(g_c), s	5.4	7.9	0.0	0.0	19.8	23.0	2.8	0.0	3.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	318	3234	0	0	920	1559	871	0	387			
V/C Ratio(X)	0.74	0.31	0.00	0.00	0.61	0.68	0.16	0.00	0.21			
Avail Cap(c_a), veh/h	422	3234	0	0	920	1559	871	0	387			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.88	0.88	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.8	7.5	0.0	0.0	16.7	17.5	26.8	0.0	27.1			
Incr Delay (d2), s/veh	4.1	0.2	0.0	0.0	3.1	2.4	0.4	0.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	2.6	0.0	0.0	8.7	8.3	1.2	0.0	1.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	7.7	0.0	0.0	19.7	19.9	27.2	0.0	28.3			
LnGrp LOS	B	A	A	A	B	B	C	A	C			
Approach Vol, veh/h	1223			1625			222					
Approach Delay, s/veh	10.0			19.8			27.6					
Approach LOS	B			B			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	63.0			12.7			50.3			27.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	57.0			13.0			39.0			22.0		
Max Q Clear Time (g_c+I1), s	9.9			7.4			25.0			5.6		
Green Ext Time (p_c), s	9.0			0.3			7.5			0.6		
Intersection Summary												
HCM 6th Ctrl Delay	16.5											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

Year 2030 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Configurations	↑↑↑	↑	↑↑	↑↑	↑↑
Traffic Volume (vph)	495	90	510	630	0
Future Volume (vph)	495	90	510	630	0
Turn Type	NA	pm+pt	NA	Split	NA
Protected Phases	2	1	6	4	4
Permitted Phases		6			
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0
Total Split (s)	30.0	14.0	44.0	30.0	30.0
Total Split (%)	40.5%	18.9%	59.5%	40.5%	40.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effect Green (s)	31.9	42.2	42.2	21.8	21.8
Actuated g/C Ratio	0.43	0.57	0.57	0.29	0.29
v/c Ratio	0.28	0.21	0.28	0.66	0.64
Control Delay	15.3	9.4	9.2	26.2	12.1
Queue Delay	0.0	0.0	0.6	0.0	0.0
Total Delay	15.3	9.4	9.8	26.2	12.1
LOS	B	A	A	C	B
Approach Delay	15.3		9.7		20.7
Approach LOS	B		A		C

Intersection Summary

Cycle Length: 74

Actuated Cycle Length: 74

Offset: 20 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 16.1

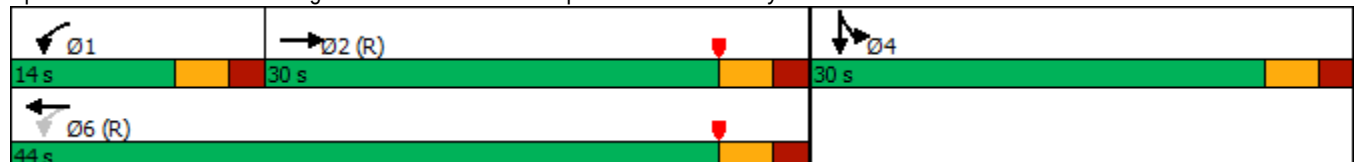
Intersection LOS: B

Intersection Capacity Utilization 81.8%

ICU Level of Service D

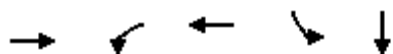
Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	600	100	567	630	398
v/c Ratio	0.28	0.21	0.28	0.66	0.64
Control Delay	15.3	9.4	9.2	26.2	12.1
Queue Delay	0.0	0.0	0.6	0.0	0.0
Total Delay	15.3	9.4	9.8	26.2	12.1
Queue Length 50th (ft)	66	20	67	132	48
Queue Length 95th (ft)	100	44	102	182	137
Internal Link Dist (ft)	178		181		388
Turn Bay Length (ft)					
Base Capacity (vph)	2176	503	2018	1088	675
Starvation Cap Reductn	0	0	1012	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.28	0.20	0.56	0.58	0.59
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2030 Background

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↰	↑↑					↰↰	↰	
Traffic Volume (vph)	0	495	45	90	510	0	0	0	0	630	0	295
Future Volume (vph)	0	495	45	90	510	0	0	0	0	630	0	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	
Frt		0.99		1.00	1.00					1.00	0.88	
Flt Protected		1.00		0.95	1.00					0.95	0.99	
Satd. Flow (prot)		5022		1770	3539					3221	1473	
Flt Permitted		1.00		0.35	1.00					0.95	0.99	
Satd. Flow (perm)		5022		643	3539					3221	1473	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	550	50	100	567	0	0	0	0	700	0	328
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	190	0
Lane Group Flow (vph)	0	587	0	100	567	0	0	0	0	630	208	0
Turn Type		NA		pm+pt	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		30.9		42.2	42.2					21.8	21.8	
Effective Green, g (s)		30.9		42.2	42.2					21.8	21.8	
Actuated g/C Ratio		0.42		0.57	0.57					0.29	0.29	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2097		462	2018					948	433	
v/s Ratio Prot		0.12		0.02	c0.16					c0.20	0.14	
v/s Ratio Perm				0.10								
v/c Ratio		0.28		0.22	0.28					0.66	0.48	
Uniform Delay, d1		14.2		7.5	8.1					22.9	21.5	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.3		0.2	0.3					1.8	0.8	
Delay (s)		14.5		7.8	8.5					24.7	22.3	
Level of Service		B		A	A					C	C	
Approach Delay (s)		14.5			8.4			0.0			23.7	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			16.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			74.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			81.8%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Year 2030 Background

AM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	495	210	240	160	10	100	100	200	235	40
Future Volume (vph)	75	495	210	240	160	10	100	100	200	235	40
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	13.0	15.0	28.0	30.0	30.0	15.0	26.0	26.0	11.0	22.0	22.0
Total Split (%)	16.3%	18.8%	35.0%	37.5%	37.5%	18.8%	32.5%	32.5%	13.8%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	15.1	9.2	25.0	18.1	18.1	10.8	8.3	8.3	17.0	14.9	14.9
Actuated g/C Ratio	0.29	0.17	0.47	0.34	0.34	0.20	0.16	0.16	0.32	0.28	0.28
v/c Ratio	0.22	0.96	0.60	0.26	0.31	0.04	0.19	0.24	0.60	0.27	0.08
Control Delay	11.3	54.0	15.4	16.0	4.6	13.0	22.5	1.2	23.5	17.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	54.0	15.4	16.0	4.6	13.0	22.5	1.2	23.5	17.0	0.2
LOS	B	D	B	B	A	B	C	A	C	B	A
Approach Delay		48.9		12.8			11.9			18.3	
Approach LOS		D		B			B			B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 52.9

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 24.8

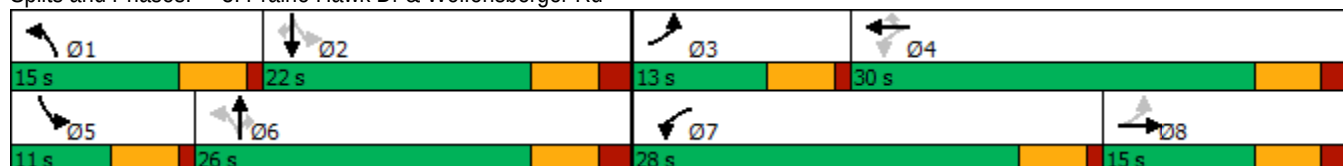
Intersection LOS: C

Intersection Capacity Utilization 59.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Year 2030 Background

AM



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	586	273	312	208	11	108	108	233	273	47
v/c Ratio	0.22	0.96	0.60	0.26	0.31	0.04	0.19	0.24	0.60	0.27	0.08
Control Delay	11.3	54.0	15.4	16.0	4.6	13.0	22.5	1.2	23.5	17.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	54.0	15.4	16.0	4.6	13.0	22.5	1.2	23.5	17.0	0.2
Queue Length 50th (ft)	14	98	54	43	0	2	16	0	53	31	0
Queue Length 95th (ft)	34	#222	82	63	26	11	37	0	#123	74	0
Internal Link Dist (ft)		961		958			243			879	
Turn Bay Length (ft)	315		115		110	75		250	340		340
Base Capacity (vph)	474	613	803	1636	834	483	1364	753	386	1207	694
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.96	0.34	0.19	0.25	0.02	0.08	0.14	0.60	0.23	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2030 Background

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	495	55	210	240	160	10	100	100	200	235	40
Future Volume (vph)	75	495	55	210	240	160	10	100	100	200	235	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1769	3481		1770	3539	1563	1769	3539	1563	1769	3539	1563
Flt Permitted	0.56	1.00		0.24	1.00	1.00	0.58	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	1047	3481		454	3539	1563	1087	3539	1563	812	3539	1563
Peak-hour factor, PHF	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Adj. Flow (vph)	80	527	59	273	312	208	11	108	108	233	273	47
RTOR Reduction (vph)	0	10	0	0	0	144	0	0	92	0	0	35
Lane Group Flow (vph)	80	576	0	273	312	64	11	108	16	233	273	12
Confl. Peds. (#/hr)	2		1	1		2	1		1	1		1
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6		6	2		2
Actuated Green, G (s)	14.5	11.4		26.2	18.1	18.1	9.6	8.8	8.8	20.7	14.9	14.9
Effective Green, g (s)	14.5	11.4		26.2	18.1	18.1	9.6	8.8	8.8	20.7	14.9	14.9
Actuated g/C Ratio	0.25	0.19		0.44	0.31	0.31	0.16	0.15	0.15	0.35	0.25	0.25
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	1.0	3.0		1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	295	673		420	1087	480	186	528	233	397	895	395
v/s Ratio Prot	0.01	c0.17		c0.11	0.09		0.00	0.03		c0.07	0.08	
v/s Ratio Perm	0.05			0.18		0.04	0.01		0.01	c0.14		0.01
v/c Ratio	0.27	0.86		0.65	0.29	0.13	0.06	0.20	0.07	0.59	0.31	0.03
Uniform Delay, d1	17.5	23.0		11.6	15.5	14.7	20.8	22.0	21.5	14.5	17.8	16.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	10.4		2.7	0.1	0.1	0.0	0.1	0.0	1.4	0.1	0.0
Delay (s)	17.7	33.4		14.4	15.6	14.9	20.8	22.0	21.6	16.0	17.9	16.6
Level of Service	B	C		B	B	B	C	C	C	B	B	B
Approach Delay (s)		31.5			15.0			21.8			17.0	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			21.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			58.9			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			59.5%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	170	1510	575	850	45	5	185
Future Volume (vph)	170	1510	575	850	45	5	185
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	13.0	60.0	47.0	47.0	40.0	40.0	40.0
Total Split (%)	13.0%	60.0%	47.0%	47.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	55.0	54.0	41.1	41.1	35.0	35.0	35.0
Actuated g/C Ratio	0.55	0.54	0.41	0.41	0.35	0.35	0.35
v/c Ratio	0.69	0.56	0.70	0.53	0.07	0.19	0.17
Control Delay	27.4	16.2	22.9	4.4	22.2	18.5	7.0
Queue Delay	1.6	48.7	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	64.8	22.9	4.4	22.2	18.5	7.0
LOS	C	E	C	A	C	B	A
Approach Delay		61.2	17.1			14.4	
Approach LOS		E	B			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 39.1

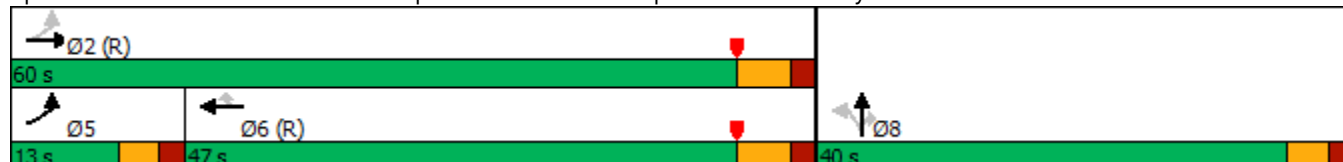
Intersection LOS: D

Intersection Capacity Utilization 89.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	173	1541	994	460	41	101	98
v/c Ratio	0.69	0.56	0.70	0.53	0.07	0.19	0.17
Control Delay	27.4	16.2	22.9	4.4	22.2	18.5	7.0
Queue Delay	1.6	48.7	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	64.8	22.9	4.4	22.2	18.5	7.0
Queue Length 50th (ft)	52	225	233	0	17	37	5
Queue Length 95th (ft)	#118	268	312	64	43	79	41
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	253	2745	1412	863	588	527	582
Starvation Cap Reductn	18	1346	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	1.10	0.70	0.53	0.07	0.19	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

Year 2030 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	170	1510	0	0	575	850	45	5	185	0	0	0
Future Volume (veh/h)	170	1510	0	0	575	850	45	5	185	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	173	1541	0	0	587	867	32	0	207			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	256	2757	0	0	781	1324	623	0	1110			
Arrive On Green	0.07	0.54	0.00	0.00	0.42	0.42	0.35	0.00	0.35			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	1781	0	3170			
Grp Volume(v), veh/h	173	1541	0	0	587	867	32	0	207			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	5.3	19.9	0.0	0.0	26.6	21.9	1.2	0.0	4.5			
Cycle Q Clear(g_c), s	5.3	19.9	0.0	0.0	26.6	21.9	1.2	0.0	4.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	256	2757	0	0	781	1324	623	0	1110			
V/C Ratio(X)	0.67	0.56	0.00	0.00	0.75	0.65	0.05	0.00	0.19			
Avail Cap(c_a), veh/h	270	2757	0	0	781	1324	623	0	1110			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.76	0.76	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.5	15.2	0.0	0.0	24.7	23.3	21.5	0.0	22.6			
Incr Delay (d2), s/veh	4.7	0.6	0.0	0.0	6.6	2.5	0.2	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.4	7.4	0.0	0.0	12.8	8.4	0.5	0.0	1.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	15.8	0.0	0.0	31.3	25.9	21.7	0.0	23.0			
LnGrp LOS	C	B	A	A	C	C	C	A	C			
Approach Vol, veh/h	1714			1454			239					
Approach Delay, s/veh	16.7			28.1			22.8					
Approach LOS	B			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	60.0			12.2			47.8			40.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	54.0			8.0			41.0			35.0		
Max Q Clear Time (g_c+I1), s	21.9			7.3			28.6			6.5		
Green Ext Time (p_c), s	15.0			0.0			6.3			0.9		
Intersection Summary												
HCM 6th Ctrl Delay	22.0											
HCM 6th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings

Year 2030 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

PM

	→	↖	←	↗	↓
Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Configurations	↑↑↑	↑	↑↑	↑↑	↔
Traffic Volume (vph)	640	135	445	1040	0
Future Volume (vph)	640	135	445	1040	0
Turn Type	NA	pm+pt	NA	Perm	NA
Protected Phases	2	1	6		4
Permitted Phases		6		4	
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0
Total Split (s)	37.0	13.0	50.0	40.0	40.0
Total Split (%)	41.1%	14.4%	55.6%	44.4%	44.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effect Green (s)	34.1	46.8	46.8	33.2	33.2
Actuated g/C Ratio	0.38	0.52	0.52	0.37	0.37
v/c Ratio	0.40	0.39	0.25	0.78	0.69
Control Delay	20.9	15.2	12.8	30.5	23.2
Queue Delay	0.0	0.0	0.8	0.0	0.0
Total Delay	20.9	15.2	13.6	30.5	23.2
LOS	C	B	B	C	C
Approach Delay	20.9		14.0		28.1
Approach LOS	C		B		C

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 23.0

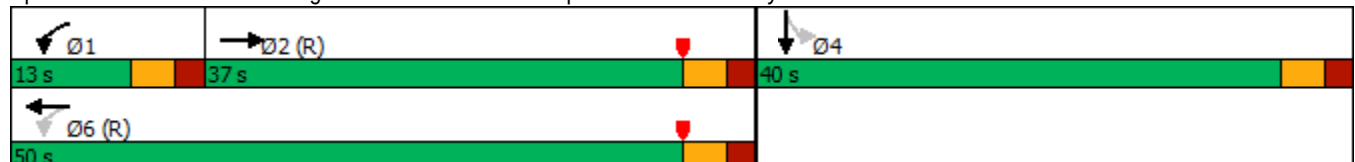
Intersection LOS: C

Intersection Capacity Utilization 89.4%

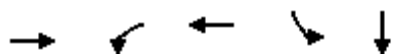
ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy



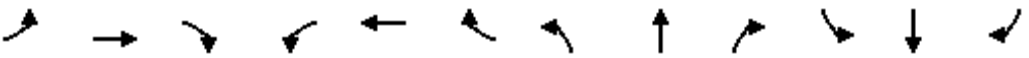
Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	756	141	464	931	438
v/c Ratio	0.40	0.39	0.25	0.78	0.69
Control Delay	20.9	15.2	12.8	30.5	23.2
Queue Delay	0.0	0.0	0.8	0.0	0.0
Total Delay	20.9	15.2	13.6	30.5	23.2
Queue Length 50th (ft)	112	42	76	245	158
Queue Length 95th (ft)	147	75	106	322	278
Internal Link Dist (ft)	178		181		388
Turn Bay Length (ft)					
Base Capacity (vph)	1911	367	1841	1252	659
Starvation Cap Reductn	0	0	1033	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.38	0.57	0.74	0.66
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2030 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↔	↑↑					↔↔	↔	
Traffic Volume (vph)	0	640	85	135	445	0	0	0	0	1040	0	275
Future Volume (vph)	0	640	85	135	445	0	0	0	0	1040	0	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	
Frt		0.98		1.00	1.00					1.00	0.90	
Flt Protected		1.00		0.95	1.00					0.95	0.98	
Satd. Flow (prot)		4995		1770	3539					3221	1503	
Flt Permitted		1.00		0.26	1.00					0.95	0.98	
Satd. Flow (perm)		4995		487	3539					3221	1503	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	667	89	141	464	0	0	0	0	1083	0	286
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	78	0
Lane Group Flow (vph)	0	738	0	141	464	0	0	0	0	931	360	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		34.1		46.8	46.8					33.2	33.2	
Effective Green, g (s)		34.1		46.8	46.8					33.2	33.2	
Actuated g/C Ratio		0.38		0.52	0.52					0.37	0.37	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1892		363	1840					1188	554	
v/s Ratio Prot		0.15		c0.03	0.13							
v/s Ratio Perm				c0.17						c0.29	0.24	
v/c Ratio		0.39		0.39	0.25					0.78	0.65	
Uniform Delay, d1		20.4		12.0	11.9					25.2	23.6	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.6		0.7	0.3					3.5	2.7	
Delay (s)		21.0		12.7	12.3					28.7	26.3	
Level of Service		C		B	B					C	C	
Approach Delay (s)		21.0			12.4			0.0			27.9	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			22.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			89.4%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Year 2030 Background

PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	340	105	530	230	70	270	335	220	100	110
Future Volume (vph)	75	340	105	530	230	70	270	335	220	100	110
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	10.0	39.0	11.0	40.0	40.0	9.6	34.0	34.0	16.0	40.4	40.4
Total Split (%)	10.0%	39.0%	11.0%	40.0%	40.0%	9.6%	34.0%	34.0%	16.0%	40.4%	40.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	21.9	17.2	23.3	17.9	17.9	17.1	11.5	11.5	27.8	19.5	19.5
Actuated g/C Ratio	0.34	0.27	0.36	0.28	0.28	0.26	0.18	0.18	0.43	0.30	0.30
v/c Ratio	0.27	0.44	0.28	0.58	0.41	0.23	0.53	0.74	0.53	0.11	0.22
Control Delay	14.8	22.0	14.5	23.7	5.6	15.9	29.1	14.9	18.5	20.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	22.0	14.5	23.7	5.6	15.9	29.1	14.9	18.5	20.3	4.5
LOS	B	C	B	C	A	B	C	B	B	C	A
Approach Delay		20.8		17.8			20.7			15.4	
Approach LOS		C		B			C			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 64.7

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 18.8

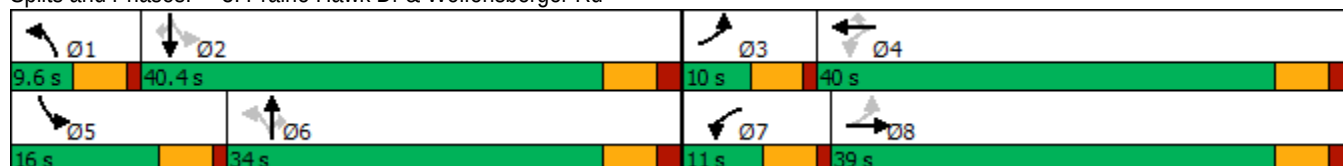
Intersection LOS: B

Intersection Capacity Utilization 58.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues

Year 2030 Background

3: Prairie Hawk Dr & Wolfensberger Rd

PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	410	113	570	247	86	333	414	250	114	125
v/c Ratio	0.27	0.44	0.28	0.58	0.41	0.23	0.53	0.74	0.53	0.11	0.22
Control Delay	14.8	22.0	14.5	23.7	5.6	15.9	29.1	14.9	18.5	20.3	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	22.0	14.5	23.7	5.6	15.9	29.1	14.9	18.5	20.3	4.5
Queue Length 50th (ft)	19	71	26	103	1	20	66	24	66	18	0
Queue Length 95th (ft)	51	126	66	178	52	48	105	80	137	41	28
Internal Link Dist (ft)		961		958			243			879	
Turn Bay Length (ft)	315		115		110	75		250	340		340
Base Capacity (vph)	318	1884	405	1957	972	377	1611	900	502	1980	937
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.22	0.28	0.29	0.25	0.23	0.21	0.46	0.50	0.06	0.13
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2030 Background

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	340	25	105	530	230	70	270	335	220	100	110
Future Volume (vph)	75	340	25	105	530	230	70	270	335	220	100	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1769	3503		1770	3539	1563	1769	3539	1563	1769	3539	1563
Flt Permitted	0.36	1.00		0.47	1.00	1.00	0.68	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	673	3503		878	3539	1563	1266	3539	1563	741	3539	1563
Peak-hour factor, PHF	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Adj. Flow (vph)	84	382	28	113	570	247	86	333	414	250	114	125
RTOR Reduction (vph)	0	6	0	0	0	177	0	0	278	0	0	88
Lane Group Flow (vph)	84	404	0	113	570	70	86	333	136	250	114	37
Confl. Peds. (#/hr)	2					2	1		1	1		1
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8			4		4	6		6	2		2
Actuated Green, G (s)	20.9	17.3		22.3	18.0	18.0	16.4	13.0	13.0	28.0	19.6	19.6
Effective Green, g (s)	20.9	17.3		22.3	18.0	18.0	16.4	13.0	13.0	28.0	19.6	19.6
Actuated g/C Ratio	0.31	0.26		0.33	0.27	0.27	0.25	0.20	0.20	0.42	0.29	0.29
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	1.0	3.0		1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	270	909		351	956	422	337	690	305	465	1041	459
v/s Ratio Prot	0.02	0.12		c0.02	c0.16		0.01	0.09		c0.08	0.03	
v/s Ratio Perm	0.08			0.09		0.04	0.05		0.09	c0.15		0.02
v/c Ratio	0.31	0.44		0.32	0.60	0.17	0.26	0.48	0.44	0.54	0.11	0.08
Uniform Delay, d1	16.5	20.6		15.8	21.1	18.6	19.9	23.8	23.6	13.3	17.1	17.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3		0.2	1.0	0.2	0.1	0.2	0.4	0.6	0.0	0.0
Delay (s)	16.8	21.0		16.0	22.1	18.7	20.0	24.0	24.0	13.9	17.2	17.0
Level of Service	B	C		B	C	B	C	C	C	B	B	B
Approach Delay (s)		20.3			20.5			23.6			15.4	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			66.6			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			58.2%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	264	986	619	975	159	2	115
Future Volume (vph)	264	986	619	975	159	2	115
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	19.5	64.0	44.5	44.5	26.0	26.0	26.0
Total Split (%)	21.7%	71.1%	49.4%	49.4%	28.9%	28.9%	28.9%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	59.0	58.0	39.9	39.9	21.0	21.0	21.0
Actuated g/C Ratio	0.66	0.64	0.44	0.44	0.23	0.23	0.23
v/c Ratio	0.84	0.33	0.77	0.58	0.27	0.27	0.22
Control Delay	42.2	7.5	20.4	4.3	30.4	24.1	7.4
Queue Delay	0.3	1.2	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	8.7	20.4	4.3	30.4	24.1	7.4
LOS	D	A	C	A	C	C	A
Approach Delay		15.8	15.4			21.0	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 16.1

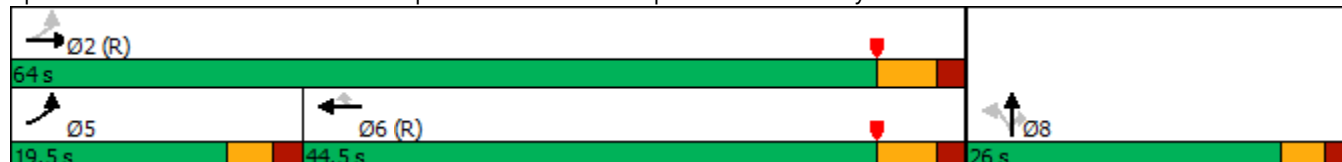
Intersection LOS: B

Intersection Capacity Utilization 79.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	287	1072	1192	541	104	102	94
v/c Ratio	0.84	0.33	0.77	0.58	0.27	0.27	0.22
Control Delay	42.2	7.5	20.4	4.3	30.4	24.1	7.4
Queue Delay	0.3	1.2	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	8.7	20.4	4.3	30.4	24.1	7.4
Queue Length 50th (ft)	104	89	247	0	50	39	0
Queue Length 95th (ft)	#229	112	339	63	97	87	38
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	367	3277	1554	940	392	382	425
Starvation Cap Reductn	4	1879	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.77	0.77	0.58	0.27	0.27	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	264	986	0	0	619	975	159	2	115	0	0	0
Future Volume (veh/h)	264	986	0	0	619	975	159	2	115	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	287	1072	0	0	673	1060	213	0	84			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	327	3291	0	0	897	1521	831	0	370			
Arrive On Green	0.11	0.64	0.00	0.00	0.48	0.48	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	287	1072	0	0	673	1060	213	0	84			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	7.4	8.5	0.0	0.0	26.3	23.5	4.4	0.0	3.9			
Cycle Q Clear(g_c), s	7.4	8.5	0.0	0.0	26.3	23.5	4.4	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	327	3291	0	0	897	1521	831	0	370			
V/C Ratio(X)	0.88	0.33	0.00	0.00	0.75	0.70	0.26	0.00	0.23			
Avail Cap(c_a), veh/h	419	3291	0	0	897	1521	831	0	370			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.6	7.2	0.0	0.0	19.0	18.3	28.1	0.0	27.9			
Incr Delay (d2), s/veh	14.5	0.2	0.0	0.0	5.7	2.7	0.7	0.0	1.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	2.8	0.0	0.0	12.1	8.6	1.9	0.0	1.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	7.4	0.0	0.0	24.7	21.0	28.9	0.0	29.4			
LnGrp LOS	C	A	A	A	C	C	C	A	C			
Approach Vol, veh/h	1359			1733			297					
Approach Delay, s/veh	13.1			22.4			29.0					
Approach LOS	B			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	64.0			14.8			49.2			26.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	58.0			14.5			38.5			21.0		
Max Q Clear Time (g_c+I1), s	10.5			9.4			28.3			6.4		
Green Ext Time (p_c), s	10.0			0.4			6.5			0.9		
Intersection Summary												
HCM 6th Ctrl Delay	19.3											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

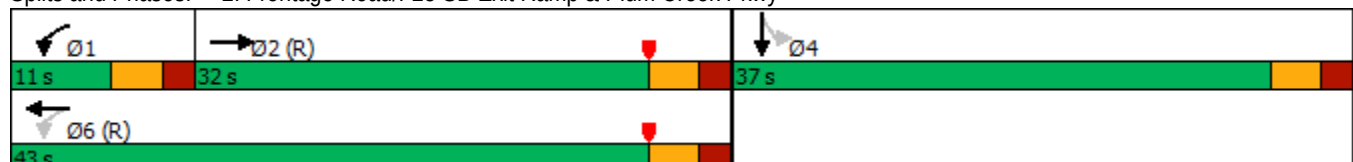
2030 w/Project
AM

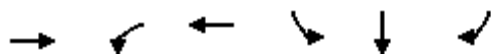
	→	↖	←	↗	↓	↙
Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑	↖	↑↑	↖↖	↙	↖
Traffic Volume (vph)	621	90	677	630	5	386
Future Volume (vph)	621	90	677	630	5	386
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effect Green (s)	40.3	50.6	50.6	19.4	19.4	80.0
Actuated g/C Ratio	0.50	0.63	0.63	0.24	0.24	1.00
v/c Ratio	0.32	0.23	0.34	0.60	0.61	0.27
Control Delay	13.4	8.5	8.2	29.4	32.6	0.4
Queue Delay	0.0	0.0	1.0	0.0	0.0	0.0
Total Delay	13.4	8.5	9.3	29.4	32.6	0.4
LOS	B	A	A	C	C	A
Approach Delay	13.4		9.2		19.1	
Approach LOS	B		A		B	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 14.5
Intersection Capacity Utilization 79.7%
Analysis Period (min) 15
Intersection LOS: B
ICU Level of Service D

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	808	100	752	469	237	429
v/c Ratio	0.32	0.23	0.34	0.60	0.61	0.27
Control Delay	13.4	8.5	8.2	29.4	32.6	0.4
Queue Delay	0.0	0.0	1.0	0.0	0.0	0.0
Total Delay	13.4	8.5	9.3	29.4	32.6	0.4
Queue Length 50th (ft)	80	17	80	115	116	0
Queue Length 95th (ft)	141	46	148	141	169	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2528	440	2239	1288	646	1583
Starvation Cap Reductn	0	0	1160	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.23	0.70	0.36	0.37	0.27
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2030 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑					↑↑	↑	↑
Traffic Volume (vph)	0	621	106	90	677	0	0	0	0	630	5	386
Future Volume (vph)	0	621	106	90	677	0	0	0	0	630	5	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4974		1770	3539					3221	1616	1583
Flt Permitted		1.00		0.27	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4974		511	3539					3221	1616	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	690	118	100	752	0	0	0	0	700	6	429
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	785	0	100	752	0	0	0	0	469	237	429
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		39.3		50.6	50.6					19.4	19.4	80.0
Effective Green, g (s)		39.3		50.6	50.6					19.4	19.4	80.0
Actuated g/C Ratio		0.49		0.63	0.63					0.24	0.24	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2443		422	2238					781	391	1583
v/s Ratio Prot		0.16		0.02	c0.21							
v/s Ratio Perm				0.13						0.15	0.15	c0.27
v/c Ratio		0.32		0.24	0.34					0.60	0.61	0.27
Uniform Delay, d1		12.3		6.2	6.9					26.9	26.9	0.0
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.3		0.3	0.4					1.3	2.7	0.4
Delay (s)		12.6		6.5	7.3					28.2	29.6	0.4
Level of Service		B		A	A					C	C	A
Approach Delay (s)		12.6			7.2			0.0			18.0	
Approach LOS		B			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			79.7%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
AM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	495	242	240	160	27	134	140	200	281	40
Future Volume (vph)	75	495	242	240	160	27	134	140	200	281	40
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6		5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	10.0	30.5	13.0	33.5	33.5	10.0	26.5	26.5	10.0	26.5	26.5
Total Split (%)	12.5%	38.1%	16.3%	41.9%	41.9%	12.5%	33.1%	33.1%	12.5%	33.1%	33.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	21.9	16.4	29.2	21.9	21.9	14.7	9.4	9.4	18.8	16.0	16.0
Actuated g/C Ratio	0.36	0.27	0.48	0.36	0.36	0.24	0.15	0.15	0.31	0.26	0.26
v/c Ratio	0.19	0.65	0.79	0.25	0.30	0.10	0.26	0.39	0.64	0.35	0.09
Control Delay	9.9	22.5	28.4	15.4	4.0	16.0	25.0	6.5	28.6	22.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	22.5	28.4	15.4	4.0	16.0	25.0	6.5	28.6	22.2	0.3
LOS	A	C	C	B	A	B	C	A	C	C	A
Approach Delay		21.0		17.5			15.6			23.0	
Approach LOS		C		B			B			C	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 61.2

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 19.6

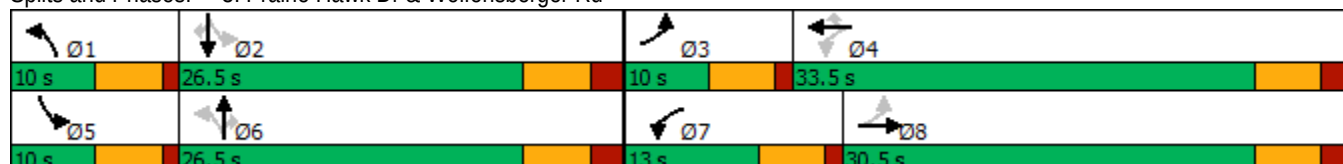
Intersection LOS: B

Intersection Capacity Utilization 66.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
AM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	80	610	314	312	208	29	144	151	233	327	47
v/c Ratio	0.19	0.65	0.79	0.25	0.30	0.10	0.26	0.39	0.64	0.35	0.09
Control Delay	9.9	22.5	28.4	15.4	4.0	16.0	25.0	6.5	28.6	22.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	22.5	28.4	15.4	4.0	16.0	25.0	6.5	28.6	22.2	0.3
Queue Length 50th (ft)	13	95	61	42	0	7	24	0	63	45	0
Queue Length 95th (ft)	36	157	#112	64	24	25	52	34	#144	101	0
Internal Link Dist (ft)		961		958			581			879	
Turn Bay Length (ft)	315		115		110	75		300	340		340
Base Capacity (vph)	443	1413	395	1606	822	322	1197	646	365	1197	646
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.43	0.79	0.19	0.25	0.09	0.12	0.23	0.64	0.27	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	495	78	242	240	160	27	134	140	200	281	40
Future Volume (veh/h)	75	495	78	242	240	160	27	134	140	200	281	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	527	83	314	312	208	29	144	151	233	327	47
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	432	767	120	448	1206	537	291	507	225	395	747	333
Arrive On Green	0.05	0.25	0.25	0.14	0.34	0.34	0.02	0.14	0.14	0.09	0.21	0.21
Sat Flow, veh/h	1781	3076	483	1781	3554	1582	1781	3554	1582	1781	3554	1583
Grp Volume(v), veh/h	80	304	306	314	312	208	29	144	151	233	327	47
Grp Sat Flow(s),veh/h/ln	1781	1777	1782	1781	1777	1582	1781	1777	1582	1781	1777	1583
Q Serve(g_s), s	1.9	8.9	9.0	7.1	3.7	5.8	0.8	2.1	5.2	5.0	4.6	1.4
Cycle Q Clear(g_c), s	1.9	8.9	9.0	7.1	3.7	5.8	0.8	2.1	5.2	5.0	4.6	1.4
Prop In Lane	1.00		0.27	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	443	444	448	1206	537	291	507	225	395	747	333
V/C Ratio(X)	0.19	0.69	0.69	0.70	0.26	0.39	0.10	0.28	0.67	0.59	0.44	0.14
Avail Cap(c_a), veh/h	499	756	759	448	1698	756	411	1266	563	395	1266	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.8	19.6	19.6	13.3	13.8	14.5	20.6	22.0	23.4	19.8	19.8	18.5
Incr Delay (d2), s/veh	0.1	1.9	1.9	4.1	0.1	0.5	0.1	0.1	1.3	1.6	0.2	0.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.5	2.8	1.3	1.8	0.3	0.8	1.8	2.6	1.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	21.4	21.5	17.4	13.9	14.9	20.6	22.2	24.7	21.4	19.9	18.6
LnGrp LOS	B	C	C	B	B	B	C	C	C	C	B	B
Approach Vol, veh/h		690			834			324			607	
Approach Delay, s/veh		20.7			15.5			23.2			20.4	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	18.1	7.8	25.5	10.0	14.2	13.0	20.3				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	5.0	20.5	5.0	27.5	5.0	20.5	8.0	24.5				
Max Q Clear Time (g_c+I1), s	2.8	6.6	3.9	7.8	7.0	7.2	9.1	11.0				
Green Ext Time (p_c), s	0.0	0.7	0.0	2.5	0.0	0.3	0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												

Timings

4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	338	60	200	529	54	115	140	265	82	155	26
Future Volume (vph)	22	338	60	200	529	54	115	140	265	82	155	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	27.6	27.6	17.4	32.0	32.0	20.6	22.5	17.4	22.5	24.4	24.4
Total Split (%)	14.4%	30.7%	30.7%	19.3%	35.6%	35.6%	22.9%	25.0%	19.3%	25.0%	27.1%	27.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effect Green (s)	30.8	24.6	24.6	40.5	35.9	35.9	11.6	18.0	33.9	18.0	24.4	24.4
Actuated g/C Ratio	0.34	0.27	0.27	0.45	0.40	0.40	0.13	0.20	0.38	0.20	0.27	0.27
v/c Ratio	0.07	0.38	0.12	0.47	0.41	0.08	0.55	0.21	0.37	0.13	0.18	0.05
Control Delay	15.0	28.4	0.7	19.3	21.7	0.2	45.2	31.1	3.8	30.2	26.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	28.4	0.7	19.3	21.7	0.2	45.2	31.1	3.8	30.2	26.8	0.2
LOS	B	C	A	B	C	A	D	C	A	C	C	A
Approach Delay		23.7			19.6			20.3			25.3	
Approach LOS		C			B			C			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 21.4

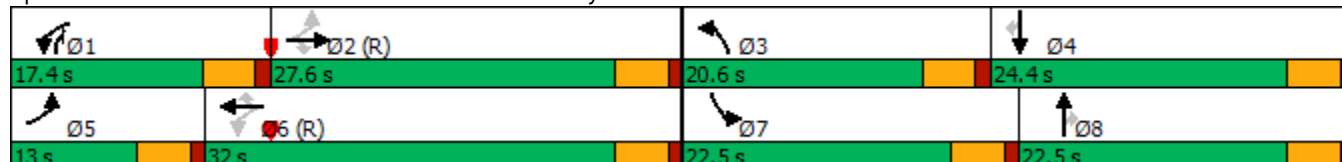
Intersection LOS: C

Intersection Capacity Utilization 46.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Prairie Hawk Dr & Plum Creek Pkwy



Queues
4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	367	65	217	575	59	125	152	288	89	168	28
v/c Ratio	0.07	0.38	0.12	0.47	0.41	0.08	0.55	0.21	0.37	0.13	0.18	0.05
Control Delay	15.0	28.4	0.7	19.3	21.7	0.2	45.2	31.1	3.8	30.2	26.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	28.4	0.7	19.3	21.7	0.2	45.2	31.1	3.8	30.2	26.8	0.2
Queue Length 50th (ft)	7	90	0	75	108	0	68	38	0	21	38	0
Queue Length 95th (ft)	21	132	3	124	189	0	117	65	48	41	69	0
Internal Link Dist (ft)	574				922				624			
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	388	965	524	476	1412	708	316	707	797	686	959	521
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.38	0.12	0.46	0.41	0.08	0.40	0.21	0.36	0.13	0.18	0.05
Intersection Summary												

HCM 6th Signalized Intersection Summary

4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
AM

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	22	338	60	200	529	54	115	140	265	82	155	26	
Future Volume (veh/h)	22	338	60	200	529	54	115	140	265	82	155	26	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	24	367	65	217	575	0	125	152	288	89	168	28	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	
Cap, veh/h	353	1113	496	486	1387		158	656	455	691	1052	469	
Arrive On Green	0.03	0.31	0.31	0.10	0.39	0.00	0.09	0.18	0.18	0.20	0.30	0.30	
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585	
Grp Volume(v), veh/h	24	367	65	217	575	0	125	152	288	89	168	28	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585	
Q Serve(g_s), s	0.8	7.1	2.6	7.0	10.6	0.0	6.2	3.3	14.3	1.9	3.1	1.1	
Cycle Q Clear(g_c), s	0.8	7.1	2.6	7.0	10.6	0.0	6.2	3.3	14.3	1.9	3.1	1.1	
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h	353	1113	496	486	1387		158	656	455	691	1052	469	
V/C Ratio(X)	0.07	0.33	0.13	0.45	0.41		0.79	0.23	0.63	0.13	0.16	0.06	
Avail Cap(c_a), veh/h	477	1113	496	559	1387		319	711	479	691	1052	469	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	20.0	23.7	22.1	16.8	20.0	0.0	40.2	31.2	28.0	29.6	23.4	22.7	
Incr Delay (d2), s/veh	0.1	0.8	0.5	0.6	0.9	0.0	8.5	0.2	2.5	0.4	0.3	0.2	
Initial Q Delay(d3),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	
%ile BackOfQ(50%),veh/ln	0.3	2.9	1.0	2.7	4.2	0.0	3.0	1.4	5.5	0.8	1.3	0.4	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	20.1	24.5	22.7	17.5	20.9	0.0	48.7	31.4	30.5	29.9	23.7	23.0	
LnGrp LOS	C	C	C	B	C		D	C	C	C	C	C	
Approach Vol, veh/h	456			792			A			565			285
Approach Delay, s/veh	24.0			19.9			34.8			25.6			
Approach LOS	C			B			C			C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	13.7	32.7	12.5	31.1	6.8	39.6	22.5	21.1					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
Max Green Setting (Gmax), s	12.9	23.1	16.1	19.9	8.5	27.5	18.0	18.0					
Max Q Clear Time (g_c+I1), s	9.0	9.1	8.2	5.1	2.8	12.6	3.9	16.3					
Green Ext Time (p_c), s	0.2	2.0	0.2	0.8	0.0	3.0	0.2	0.4					
Intersection Summary													
HCM 6th Ctrl Delay			25.6										
HCM 6th LOS			C										
Notes													

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	421	562	108	0	45
Future Vol, veh/h	0	421	562	108	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	458	611	117	0	49

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	306
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	690
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	690
HCM Lane V/C Ratio	-	-	-	0.071
HCM Control Delay (s)	-	-	-	10.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Timings

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	307	1713	772	850	181	5	185
Future Volume (vph)	307	1713	772	850	181	5	185
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	19.0	73.0	54.0	54.0	27.0	27.0	27.0
Total Split (%)	19.0%	73.0%	54.0%	54.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	68.0	67.0	48.6	48.6	22.0	22.0	22.0
Actuated g/C Ratio	0.68	0.67	0.49	0.49	0.22	0.22	0.22
v/c Ratio	0.88	0.51	0.71	0.53	0.36	0.35	0.30
Control Delay	45.3	7.7	21.5	3.6	36.3	27.7	13.9
Queue Delay	1.8	0.5	0.0	0.0	0.6	0.5	0.0
Total Delay	47.1	8.1	21.5	3.6	36.8	28.2	13.9
LOS	D	A	C	A	D	C	B
Approach Delay		14.1	16.0			26.6	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 16.0

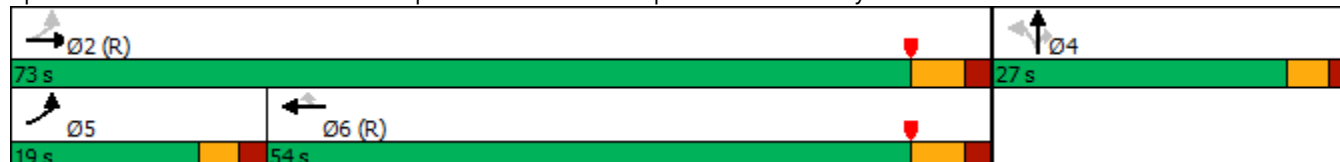
Intersection LOS: B

Intersection Capacity Utilization 94.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	313	1748	1143	512	131	127	121
v/c Ratio	0.88	0.51	0.71	0.53	0.36	0.35	0.30
Control Delay	45.3	7.7	21.5	3.6	36.3	27.7	13.9
Queue Delay	1.8	0.5	0.0	0.0	0.6	0.5	0.0
Total Delay	47.1	8.1	21.5	3.6	36.8	28.2	13.9
Queue Length 50th (ft)	111	110	283	0	74	56	17
Queue Length 95th (ft)	#252	155	366	59	133	114	69
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	367	3406	1617	963	369	360	398
Starvation Cap Reductn	11	1039	0	0	0	0	0
Spillback Cap Reductn	0	0	4	0	67	61	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.74	0.71	0.53	0.43	0.42	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

2030 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	307	1713	0	0	772	850	181	5	185	0	0	0
Future Volume (veh/h)	307	1713	0	0	772	850	181	5	185	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	313	1748	0	0	709	919	246	0	127			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	339	3421	0	0	945	1602	784	0	349			
Arrive On Green	0.23	1.00	0.00	0.00	0.51	0.51	0.22	0.00	0.22			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	313	1748	0	0	709	919	246	0	127			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	9.2	0.0	0.0	0.0	30.2	20.2	5.8	0.0	6.8			
Cycle Q Clear(g_c), s	9.2	0.0	0.0	0.0	30.2	20.2	5.8	0.0	6.8			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	339	3421	0	0	945	1602	784	0	349			
V/C Ratio(X)	0.92	0.51	0.00	0.00	0.75	0.57	0.31	0.00	0.36			
Avail Cap(c_a), veh/h	384	3421	0	0	945	1602	784	0	349			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.75	0.75	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	18.1	0.0	0.0	0.0	19.7	17.2	32.7	0.0	33.1			
Incr Delay (d2), s/veh	21.0	0.4	0.0	0.0	5.5	1.5	1.0	0.0	2.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	0.1	0.0	0.0	13.8	7.4	2.6	0.0	6.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.4	0.0	0.0	25.2	18.7	33.7	0.0	36.0			
LnGrp LOS	D	A	A	A	C	B	C	A	D			
Approach Vol, veh/h	2061			1628			373					
Approach Delay, s/veh	6.3			21.5			34.5					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	73.0			27.0		16.5	56.5					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	67.0			22.0		14.0	48.0					
Max Q Clear Time (g_c+I1), s	2.0			8.8		11.2	32.2					
Green Ext Time (p_c), s	23.6			1.1		0.3	8.4					
Intersection Summary												
HCM 6th Ctrl Delay	15.0											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2030 w/Project
PM

	→	↙	←	↘	↓	↗
Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑	↙	↑↑	↘↙	↙	↗
Traffic Volume (vph)	980	135	777	1040	5	456
Future Volume (vph)	980	135	777	1040	5	456
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	47.0	13.0	60.0	40.0	40.0	
Total Split (%)	47.0%	13.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effect Green (s)	42.2	55.0	55.0	35.0	35.0	100.0
Actuated g/C Ratio	0.42	0.55	0.55	0.35	0.35	1.00
v/c Ratio	0.60	0.59	0.42	0.64	0.64	0.30
Control Delay	10.9	32.3	16.8	30.5	33.5	0.5
Queue Delay	0.0	3.3	6.2	0.1	0.1	0.0
Total Delay	10.9	35.6	23.0	30.6	33.6	0.5
LOS	B	D	C	C	C	A
Approach Delay	10.9		24.8		22.1	
Approach LOS	B		C		C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 19.0

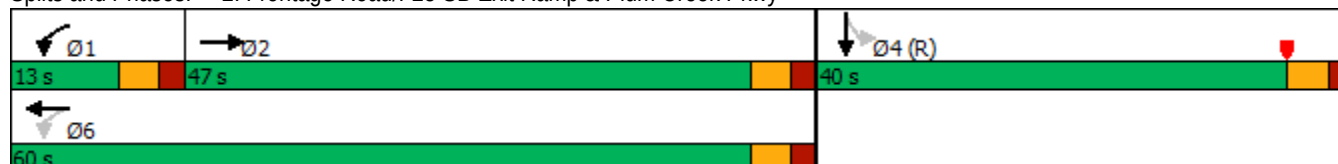
Intersection LOS: B

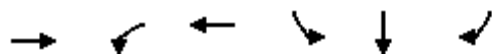
Intersection Capacity Utilization 94.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1281	141	809	726	362	475
v/c Ratio	0.60	0.59	0.42	0.64	0.64	0.30
Control Delay	10.9	32.3	16.8	30.5	33.5	0.5
Queue Delay	0.0	3.3	6.2	0.1	0.1	0.0
Total Delay	10.9	35.6	23.0	30.6	33.6	0.5
Queue Length 50th (ft)	76	64	155	210	209	0
Queue Length 95th (ft)	115	m109	224	278	321	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2128	243	1946	1127	565	1583
Starvation Cap Reductn	0	44	1071	0	0	0
Spillback Cap Reductn	46	0	0	25	12	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.71	0.92	0.66	0.65	0.30

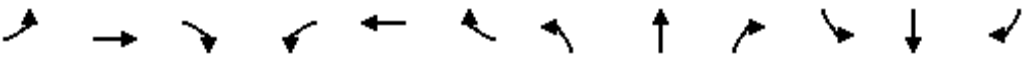
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2030 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑					↑↑	↑	↑
Traffic Volume (vph)	0	980	250	135	777	0	0	0	0	1040	5	456
Future Volume (vph)	0	980	250	135	777	0	0	0	0	1040	5	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4930		1770	3539					3221	1615	1583
Flt Permitted		1.00		0.12	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4930		216	3539					3221	1615	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1021	260	141	809	0	0	0	0	1083	5	475
RTOR Reduction (vph)	0	45	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1236	0	141	809	0	0	0	0	726	362	475
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		42.2		55.0	55.0					35.0	35.0	100.0
Effective Green, g (s)		42.2		55.0	55.0					35.0	35.0	100.0
Actuated g/C Ratio		0.42		0.55	0.55					0.35	0.35	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2080		240	1946					1127	565	1583
v/s Ratio Prot		0.25		c0.05	0.23							
v/s Ratio Perm				c0.28						c0.23	0.22	0.30
v/c Ratio		0.59		0.59	0.42					0.64	0.64	0.30
Uniform Delay, d1		22.3		14.3	13.1					27.3	27.2	0.0
Progression Factor		0.46		2.03	1.22					1.00	1.00	1.00
Incremental Delay, d2		1.2		2.8	0.5					2.8	5.5	0.5
Delay (s)		11.4		31.9	16.6					30.1	32.7	0.5
Level of Service		B		C	B					C	C	A
Approach Delay (s)		11.4			18.8			0.0			21.7	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			94.2%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	340	168	530	230	116	362	445	220	191	110
Future Volume (vph)	75	340	168	530	230	116	362	445	220	191	110
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	3	8	7	4		1	6	7	5	2	
Permitted Phases	8		4		4	6		6	2		2
Detector Phase	3	8	7	4	4	1	6	7	5	2	2
Switch Phase											
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	3.0	8.0	5.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	11.0	40.0	40.0	9.0	33.0	11.0	9.5	32.0	32.0
Total Split (s)	11.0	38.6	11.0	38.6	38.6	12.0	37.4	11.0	13.0	38.4	38.4
Total Split (%)	11.0%	38.6%	11.0%	38.6%	38.6%	12.0%	37.4%	11.0%	13.0%	38.4%	38.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	23.0	17.9	24.5	20.6	20.6	20.6	14.5	19.6	22.7	15.6	15.6
Actuated g/C Ratio	0.33	0.26	0.35	0.30	0.30	0.30	0.21	0.28	0.33	0.23	0.23
v/c Ratio	0.27	0.51	0.52	0.54	0.39	0.36	0.60	0.90	0.73	0.27	0.26
Control Delay	15.1	22.6	20.8	23.6	5.7	18.2	28.9	31.5	31.5	23.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	22.6	20.8	23.6	5.7	18.2	28.9	31.5	31.5	23.8	3.6
LOS	B	C	C	C	A	B	C	C	C	C	A
Approach Delay		21.4		18.7			28.8			22.8	
Approach LOS		C		B			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 69.1

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 23.4

Intersection LOS: C

Intersection Capacity Utilization 66.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd

			
Ø1	Ø2	Ø3	Ø4
12 s	38.4 s	11 s	38.6 s
			
Ø5	Ø6	Ø7	Ø8
13 s	37.4 s	11 s	38.6 s

Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
PM

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	84	461	181	570	247	143	447	549	250	217	125
v/c Ratio	0.27	0.51	0.52	0.54	0.39	0.36	0.60	0.90	0.73	0.27	0.26
Control Delay	15.1	22.6	20.8	23.6	5.7	18.2	28.9	31.5	31.5	23.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	22.6	20.8	23.6	5.7	18.2	28.9	31.5	31.5	23.8	3.6
Queue Length 50th (ft)	20	80	46	109	3	38	89	109	71	39	0
Queue Length 95th (ft)	49	132	97	174	53	76	134	#214	#164	74	21
Internal Link Dist (ft)		961		958			581			879	
Turn Bay Length (ft)	315		115		110	75		300	340		340
Base Capacity (vph)	312	1670	346	1701	874	397	1638	612	344	1691	832
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.28	0.52	0.34	0.28	0.36	0.27	0.90	0.73	0.13	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

2030 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	340	70	168	530	230	116	362	445	220	191	110
Future Volume (veh/h)	75	340	70	168	530	230	116	362	445	220	191	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	382	79	181	570	247	143	447	549	250	217	125
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	232	653	134	287	817	364	547	1255	653	379	1297	578
Arrive On Green	0.05	0.22	0.22	0.06	0.23	0.23	0.07	0.35	0.35	0.08	0.37	0.37
Sat Flow, veh/h	1781	2936	601	1781	3554	1581	1781	3554	1584	1781	3554	1584
Grp Volume(v), veh/h	84	230	231	181	570	247	143	447	549	250	217	125
Grp Sat Flow(s),veh/h/ln	1781	1777	1760	1781	1777	1581	1781	1777	1584	1781	1777	1584
Q Serve(g_s), s	3.0	9.8	10.0	5.0	12.5	12.1	4.3	7.9	26.5	7.0	3.5	4.6
Cycle Q Clear(g_c), s	3.0	9.8	10.0	5.0	12.5	12.1	4.3	7.9	26.5	7.0	3.5	4.6
Prop In Lane	1.00		0.34	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	232	395	391	287	817	364	547	1255	653	379	1297	578
V/C Ratio(X)	0.36	0.58	0.59	0.63	0.70	0.68	0.26	0.36	0.84	0.66	0.17	0.22
Avail Cap(c_a), veh/h	245	683	677	287	1366	608	547	1316	680	379	1358	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	29.5	29.5	27.8	29.9	29.8	15.3	20.3	22.4	17.3	18.2	18.6
Incr Delay (d2), s/veh	1.0	1.4	1.4	4.4	1.1	2.2	0.3	0.2	9.0	4.2	0.1	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.3	4.2	4.2	1.3	5.2	4.6	1.7	3.2	10.7	3.5	1.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	30.8	31.0	32.1	31.0	32.0	15.6	20.5	31.5	21.5	18.3	18.7
LnGrp LOS	C	C	C	C	C	C	B	C	C	C	B	B
Approach Vol, veh/h	545		998				1139		592			
Approach Delay, s/veh	30.0		31.5				25.2		19.7			
Approach LOS	C		C				C		B			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	37.0	10.4	25.5	13.0	36.0	11.0	24.9				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	6.0	32.4	5.0	32.6	7.0	31.4	5.0	32.6				
Max Q Clear Time (g_c+I1), s	6.3	6.6	5.0	14.5	9.0	28.5	7.0	12.0				
Green Ext Time (p_c), s	0.0	1.8	0.0	4.4	0.0	1.5	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			26.9									
HCM 6th LOS			C									
Notes												

Timings

4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	551	135	255	874	93	145	175	175	260	190	38
Future Volume (vph)	32	551	135	255	874	93	145	175	175	260	190	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	27.5	27.5	20.0	38.0	38.0	25.2	22.5	20.0	30.0	27.3	27.3
Total Split (%)	9.5%	27.5%	27.5%	20.0%	38.0%	38.0%	25.2%	22.5%	20.0%	30.0%	27.3%	27.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effect Green (s)	29.0	24.0	24.0	43.0	37.3	37.3	14.2	30.0	48.9	13.5	29.3	29.3
Actuated g/C Ratio	0.29	0.24	0.24	0.43	0.37	0.37	0.14	0.30	0.49	0.14	0.29	0.29
v/c Ratio	0.20	0.70	0.27	0.78	0.72	0.15	0.63	0.18	0.22	0.61	0.20	0.07
Control Delay	20.7	40.3	2.3	43.9	41.3	7.7	51.1	27.3	5.5	46.2	28.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	40.3	2.3	43.9	41.3	7.7	51.1	27.3	5.5	46.2	28.3	0.2
LOS	C	D	A	D	D	A	D	C	A	D	C	A
Approach Delay		32.3			39.3			26.6			35.7	
Approach LOS		C			D			C			D	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 34.8

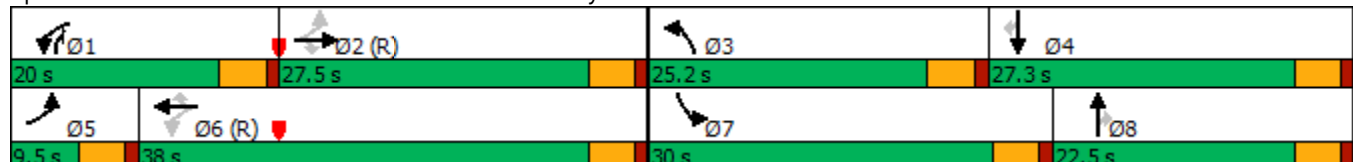
Intersection LOS: C

Intersection Capacity Utilization 57.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Prairie Hawk Dr & Plum Creek Pkwy



Queues
4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	599	147	277	950	101	158	190	190	283	207	41
v/c Ratio	0.20	0.70	0.27	0.78	0.72	0.15	0.63	0.18	0.22	0.61	0.20	0.07
Control Delay	20.7	40.3	2.3	43.9	41.3	7.7	51.1	27.3	5.5	46.2	28.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	40.3	2.3	43.9	41.3	7.7	51.1	27.3	5.5	46.2	28.3	0.2
Queue Length 50th (ft)	13	186	0	166	328	7	96	46	16	88	52	0
Queue Length 95th (ft)	31	250	14	#265	398	34	153	78	57	125	87	0
Internal Link Dist (ft)		574			922			624			375	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	174	850	542	369	1319	693	366	1060	860	875	1037	579
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.70	0.27	0.75	0.72	0.15	0.43	0.18	0.22	0.32	0.20	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

4: Prairie Hawk Dr & Plum Creek Pkwy

2030 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	551	135	255	874	93	145	175	175	260	190	38
Future Volume (veh/h)	32	551	135	255	874	93	145	175	175	260	190	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	599	147	277	950	0	158	190	190	283	207	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	277	1312	585	449	1609		193	811	543	373	810	361
Arrive On Green	0.03	0.37	0.37	0.11	0.45	0.00	0.11	0.23	0.23	0.11	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	35	599	147	277	950	0	158	190	190	283	207	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.2	12.8	6.4	9.1	20.0	0.0	8.7	4.4	9.0	8.0	4.8	2.0
Cycle Q Clear(g_c), s	1.2	12.8	6.4	9.1	20.0	0.0	8.7	4.4	9.0	8.0	4.8	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	1312	585	449	1609		193	811	543	373	810	361
V/C Ratio(X)	0.13	0.46	0.25	0.62	0.59		0.82	0.23	0.35	0.76	0.26	0.11
Avail Cap(c_a), veh/h	311	1312	585	521	1609		369	811	543	881	810	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	23.9	21.9	16.4	20.4	0.0	43.6	31.5	24.5	43.3	31.6	30.6
Incr Delay (d2), s/veh	0.2	1.1	1.0	1.7	1.6	0.0	8.3	0.1	0.4	3.2	0.8	0.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.5	5.2	2.5	3.6	7.9	0.0	4.2	1.9	3.3	3.5	2.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.3	25.1	22.9	18.1	22.0	0.0	52.0	31.6	24.9	46.5	32.4	31.2
LnGrp LOS	B	C	C	B	C		D	C	C	D	C	C
Approach Vol, veh/h	781			1227			A			538		
Approach Delay, s/veh	24.4			21.1			35.2			39.8		
Approach LOS	C			C			D			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	41.4	15.3	27.3	7.6	49.8	15.3	27.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	23.0	20.7	22.8	5.0	33.5	25.5	18.0				
Max Q Clear Time (g_c+I1), s	11.1	14.8	10.7	6.8	3.2	22.0	10.0	11.0				
Green Ext Time (p_c), s	0.3	2.6	0.3	1.2	0.0	4.7	0.8	1.0				
Intersection Summary												
HCM 6th Ctrl Delay	27.7											
HCM 6th LOS	C											

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Vol, veh/h	0	718	769	287	0	171
Future Vol, veh/h	0	718	769	287	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	780	836	312	0	186
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	418
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	584
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	584
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	584		
HCM Lane V/C Ratio	-	-	-	0.318		
HCM Control Delay (s)	-	-	-	14		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile O(veh)	-	-	-	1.4		

Timings

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	240	1025	565	1100	90	2	130
Future Volume (vph)	240	1025	565	1100	90	2	130
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	18.0	63.0	45.0	45.0	27.0	27.0	27.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	58.0	57.0	40.6	40.6	22.0	22.0	22.0
Actuated g/C Ratio	0.64	0.63	0.45	0.45	0.24	0.24	0.24
v/c Ratio	0.85	0.35	0.75	0.61	0.20	0.20	0.18
Control Delay	44.2	8.1	18.2	4.5	28.7	11.5	5.2
Queue Delay	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	9.5	18.2	4.5	28.7	11.5	5.2
LOS	D	A	B	A	C	B	A
Approach Delay		16.1	13.7			15.4	
Approach LOS		B	B			B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 14.7

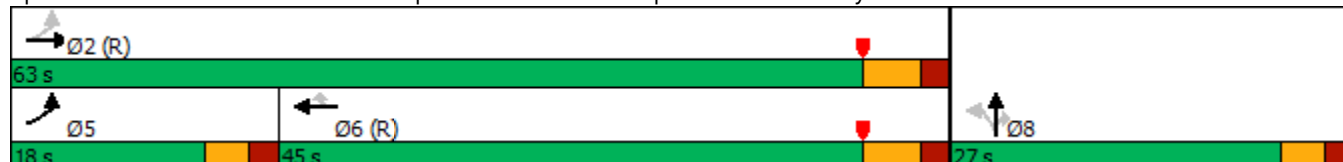
Intersection LOS: B

Intersection Capacity Utilization 90.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	261	1114	1212	598	83	80	78
v/c Ratio	0.85	0.35	0.75	0.61	0.20	0.20	0.18
Control Delay	44.2	8.1	18.2	4.5	28.7	11.5	5.2
Queue Delay	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	9.5	18.2	4.5	28.7	11.5	5.2
Queue Length 50th (ft)	91	97	226	0	40	7	0
Queue Length 95th (ft)	#210	121	321	65	80	47	26
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	337	3220	1606	978	410	409	440
Starvation Cap Reductn	0	1815	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.79	0.75	0.61	0.20	0.20	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	240	1025	0	0	565	1100	90	2	130	0	0	0
Future Volume (vph)	240	1025	0	0	565	1100	90	2	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0	6.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.91			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.93	0.85	1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)	1770	5085			3139	1441	1681	1481	1504			
Flt Permitted	0.09	1.00			1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)	163	5085			3139	1441	1681	1481	1504			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	1114	0	0	614	1196	98	2	141	0	0	0
RTOR Reduction (vph)	0	0	0	0	190	328	0	48	59	0	0	0
Lane Group Flow (vph)	261	1114	0	0	1022	270	83	32	19	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	2					6	8		8			
Actuated Green, G (s)	57.0	57.0			40.6	40.6	22.0	22.0	22.0			
Effective Green, g (s)	57.0	57.0			40.6	40.6	22.0	22.0	22.0			
Actuated g/C Ratio	0.63	0.63			0.45	0.45	0.24	0.24	0.24			
Clearance Time (s)	5.0	6.0			6.0	6.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	306	3220			1416	650	410	362	367			
v/s Ratio Prot	c0.11	0.22			0.33							
v/s Ratio Perm	c0.43					0.19	c0.05	0.02	0.01			
v/c Ratio	0.85	0.35			0.72	0.42	0.20	0.09	0.05			
Uniform Delay, d1	23.5	7.7			20.1	16.7	27.0	26.3	26.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	19.9	0.3			3.2	2.0	1.1	0.5	0.3			
Delay (s)	43.4	8.0			23.3	18.6	28.1	26.8	26.3			
Level of Service	D	A			C	B	C	C	C			
Approach Delay (s)		14.8			21.8			27.1			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		19.3			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		90.0			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		90.2%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Timings

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2040 Background

Timing Plan: AM

	→	↖	←	↗	↓
Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Configurations	↑↑↑	↑	↑↑	↑↑	↑
Traffic Volume (vph)	555	105	555	710	0
Future Volume (vph)	555	105	555	710	0
Turn Type	NA	pm+pt	NA	Split	NA
Protected Phases	2	1	6	4	4
Permitted Phases		6			
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0
Total Split (s)	30.0	14.0	44.0	30.0	30.0
Total Split (%)	40.5%	18.9%	59.5%	40.5%	40.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effect Green (s)	30.4	41.0	41.0	23.0	23.0
Actuated g/C Ratio	0.41	0.55	0.55	0.31	0.31
v/c Ratio	0.32	0.27	0.31	0.71	0.70
Control Delay	16.4	10.3	9.9	26.6	16.2
Queue Delay	0.0	0.0	0.7	0.0	0.0
Total Delay	16.4	10.3	10.6	26.6	16.2
LOS	B	B	B	C	B
Approach Delay	16.4		10.6		22.7
Approach LOS	B		B		C

Intersection Summary

Cycle Length: 74

Actuated Cycle Length: 74

Offset: 20 (27%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 17.5

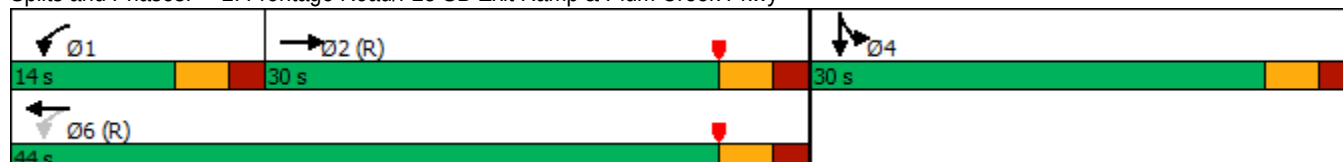
Intersection LOS: B

Intersection Capacity Utilization 90.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

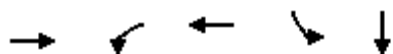


Queues

Year 2040 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Timing Plan: AM



Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	673	117	617	710	435
v/c Ratio	0.32	0.27	0.31	0.71	0.70
Control Delay	16.4	10.3	9.9	26.6	16.2
Queue Delay	0.0	0.0	0.7	0.0	0.0
Total Delay	16.4	10.3	10.6	26.6	16.2
Queue Length 50th (ft)	79	25	79	149	76
Queue Length 95th (ft)	112	50	111	209	187
Internal Link Dist (ft)	437		181		388
Turn Bay Length (ft)					
Base Capacity (vph)	2078	461	1959	1088	654
Starvation Cap Reductn	0	0	955	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.32	0.25	0.61	0.65	0.67
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2040 Background

Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑					↑↑	↑	
Traffic Volume (vph)	0	555	50	105	555	0	0	0	0	710	0	320
Future Volume (vph)	0	555	50	105	555	0	0	0	0	710	0	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	
Frt		0.99		1.00	1.00					1.00	0.88	
Flt Protected		1.00		0.95	1.00					0.95	0.99	
Satd. Flow (prot)		5022		1770	3539					3221	1474	
Flt Permitted		1.00		0.31	1.00					0.95	0.99	
Satd. Flow (perm)		5022		570	3539					3221	1474	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	617	56	117	617	0	0	0	0	789	0	356
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	0	0	163	0
Lane Group Flow (vph)	0	660	0	117	617	0	0	0	0	710	272	0
Turn Type		NA		pm+pt	NA					Split	NA	
Protected Phases		2		1	6					4	4	
Permitted Phases				6								
Actuated Green, G (s)		29.5		41.0	41.0					23.0	23.0	
Effective Green, g (s)		29.5		41.0	41.0					23.0	23.0	
Actuated g/C Ratio		0.40		0.55	0.55					0.31	0.31	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2002		421	1960					1001	458	
v/s Ratio Prot		0.13		0.02	c0.17					c0.22	0.18	
v/s Ratio Perm				0.13								
v/c Ratio		0.33		0.28	0.31					0.71	0.59	
Uniform Delay, d1		15.4		8.3	8.9					22.5	21.5	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.4		0.4	0.4					2.3	2.1	
Delay (s)		15.8		8.6	9.3					24.9	23.6	
Level of Service		B		A	A					C	C	
Approach Delay (s)		15.8			9.2			0.0			24.4	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			74.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			90.2%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background

Timing Plan: AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	560	60	235	275	180	15	115	110	225	270	45
Future Volume (vph)	85	560	60	235	275	180	15	115	110	225	270	45
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	10.5	38.0	38.0	15.0	42.5	42.5	9.5	34.0	34.0	13.0	37.5	37.5
Total Split (%)	10.5%	38.0%	38.0%	15.0%	42.5%	42.5%	9.5%	34.0%	34.0%	13.0%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	23.0	17.1	17.1	32.9	24.2	24.2	13.3	8.4	8.4	22.1	19.7	19.7
Actuated g/C Ratio	0.35	0.26	0.26	0.50	0.37	0.37	0.20	0.13	0.13	0.34	0.30	0.30
v/c Ratio	0.22	0.65	0.12	0.71	0.27	0.32	0.06	0.27	0.37	0.64	0.30	0.09
Control Delay	10.4	25.0	0.5	20.9	16.0	3.8	17.2	28.8	7.7	27.3	20.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	25.0	0.5	20.9	16.0	3.8	17.2	28.8	7.7	27.3	20.6	0.3
LOS	B	C	A	C	B	A	B	C	A	C	C	A
Approach Delay		21.1			14.5			18.4			21.7	
Approach LOS		C			B			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 65.6

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 18.6

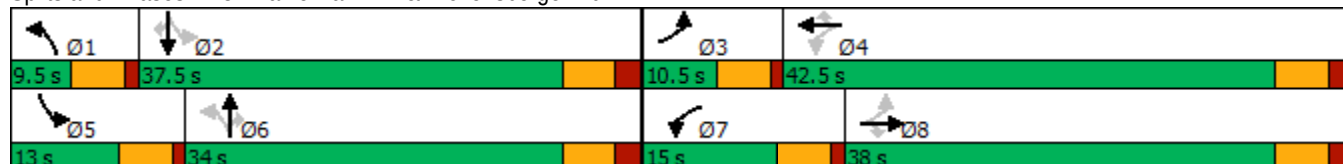
Intersection LOS: B

Intersection Capacity Utilization 62.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background

Timing Plan: AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	90	596	64	305	357	234	16	124	118	262	314	52
v/c Ratio	0.22	0.65	0.12	0.71	0.27	0.32	0.06	0.27	0.37	0.64	0.30	0.09
Control Delay	10.4	25.0	0.5	20.9	16.0	3.8	17.2	28.8	7.7	27.3	20.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	25.0	0.5	20.9	16.0	3.8	17.2	28.8	7.7	27.3	20.6	0.3
Queue Length 50th (ft)	17	110	0	67	54	0	4	23	0	79	47	0
Queue Length 95th (ft)	38	162	0	97	72	24	18	51	32	#159	100	0
Internal Link Dist (ft)	961			958			546			879		
Turn Bay Length (ft)	315		315	115		110	75		300	340		340
Base Capacity (vph)	425	1734	838	428	1978	976	271	1517	751	408	1707	827
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.34	0.08	0.71	0.18	0.24	0.06	0.08	0.16	0.64	0.18	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background

Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	85	560	60	235	275	180	15	115	110	225	270	45
Future Volume (vph)	85	560	60	235	275	180	15	115	110	225	270	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1769	3539	1563	1770	3539	1562	1769	3539	1563	1769	3539	1563
Flt Permitted	0.54	1.00	1.00	0.24	1.00	1.00	0.56	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	1002	3539	1563	451	3539	1562	1045	3539	1563	896	3539	1563
Peak-hour factor, PHF	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Adj. Flow (vph)	90	596	64	305	357	234	16	124	118	262	314	52
RTOR Reduction (vph)	0	0	47	0	0	154	0	0	97	0	0	38
Lane Group Flow (vph)	90	596	17	305	357	80	16	124	21	262	314	14
Confl. Peds. (#/hr)	2		1	1		2	1		1	1		1
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	22.4	18.3	18.3	33.3	24.2	24.2	13.3	12.5	12.5	25.5	19.7	19.7
Effective Green, g (s)	22.4	18.3	18.3	33.3	24.2	24.2	13.3	12.5	12.5	25.5	19.7	19.7
Actuated g/C Ratio	0.32	0.26	0.26	0.47	0.34	0.34	0.19	0.18	0.18	0.36	0.28	0.28
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	361	914	403	398	1209	533	204	624	275	421	984	434
v/s Ratio Prot	0.01	0.17		c0.11	0.10		0.00	0.04		c0.07	0.09	
v/s Ratio Perm	0.06		0.01	c0.25		0.05	0.01		0.01	c0.15		0.01
v/c Ratio	0.25	0.65	0.04	0.77	0.30	0.15	0.08	0.20	0.08	0.62	0.32	0.03
Uniform Delay, d1	17.4	23.4	19.7	13.2	17.1	16.2	23.6	24.9	24.3	17.2	20.2	18.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.7	0.0	7.7	0.1	0.1	0.1	0.1	0.0	2.1	0.1	0.0
Delay (s)	17.6	25.1	19.7	20.9	17.2	16.3	23.6	24.9	24.4	19.3	20.3	18.6
Level of Service	B	C	B	C	B	B	C	C	C	B	C	B
Approach Delay (s)		23.7			18.2			24.6			19.7	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			20.9		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			70.8		Sum of lost time (s)					22.0		
Intersection Capacity Utilization			62.2%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	185	1680	645	955	50	5	210
Future Volume (vph)	185	1680	645	955	50	5	210
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	13.0	60.0	47.0	47.0	40.0	40.0	40.0
Total Split (%)	13.0%	60.0%	47.0%	47.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	55.0	54.0	41.0	41.0	35.0	35.0	35.0
Actuated g/C Ratio	0.55	0.54	0.41	0.41	0.35	0.35	0.35
v/c Ratio	0.87	0.62	0.80	0.57	0.08	0.22	0.19
Control Delay	56.2	17.2	26.3	4.6	22.3	21.3	8.2
Queue Delay	0.0	48.4	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	65.6	26.3	4.6	22.3	21.3	8.2
LOS	E	E	C	A	C	C	A
Approach Delay		64.7	19.6			16.1	
Approach LOS		E	B			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 41.9

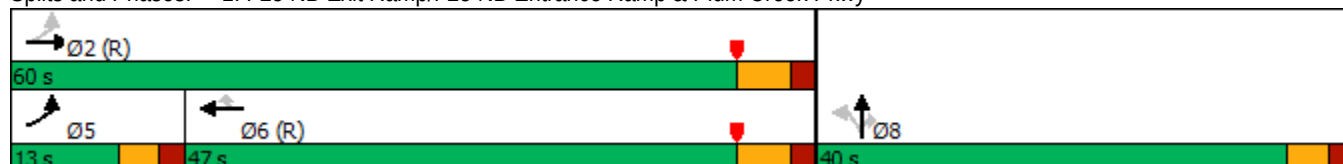
Intersection LOS: D

Intersection Capacity Utilization 99.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	189	1714	1126	506	46	113	111
v/c Ratio	0.87	0.62	0.80	0.57	0.08	0.22	0.19
Control Delay	56.2	17.2	26.3	4.6	22.3	21.3	8.2
Queue Delay	0.0	48.4	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	65.6	26.3	4.6	22.3	21.3	8.2
Queue Length 50th (ft)	67	263	286	0	20	48	10
Queue Length 95th (ft)	#195	311	379	68	46	94	49
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	217	2745	1415	889	588	520	582
Starvation Cap Reductn	0	1276	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.17	0.80	0.57	0.08	0.22	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

Year 2040 Background

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	1680	0	0	645	955	50	5	210	0	0	0
Future Volume (vph)	185	1680	0	0	645	955	50	5	210	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0	6.0	5.0	5.0	5.0			
Lane Util. Factor	1.00	0.91			0.91	0.91	0.95	0.91	0.95			
Frt	1.00	1.00			0.94	0.85	1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	5085			3179	1441	1681	1460	1504			
Flt Permitted	0.09	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	162	5085			3179	1441	1681	1460	1504			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	189	1714	0	0	658	974	51	5	214	0	0	0
RTOR Reduction (vph)	0	0	0	0	112	299	0	9	57	0	0	0
Lane Group Flow (vph)	189	1714	0	0	1014	207	46	104	54	0	0	0
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	2					6	8		8			
Actuated Green, G (s)	54.0	54.0			41.0	41.0	35.0	35.0	35.0			
Effective Green, g (s)	54.0	54.0			41.0	41.0	35.0	35.0	35.0			
Actuated g/C Ratio	0.54	0.54			0.41	0.41	0.35	0.35	0.35			
Clearance Time (s)	5.0	6.0			6.0	6.0	5.0	5.0	5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	216	2745			1303	590	588	511	526			
v/s Ratio Prot	c0.07	0.34			0.32							
v/s Ratio Perm	c0.40					0.14	0.03	0.07	0.04			
v/c Ratio	0.88	0.62			0.78	0.35	0.08	0.20	0.10			
Uniform Delay, d1	22.7	16.0			25.6	20.3	21.7	22.7	21.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	30.1	1.1			4.6	1.6	0.3	0.9	0.4			
Delay (s)	52.8	17.0			30.2	22.0	22.0	23.6	22.3			
Level of Service	D	B			C	C	C	C	C			
Approach Delay (s)		20.6			27.7			22.8			0.0	
Approach LOS		C			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		100.0			Sum of lost time (s)			16.0				
Intersection Capacity Utilization		99.1%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

Timings

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2040 Background

Timing Plan: PM

	→	↖	←	↗	↓
Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Configurations	↑↑↑	↖	↑↑	↗↖	↕
Traffic Volume (vph)	690	155	500	1175	0
Future Volume (vph)	690	155	500	1175	0
Turn Type	NA	pm+pt	NA	Perm	NA
Protected Phases	2	1	6		4
Permitted Phases		6		4	
Detector Phase	2	1	6	4	4
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0
Total Split (s)	37.0	13.0	50.0	40.0	40.0
Total Split (%)	41.1%	14.4%	55.6%	44.4%	44.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Max	None	None
Act Effect Green (s)	32.8	45.6	45.6	34.4	34.4
Actuated g/C Ratio	0.36	0.51	0.51	0.38	0.38
v/c Ratio	0.44	0.48	0.29	0.86	0.76
Control Delay	22.0	17.4	13.6	33.7	26.5
Queue Delay	0.0	2.0	1.3	0.0	0.0
Total Delay	22.0	19.4	14.8	33.7	26.5
LOS	C	B	B	C	C
Approach Delay	22.0		15.9		31.4
Approach LOS	C		B		C

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 25.4

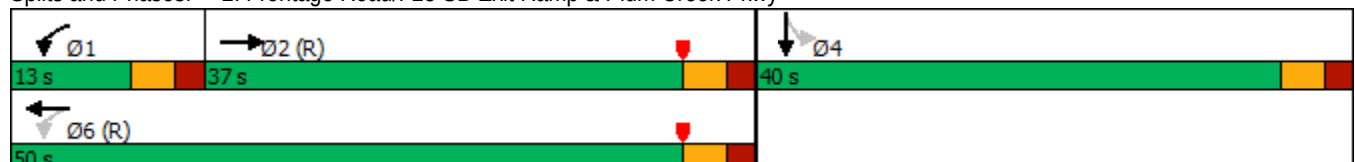
Intersection LOS: C

Intersection Capacity Utilization 99.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

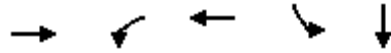


Queues

Year 2040 Background

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Timing Plan: PM



Lane Group	EBT	WBL	WBT	SBL	SBT
Lane Group Flow (vph)	813	161	521	1053	494
v/c Ratio	0.44	0.48	0.29	0.86	0.76
Control Delay	22.0	17.4	13.6	33.7	26.5
Queue Delay	0.0	2.0	1.3	0.0	0.0
Total Delay	22.0	19.4	14.8	33.7	26.5
Queue Length 50th (ft)	123	48	87	292	197
Queue Length 95th (ft)	159	84	120	382	339
Internal Link Dist (ft)	437		181		388
Turn Bay Length (ft)					
Base Capacity (vph)	1840	338	1792	1252	660
Starvation Cap Reductn	0	81	1012	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.63	0.67	0.84	0.75
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

Year 2040 Background

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↔	↑↑					↔	↔	
Traffic Volume (vph)	0	690	90	155	500	0	0	0	0	1175	0	310
Future Volume (vph)	0	690	90	155	500	0	0	0	0	1175	0	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	
Frt		0.98		1.00	1.00					1.00	0.90	
Flt Protected		1.00		0.95	1.00					0.95	0.98	
Satd. Flow (prot)		4997		1770	3539					3221	1503	
Flt Permitted		1.00		0.23	1.00					0.95	0.98	
Satd. Flow (perm)		4997		434	3539					3221	1503	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	719	94	161	521	0	0	0	0	1224	0	323
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	77	0
Lane Group Flow (vph)	0	795	0	161	521	0	0	0	0	1053	417	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Actuated Green, G (s)		32.8		45.6	45.6					34.4	34.4	
Effective Green, g (s)		32.8		45.6	45.6					34.4	34.4	
Actuated g/C Ratio		0.36		0.51	0.51					0.38	0.38	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		1821		335	1793					1231	574	
v/s Ratio Prot		0.16		c0.04	0.15							
v/s Ratio Perm				c0.20						c0.33	0.28	
v/c Ratio		0.44		0.48	0.29					0.86	0.73	
Uniform Delay, d1		21.6		13.0	12.8					25.5	23.8	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		0.8		1.1	0.4					6.0	4.6	
Delay (s)		22.4		14.1	13.3					31.5	28.4	
Level of Service		C		B	B					C	C	
Approach Delay (s)		22.4			13.5			0.0			30.5	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			24.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			99.1%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Timings 3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background
Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	385	30	115	600	255	75	305	370	245	100	120
Future Volume (vph)	85	385	30	115	600	255	75	305	370	245	100	120
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	10.0	39.0	39.0	11.0	40.0	40.0	9.6	34.0	34.0	16.0	40.4	40.4
Total Split (%)	10.0%	39.0%	39.0%	11.0%	40.0%	40.0%	9.6%	34.0%	34.0%	16.0%	40.4%	40.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	25.2	20.4	20.4	26.6	21.1	21.1	20.5	14.7	14.7	31.9	23.6	23.6
Actuated g/C Ratio	0.35	0.28	0.28	0.37	0.29	0.29	0.28	0.20	0.20	0.44	0.33	0.33
v/c Ratio	0.35	0.43	0.06	0.33	0.62	0.44	0.24	0.52	0.81	0.60	0.10	0.22
Control Delay	18.3	24.0	0.2	17.0	26.1	7.5	17.1	29.5	23.0	21.4	20.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	24.0	0.2	17.0	26.1	7.5	17.1	29.5	23.0	21.4	20.9	4.9
LOS	B	C	A	B	C	A	B	C	C	C	C	A
Approach Delay		21.5			20.1			25.0			17.1	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 72.2

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.4

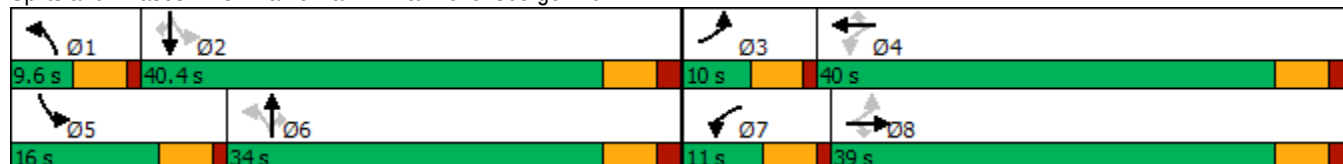
Intersection LOS: C

Intersection Capacity Utilization 62.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background
Timing Plan: PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	433	34	124	645	274	93	377	457	278	114	136
v/c Ratio	0.35	0.43	0.06	0.33	0.62	0.44	0.24	0.52	0.81	0.60	0.10	0.22
Control Delay	18.3	24.0	0.2	17.0	26.1	7.5	17.1	29.5	23.0	21.4	20.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	24.0	0.2	17.0	26.1	7.5	17.1	29.5	23.0	21.4	20.9	4.9
Queue Length 50th (ft)	24	83	0	32	130	12	24	81	62	82	20	0
Queue Length 95th (ft)	65	151	0	82	229	74	56	125	145	167	43	34
Internal Link Dist (ft)		961			958			546			879	
Turn Bay Length (ft)	315		315	115		110	75		300	340		340
Base Capacity (vph)	282	1736	876	388	1788	907	398	1472	828	483	1809	868
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.25	0.04	0.32	0.36	0.30	0.23	0.26	0.55	0.58	0.06	0.16
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Prairie Hawk Dr & Wolfensberger Rd

Year 2040 Background

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	85	385	30	115	600	255	75	305	370	245	100	120
Future Volume (vph)	85	385	30	115	600	255	75	305	370	245	100	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1769	3539	1583	1770	3539	1562	1769	3539	1563	1769	3539	1563
Flt Permitted	0.30	1.00	1.00	0.44	1.00	1.00	0.68	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	552	3539	1583	824	3539	1562	1266	3539	1563	701	3539	1563
Peak-hour factor, PHF	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Adj. Flow (vph)	96	433	34	124	645	274	93	377	457	278	114	136
RTOR Reduction (vph)	0	0	25	0	0	170	0	0	237	0	0	93
Lane Group Flow (vph)	96	433	9	124	645	104	93	377	220	278	114	43
Confl. Peds. (#/hr)	2					2	1		1	1		1
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Actuated Green, G (s)	24.1	20.4	20.4	25.5	21.1	21.1	19.7	16.3	16.3	32.0	23.6	23.6
Effective Green, g (s)	24.1	20.4	20.4	25.5	21.1	21.1	19.7	16.3	16.3	32.0	23.6	23.6
Actuated g/C Ratio	0.33	0.28	0.28	0.35	0.29	0.29	0.27	0.22	0.22	0.43	0.32	0.32
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	1.0	3.0	3.0	1.0	3.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0
Lane Grp Cap (vph)	241	978	437	341	1011	446	361	781	345	458	1131	499
v/s Ratio Prot	0.02	0.12		c0.02	c0.18		0.01	0.11		c0.09	0.03	
v/s Ratio Perm	0.11		0.01	0.10		0.07	0.06		0.14	c0.17		0.03
v/c Ratio	0.40	0.44	0.02	0.36	0.64	0.23	0.26	0.48	0.64	0.61	0.10	0.09
Uniform Delay, d1	17.9	22.0	19.4	17.0	23.0	20.2	20.9	25.1	26.1	14.4	17.6	17.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.3	0.0	0.2	1.3	0.3	0.1	0.2	2.8	1.6	0.0	0.0
Delay (s)	18.3	22.3	19.5	17.3	24.3	20.4	21.1	25.2	28.9	16.0	17.7	17.6
Level of Service	B	C	B	B	C	C	C	C	C	B	B	B
Approach Delay (s)		21.5			22.5			26.6			16.7	
Approach LOS		C			C			C			B	
Intersection Summary												
HCM 2000 Control Delay			22.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			73.8			Sum of lost time (s)			22.0			
Intersection Capacity Utilization			62.9%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Timings

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	289	1101	664	1100	159	2	130
Future Volume (vph)	289	1101	664	1100	159	2	130
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			8	
Permitted Phases	2			6	8		8
Detector Phase	5	2	6	6	8	8	8
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	20.0	67.0	47.0	47.0	23.0	23.0	23.0
Total Split (%)	22.2%	74.4%	52.2%	52.2%	25.6%	25.6%	25.6%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	62.0	61.0	42.0	42.0	18.0	18.0	18.0
Actuated g/C Ratio	0.69	0.68	0.47	0.47	0.20	0.20	0.20
v/c Ratio	0.88	0.35	0.81	0.60	0.32	0.32	0.26
Control Delay	47.1	6.4	20.4	4.3	34.0	25.1	8.6
Queue Delay	1.5	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	7.7	20.4	4.3	34.0	25.1	8.6
LOS	D	A	C	A	C	C	A
Approach Delay		16.2	15.4			22.9	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 16.4

Intersection LOS: B

Intersection Capacity Utilization 87.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	314	1197	1320	598	109	107	100
v/c Ratio	0.88	0.35	0.81	0.60	0.32	0.32	0.26
Control Delay	47.1	6.4	20.4	4.3	34.0	25.1	8.6
Queue Delay	1.5	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	7.7	20.4	4.3	34.0	25.1	8.6
Queue Length 50th (ft)	120	91	274	0	55	40	0
Queue Length 95th (ft)	#260	113	375	62	107	92	43
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	377	3446	1638	991	336	335	380
Starvation Cap Reductn	12	1943	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.80	0.81	0.60	0.32	0.32	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	289	1101	0	0	664	1100	159	2	130	0	0	0
Future Volume (veh/h)	289	1101	0	0	664	1100	159	2	130	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	314	1197	0	0	722	1196	218	0	95			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	352	3461	0	0	920	1560	713	0	317			
Arrive On Green	0.13	0.68	0.00	0.00	0.49	0.49	0.20	0.00	0.20			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	314	1197	0	0	722	1196	218	0	95			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	9.4	8.9	0.0	0.0	28.7	27.7	4.7	0.0	4.6			
Cycle Q Clear(g_c), s	9.4	8.9	0.0	0.0	28.7	27.7	4.7	0.0	4.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	352	3461	0	0	920	1560	713	0	317			
V/C Ratio(X)	0.89	0.35	0.00	0.00	0.78	0.77	0.31	0.00	0.30			
Avail Cap(c_a), veh/h	417	3461	0	0	920	1560	713	0	317			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.89	0.89	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	23.1	6.1	0.0	0.0	18.9	18.6	30.7	0.0	30.6			
Incr Delay (d2), s/veh	17.0	0.2	0.0	0.0	6.7	3.7	1.1	0.0	2.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.2	2.8	0.0	0.0	13.3	10.2	2.1	0.0	1.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	6.3	0.0	0.0	25.6	22.3	31.8	0.0	33.0			
LnGrp LOS	D	A	A	A	C	C	C	A	C			
Approach Vol, veh/h	1511			1918			313					
Approach Delay, s/veh	13.4			23.5			32.2					
Approach LOS	B			C			C					
Timer - Assigned Phs	2			5			6			8		
Phs Duration (G+Y+Rc), s	67.0			16.7			50.3			23.0		
Change Period (Y+Rc), s	6.0			5.0			6.0			5.0		
Max Green Setting (Gmax), s	61.0			15.0			41.0			18.0		
Max Q Clear Time (g_c+I1), s	10.9			11.4			30.7			6.7		
Green Ext Time (p_c), s	11.9			0.3			7.1			0.8		
Intersection Summary												
HCM 6th Ctrl Delay				20.1								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2040 w/Project
AM

	→	↖	←	↙	↓	↘
Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑	↑	↑↑	↑↑	↑	↑
Traffic Volume (vph)	681	105	722	710	5	411
Future Volume (vph)	681	105	722	710	5	411
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	32.0	11.0	43.0	37.0	37.0	
Total Split (%)	40.0%	13.8%	53.8%	46.3%	46.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	C-Max	None	C-Max	None	None	
Act Effect Green (s)	38.2	48.6	48.6	21.4	21.4	80.0
Actuated g/C Ratio	0.48	0.61	0.61	0.27	0.27	1.00
v/c Ratio	0.37	0.29	0.37	0.61	0.62	0.29
Control Delay	15.1	10.2	9.6	28.0	31.0	0.5
Queue Delay	0.0	0.0	1.3	0.0	0.0	0.0
Total Delay	15.1	10.2	10.9	28.0	31.0	0.5
LOS	B	B	B	C	C	A
Approach Delay	15.1		10.8		18.6	
Approach LOS	B		B		B	

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 20 (25%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 15.2

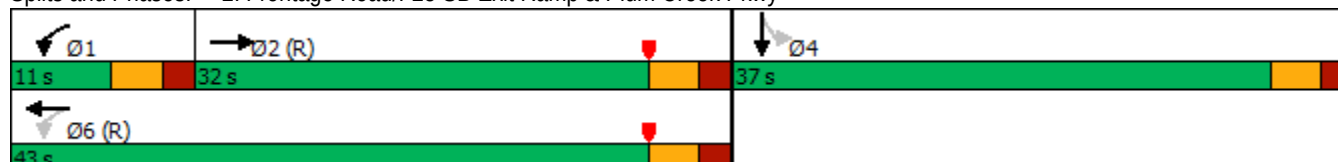
Intersection LOS: B

Intersection Capacity Utilization 87.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

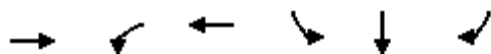


Queues

2040 w/Project

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

AM



Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	880	117	802	529	266	457
v/c Ratio	0.37	0.29	0.37	0.61	0.62	0.29
Control Delay	15.1	10.2	9.6	28.0	31.0	0.5
Queue Delay	0.0	0.0	1.3	0.0	0.0	0.0
Total Delay	15.1	10.2	10.9	28.0	31.0	0.5
Queue Length 50th (ft)	97	22	95	127	128	0
Queue Length 95th (ft)	158	56	172	152	181	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2400	398	2148	1288	646	1583
Starvation Cap Reductn	0	0	1064	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.29	0.74	0.41	0.41	0.29
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2040 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↑	↑↑					↑↑	↑	↑
Traffic Volume (vph)	0	681	111	105	722	0	0	0	0	710	5	411
Future Volume (vph)	0	681	111	105	722	0	0	0	0	710	5	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.98		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4979		1770	3539					3221	1616	1583
Flt Permitted		1.00		0.24	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4979		451	3539					3221	1616	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	757	123	117	802	0	0	0	0	789	6	457
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	858	0	117	802	0	0	0	0	529	266	457
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		37.3		48.6	48.6					21.4	21.4	80.0
Effective Green, g (s)		37.3		48.6	48.6					21.4	21.4	80.0
Actuated g/C Ratio		0.47		0.61	0.61					0.27	0.27	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2321		377	2149					861	432	1583
v/s Ratio Prot		0.17		0.02	0.23							
v/s Ratio Perm				0.16						0.16	0.16	0.29
v/c Ratio		0.37		0.31	0.37					0.61	0.62	0.29
Uniform Delay, d1		13.8		7.3	8.0					25.7	25.7	0.0
Progression Factor		1.00		1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5		0.5	0.5					1.3	2.6	0.5
Delay (s)		14.2		7.8	8.5					27.0	28.3	0.5
Level of Service		B		A	A					C	C	A
Approach Delay (s)		14.2			8.4			0.0			17.6	
Approach LOS		B			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			80.0			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			87.7%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	560	83	267	275	180	32	149	150	225	316	45
Future Volume (vph)	85	560	83	267	275	180	32	149	150	225	316	45
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	5.0	3.0	8.0	8.0	3.0	8.0	8.0
Minimum Split (s)	9.5	38.0	38.0	10.0	40.0	40.0	9.5	33.0	33.0	9.5	32.0	32.0
Total Split (s)	10.5	38.0	38.0	18.0	45.5	45.5	9.6	34.0	34.0	10.0	34.4	34.4
Total Split (%)	10.5%	38.0%	38.0%	18.0%	45.5%	45.5%	9.6%	34.0%	34.0%	10.0%	34.4%	34.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	23.3	17.5	17.5	36.3	27.4	27.4	15.3	10.1	10.1	19.6	16.8	16.8
Actuated g/C Ratio	0.34	0.26	0.26	0.54	0.41	0.41	0.23	0.15	0.15	0.29	0.25	0.25
v/c Ratio	0.23	0.65	0.16	0.71	0.25	0.30	0.12	0.30	0.40	0.78	0.42	0.10
Control Delay	10.6	26.1	0.6	19.1	14.8	3.5	19.1	28.2	6.1	41.0	25.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	26.1	0.6	19.1	14.8	3.5	19.1	28.2	6.1	41.0	25.5	0.4
LOS	B	C	A	B	B	A	B	C	A	D	C	A
Approach Delay		21.4			13.6			17.3			29.5	
Approach LOS		C			B			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 67.6

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.2

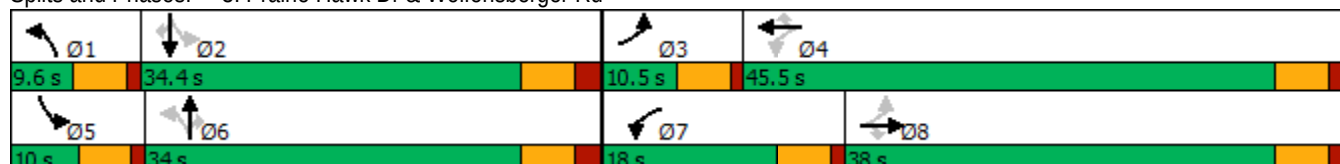
Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	90	596	88	347	357	234	34	160	161	262	367	52
v/c Ratio	0.23	0.65	0.16	0.71	0.25	0.30	0.12	0.30	0.40	0.78	0.42	0.10
Control Delay	10.6	26.1	0.6	19.1	14.8	3.5	19.1	28.2	6.1	41.0	25.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	26.1	0.6	19.1	14.8	3.5	19.1	28.2	6.1	41.0	25.5	0.4
Queue Length 50th (ft)	15	110	0	69	49	0	10	31	0	86	61	0
Queue Length 95th (ft)	41	178	0	117	75	23	31	63	32	#206	123	0
Internal Link Dist (ft)		961			958			581			879	
Turn Bay Length (ft)	315		315	115		110	75		300	340		340
Base Capacity (vph)	419	1698	851	499	2096	1020	284	1485	770	338	1507	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.35	0.10	0.70	0.17	0.23	0.12	0.11	0.21	0.78	0.24	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	560	83	267	275	180	32	149	150	225	316	45
Future Volume (veh/h)	85	560	83	267	275	180	32	149	150	225	316	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	596	88	347	357	234	34	160	161	262	367	52
Peak Hour Factor	0.94	0.94	0.94	0.77	0.77	0.77	0.93	0.93	0.93	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	918	408	492	1310	583	260	503	224	367	714	318
Arrive On Green	0.05	0.26	0.26	0.16	0.37	0.37	0.02	0.14	0.14	0.08	0.20	0.20
Sat Flow, veh/h	1781	3554	1581	1781	3554	1582	1781	3554	1582	1781	3554	1583
Grp Volume(v), veh/h	90	596	88	347	357	234	34	160	161	262	367	52
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1582	1781	1777	1582	1781	1777	1583
Q Serve(g_s), s	2.3	9.3	2.7	8.2	4.4	6.8	1.0	2.5	6.0	5.0	5.7	1.7
Cycle Q Clear(g_c), s	2.3	9.3	2.7	8.2	4.4	6.8	1.0	2.5	6.0	5.0	5.7	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	426	918	408	492	1310	583	260	503	224	367	714	318
V/C Ratio(X)	0.21	0.65	0.22	0.71	0.27	0.40	0.13	0.32	0.72	0.71	0.51	0.16
Avail Cap(c_a), veh/h	487	1834	816	572	2264	1008	353	1605	714	367	1628	725
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	20.5	18.1	13.2	13.7	14.5	22.2	23.9	25.4	23.2	22.1	20.5
Incr Delay (d2), s/veh	0.1	0.8	0.3	2.4	0.1	0.4	0.1	0.1	1.6	5.6	0.2	0.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	3.6	0.9	3.0	1.6	2.2	0.4	1.0	2.2	1.7	2.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	21.3	18.3	15.6	13.9	14.9	22.3	24.1	27.1	28.7	22.3	20.6
LnGrp LOS	B	C	B	B	B	B	C	C	C	C	C	C
Approach Vol, veh/h	774			938			355			681		
Approach Delay, s/veh	20.3			14.8			25.2			24.6		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	18.4	8.4	28.9	10.0	14.8	15.2	22.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0				
Max Green Setting (Gmax), s	4.6	28.4	5.5	39.5	5.0	28.0	13.0	32.0				
Max Q Clear Time (g_c+I1), s	3.0	7.7	4.3	8.8	7.0	8.0	10.2	11.3				
Green Ext Time (p_c), s	0.0	0.9	0.0	3.2	0.0	0.4	0.1	4.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									
Notes												

Timings

4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	363	70	230	569	59	130	160	300	87	180	26
Future Volume (vph)	27	363	70	230	569	59	130	160	300	87	180	26
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	13.0	25.0	25.0	20.0	32.0	32.0	22.1	22.5	20.0	22.5	22.9	22.9
Total Split (%)	14.4%	27.8%	27.8%	22.2%	35.6%	35.6%	24.6%	25.0%	22.2%	25.0%	25.4%	25.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	Max	Max	Max
Act Effect Green (s)	29.3	22.9	22.9	40.5	35.8	35.8	12.4	18.0	35.6	18.0	23.6	23.6
Actuated g/C Ratio	0.33	0.25	0.25	0.45	0.40	0.40	0.14	0.20	0.40	0.20	0.26	0.26
v/c Ratio	0.09	0.44	0.14	0.55	0.44	0.09	0.58	0.25	0.40	0.14	0.21	0.05
Control Delay	15.5	30.6	0.5	20.9	22.2	0.4	45.3	31.4	3.5	30.3	27.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	30.6	0.5	20.9	22.2	0.4	45.3	31.4	3.5	30.3	27.8	0.2
LOS	B	C	A	C	C	A	D	C	A	C	C	A
Approach Delay		25.2			20.4			20.3			26.1	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 22.1

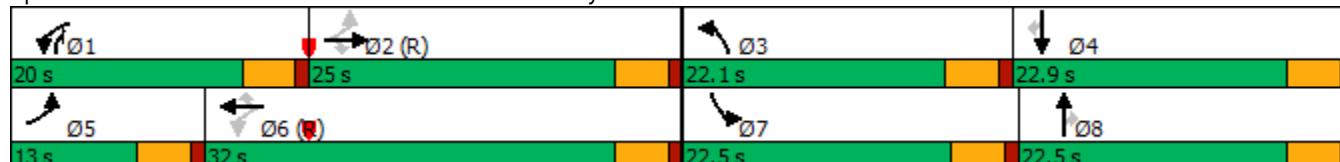
Intersection LOS: C

Intersection Capacity Utilization 50.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Prairie Hawk Dr & Plum Creek Pkwy



Queues
4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
AM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	29	395	76	250	618	64	141	174	326	95	196	28
v/c Ratio	0.09	0.44	0.14	0.55	0.44	0.09	0.58	0.25	0.40	0.14	0.21	0.05
Control Delay	15.5	30.6	0.5	20.9	22.2	0.4	45.3	31.4	3.5	30.3	27.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	30.6	0.5	20.9	22.2	0.4	45.3	31.4	3.5	30.3	27.8	0.2
Queue Length 50th (ft)	9	100	0	88	118	0	76	44	0	23	45	0
Queue Length 95th (ft)	24	148	0	143	206	2	128	73	48	43	80	0
Internal Link Dist (ft)		574			922			624			375	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	365	901	538	487	1408	706	346	707	856	686	928	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.44	0.14	0.51	0.44	0.09	0.41	0.25	0.38	0.14	0.21	0.05
Intersection Summary												

HCM 6th Signalized Intersection Summary

4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	363	70	230	569	59	130	160	300	87	180	26
Future Volume (veh/h)	27	363	70	230	569	59	130	160	300	87	180	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	395	76	250	618	0	141	174	326	95	196	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	1000	446	470	1323		176	707	505	691	1066	476
Arrive On Green	0.03	0.28	0.28	0.12	0.37	0.00	0.10	0.20	0.20	0.20	0.30	0.30
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	29	395	76	250	618	0	141	174	326	95	196	28
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.0	8.1	3.3	8.5	11.9	0.0	7.0	3.7	15.9	2.0	3.7	1.1
Cycle Q Clear(g_c), s	1.0	8.1	3.3	8.5	11.9	0.0	7.0	3.7	15.9	2.0	3.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	324	1000	446	470	1323		176	707	505	691	1066	476
V/C Ratio(X)	0.09	0.40	0.17	0.53	0.47		0.80	0.25	0.65	0.14	0.18	0.06
Avail Cap(c_a), veh/h	442	1000	446	563	1323		348	711	507	691	1066	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	26.1	24.4	18.2	21.5	0.0	39.7	30.4	26.3	29.6	23.3	22.4
Incr Delay (d2), s/veh	0.1	1.2	0.8	0.9	1.2	0.0	8.1	0.2	2.8	0.4	0.4	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.4	3.4	1.3	3.3	4.7	0.0	3.4	1.6	6.1	0.9	1.5	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	27.3	25.2	19.1	22.6	0.0	47.7	30.5	29.1	30.0	23.7	22.7
LnGrp LOS	C	C	C	B	C		D	C	C	C	C	C
Approach Vol, veh/h		500			868	A		641			319	
Approach Delay, s/veh		26.7			21.6			33.6			25.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	29.8	13.4	31.5	7.1	38.0	22.5	22.4				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	15.5	20.5	17.6	18.4	8.5	27.5	18.0	18.0				
Max Q Clear Time (g_c+I1), s	10.5	10.1	9.0	5.7	3.0	13.9	4.0	17.9				
Green Ext Time (p_c), s	0.3	1.9	0.2	0.9	0.0	3.2	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			26.5									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	461	617	108	0	45
Future Vol, veh/h	0	461	617	108	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	501	671	117	0	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 336
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 660
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - - 660
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	660
HCM Lane V/C Ratio	-	-	-	0.074
HCM Control Delay (s)	-	-	-	10.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Timings

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	322	1883	842	955	186	5	210
Future Volume (vph)	322	1883	842	955	186	5	210
Turn Type	pm+pt	NA	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	6			4	
Permitted Phases	2			6	4		4
Detector Phase	5	2	6	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	10.0	10.0	10.0	5.0	5.0	5.0
Minimum Split (s)	10.0	31.0	24.0	24.0	40.0	40.0	40.0
Total Split (s)	22.0	73.0	51.0	51.0	27.0	27.0	27.0
Total Split (%)	22.0%	73.0%	51.0%	51.0%	27.0%	27.0%	27.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0	-2.0	-2.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max
Act Effect Green (s)	69.0	69.0	48.0	48.0	23.0	23.0	23.0
Actuated g/C Ratio	0.69	0.69	0.48	0.48	0.23	0.23	0.23
v/c Ratio	0.88	0.55	0.79	0.57	0.37	0.37	0.32
Control Delay	38.9	6.9	24.9	4.0	35.7	29.7	14.9
Queue Delay	22.2	3.2	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	10.0	24.9	4.0	35.7	29.7	14.9
LOS	E	B	C	A	D	C	B
Approach Delay		17.5	18.5			27.0	
Approach LOS		B	B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 83 (83%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 18.8

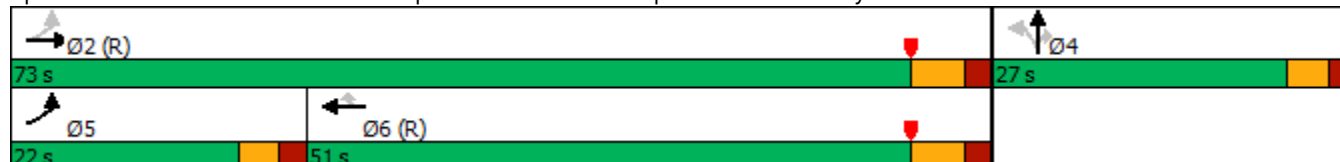
Intersection LOS: B

Intersection Capacity Utilization 99.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy



Queues

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	329	1921	1268	565	142	136	131
v/c Ratio	0.88	0.55	0.79	0.57	0.37	0.37	0.32
Control Delay	38.9	6.9	24.9	4.0	35.7	29.7	14.9
Queue Delay	22.2	3.2	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	10.0	24.9	4.0	35.7	29.7	14.9
Queue Length 50th (ft)	131	221	343	0	81	64	23
Queue Length 95th (ft)	#290	263	441	62	141	126	76
Internal Link Dist (ft)		181	431			480	
Turn Bay Length (ft)					350		150
Base Capacity (vph)	392	3508	1598	985	386	367	412
Starvation Cap Reductn	65	1452	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.93	0.79	0.57	0.37	0.37	0.32

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

2040 w/Project

1: I-25 NB Exit Ramp/I-25 NB Entrance Ramp & Plum Creek Pkwy

PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			 			 				
Traffic Volume (veh/h)	322	1883	0	0	842	955	186	5	210	0	0	0
Future Volume (veh/h)	322	1883	0	0	842	955	186	5	210	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach	No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	329	1921	0	0	792	1018	262	0	140			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	367	3523	0	0	941	1595	819	0	365			
Arrive On Green	0.29	1.00	0.00	0.00	0.50	0.50	0.23	0.00	0.23			
Sat Flow, veh/h	1781	5274	0	0	1870	3170	3563	0	1585			
Grp Volume(v), veh/h	329	1921	0	0	792	1018	262	0	140			
Grp Sat Flow(s),veh/h/ln	1781	1702	0	0	1870	1585	1781	0	1585			
Q Serve(g_s), s	11.3	0.0	0.0	0.0	36.5	23.5	6.1	0.0	7.5			
Cycle Q Clear(g_c), s	11.3	0.0	0.0	0.0	36.5	23.5	6.1	0.0	7.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	367	3523	0	0	941	1595	819	0	365			
V/C Ratio(X)	0.90	0.55	0.00	0.00	0.84	0.64	0.32	0.00	0.38			
Avail Cap(c_a), veh/h	426	3523	0	0	941	1595	819	0	365			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.8	0.0	0.0	0.0	21.4	18.2	32.0	0.0	32.5			
Incr Delay (d2), s/veh	14.6	0.4	0.0	0.0	9.0	2.0	1.0	0.0	3.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.7	0.1	0.0	0.0	17.3	8.6	2.7	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	0.4	0.0	0.0	30.4	20.2	33.0	0.0	35.6			
LnGrp LOS	D	A	A	A	C	C	C	A	D			
Approach Vol, veh/h	2250			1810			402					
Approach Delay, s/veh	5.5			24.7			33.9					
Approach LOS	A			C			C					
Timer - Assigned Phs	2			4		5	6					
Phs Duration (G+Y+Rc), s	73.0			27.0		18.7	54.3					
Change Period (Y+Rc), s	6.0			5.0		5.0	6.0					
Max Green Setting (Gmax), s	67.0			22.0		17.0	45.0					
Max Q Clear Time (g_c+I1), s	2.0			9.5		13.3	38.5					
Green Ext Time (p_c), s	28.2			1.1		0.4	4.8					
Intersection Summary												
HCM 6th Ctrl Delay	15.8											
HCM 6th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Timings 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2040 w/Project
PM

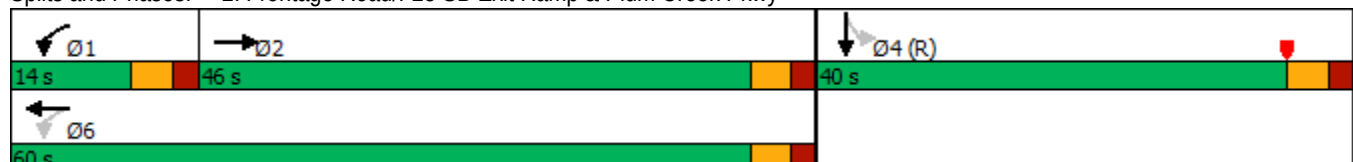
	→	↖	←	↗	↓	↙
Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑↑	↖	↑↑	↖↖	↓	↖
Traffic Volume (vph)	1030	155	832	1175	5	491
Future Volume (vph)	1030	155	832	1175	5	491
Turn Type	NA	pm+pt	NA	Perm	NA	Free
Protected Phases	2	1	6		4	
Permitted Phases		6		4		Free
Detector Phase	2	1	6	4	4	
Switch Phase						
Minimum Initial (s)	10.0	5.0	10.0	5.0	5.0	
Minimum Split (s)	30.0	10.0	30.0	10.0	10.0	
Total Split (s)	46.0	14.0	60.0	40.0	40.0	
Total Split (%)	46.0%	14.0%	60.0%	40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes				
Recall Mode	Max	None	Max	C-Max	C-Max	
Act Effect Green (s)	42.4	56.0	56.0	36.0	36.0	100.0
Actuated g/C Ratio	0.42	0.56	0.56	0.36	0.36	1.00
v/c Ratio	0.63	0.62	0.44	0.71	0.70	0.32
Control Delay	26.5	27.6	4.0	31.5	35.3	0.5
Queue Delay	0.0	0.3	1.1	1.7	3.0	0.0
Total Delay	26.5	27.9	5.1	33.2	38.3	0.5
LOS	C	C	A	C	D	A
Approach Delay	26.5		8.7		24.8	
Approach LOS	C		A		C	

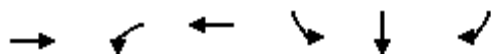
Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 40 (40%), Referenced to phase 4:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 21.3
 Intersection Capacity Utilization 99.0%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy





Lane Group	EBT	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	1339	161	867	820	409	511
v/c Ratio	0.63	0.62	0.44	0.71	0.70	0.32
Control Delay	26.5	27.6	4.0	31.5	35.3	0.5
Queue Delay	0.0	0.3	1.1	1.7	3.0	0.0
Total Delay	26.5	27.9	5.1	33.2	38.3	0.5
Queue Length 50th (ft)	304	24	23	243	242	0
Queue Length 95th (ft)	347	m59	46	318	367	0
Internal Link Dist (ft)	437		181		388	
Turn Bay Length (ft)						160
Base Capacity (vph)	2136	265	1981	1159	581	1583
Starvation Cap Reductn	0	7	816	0	0	0
Spillback Cap Reductn	3	0	0	183	91	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.62	0.74	0.84	0.83	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Frontage Road/I-25 SB Exit Ramp & Plum Creek Pkwy

2040 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑		↖	↑↑					↖↖	↖	↖
Traffic Volume (vph)	0	1030	255	155	832	0	0	0	0	1175	5	491
Future Volume (vph)	0	1030	255	155	832	0	0	0	0	1175	5	491
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91		1.00	0.95					0.91	0.91	1.00
Frt		0.97		1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4934		1770	3539					3221	1615	1583
Flt Permitted		1.00		0.10	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4934		192	3539					3221	1615	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1073	266	161	867	0	0	0	0	1224	5	511
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1296	0	161	867	0	0	0	0	820	409	511
Turn Type		NA		pm+pt	NA					Perm	NA	Free
Protected Phases		2		1	6						4	
Permitted Phases				6						4		Free
Actuated Green, G (s)		41.4		55.0	55.0					35.0	35.0	100.0
Effective Green, g (s)		42.4		56.0	56.0					36.0	36.0	100.0
Actuated g/C Ratio		0.42		0.56	0.56					0.36	0.36	1.00
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		2092		259	1981					1159	581	1583
v/s Ratio Prot		0.26		c0.06	0.24							
v/s Ratio Perm				c0.29						c0.25	0.25	0.32
v/c Ratio		0.62		0.62	0.44					0.71	0.70	0.32
Uniform Delay, d1		22.5		14.9	12.8					27.5	27.4	0.0
Progression Factor		1.18		1.42	0.27					1.00	1.00	1.00
Incremental Delay, d2		1.3		3.2	0.5					3.7	7.0	0.5
Delay (s)		27.7		24.3	4.0					31.1	34.4	0.5
Level of Service		C		C	A					C	C	A
Approach Delay (s)		27.7			7.2			0.0			22.9	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			20.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)				12.0		
Intersection Capacity Utilization			99.0%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	385	75	178	600	255	121	397	480	245	191	120
Future Volume (vph)	85	385	75	178	600	255	121	397	480	245	191	120
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	Perm
Protected Phases	3	8		7	4		1	6	7	5	2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	1	6	6 7	5	2	2
Switch Phase												
Minimum Initial (s)	3.0	5.0	5.0	5.0	5.0	5.0	3.0	8.0	5.0	3.0	5.0	5.0
Minimum Split (s)	9.5	38.0	38.0	11.0	40.0	40.0	9.0	33.0	11.0	9.5	32.0	32.0
Total Split (s)	9.4	35.6	35.6	11.4	37.6	37.6	13.0	39.0	11.4	14.0	40.0	40.0
Total Split (%)	9.4%	35.6%	35.6%	11.4%	37.6%	37.6%	13.0%	39.0%	11.4%	14.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	28.1	22.5	22.5	32.8	27.2	27.2	37.2	28.0	35.7	39.5	29.2	29.2
Actuated g/C Ratio	0.33	0.26	0.26	0.39	0.32	0.32	0.44	0.33	0.42	0.46	0.34	0.34
v/c Ratio	0.37	0.46	0.16	0.54	0.57	0.42	0.26	0.42	0.77	0.62	0.18	0.21
Control Delay	21.9	28.2	0.6	24.8	27.8	7.3	14.1	23.7	20.5	21.2	20.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	28.2	0.6	24.8	27.8	7.3	14.1	23.7	20.5	21.2	20.5	3.0
LOS	C	C	A	C	C	A	B	C	C	C	C	A
Approach Delay		23.4			22.2			21.0			17.0	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85

Natural Cycle: 95

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.1

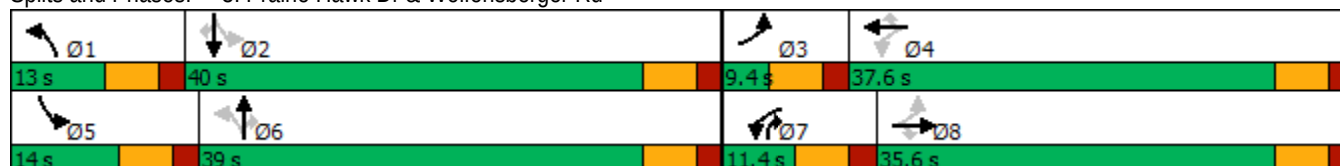
Intersection LOS: C

Intersection Capacity Utilization 64.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Prairie Hawk Dr & Wolfensberger Rd



Queues
3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	96	433	84	191	645	274	149	490	593	278	217	136
v/c Ratio	0.37	0.46	0.16	0.54	0.57	0.42	0.26	0.42	0.77	0.62	0.18	0.21
Control Delay	21.9	28.2	0.6	24.8	27.8	7.3	14.1	23.7	20.5	21.2	20.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	28.2	0.6	24.8	27.8	7.3	14.1	23.7	20.5	21.2	20.5	3.0
Queue Length 50th (ft)	34	106	0	71	164	15	43	107	167	86	42	0
Queue Length 95th (ft)	68	154	0	125	230	74	78	147	265	156	74	24
Internal Link Dist (ft)		961			958			581			879	
Turn Bay Length (ft)	315		315	115		110	75		300	340		340
Base Capacity (vph)	261	1356	707	353	1442	777	571	1502	844	446	1545	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.32	0.12	0.54	0.45	0.35	0.26	0.33	0.70	0.62	0.14	0.18
Intersection Summary												

HCM 6th Signalized Intersection Summary

3: Prairie Hawk Dr & Wolfensberger Rd

2040 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	85	385	75	178	600	255	121	397	480	245	191	120
Future Volume (veh/h)	85	385	75	178	600	255	121	397	480	245	191	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	433	84	191	645	274	149	490	593	278	217	136
Peak Hour Factor	0.89	0.89	0.89	0.93	0.93	0.93	0.81	0.81	0.81	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	865	385	351	945	420	617	1355	736	428	1429	637
Arrive On Green	0.06	0.24	0.24	0.08	0.27	0.27	0.09	0.38	0.38	0.11	0.40	0.40
Sat Flow, veh/h	1781	3554	1581	1781	3554	1581	1781	3554	1584	1781	3554	1584
Grp Volume(v), veh/h	96	433	84	191	645	274	149	490	593	278	217	136
Grp Sat Flow(s),veh/h/ln	1781	1777	1581	1781	1777	1581	1781	1777	1584	1781	1777	1584
Q Serve(g_s), s	3.5	9.3	3.8	7.2	14.5	13.7	4.3	8.8	28.5	8.3	3.5	5.0
Cycle Q Clear(g_c), s	3.5	9.3	3.8	7.2	14.5	13.7	4.3	8.8	28.5	8.3	3.5	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	865	385	351	945	420	617	1355	736	428	1429	637
V/C Ratio(X)	0.38	0.50	0.22	0.54	0.68	0.65	0.24	0.36	0.81	0.65	0.15	0.21
Avail Cap(c_a), veh/h	252	1262	562	351	1342	597	634	1398	755	428	1438	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	29.0	26.9	23.2	29.3	29.0	13.5	19.8	20.4	14.5	16.9	17.4
Incr Delay (d2), s/veh	0.9	0.4	0.3	1.7	0.9	1.7	0.2	0.2	6.3	3.4	0.0	0.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.5	3.9	1.4	3.1	6.0	5.2	1.7	3.6	10.9	3.6	1.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	29.4	27.2	24.9	30.2	30.7	13.7	19.9	26.7	17.9	17.0	17.6
LnGrp LOS	C	C	C	C	C	C	B	B	C	B	B	B
Approach Vol, veh/h		613			1110			1232			631	
Approach Delay, s/veh		28.4			29.4			22.4			17.5	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	39.8	9.4	27.7	14.0	37.9	11.4	25.7				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	7.0	34.0	3.4	31.6	8.0	33.0	5.4	29.6				
Max Q Clear Time (g_c+I1), s	6.3	7.0	5.5	16.5	10.3	30.5	9.2	11.3				
Green Ext Time (p_c), s	0.0	1.9	0.0	4.7	0.0	1.4	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay	24.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved changes to right turn type.

Timings

4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	571	155	290	929	98	165	200	200	270	220	38
Future Volume (vph)	37	571	155	290	929	98	165	200	200	270	220	38
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	9.5	9.5	22.5	22.5
Total Split (s)	9.5	26.1	26.1	22.0	38.6	38.6	26.4	22.5	22.0	29.4	25.5	25.5
Total Split (%)	9.5%	26.1%	26.1%	22.0%	38.6%	38.6%	26.4%	22.5%	22.0%	29.4%	25.5%	25.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	Max	Max
Act Effect Green (s)	28.9	23.4	23.4	44.1	38.4	38.4	15.8	29.6	50.3	14.3	28.1	28.1
Actuated g/C Ratio	0.29	0.23	0.23	0.44	0.38	0.38	0.16	0.30	0.50	0.14	0.28	0.28
v/c Ratio	0.23	0.75	0.34	0.84	0.74	0.16	0.64	0.21	0.25	0.60	0.24	0.07
Control Delay	21.1	42.7	7.2	38.3	25.0	2.4	49.3	27.9	6.5	45.0	29.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	42.7	7.2	38.3	25.0	2.4	49.3	27.9	6.5	45.0	29.7	0.3
LOS	C	D	A	D	C	A	D	C	A	D	C	A
Approach Delay		34.5			26.3			26.6			35.4	
Approach LOS		C			C			C			D	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 29.8

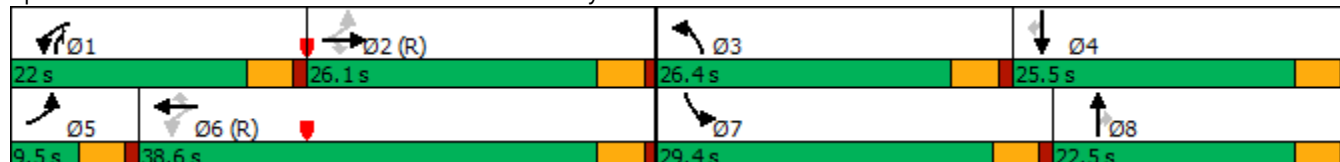
Intersection LOS: C

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Prairie Hawk Dr & Plum Creek Pkwy



Queues
4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
PM

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	621	168	315	1010	107	179	217	217	293	239	41
v/c Ratio	0.23	0.75	0.34	0.84	0.74	0.16	0.64	0.21	0.25	0.60	0.24	0.07
Control Delay	21.1	42.7	7.2	38.3	25.0	2.4	49.3	27.9	6.5	45.0	29.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	42.7	7.2	38.3	25.0	2.4	49.3	27.9	6.5	45.0	29.7	0.3
Queue Length 50th (ft)	14	197	0	111	324	9	108	54	26	91	62	0
Queue Length 95th (ft)	34	263	52	#268	393	24	168	89	71	128	102	0
Internal Link Dist (ft)		574			922			624			375	
Turn Bay Length (ft)	230		230	230		230	230		230	230		250
Base Capacity (vph)	171	827	498	395	1358	678	396	1046	881	871	992	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.75	0.34	0.80	0.74	0.16	0.45	0.21	0.25	0.34	0.24	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary

4: Prairie Hawk Dr & Plum Creek Pkwy

2040 w/Project
PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	571	155	290	929	98	165	200	200	270	220	38
Future Volume (veh/h)	37	571	155	290	929	98	165	200	200	270	220	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	40	621	168	315	1010	0	179	217	217	293	239	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1306	582	468	1639		223	799	566	399	764	341
Arrive On Green	0.04	0.37	0.37	0.13	0.46	0.00	0.13	0.22	0.22	0.12	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	40	621	168	315	1010	0	179	217	217	293	239	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.4	13.4	7.5	10.3	21.4	0.0	9.8	5.0	10.2	8.2	5.7	2.1
Cycle Q Clear(g_c), s	1.4	13.4	7.5	10.3	21.4	0.0	9.8	5.0	10.2	8.2	5.7	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	1306	582	468	1639		223	799	566	399	764	341
V/C Ratio(X)	0.14	0.48	0.29	0.67	0.62		0.80	0.27	0.38	0.73	0.31	0.12
Avail Cap(c_a), veh/h	308	1306	582	553	1639		399	799	566	878	764	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	24.2	22.4	16.2	20.3	0.0	42.5	32.0	23.9	42.7	33.0	31.6
Incr Delay (d2), s/veh	0.2	1.2	1.2	2.5	1.7	0.0	6.6	0.2	0.4	2.6	1.1	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.5	5.5	2.9	4.1	8.4	0.0	4.6	2.2	3.8	3.6	2.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	25.5	23.6	18.7	22.0	0.0	49.2	32.2	24.4	45.4	34.1	32.4
LnGrp LOS	B	C	C	B	C		D	C	C	D	C	C
Approach Vol, veh/h	829			1325			A			613		
Approach Delay, s/veh	24.8			21.2			34.4			39.7		
Approach LOS	C			C			C			D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	40.7	16.5	25.5	7.9	50.1	15.5	26.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	17.5	21.6	21.9	21.0	5.0	34.1	24.9	18.0				
Max Q Clear Time (g_c+I1), s	12.3	15.4	11.8	7.7	3.4	23.4	10.2	12.2				
Green Ext Time (p_c), s	0.4	2.3	0.3	1.2	0.0	4.7	0.9	1.0				

Intersection Summary

HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	763	844	287	0	171
Future Vol, veh/h	0	763	844	287	0	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	200	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	829	917	312	0	186

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 459
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 549
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 549
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.9
HCM LOS			B

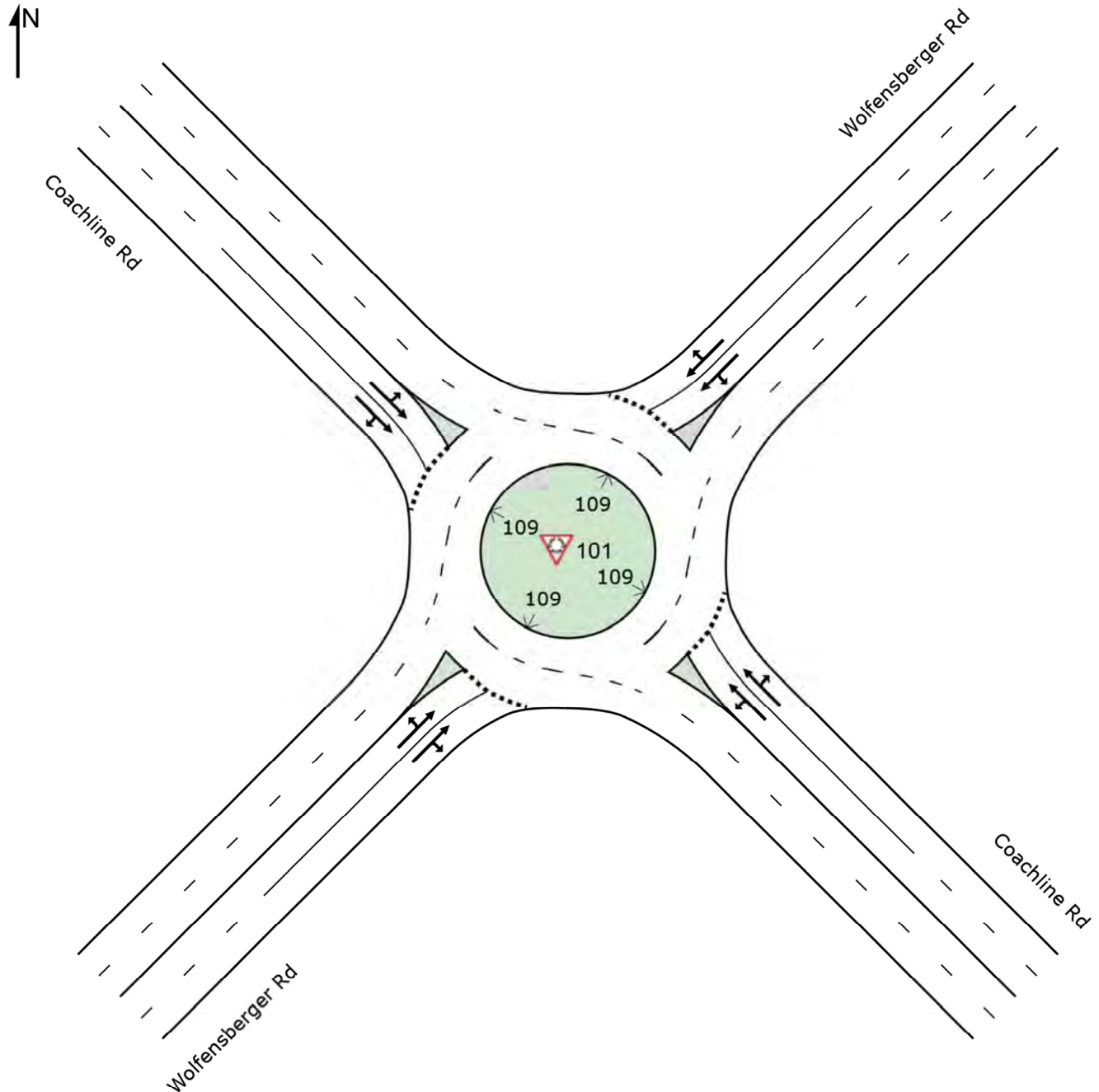
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	549
HCM Lane V/C Ratio	-	-	-	0.339
HCM Control Delay (s)	-	-	-	14.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	1.5

Intersection Capacity Worksheets (Rodel)

SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_EX AM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

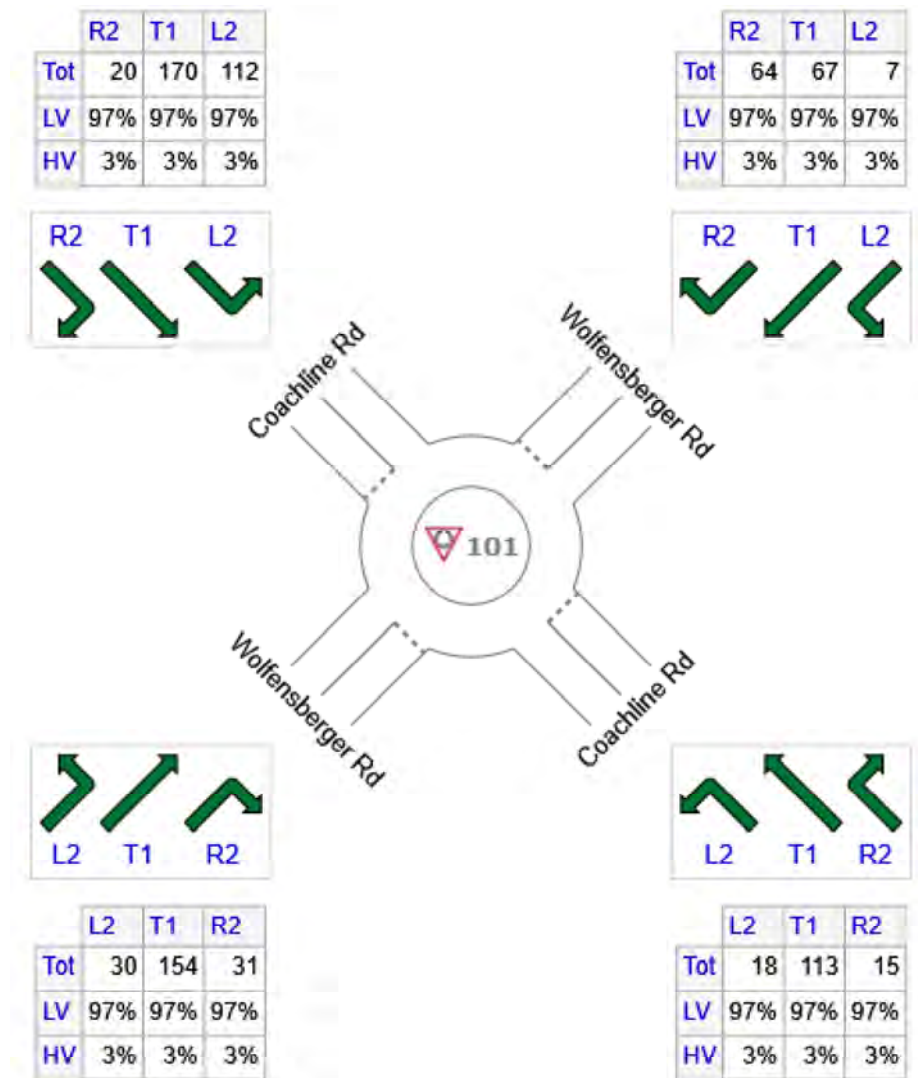
 **Site: 101 [Coachline & Wolfensberger_EX AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	146	142	4
NE: Wolfensberger Rd	138	134	4
NW: Coachline Rd	302	293	9
SW: Wolfensberger Rd	215	209	6
Total	801	777	24

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_EX AM]

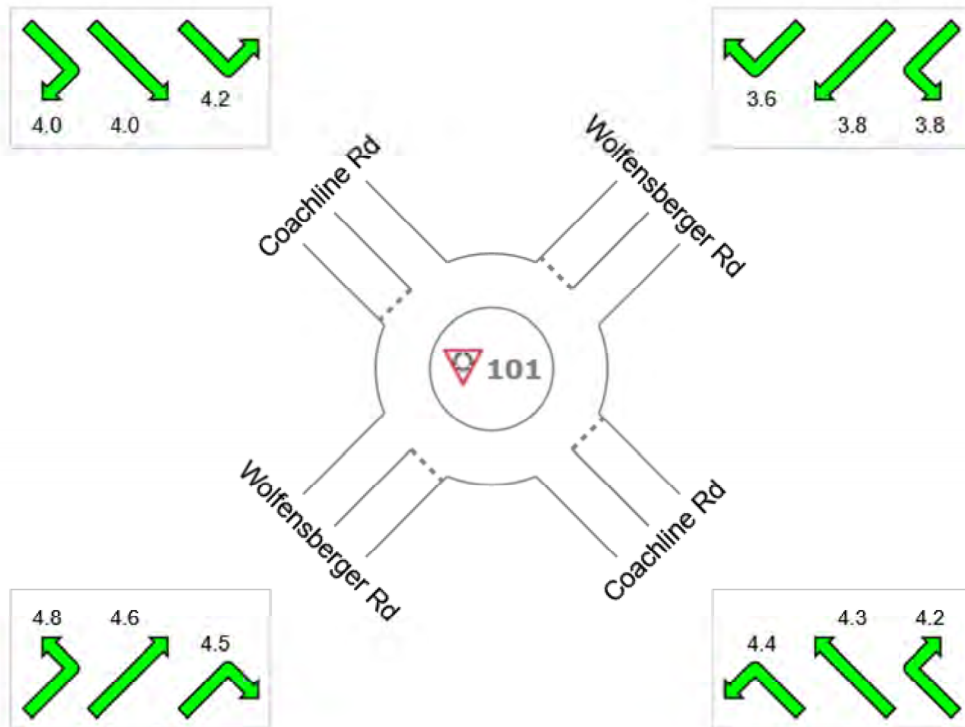
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.3	3.7	4.1	4.6	4.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_EX AM]

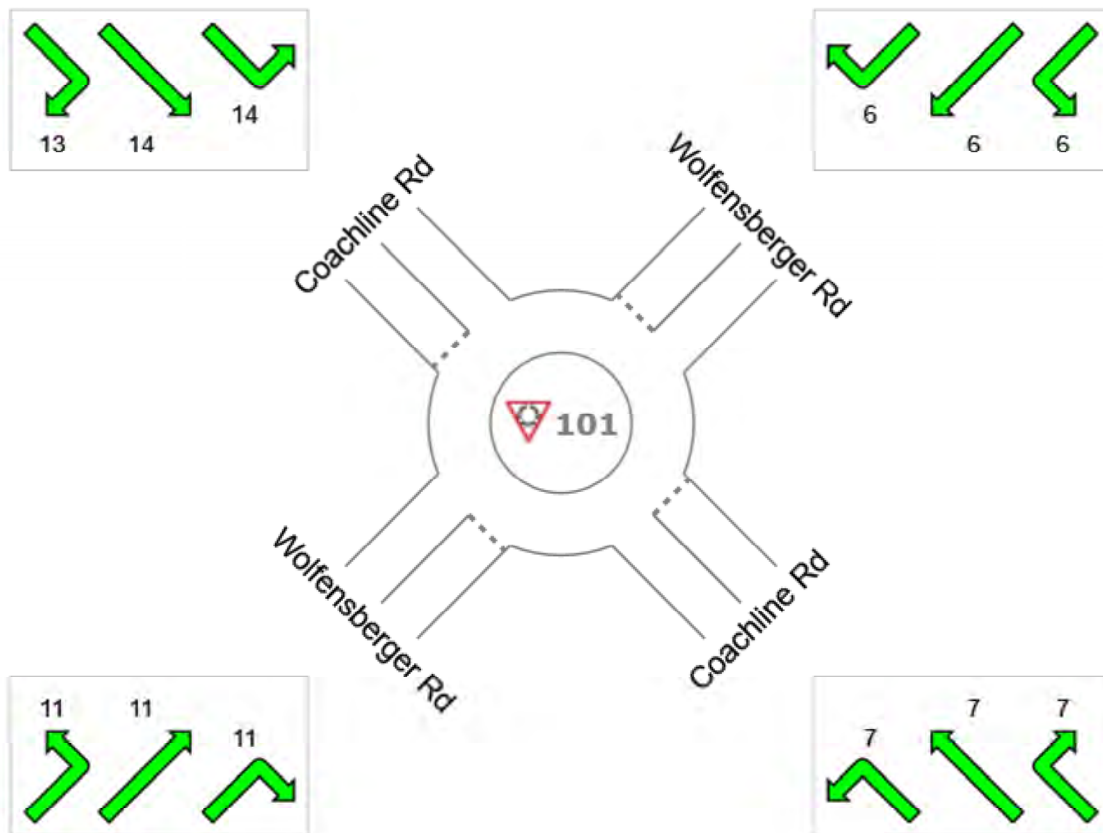
New Site

Site Category: (None)

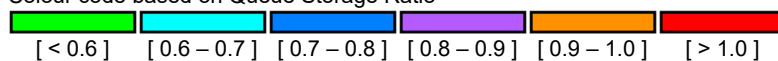
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	7	6	14	11	14



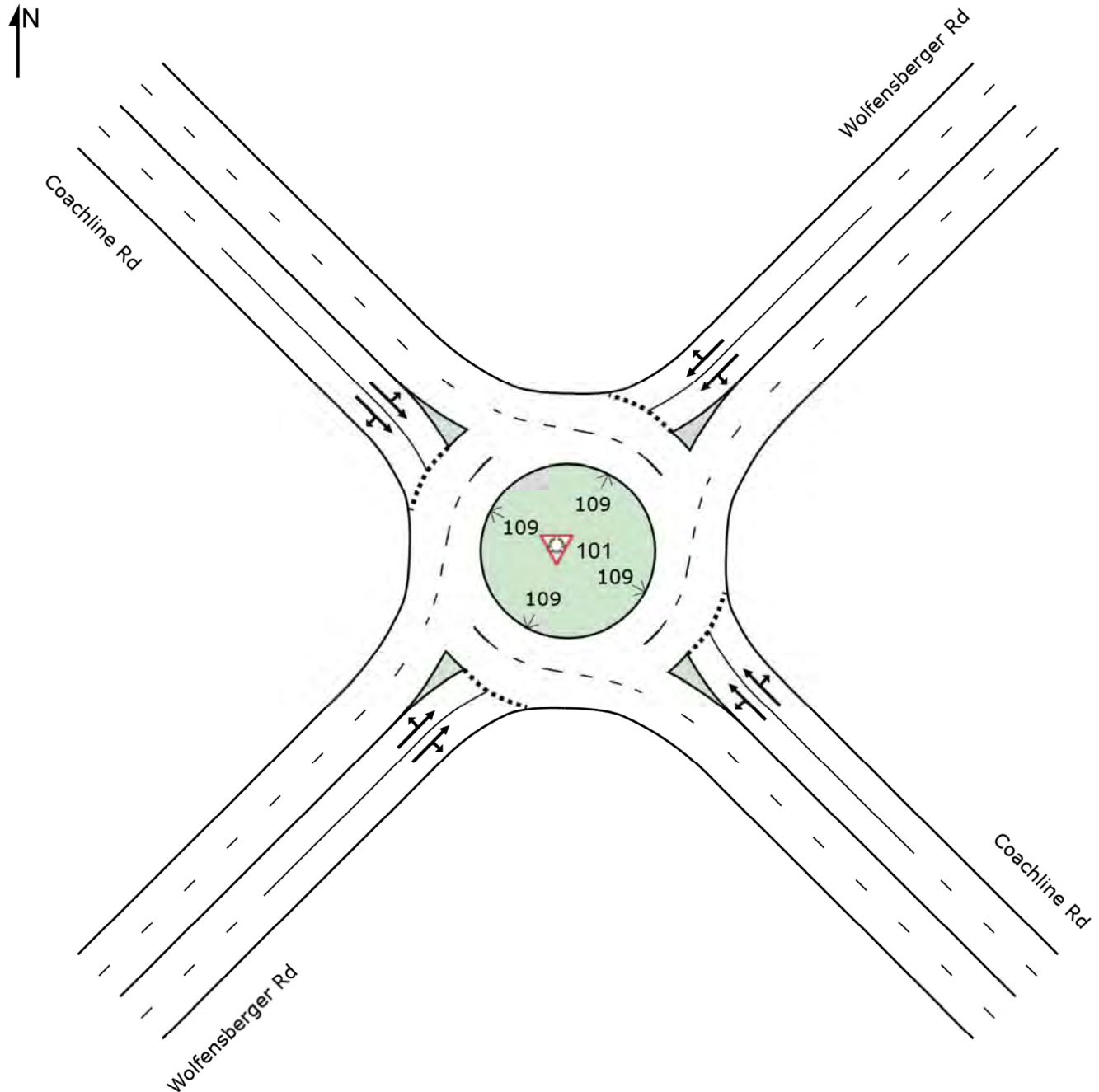
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_EX PM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_EX PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	31	126	87
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	116	136	17
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	14	105	42
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	40	196	22
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	258	250	8
NE: Wolfensberger Rd	269	261	8
NW: Coachline Rd	244	237	7
SW: Wolfensberger Rd	161	156	5
Total	932	904	28

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_EX PM]

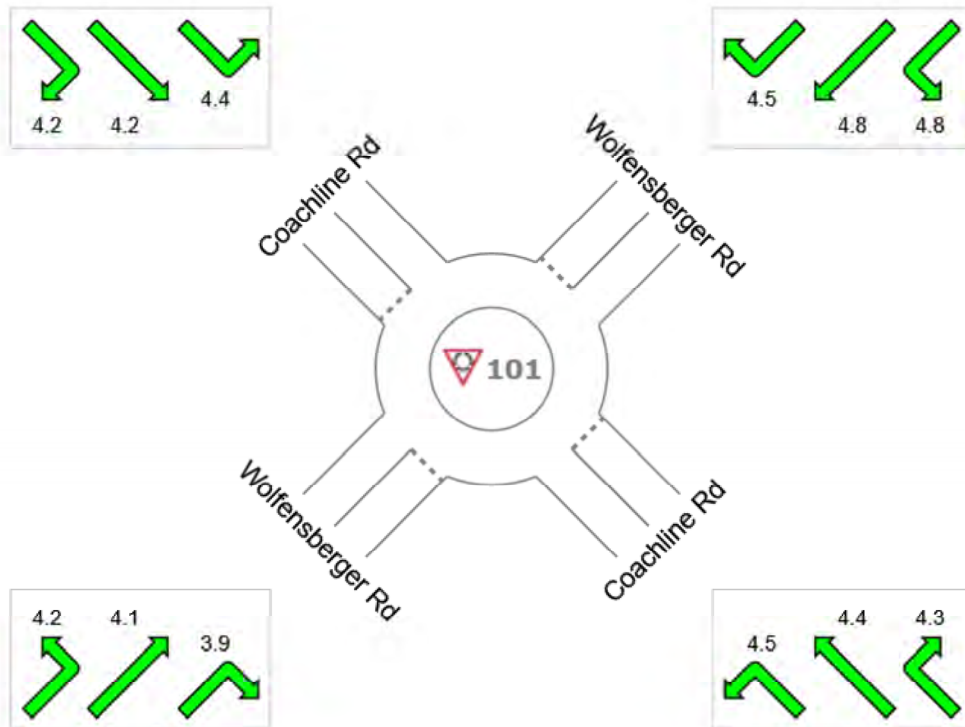
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.4	4.7	4.3	4.1	4.4
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

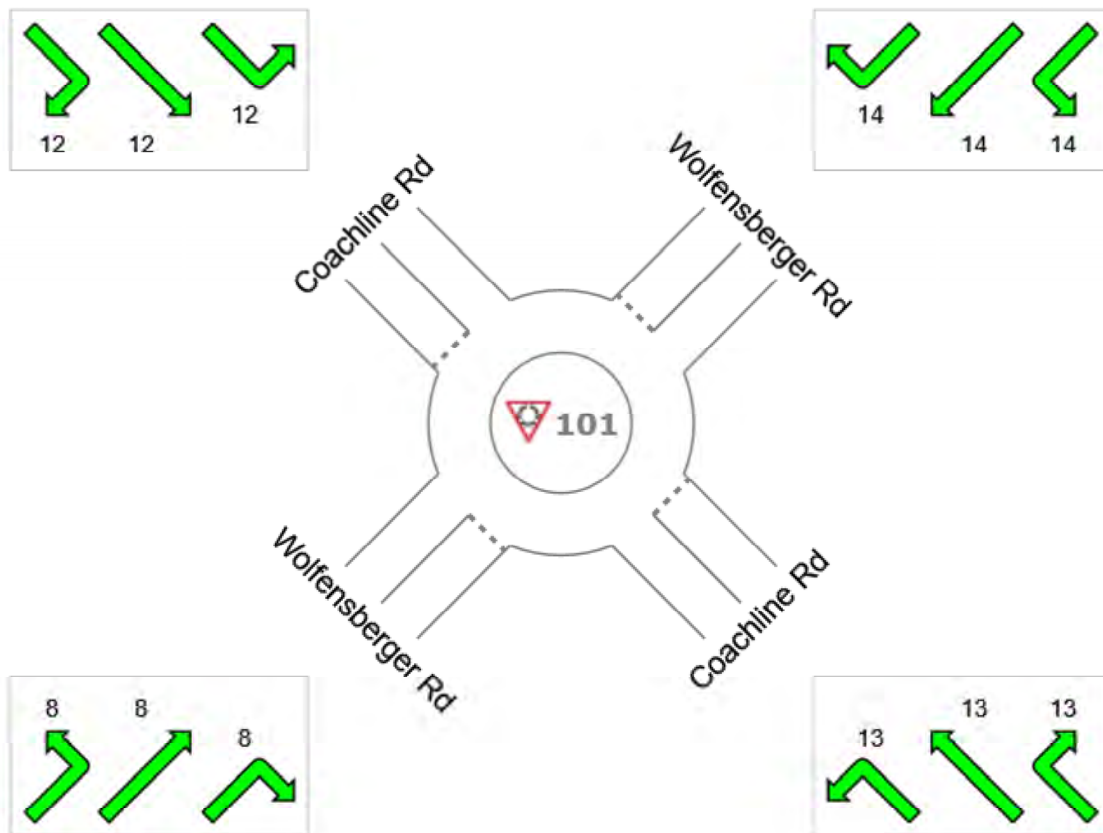
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_EX PM]**

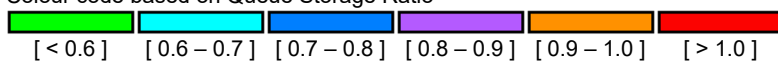
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	13	14	12	8	14



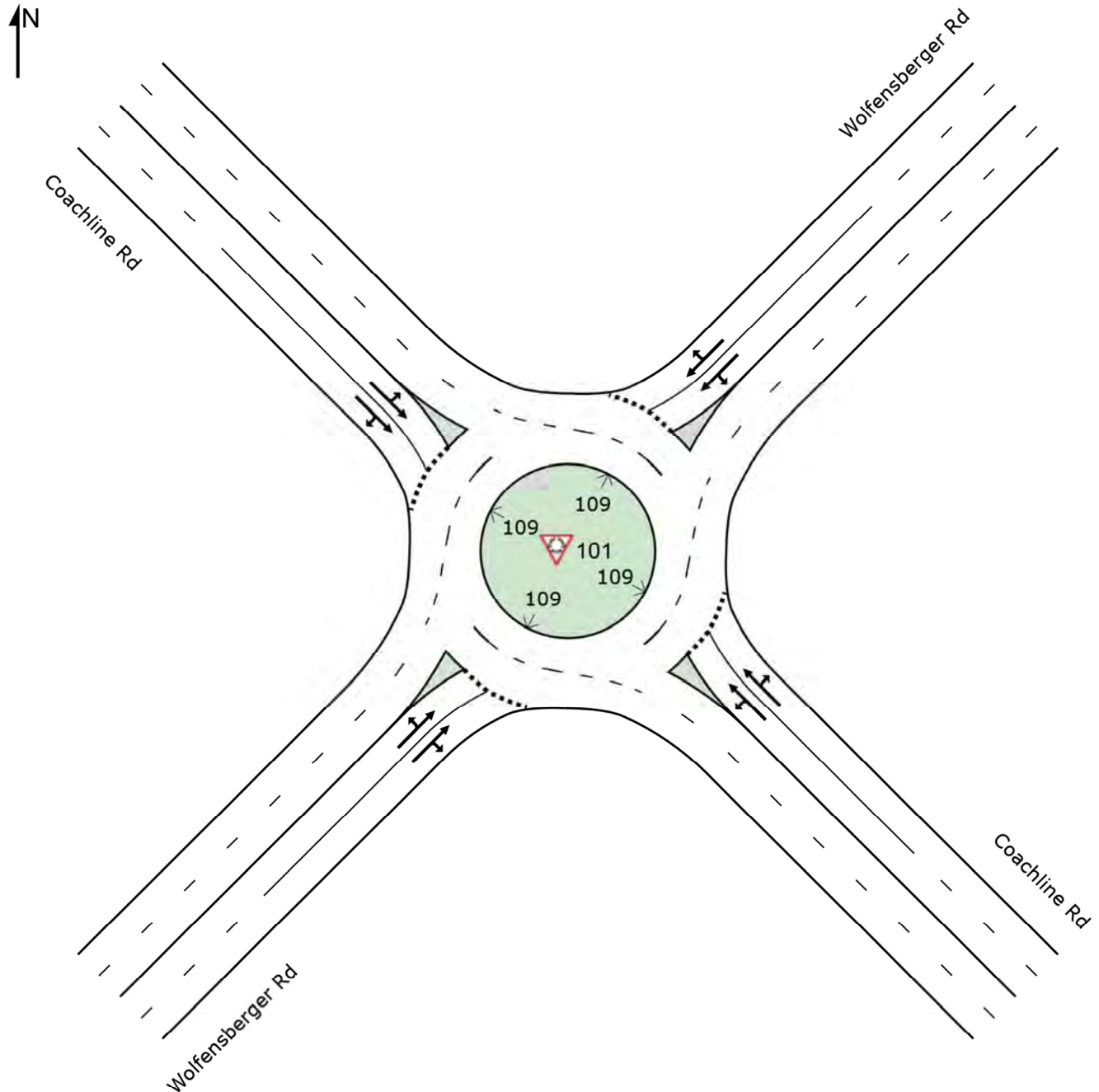
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_23 AM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

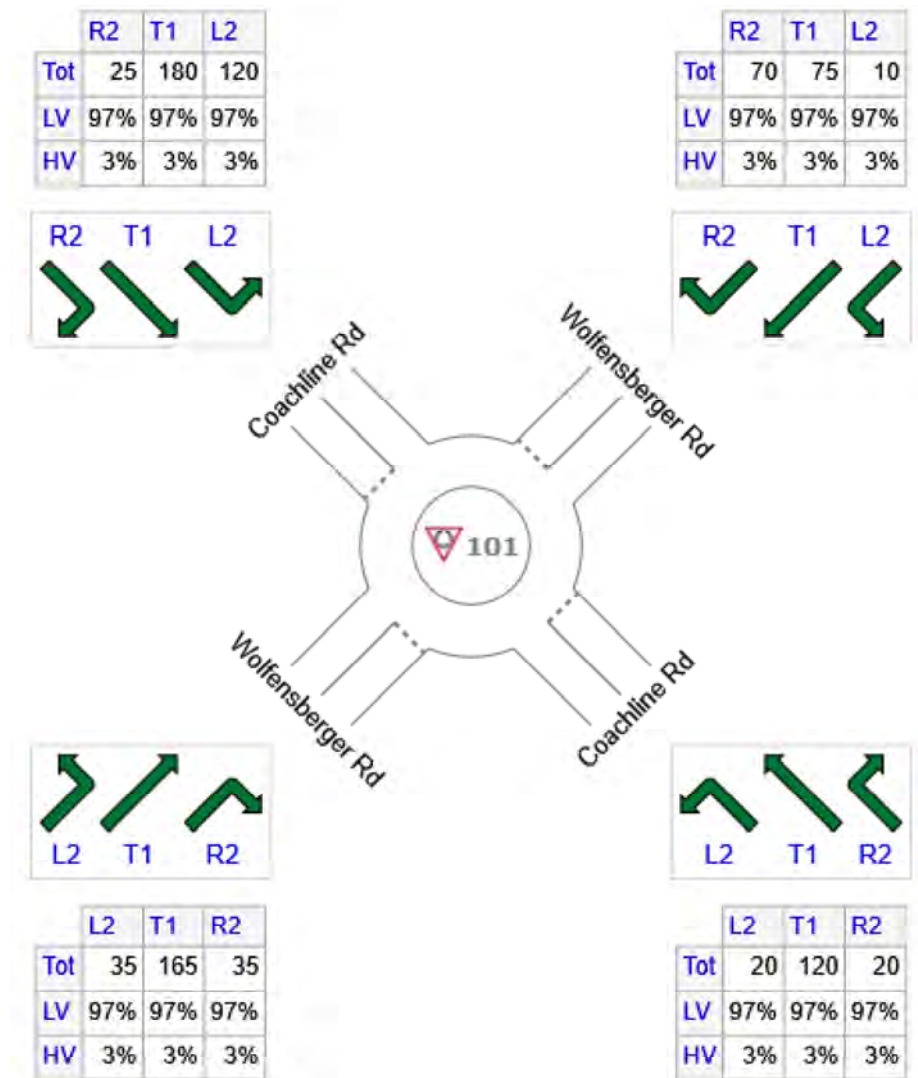
 **Site: 101 [Coachline & Wolfensberger_23 AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	160	155	5
NE: Wolfensberger Rd	155	150	5
NW: Coachline Rd	325	315	10
SW: Wolfensberger Rd	235	228	7
Total	875	849	26

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Tuesday, October 13, 2020 9:40:13 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\ML_RABs.sip8

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_23 AM]

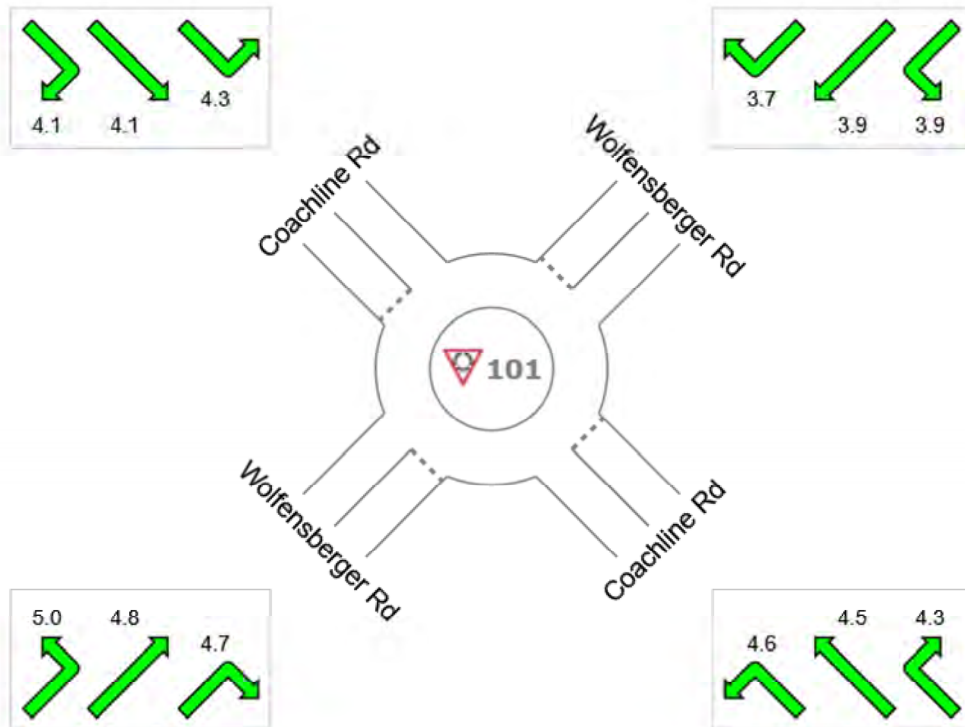
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.5	3.8	4.2	4.8	4.4
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_23 AM]

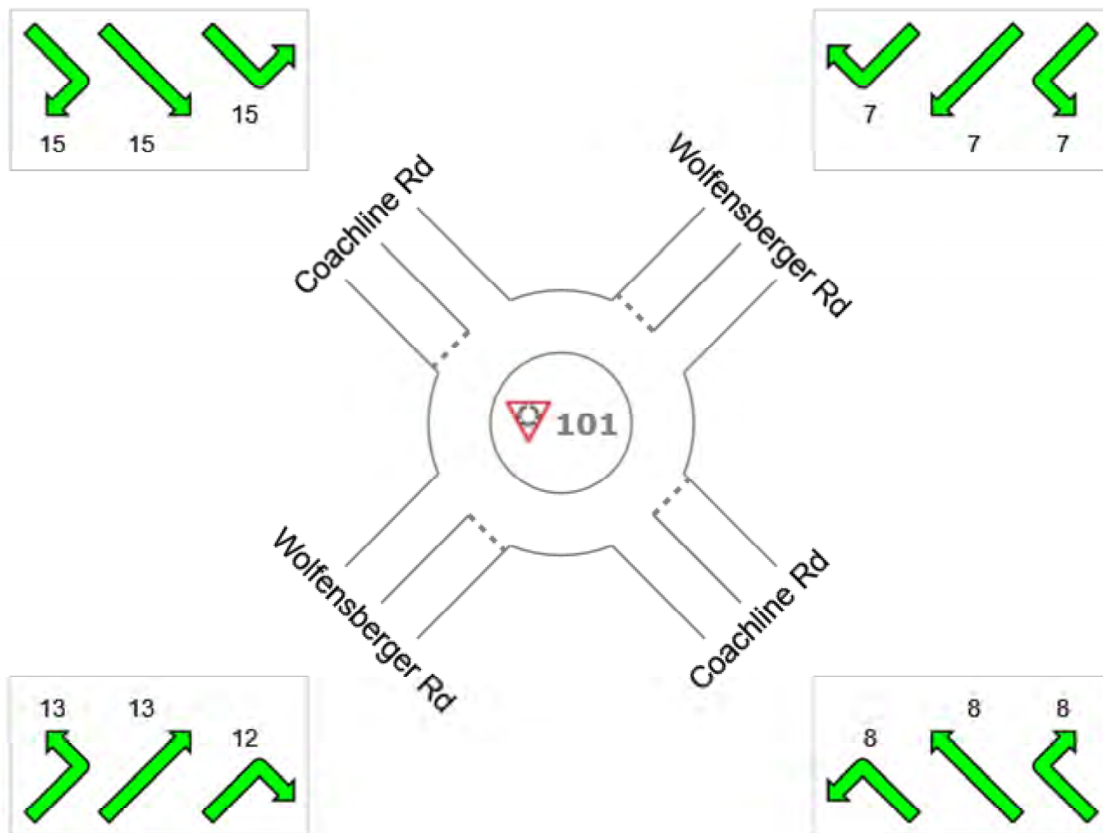
New Site

Site Category: (None)

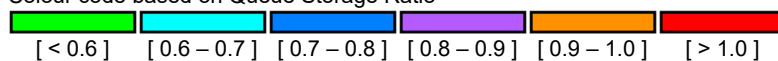
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	8	7	15	13	15



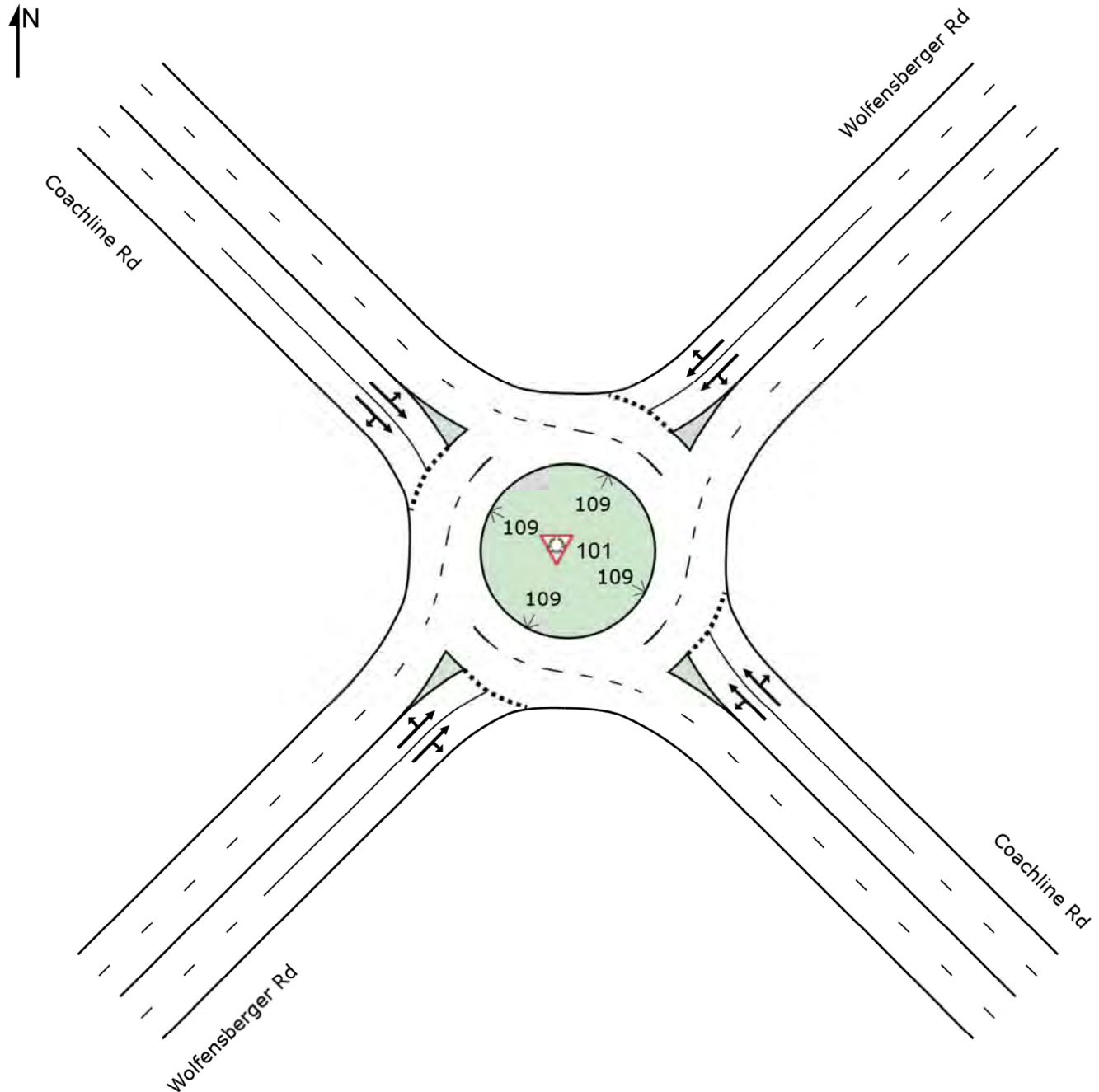
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_23 PM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_23 PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	35	135	95
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	125	145	20
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	15	115	45
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	45	210	25
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	280	272	8
NE: Wolfensberger Rd	290	281	9
NW: Coachline Rd	265	257	8
SW: Wolfensberger Rd	175	170	5
Total	1010	980	30

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_23 PM]

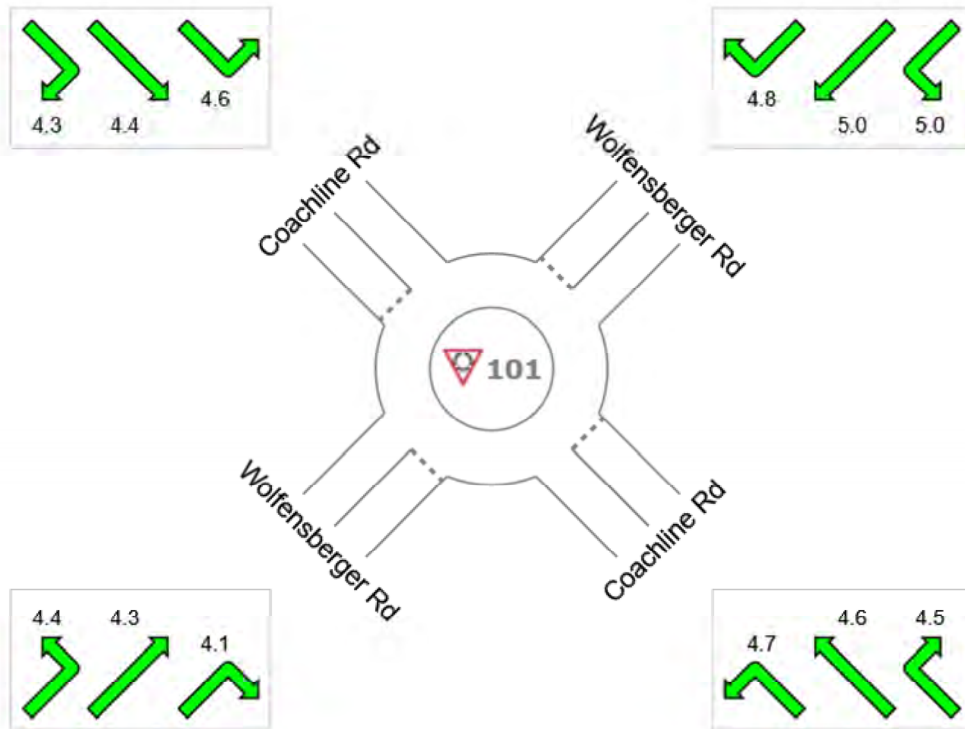
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.6	4.9	4.5	4.2	4.6
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_23 PM]

New Site

Site Category: (None)

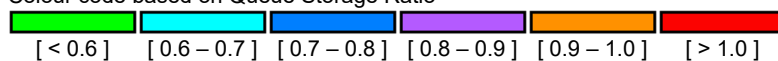
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	14	15	13	9	15



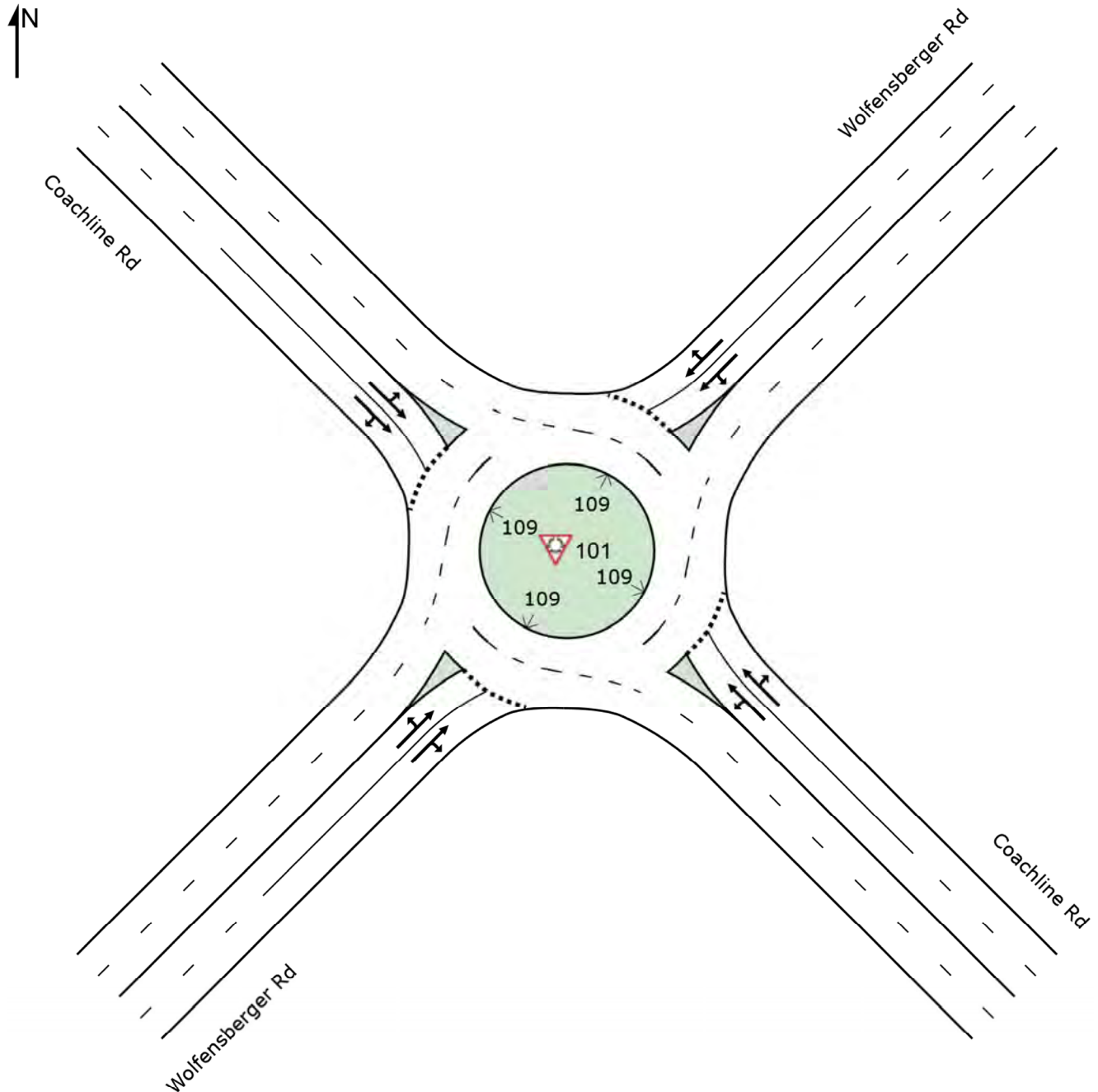
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL AM]**

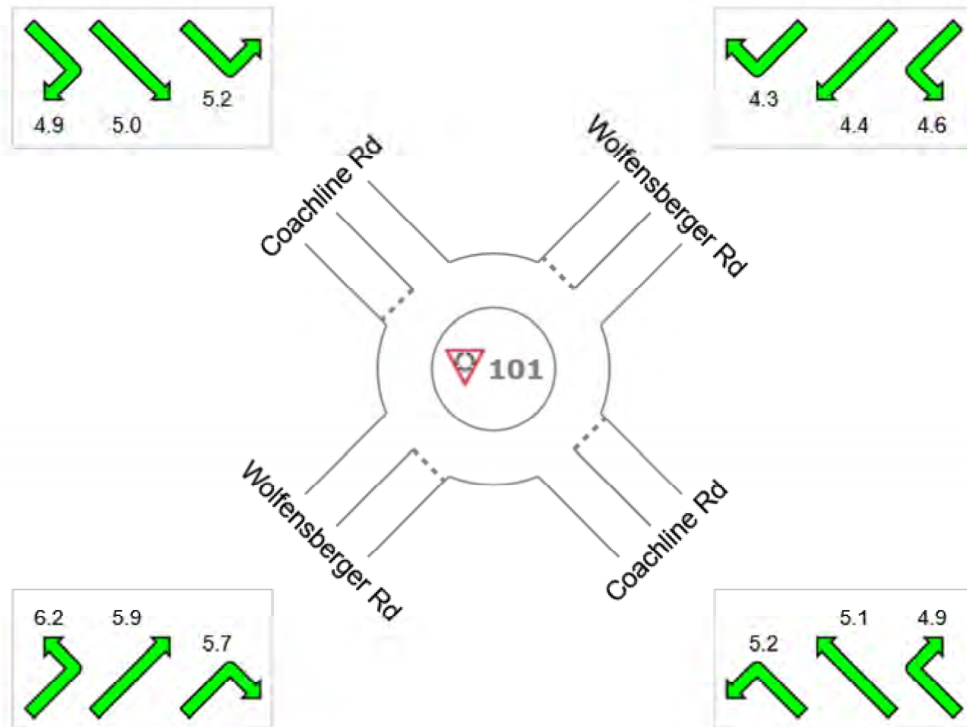
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.1	4.5	5.1	5.9	5.1
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	25	196	120
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	70	75	28
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	35	165	38
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	22	130	31
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	183	178	5
NE: Wolfensberger Rd	173	168	5
NW: Coachline Rd	341	331	10
SW: Wolfensberger Rd	238	231	7
Total	935	907	28

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL AM]**

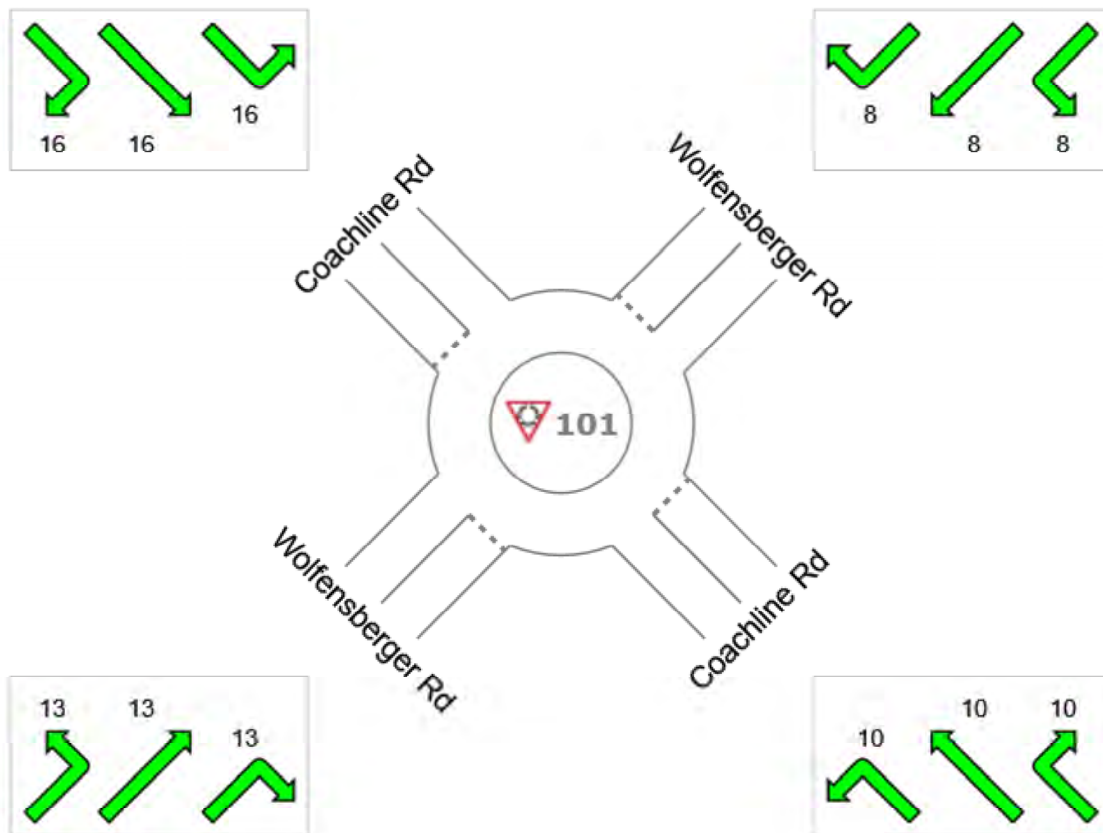
New Site

Site Category: (None)

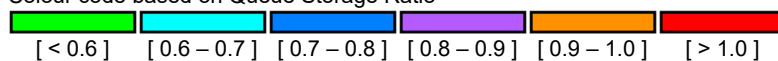
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	10	8	16	13	16



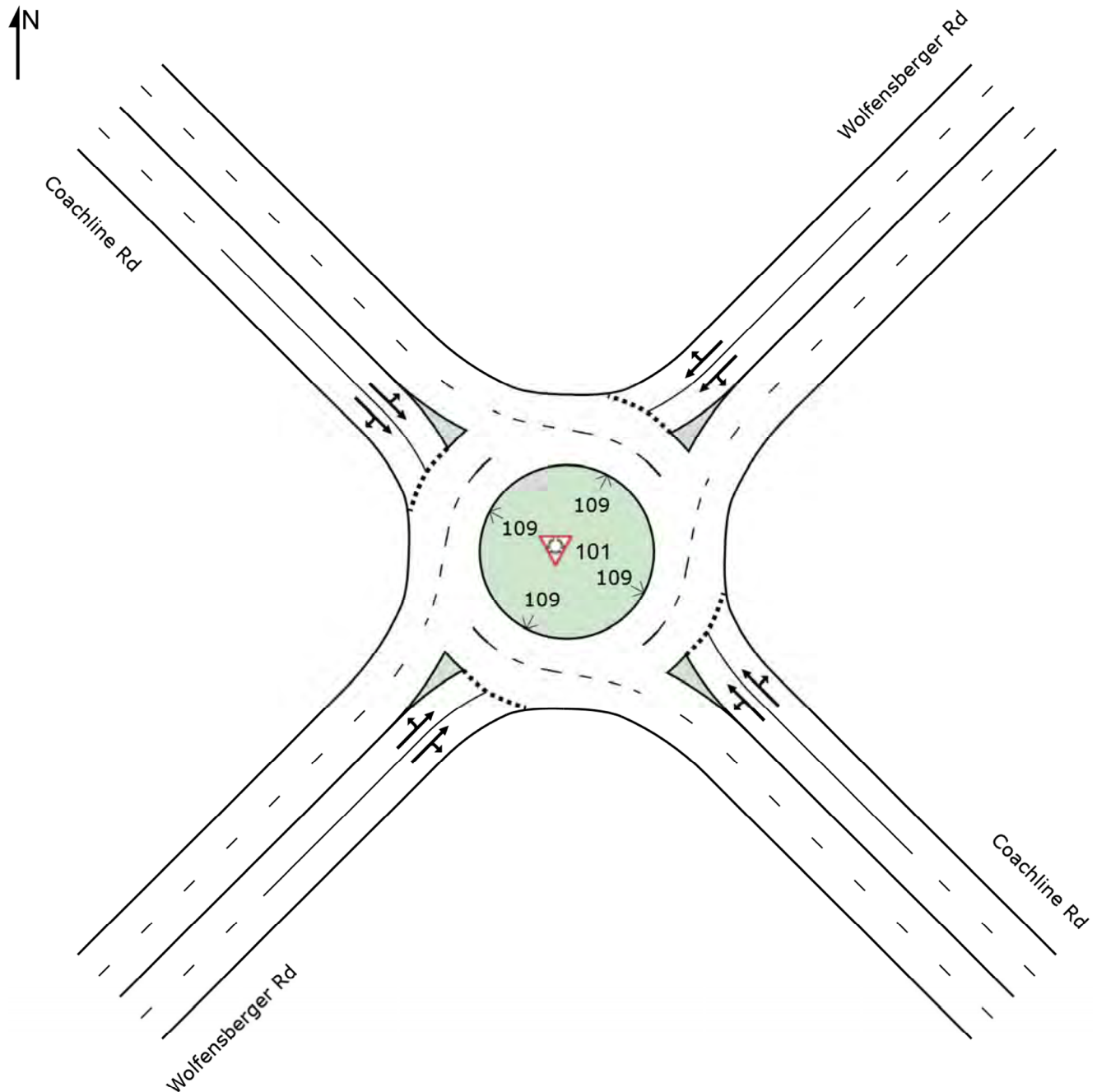
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_23 TOTAL PM]

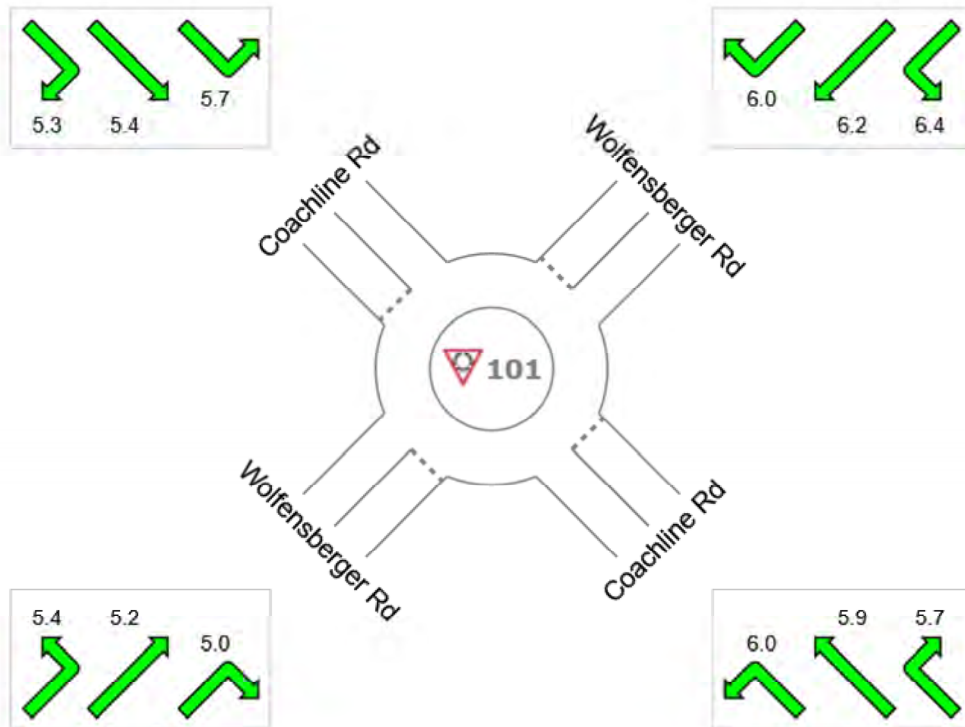
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.8	6.2	5.5	5.2	5.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_23 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	35	185	95
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	125	145	77
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	15	115	56
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	57	264	87
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	408	396	12
NE: Wolfensberger Rd	347	337	10
NW: Coachline Rd	315	306	9
SW: Wolfensberger Rd	186	180	6
Total	1256	1218	38

QUEUE DISTANCE (%ILE)

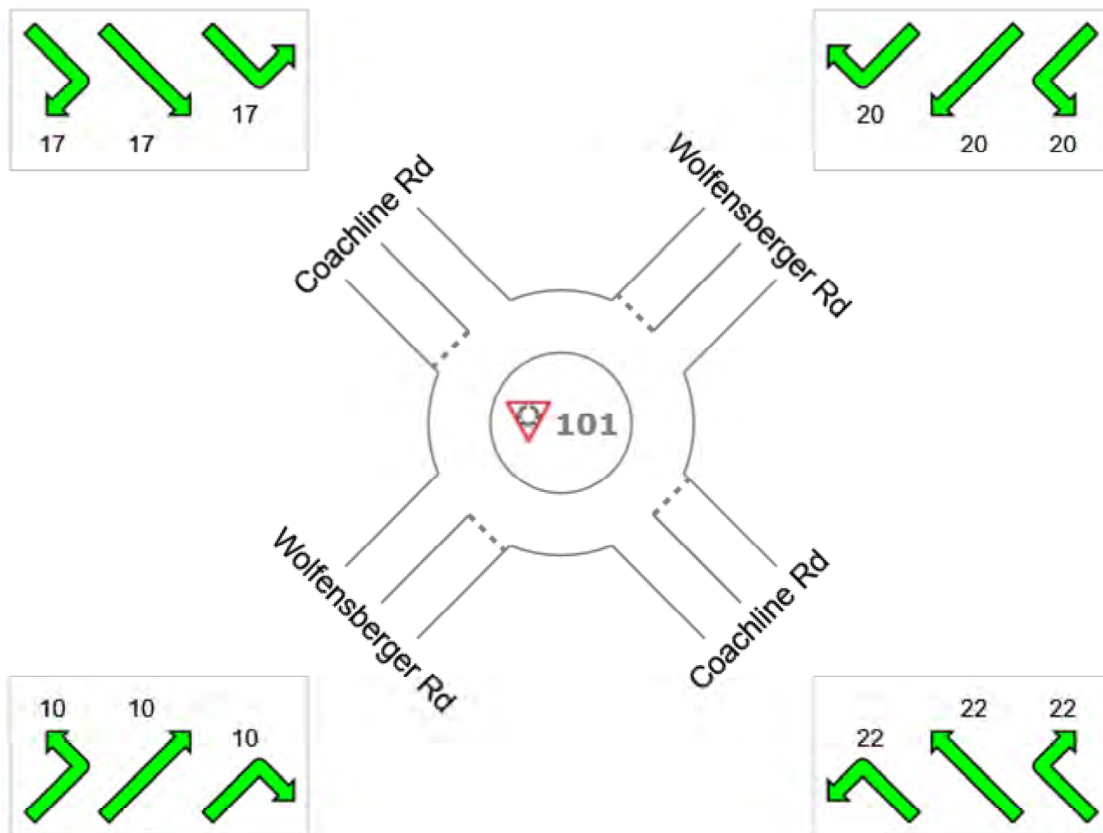
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_23 TOTAL PM]

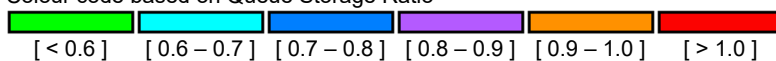
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	22	20	17	10	22



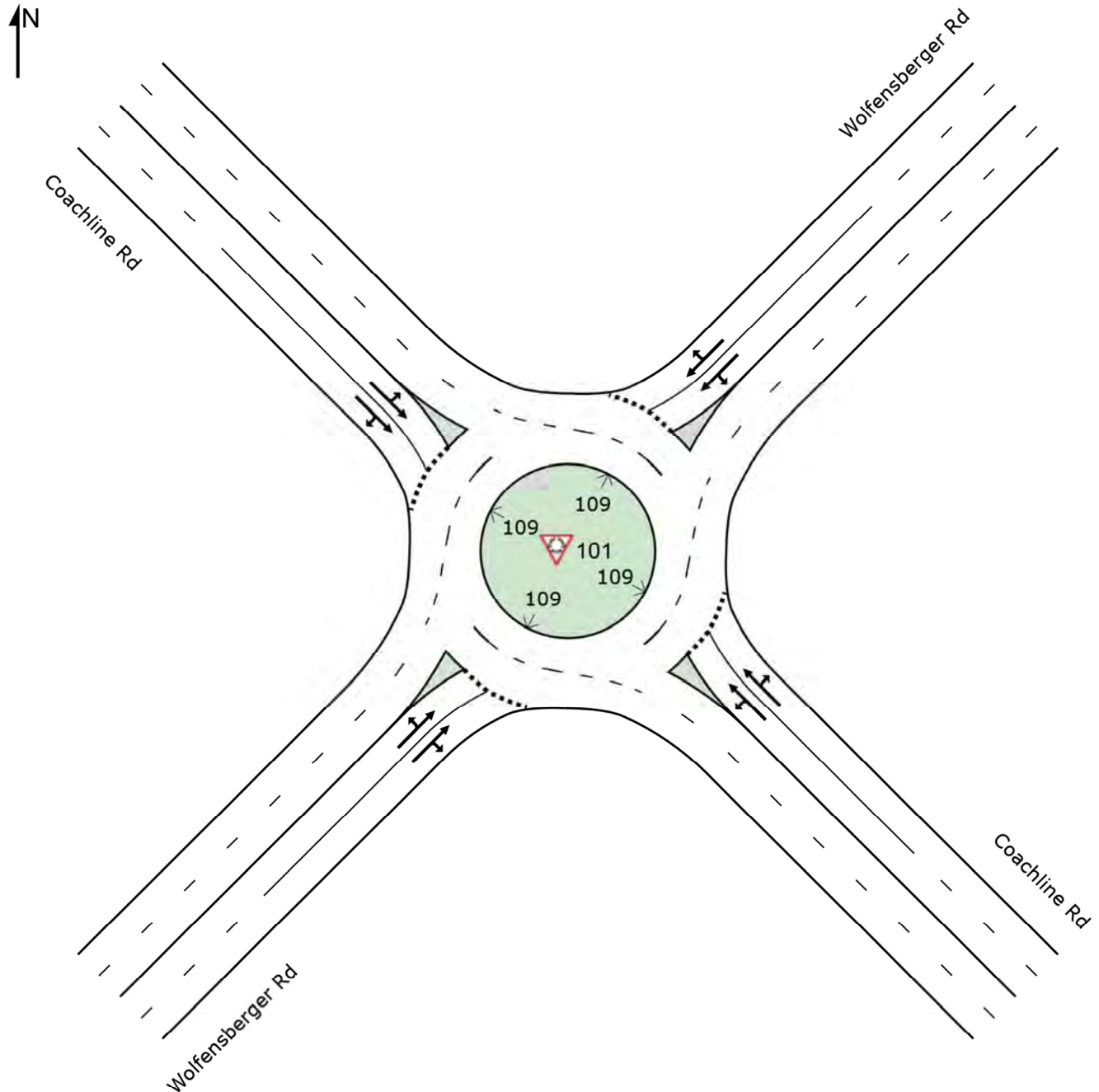
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_27 AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

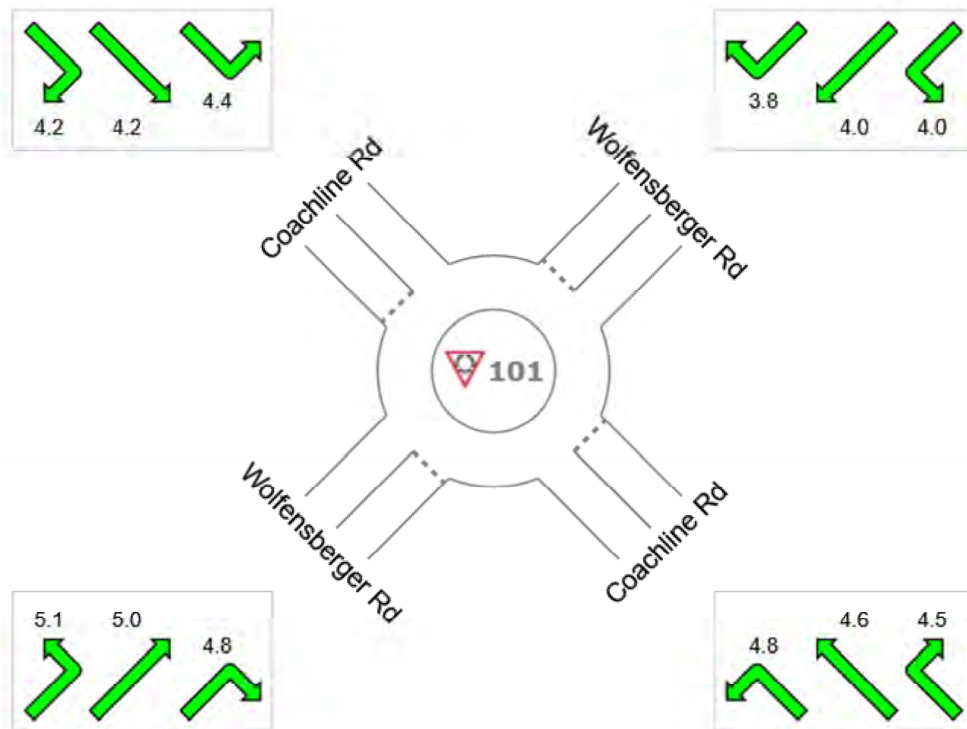
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 101 [Coachline & Wolfensberger_27 AM]**

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.6	3.9	4.3	5.0	4.4
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

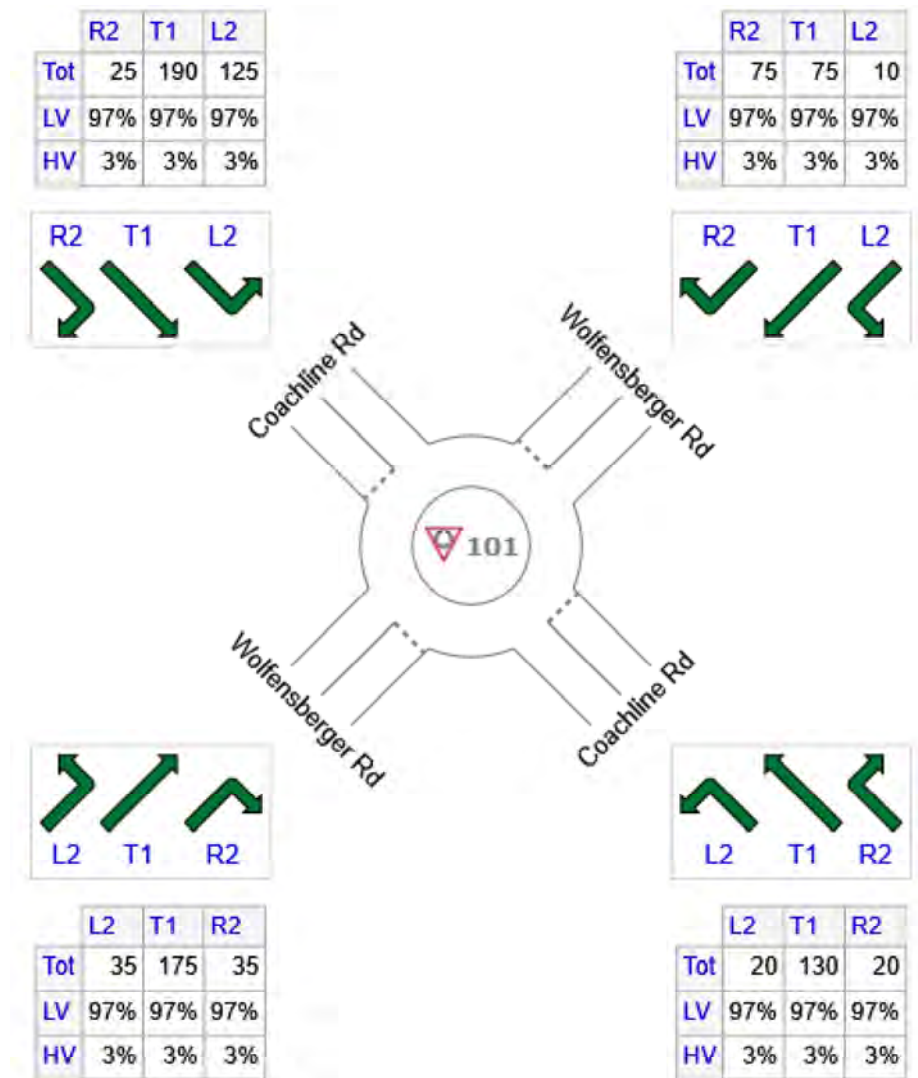
 **Site: 101 [Coachline & Wolfensberger_27 AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	170	165	5
NE: Wolfensberger Rd	160	155	5
NW: Coachline Rd	340	330	10
SW: Wolfensberger Rd	245	238	7
Total	915	888	27

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)



Site: 101 [Coachline & Wolfensberger_27 AM]

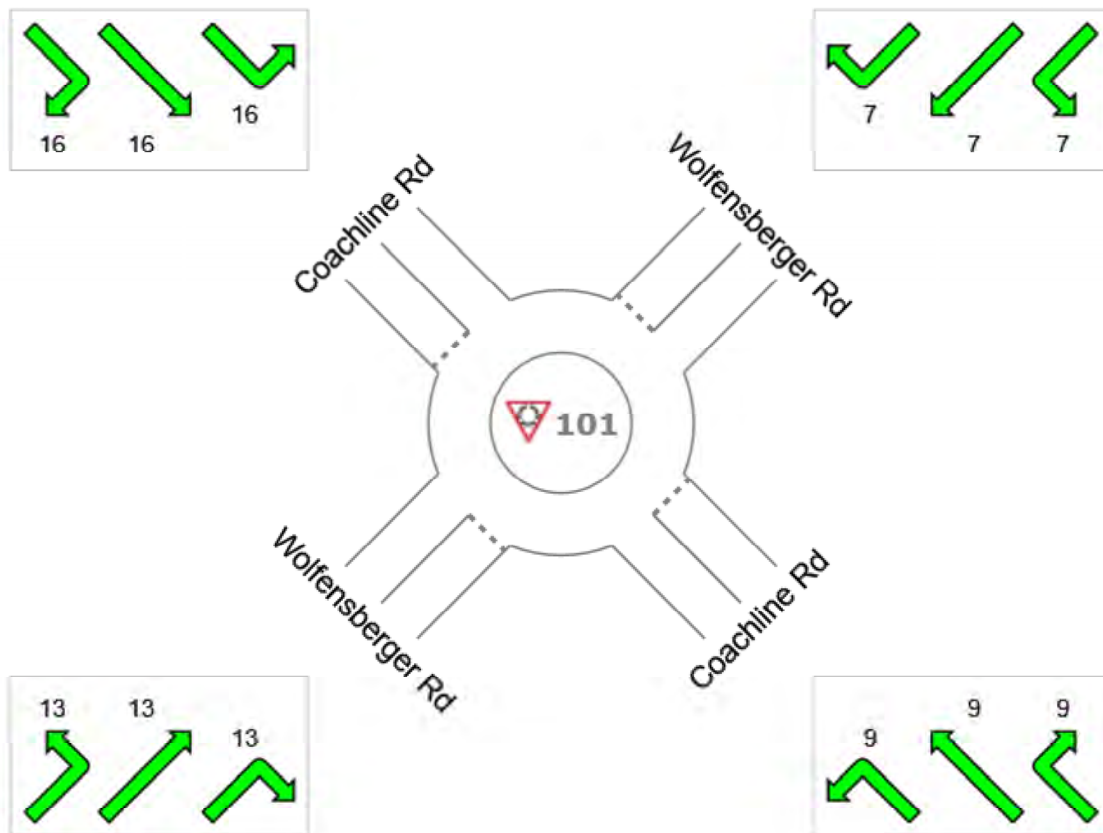
New Site

Site Category: (None)

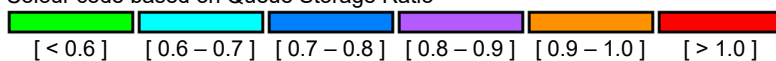
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	9	7	16	13	16



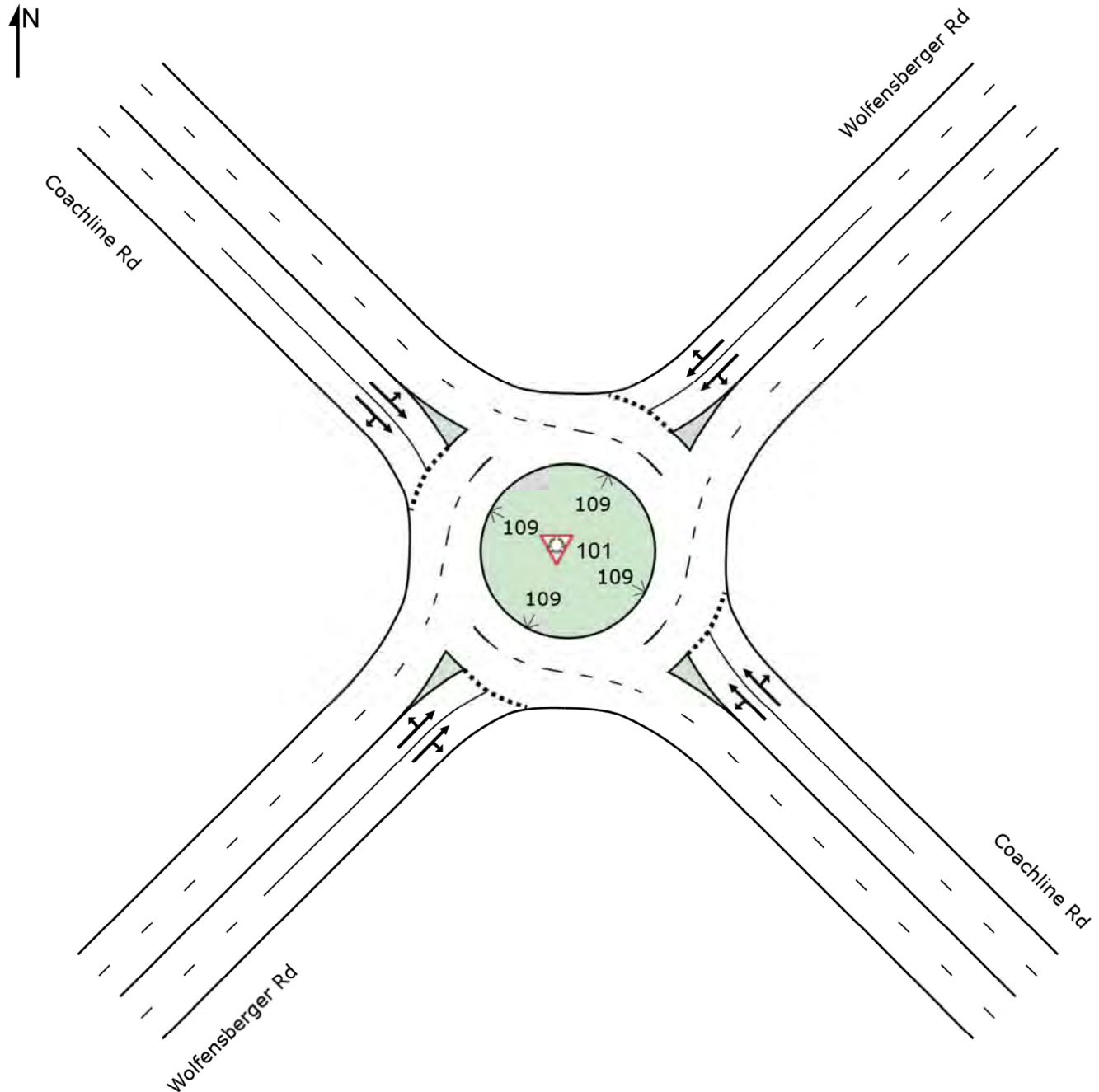
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_27 PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 101 [Coachline & Wolfensberger_27 PM]**

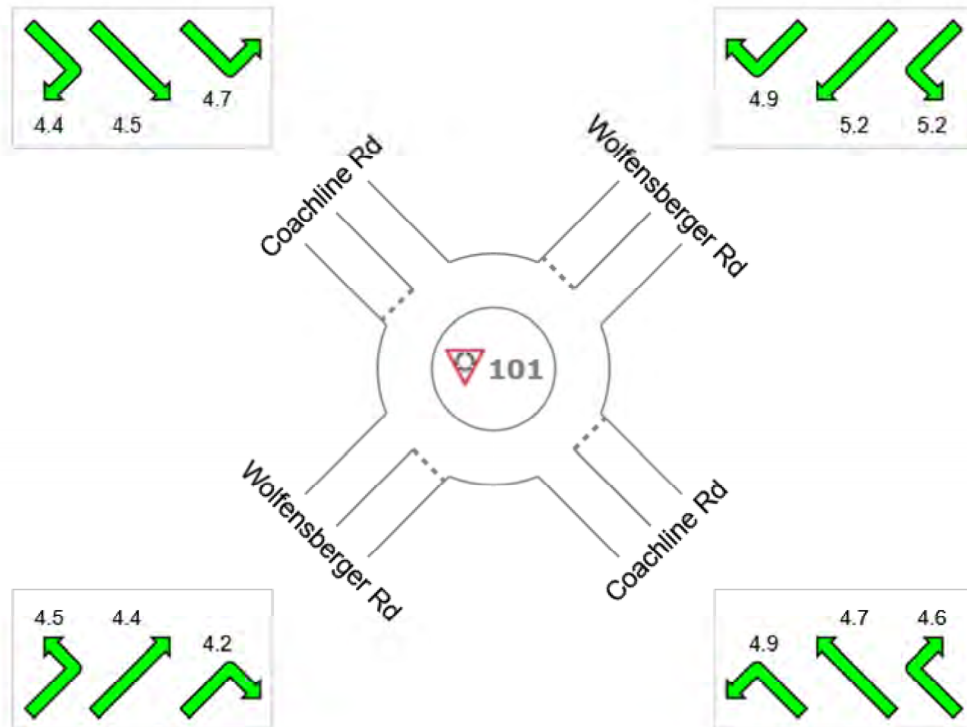
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.7	5.1	4.6	4.3	4.7
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_27 PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	35	140	100
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	130	155	20
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	20	120	50
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	45	220	25
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	290	281	9
NE: Wolfensberger Rd	305	296	9
NW: Coachline Rd	275	267	8
SW: Wolfensberger Rd	190	184	6
Total	1060	1028	32

QUEUE DISTANCE (%ILE)

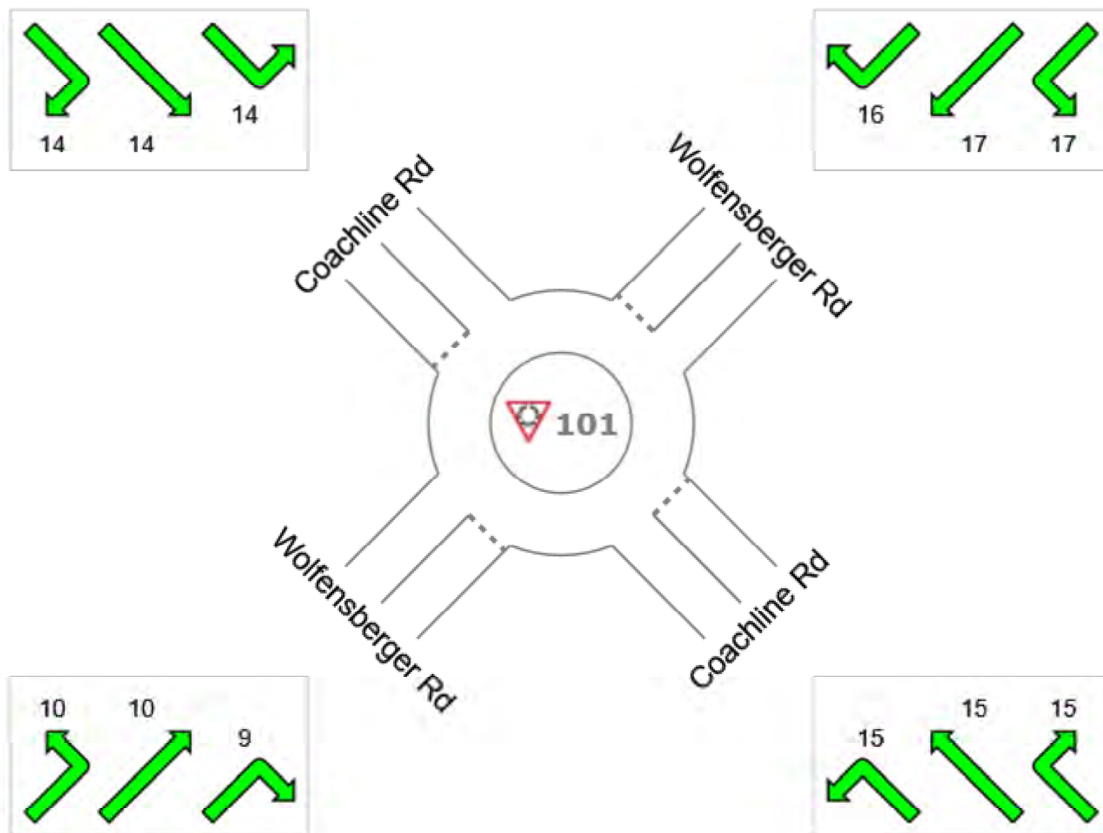
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_27 PM]

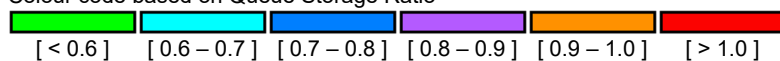
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	15	17	14	10	17



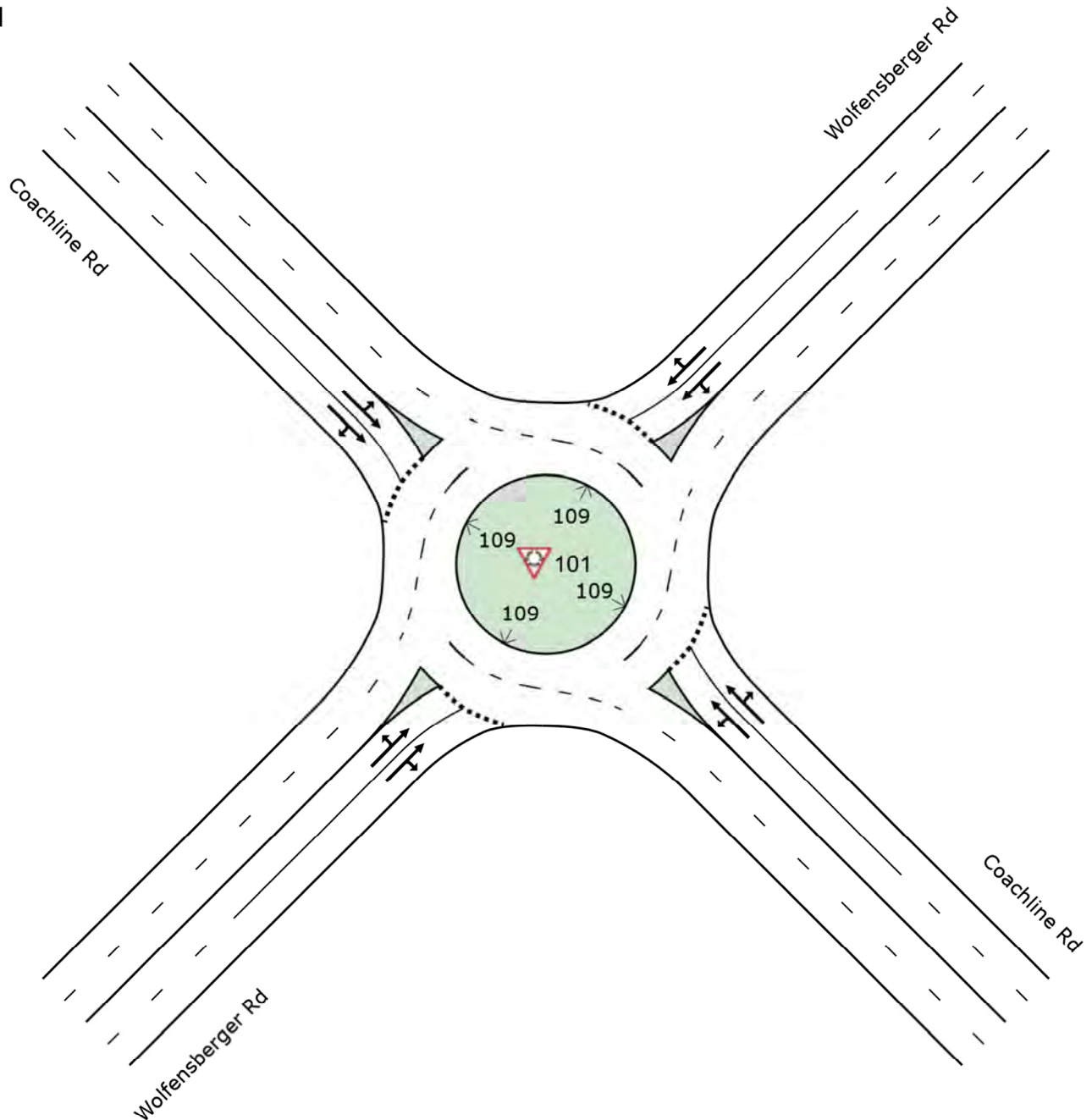
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_27 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_27 TOTAL AM]

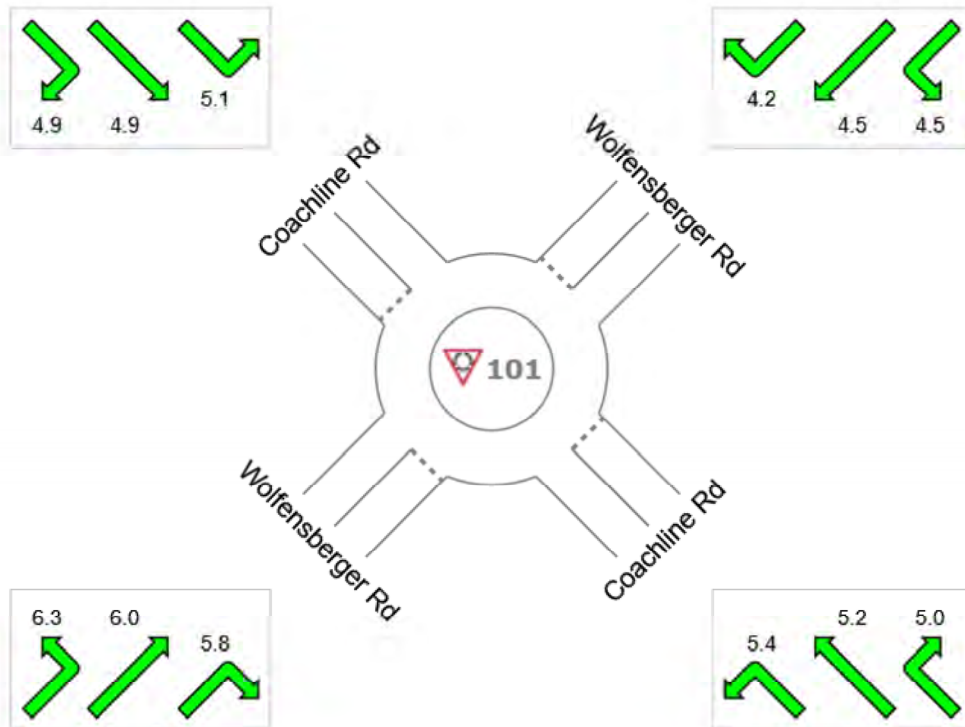
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.2	4.4	5.0	6.0	5.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 Site: 101 [Coachline & Wolfensberger_27 TOTAL AM]

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	25	253	125
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	75	75	14
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	35	175	48
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	30	177	23
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	230	223	7
NE: Wolfensberger Rd	164	159	5
NW: Coachline Rd	403	391	12
SW: Wolfensberger Rd	258	250	8
Total	1055	1023	32

QUEUE DISTANCE (%ILE)

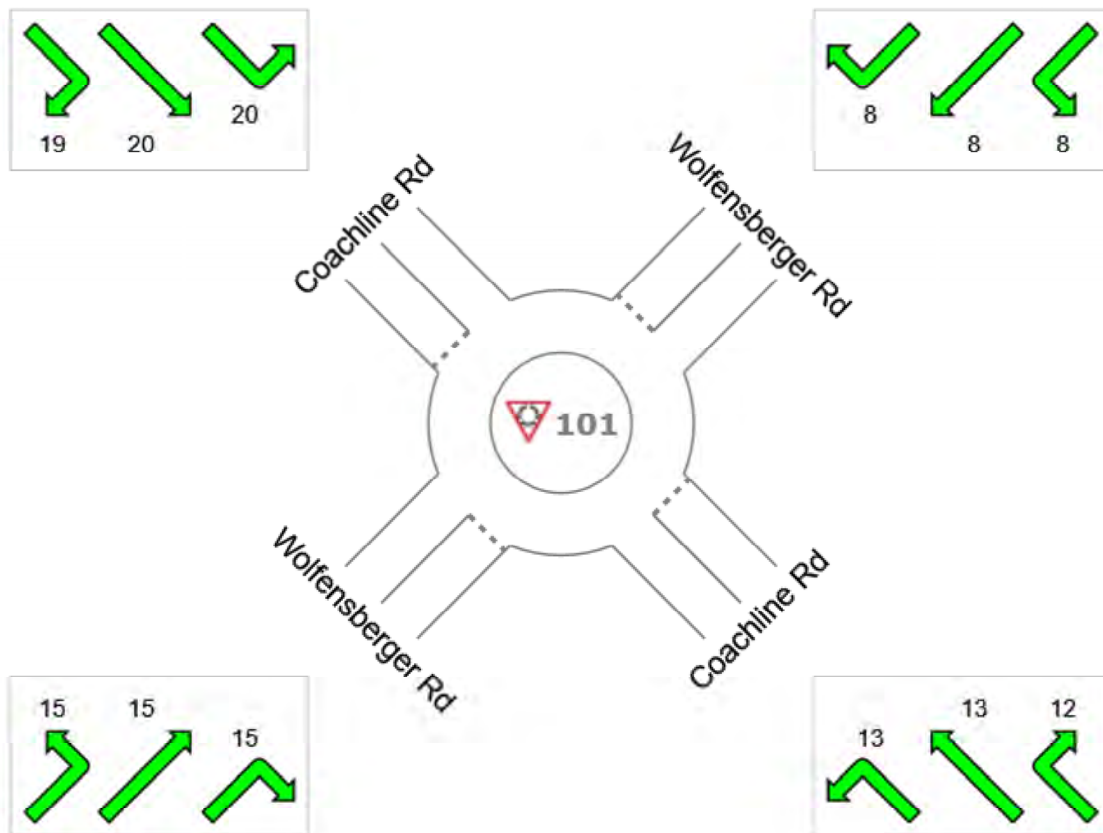
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_27 TOTAL AM]

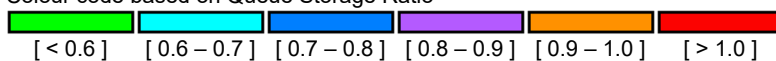
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	13	8	20	15	20



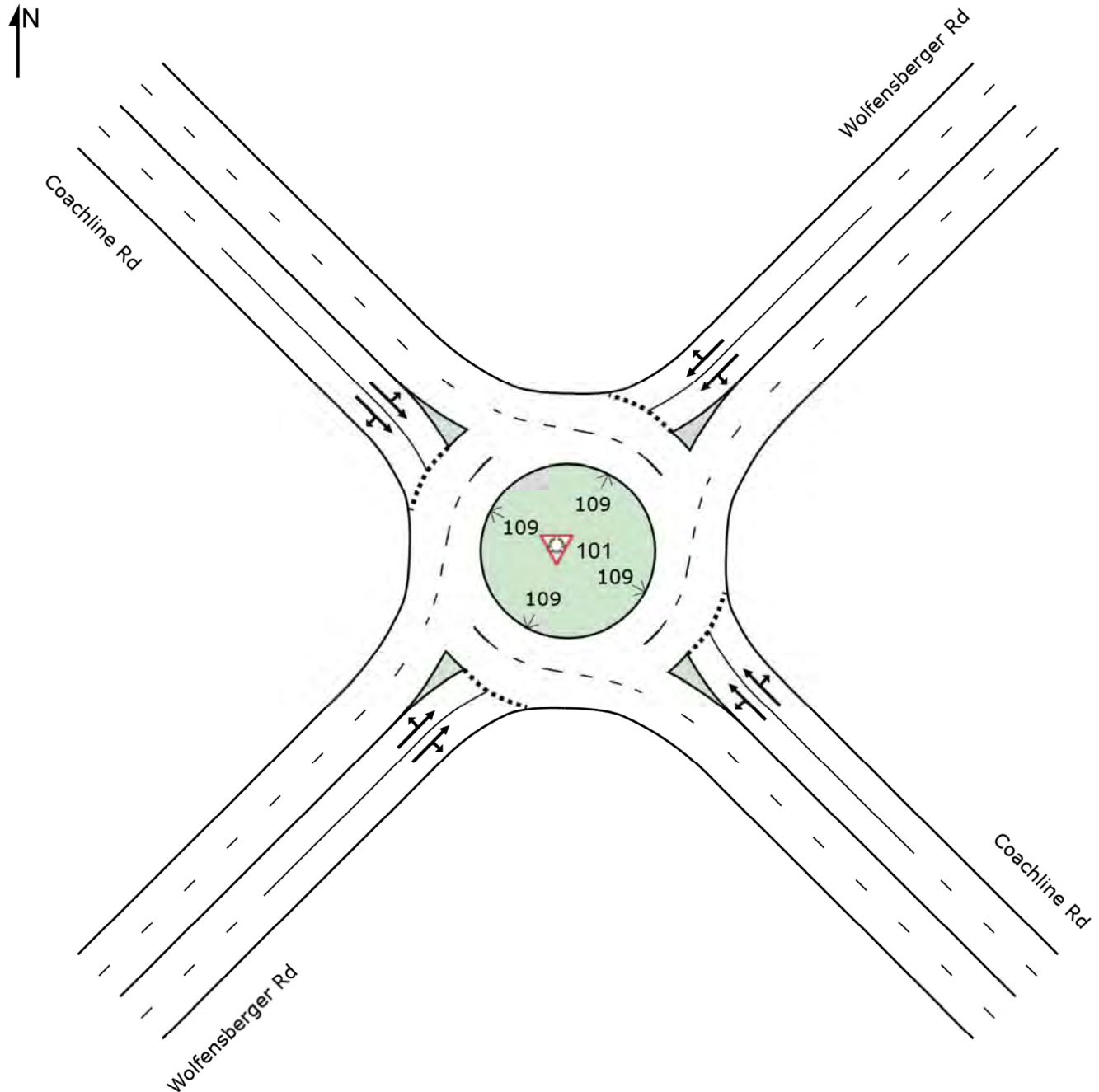
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_27 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_27 TOTAL PM]

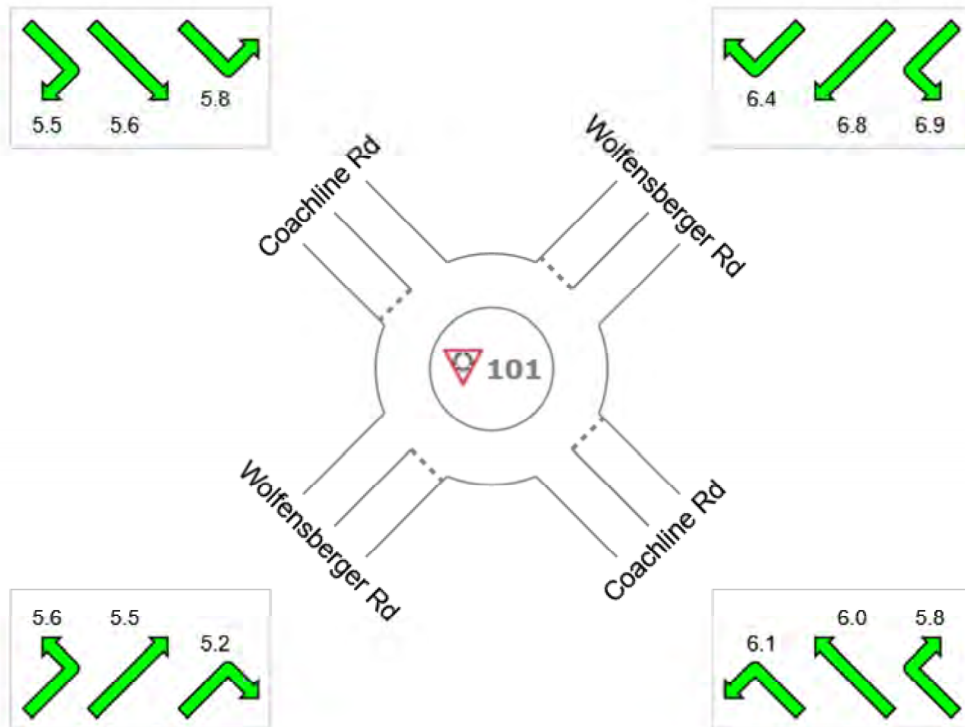
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	6.0	6.6	5.6	5.4	5.9
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_27 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	35	265	100
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	130	155	29
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	20	120	77
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	73	349	34
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	456	442	14
NE: Wolfensberger Rd	314	305	9
NW: Coachline Rd	400	388	12
SW: Wolfensberger Rd	217	210	7
Total	1387	1345	42

QUEUE DISTANCE (%ILE)

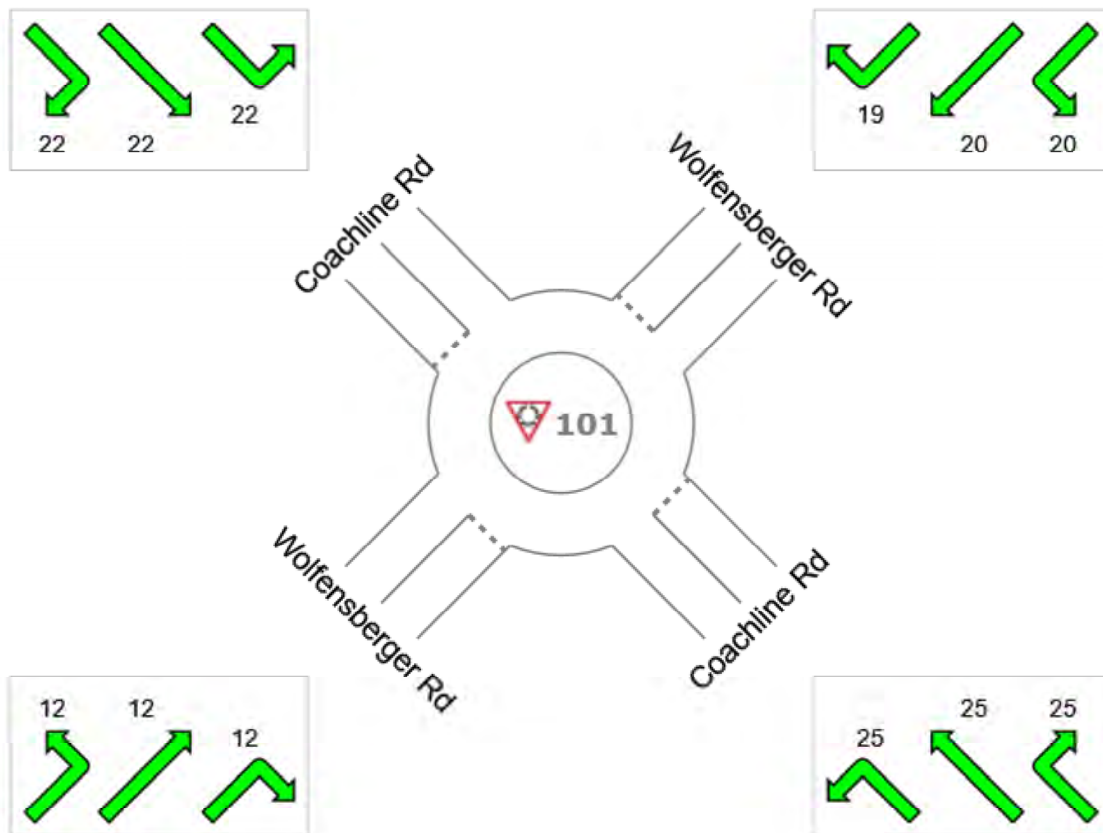
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_27 TOTAL PM]

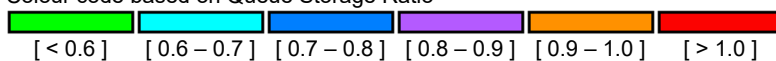
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	25	20	22	12	25



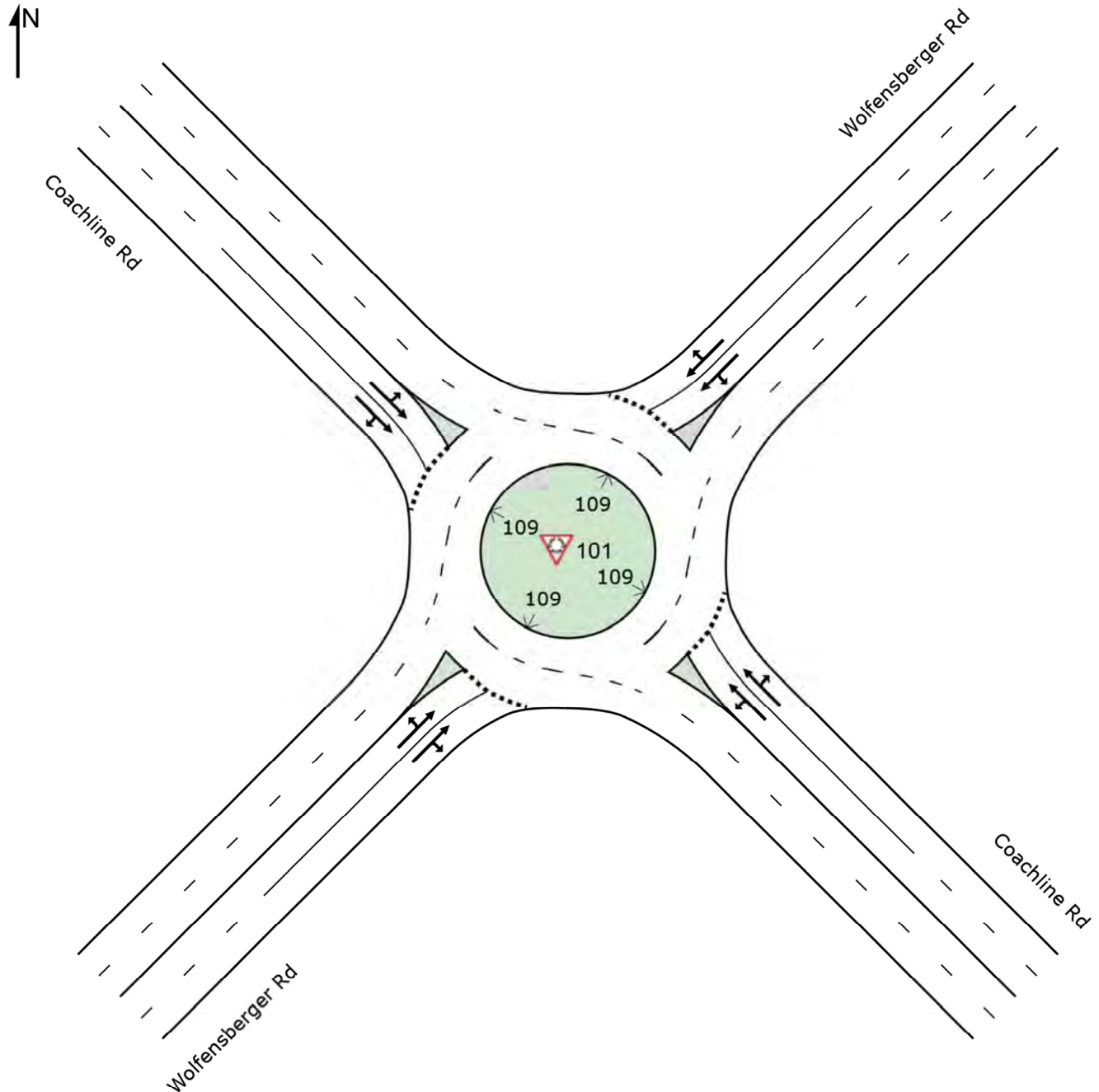
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_30 AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_30 AM]

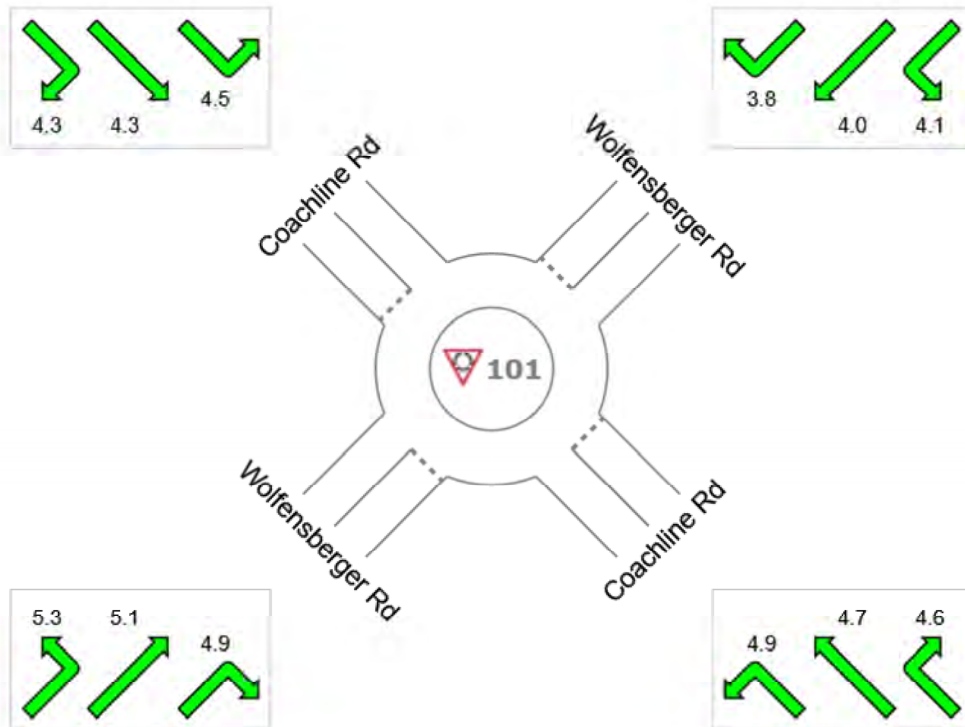
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.7	3.9	4.4	5.1	4.6
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_30 AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	25	285	130
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	75	80	10
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	35	180	60
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	30	150	20
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	200	194	6
NE: Wolfensberger Rd	165	160	5
NW: Coachline Rd	440	427	13
SW: Wolfensberger Rd	275	267	8
Total	1080	1048	32

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)



Site: 101 [Coachline & Wolfensberger_30 AM]

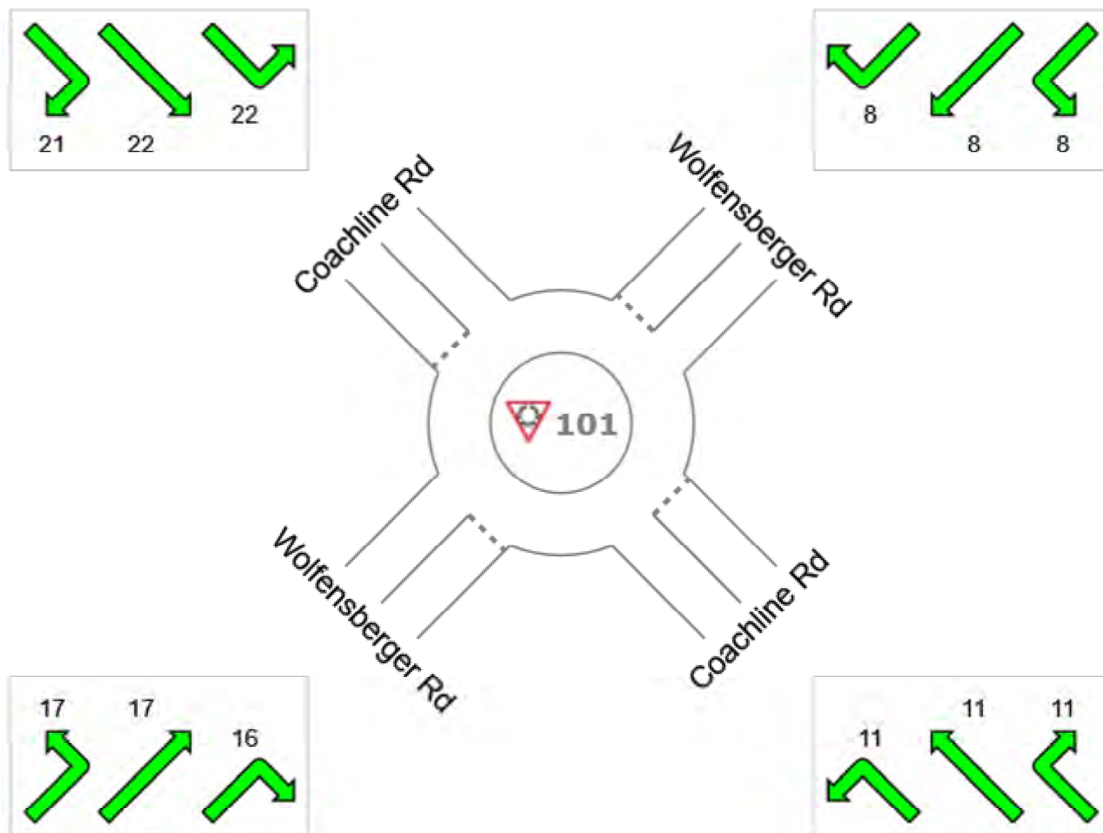
New Site

Site Category: (None)

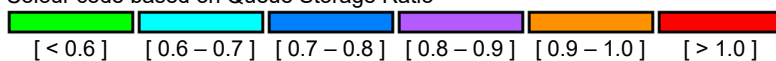
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	11	8	22	17	22



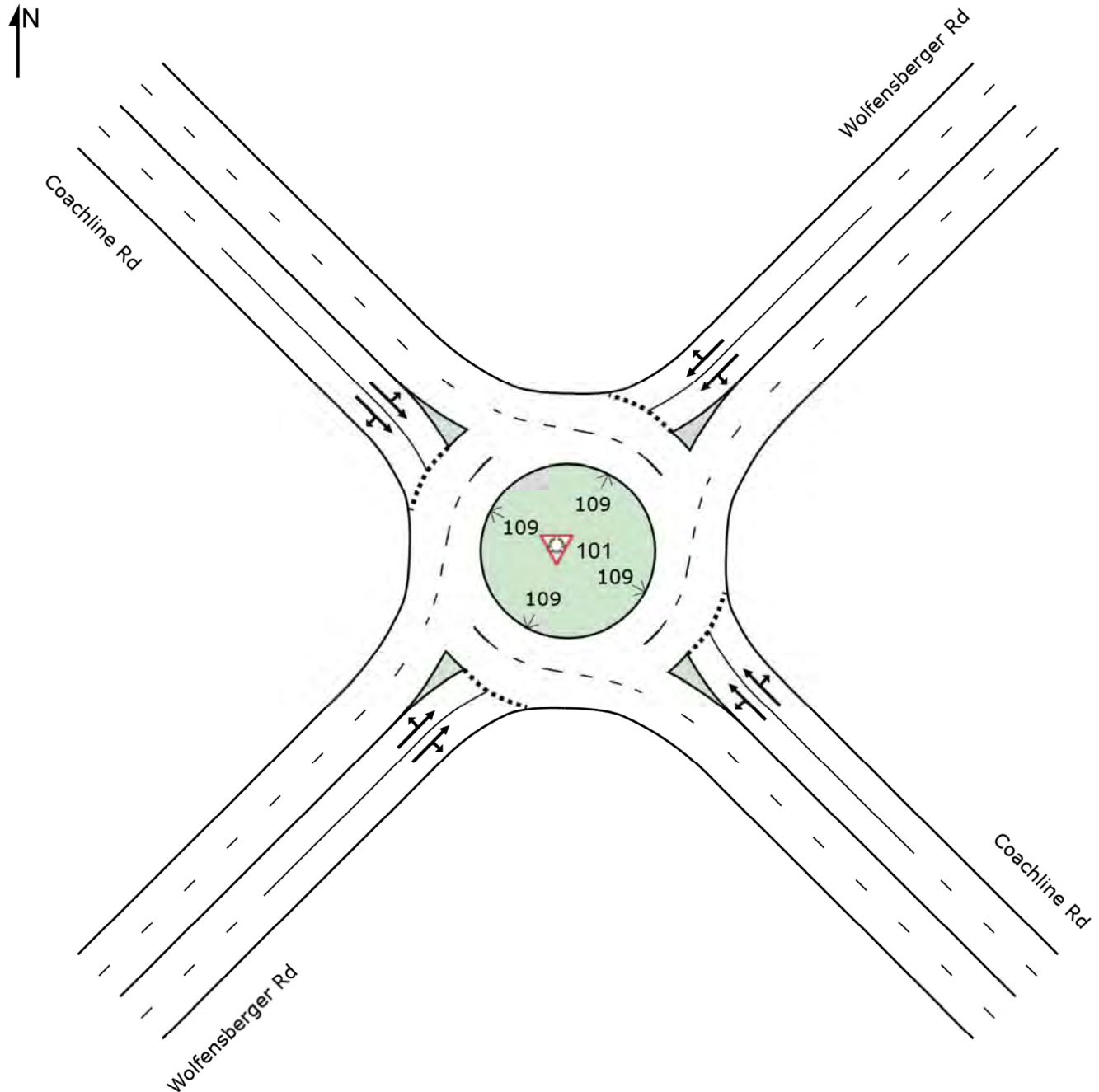
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_30 PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

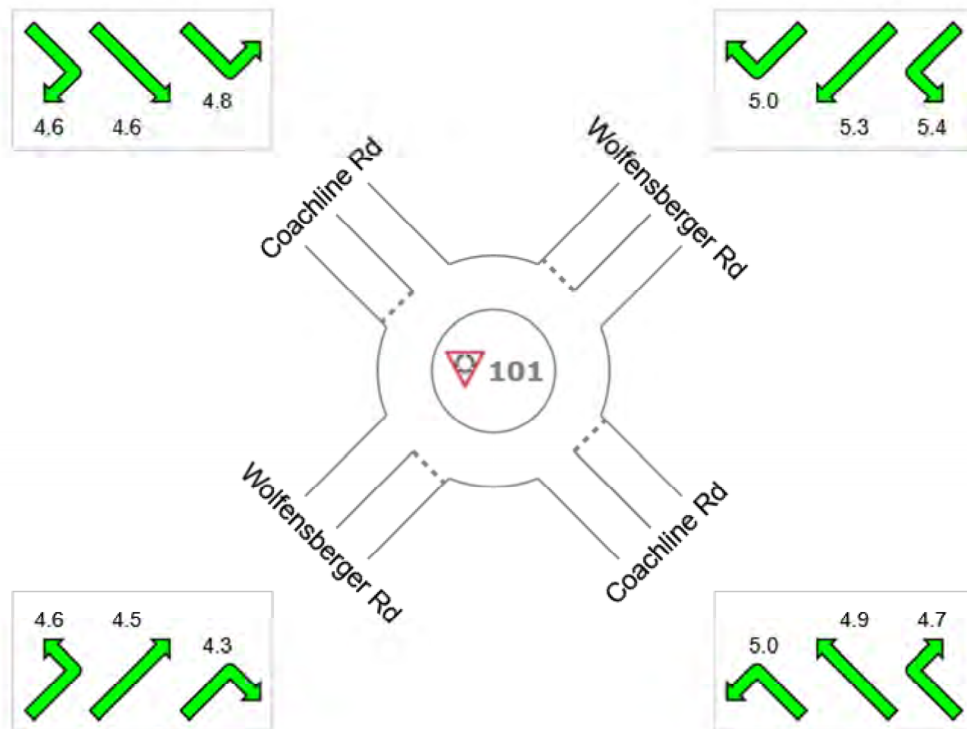
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 101 [Coachline & Wolfensberger_30 PM]**

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	4.9	5.2	4.7	4.4	4.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_30 PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	40	165	105
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	135	160	20
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	20	125	55
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	70	315	35
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	420	407	13
NE: Wolfensberger Rd	315	306	9
NW: Coachline Rd	310	301	9
SW: Wolfensberger Rd	200	194	6
Total	1245	1208	37

QUEUE DISTANCE (%ILE)

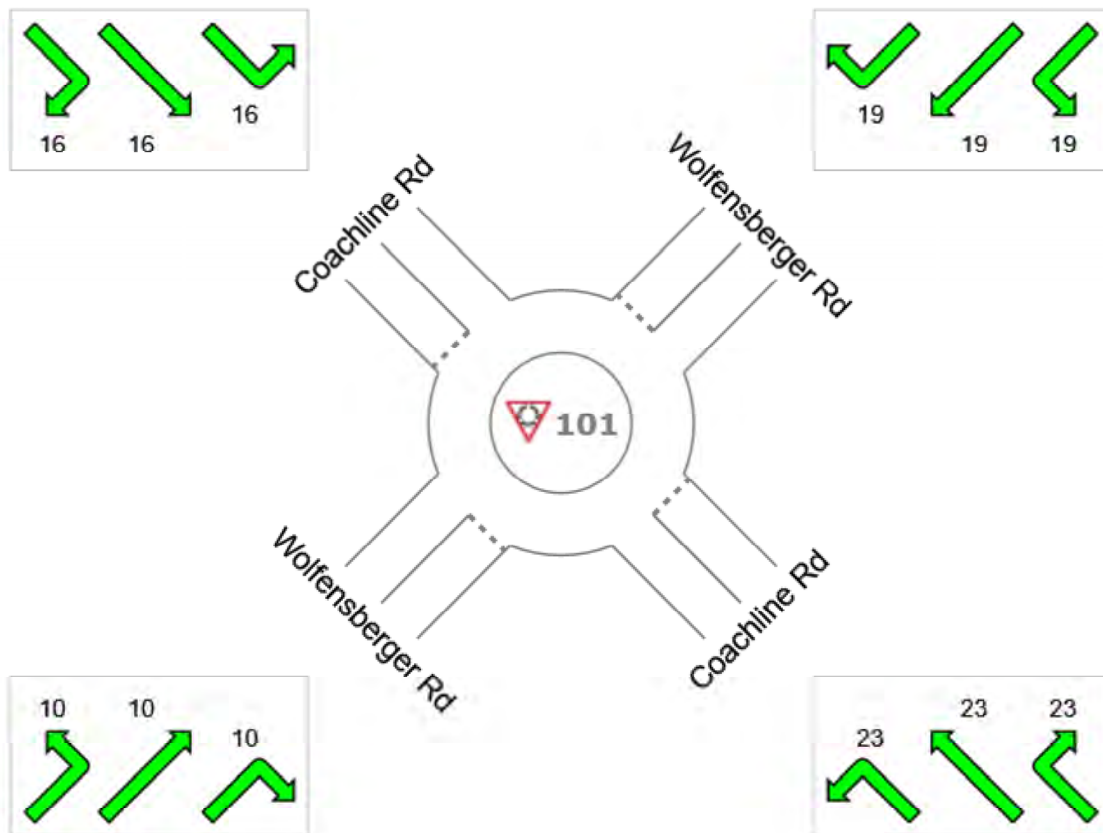
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 Site: 101 [Coachline & Wolfensberger_30 PM]

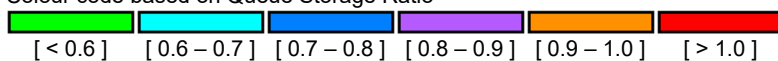
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	23	19	16	10	23



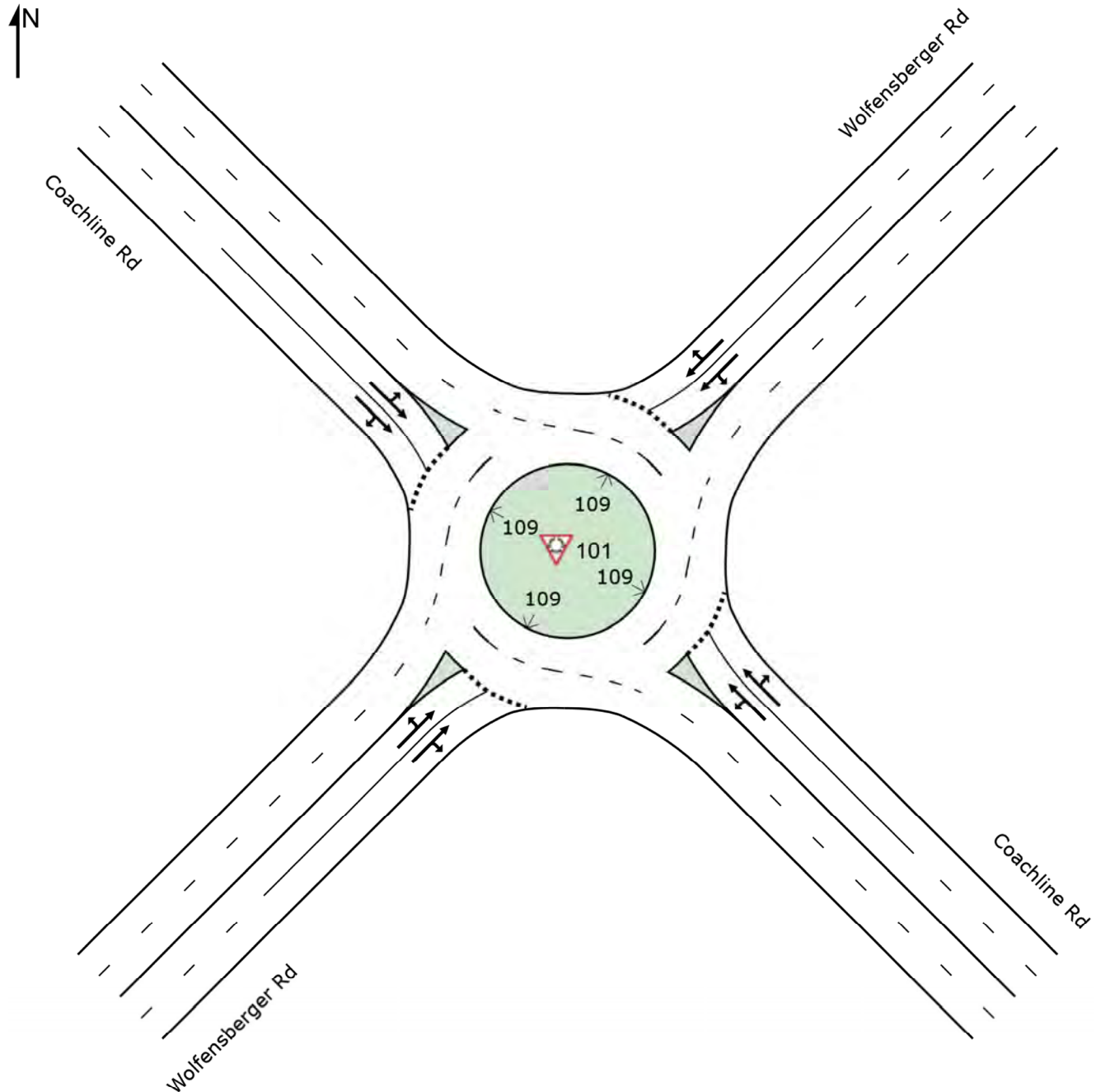
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_30 TOTAL AM]

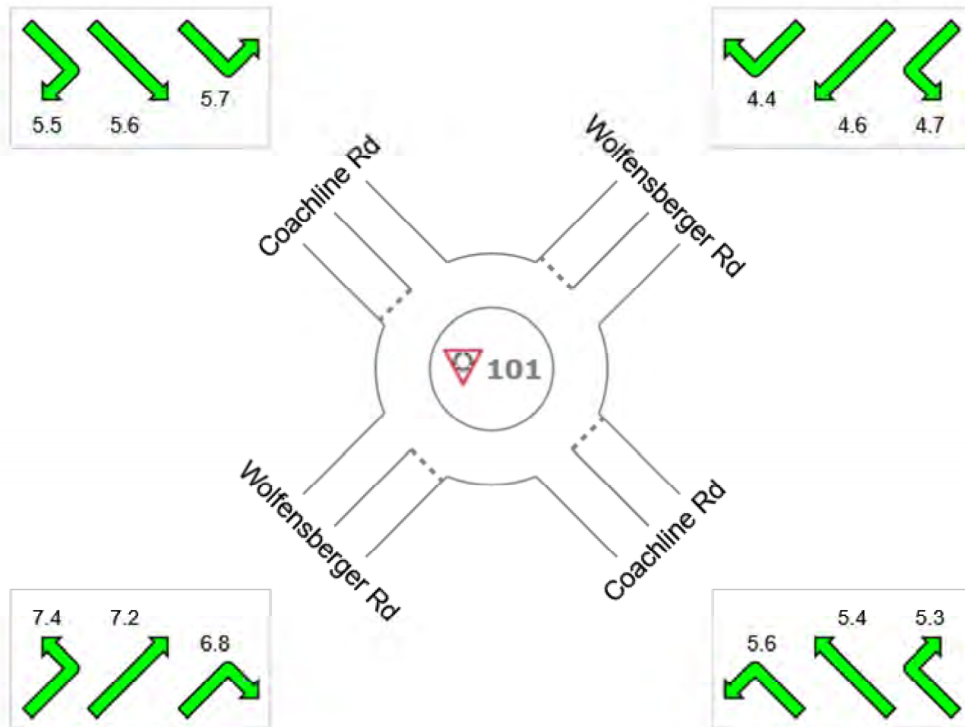
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.4	4.6	5.6	7.1	5.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	25	349	130
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	75	80	21
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	35	180	72
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	38	196	24
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	258	250	8
NE: Wolfensberger Rd	176	171	5
NW: Coachline Rd	504	489	15
SW: Wolfensberger Rd	287	278	9
Total	1225	1188	37

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL AM]**

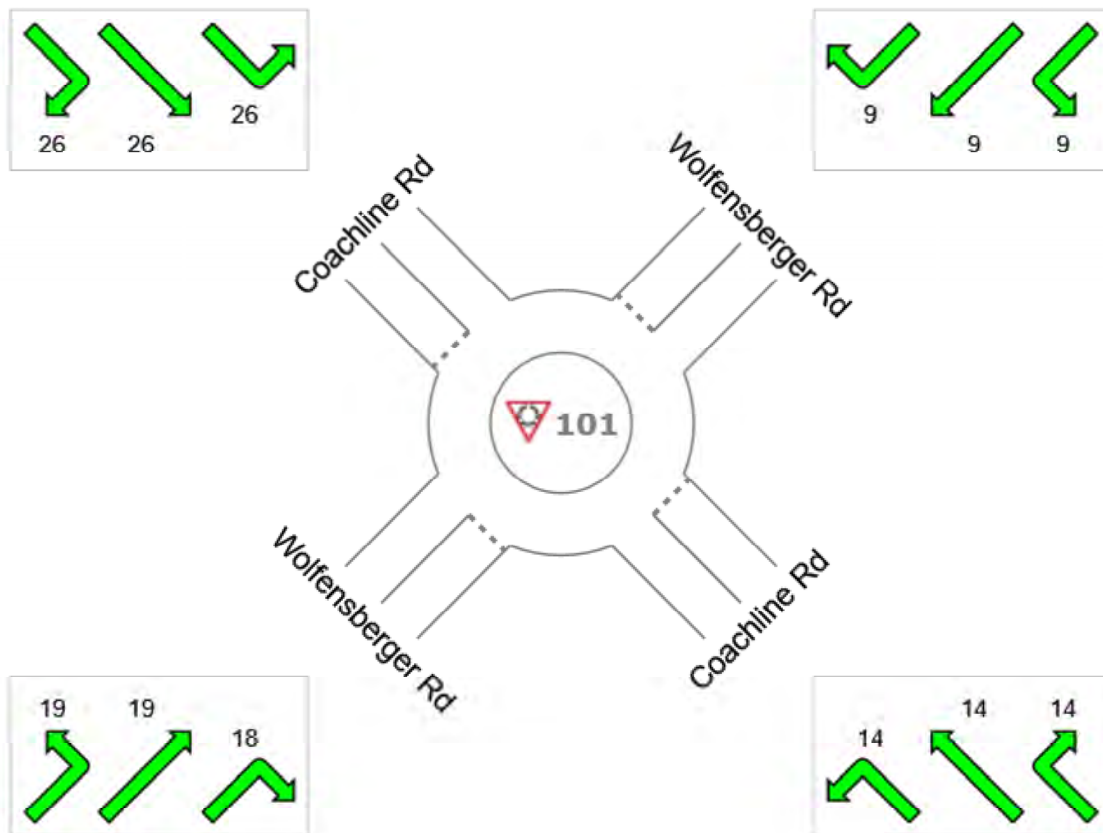
New Site

Site Category: (None)

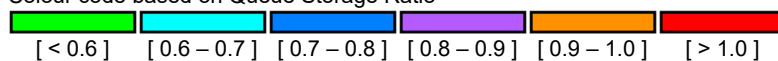
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	14	9	26	19	26



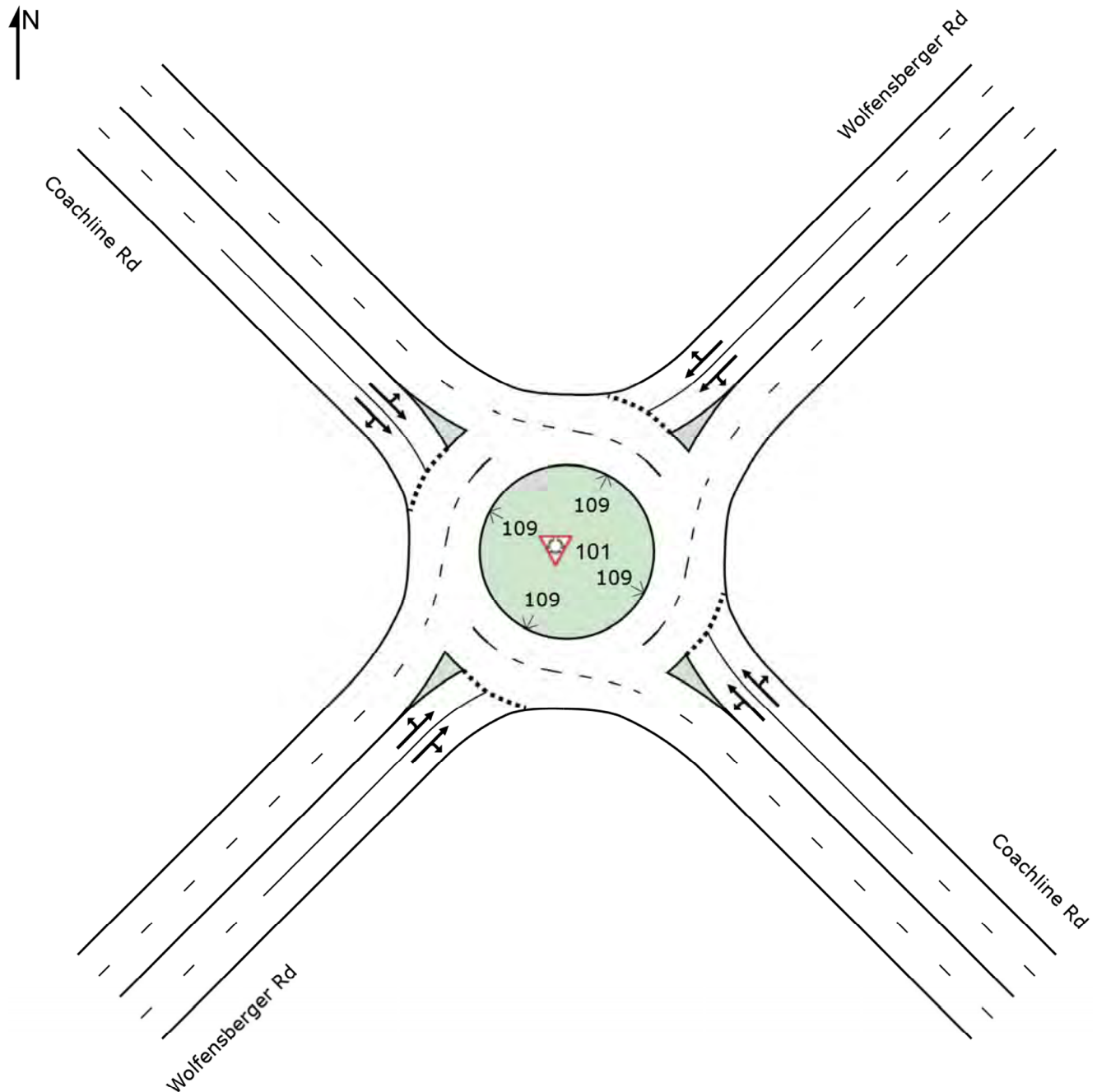
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_30 TOTAL PM]

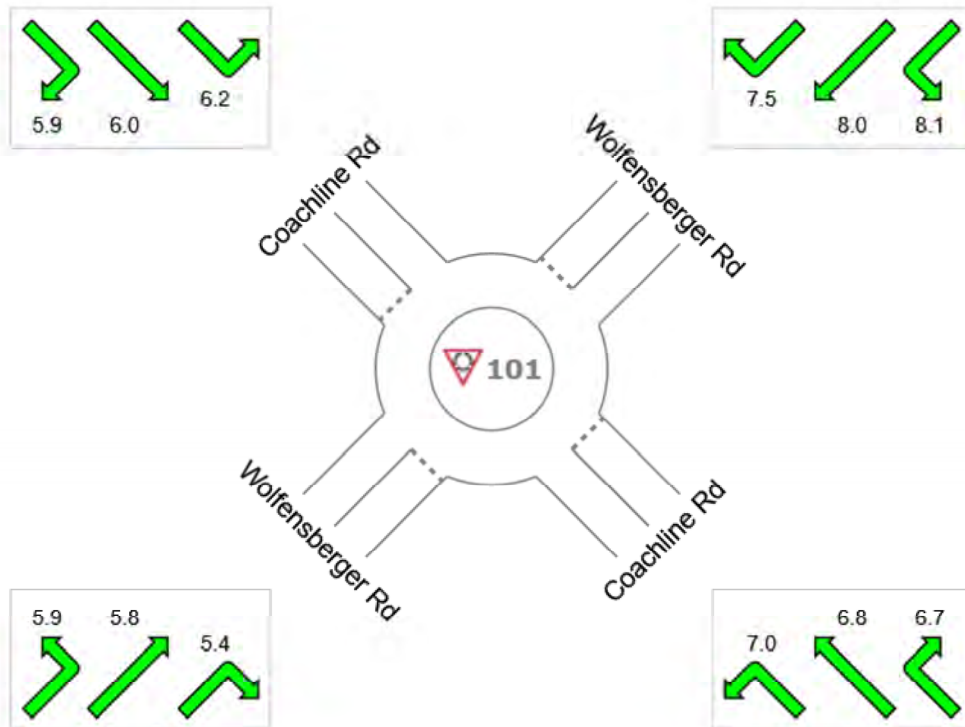
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	6.8	7.8	6.1	5.7	6.6
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	40	291	105
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	135	160	30
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	20	125	80
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	95	442	45
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	582	565	17
NE: Wolfensberger Rd	325	315	10
NW: Coachline Rd	436	423	13
SW: Wolfensberger Rd	225	218	7
Total	1568	1521	47

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_30 TOTAL PM]**

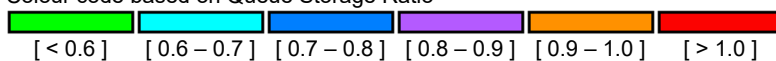
New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	35	22	25	13	35



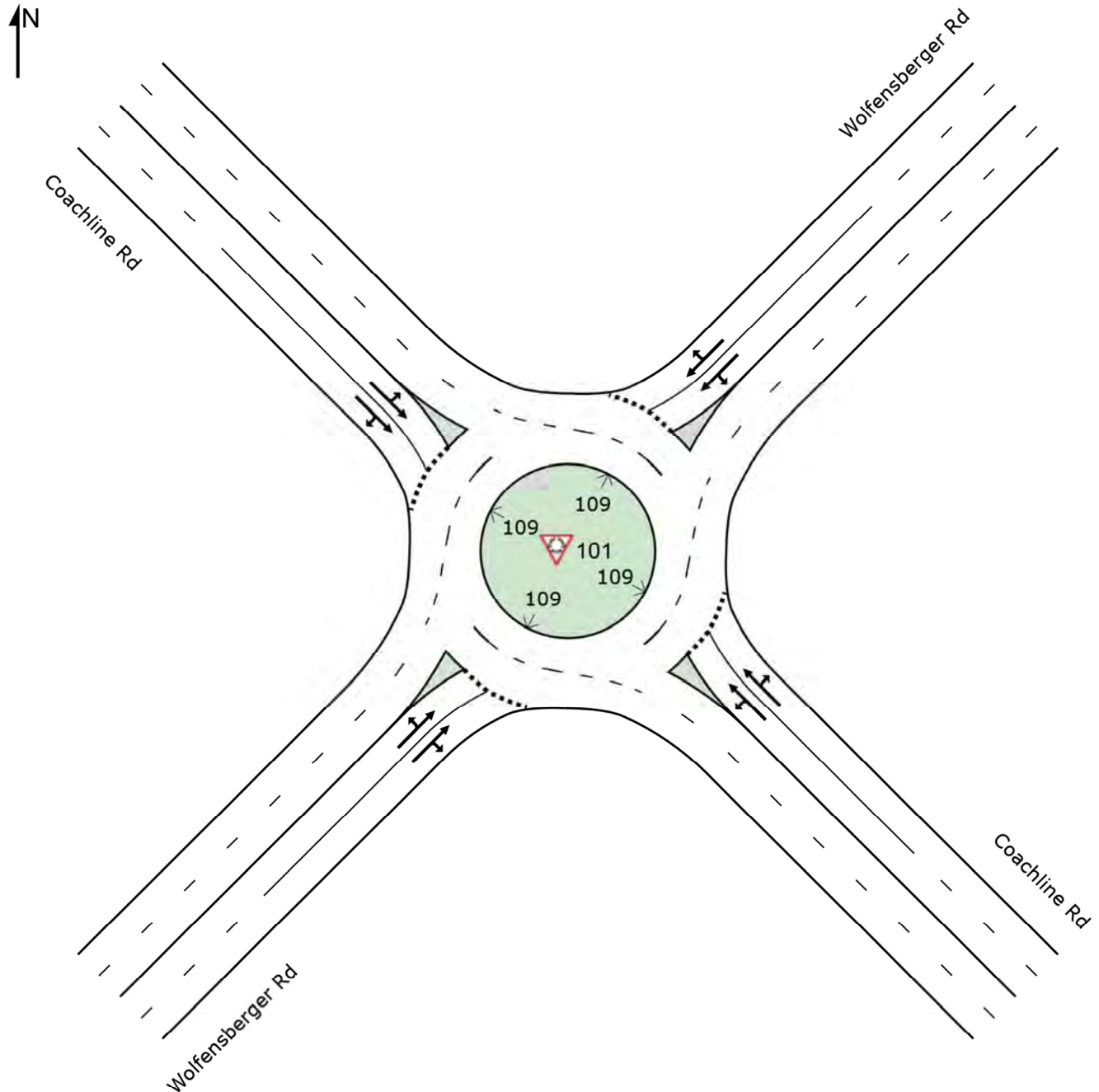
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_40 AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_40 AM]

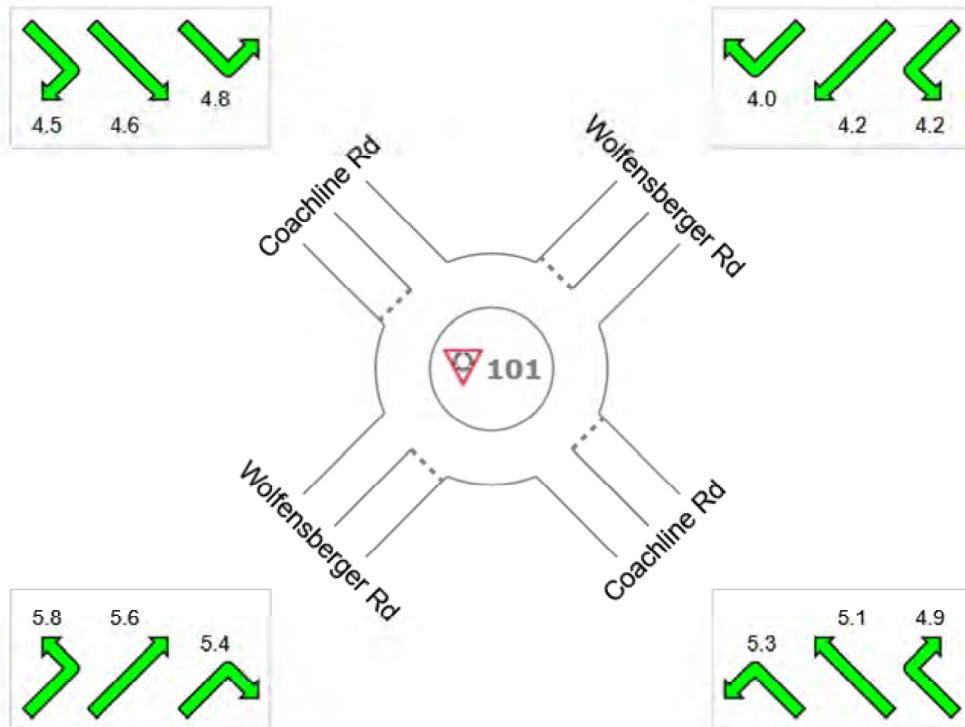
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.1	4.1	4.6	5.6	4.9
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_40 AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	30	310	150
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	85	90	15
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	40	205	65
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	30	165	20
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	215	209	6
NE: Wolfensberger Rd	190	184	6
NW: Coachline Rd	490	475	15
SW: Wolfensberger Rd	310	301	9
Total	1205	1169	36

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)



Site: 101 [Coachline & Wolfensberger_40 AM]

New Site

Site Category: (None)

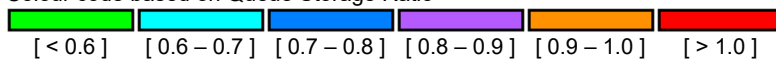
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	12	9	25	20	25



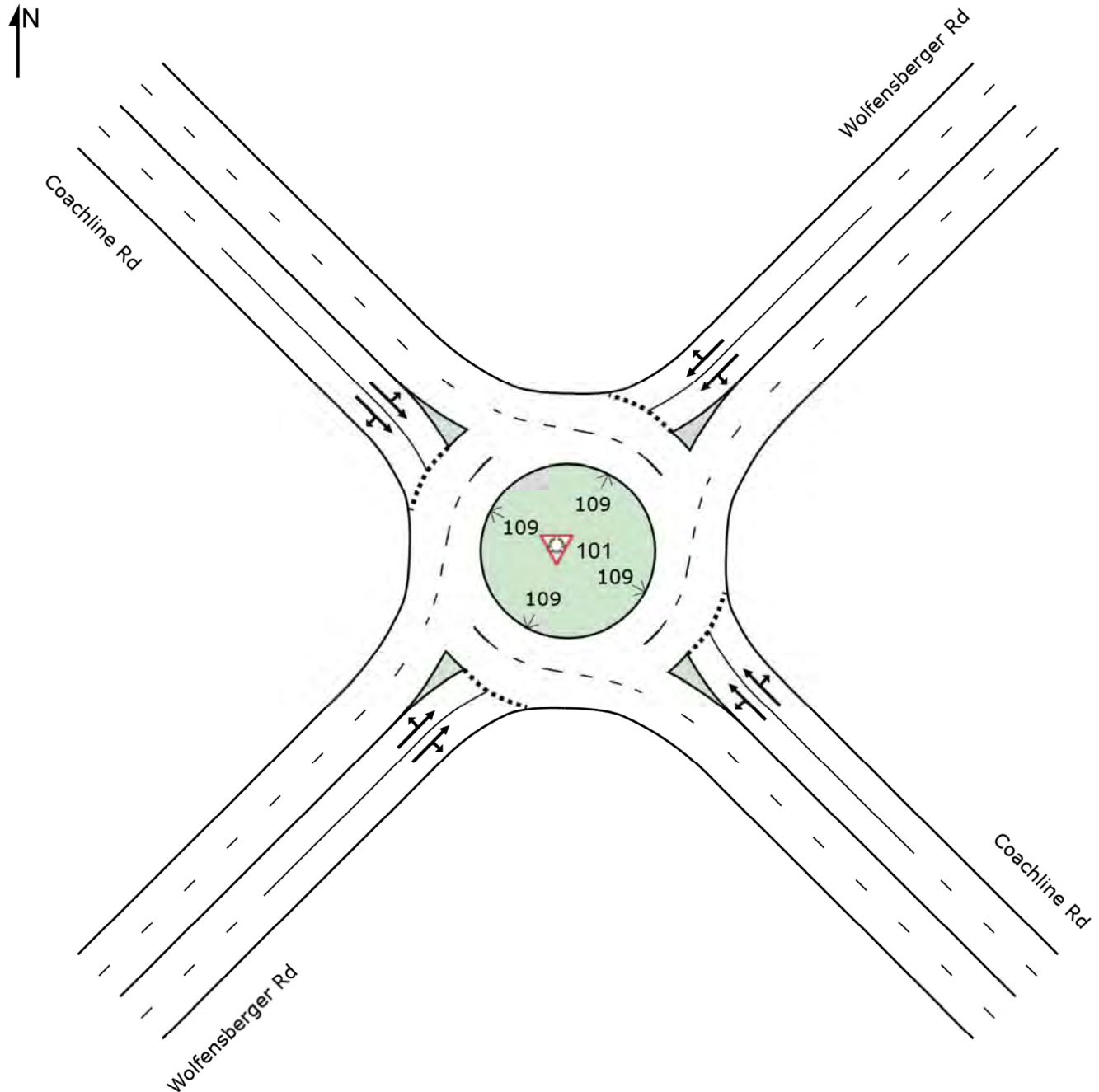
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_40 PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_40 PM]

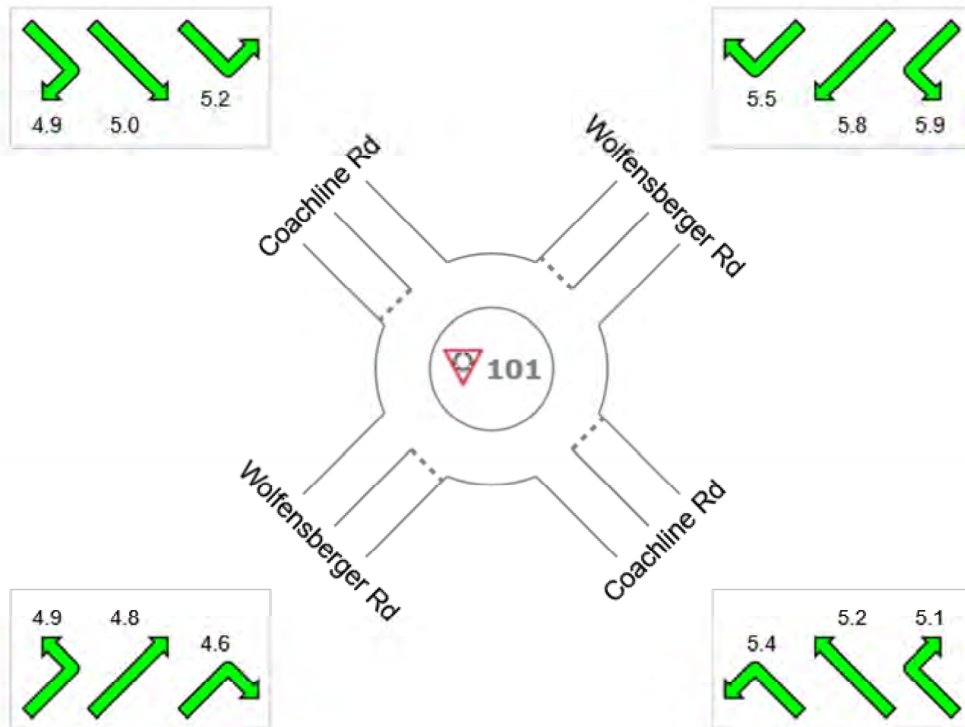
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.2	5.7	5.0	4.7	5.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab). LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

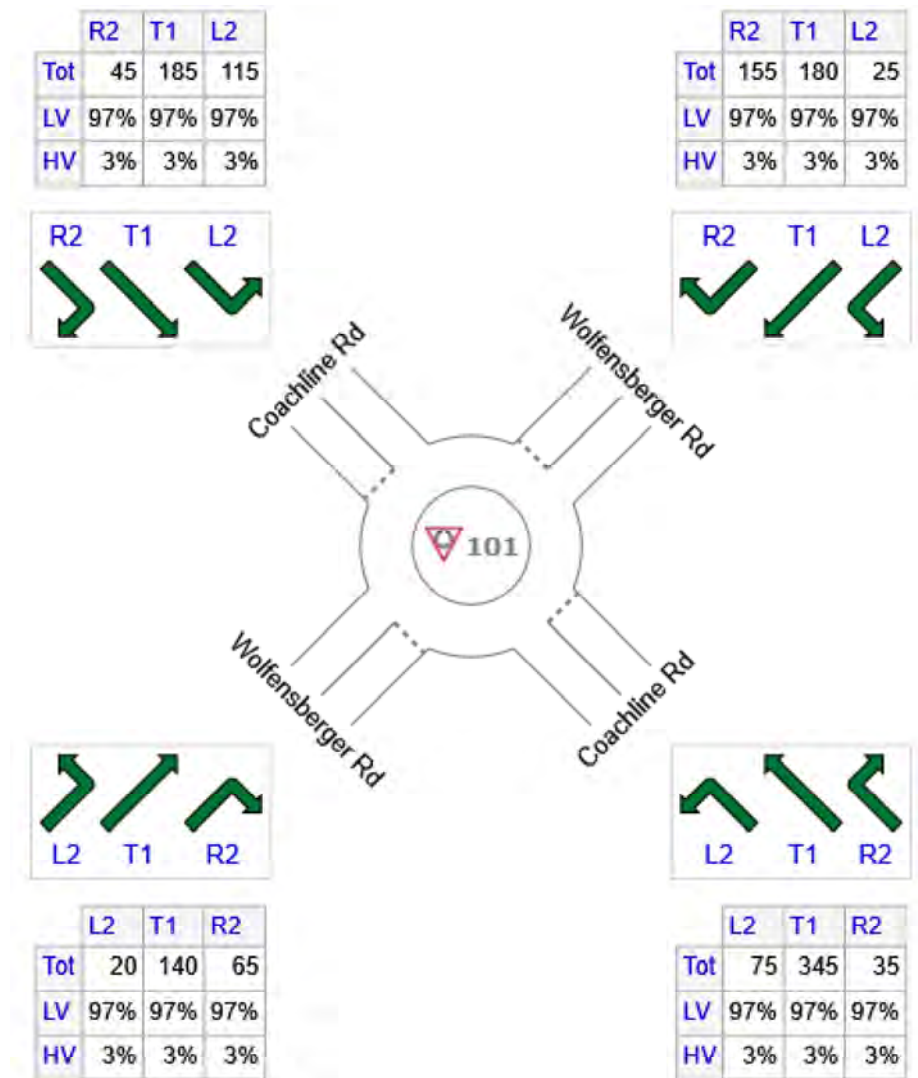
 **Site: 101 [Coachline & Wolfensberger_40 PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	455	441	14
NE: Wolfensberger Rd	360	349	11
NW: Coachline Rd	345	335	10
SW: Wolfensberger Rd	225	218	7
Total	1385	1343	42

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_40 PM]**

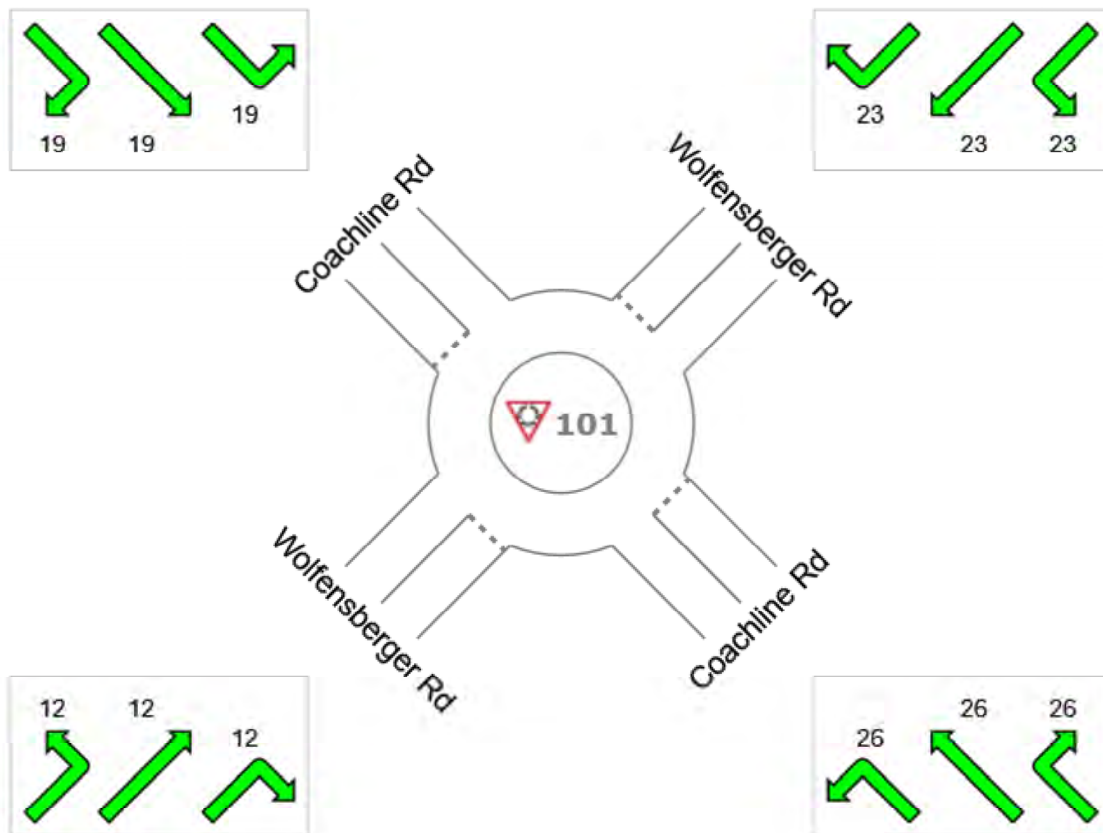
New Site

Site Category: (None)

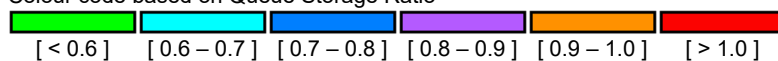
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	26	23	19	12	26



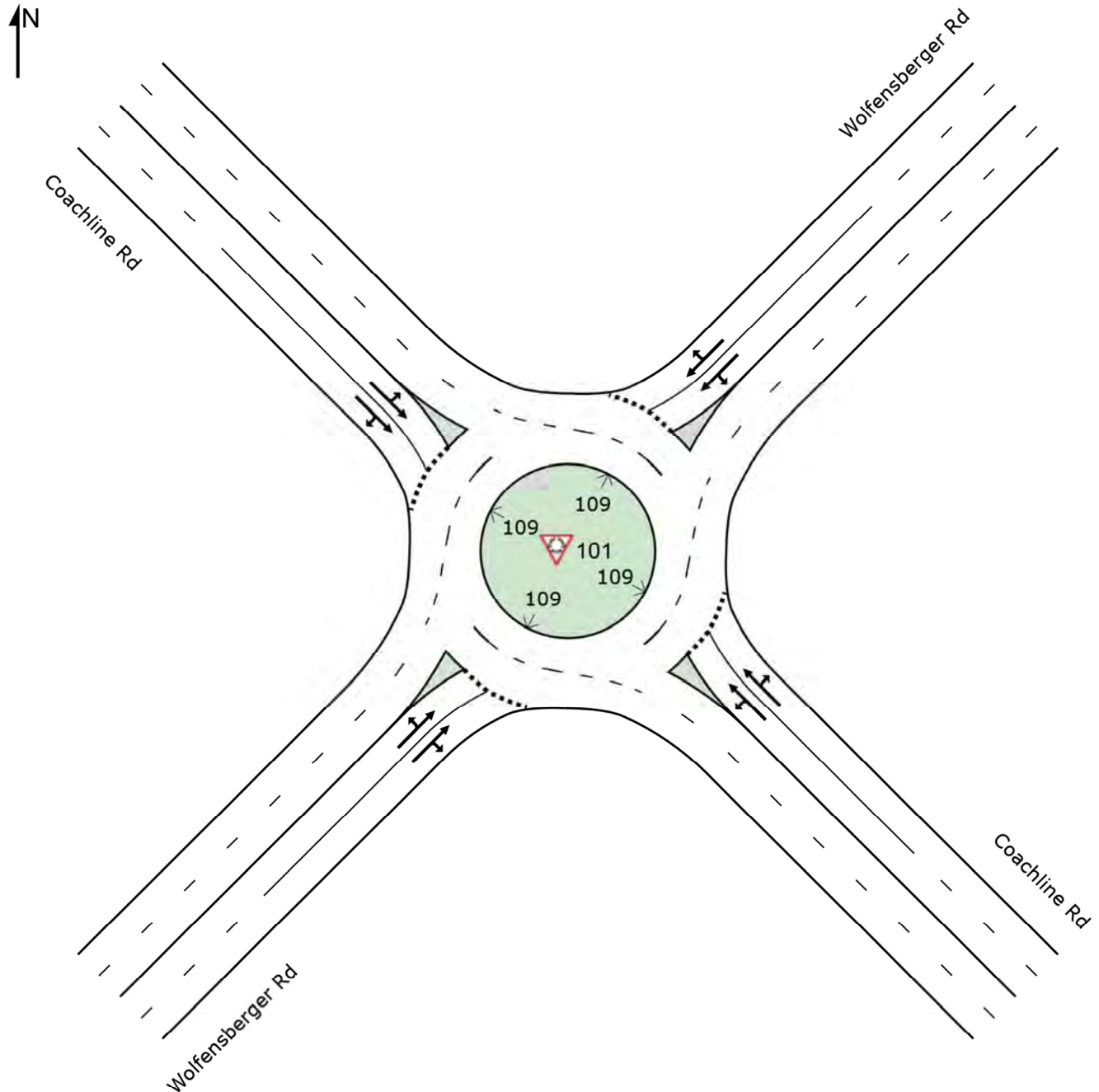
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL AM]**

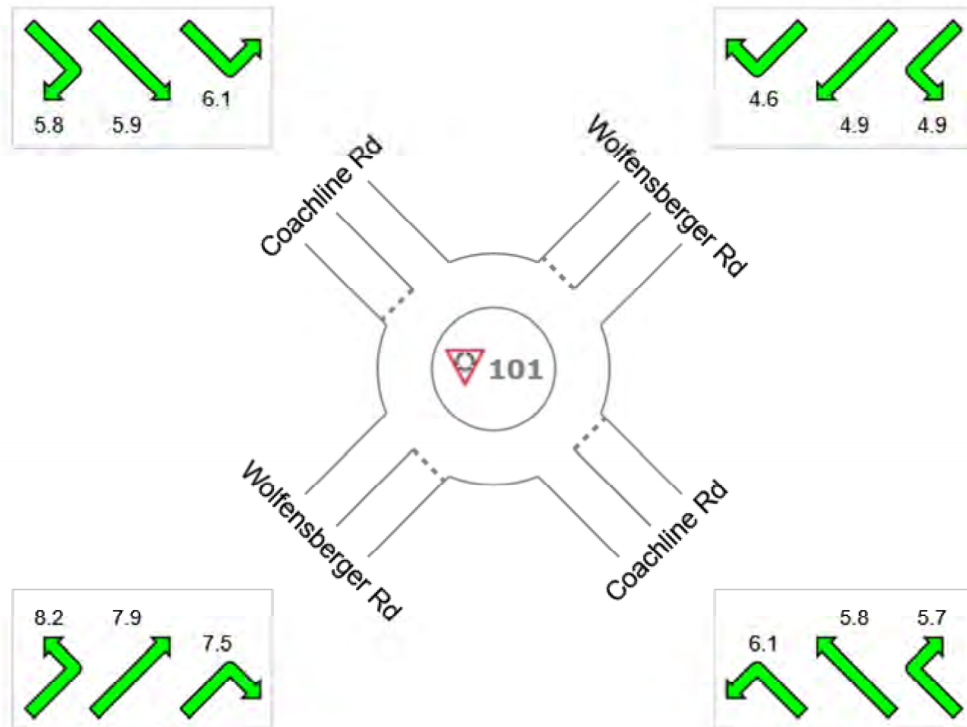
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	5.8	4.8	5.9	7.9	6.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

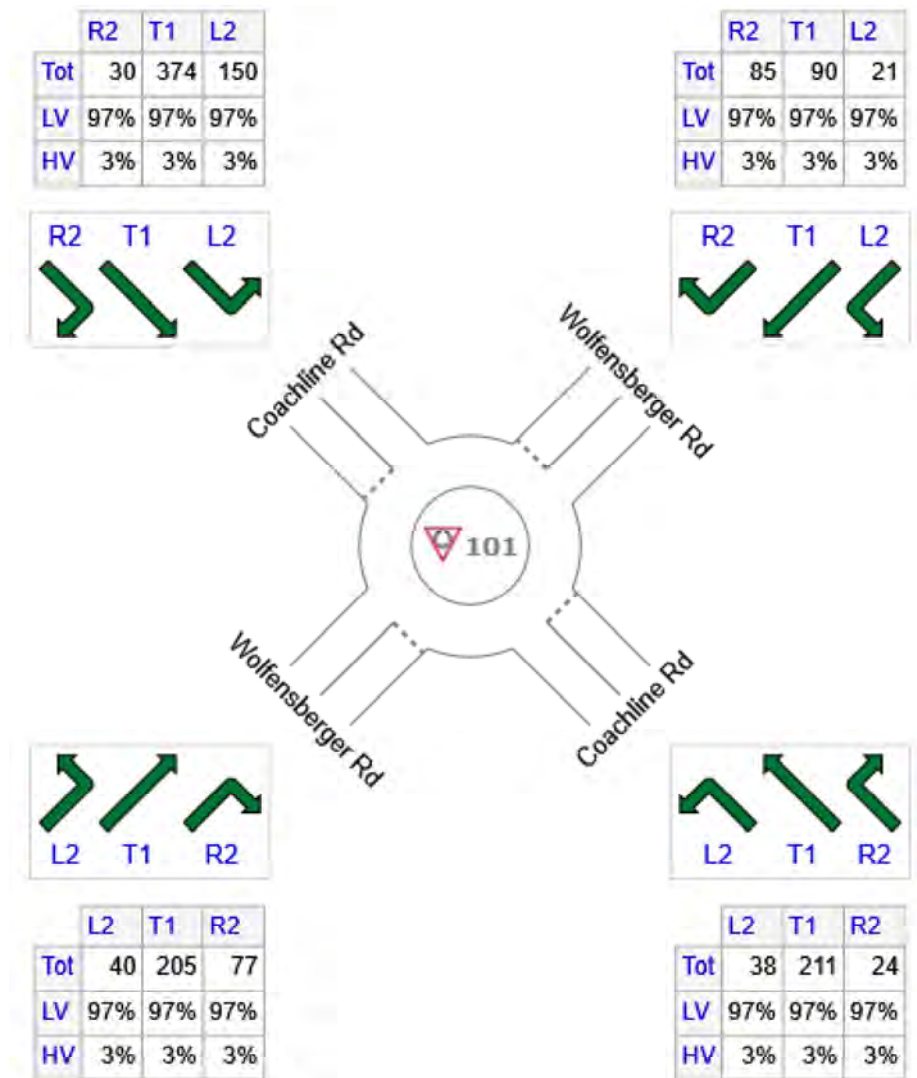
 **Site: 101 [Coachline & Wolfensberger_40 TOTAL AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	273	265	8
NE: Wolfensberger Rd	196	190	6
NW: Coachline Rd	554	537	17
SW: Wolfensberger Rd	322	312	10
Total	1345	1305	40

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:01:33 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Coachline & Wolfensberger.sip8

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL AM]**

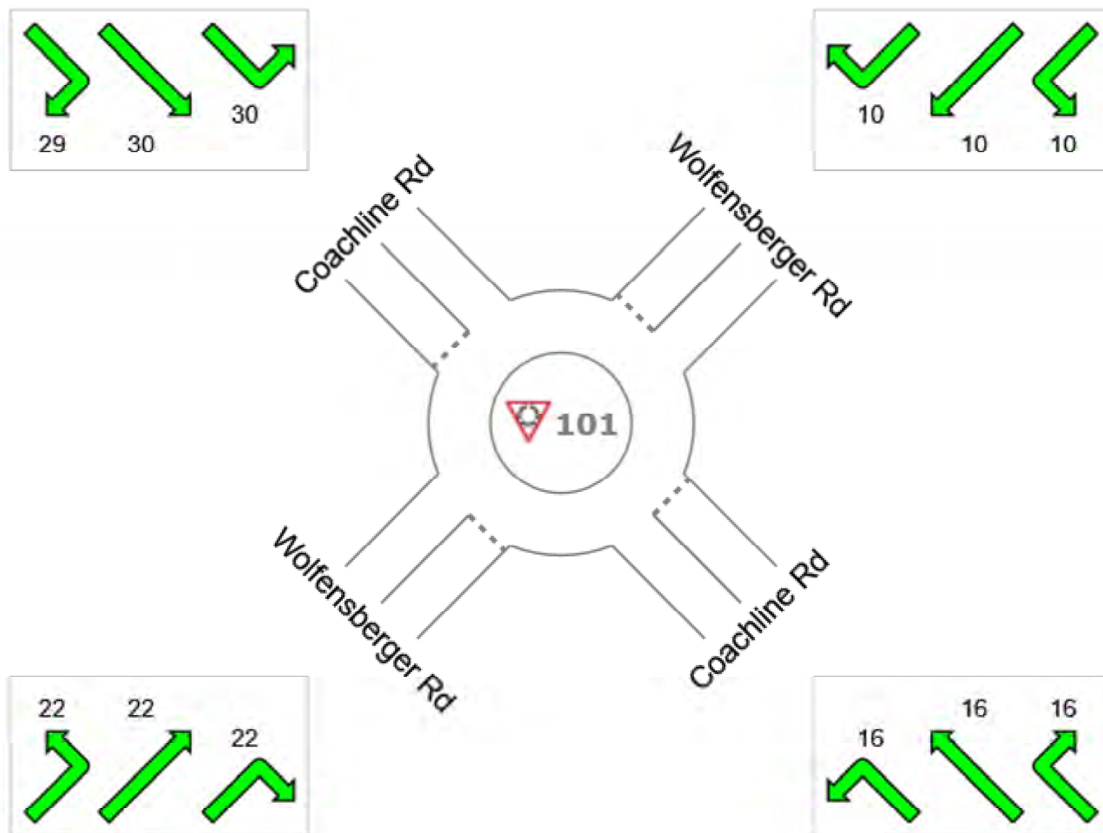
New Site

Site Category: (None)

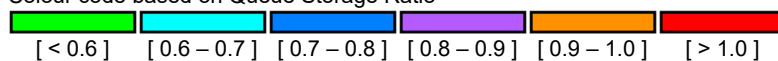
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	16	10	30	22	30



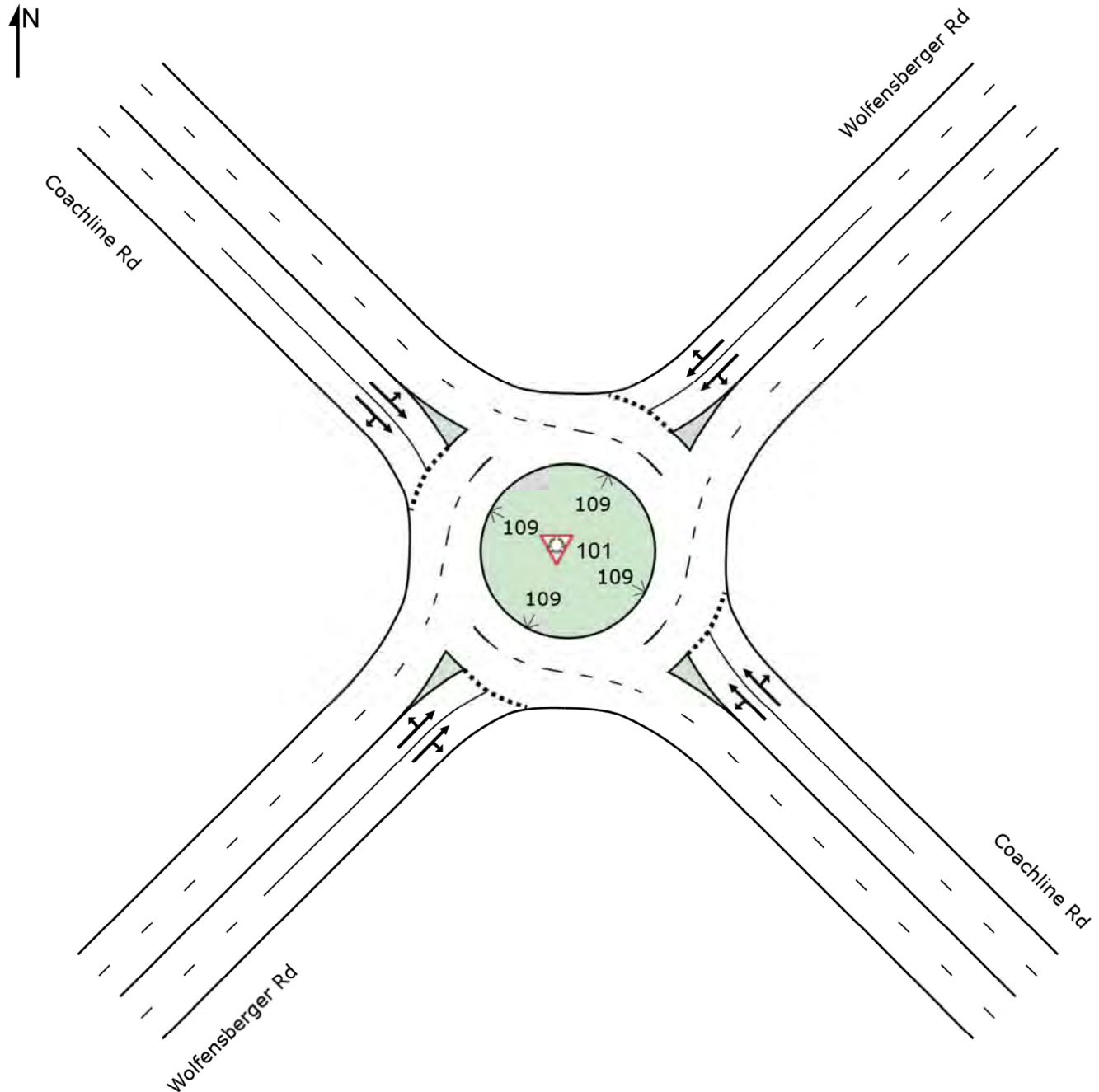
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 101 [Coachline & Wolfensberger_40 TOTAL PM]

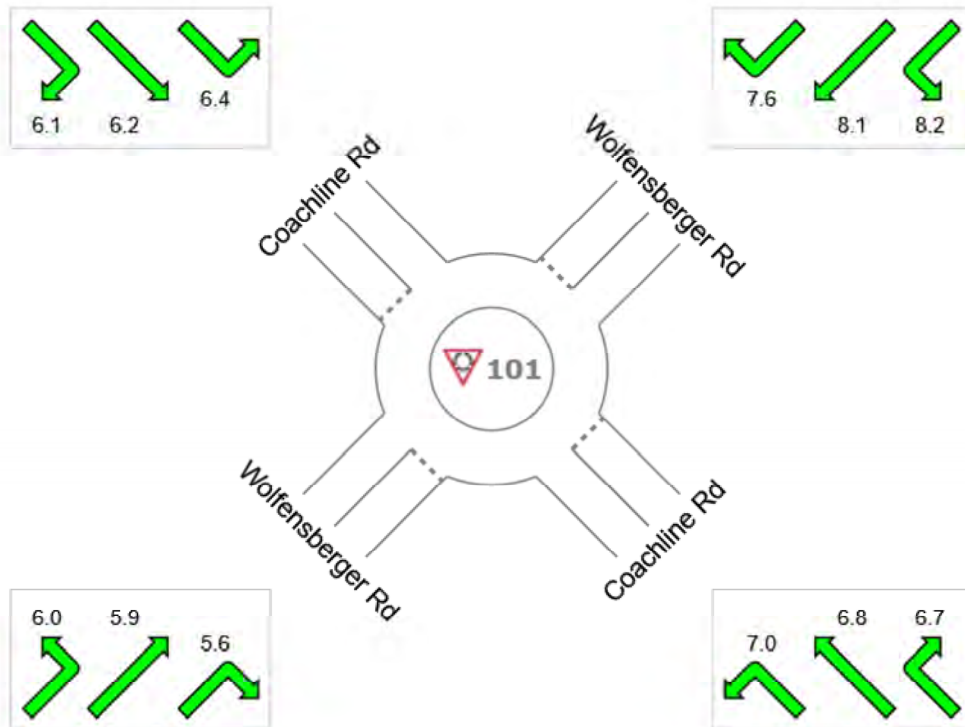
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Delay (Control)	6.9	7.9	6.2	5.8	6.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %

	R2	T1	L2
Tot	45	311	115
LV	97%	97%	97%
HV	3%	3%	3%



	R2	T1	L2
Tot	155	180	35
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	20	140	90
LV	97%	97%	97%
HV	3%	3%	3%



	L2	T1	R2
Tot	100	472	45
LV	97%	97%	97%
HV	3%	3%	3%

	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
SE: Coachline Rd	617	598	19
NE: Wolfensberger Rd	370	359	11
NW: Coachline Rd	471	457	14
SW: Wolfensberger Rd	250	243	8
Total	1708	1657	51

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 101 [Coachline & Wolfensberger_40 TOTAL PM]**

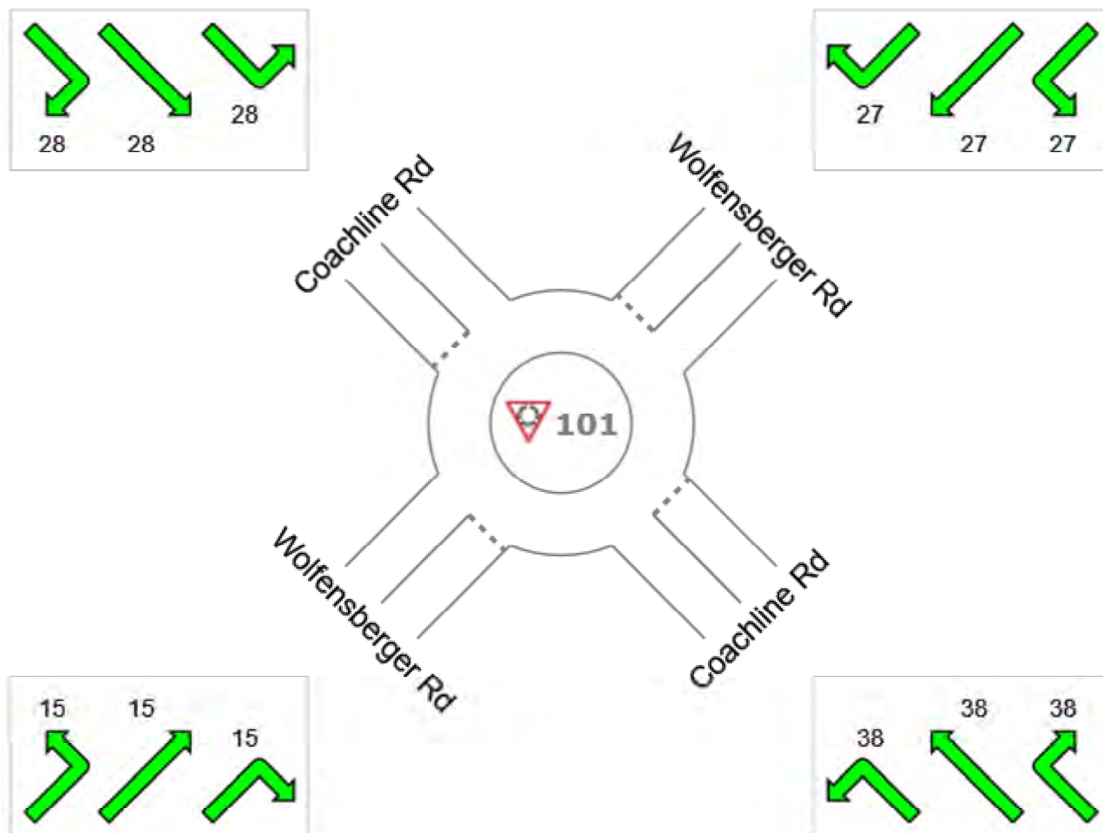
New Site

Site Category: (None)

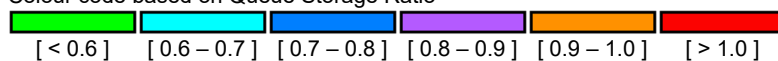
Roundabout

All Movement Classes

	Approaches				Intersection
	Southeast	Northeast	Northwest	Southwest	
Vehicle Queue (%ile)	38	27	28	15	38



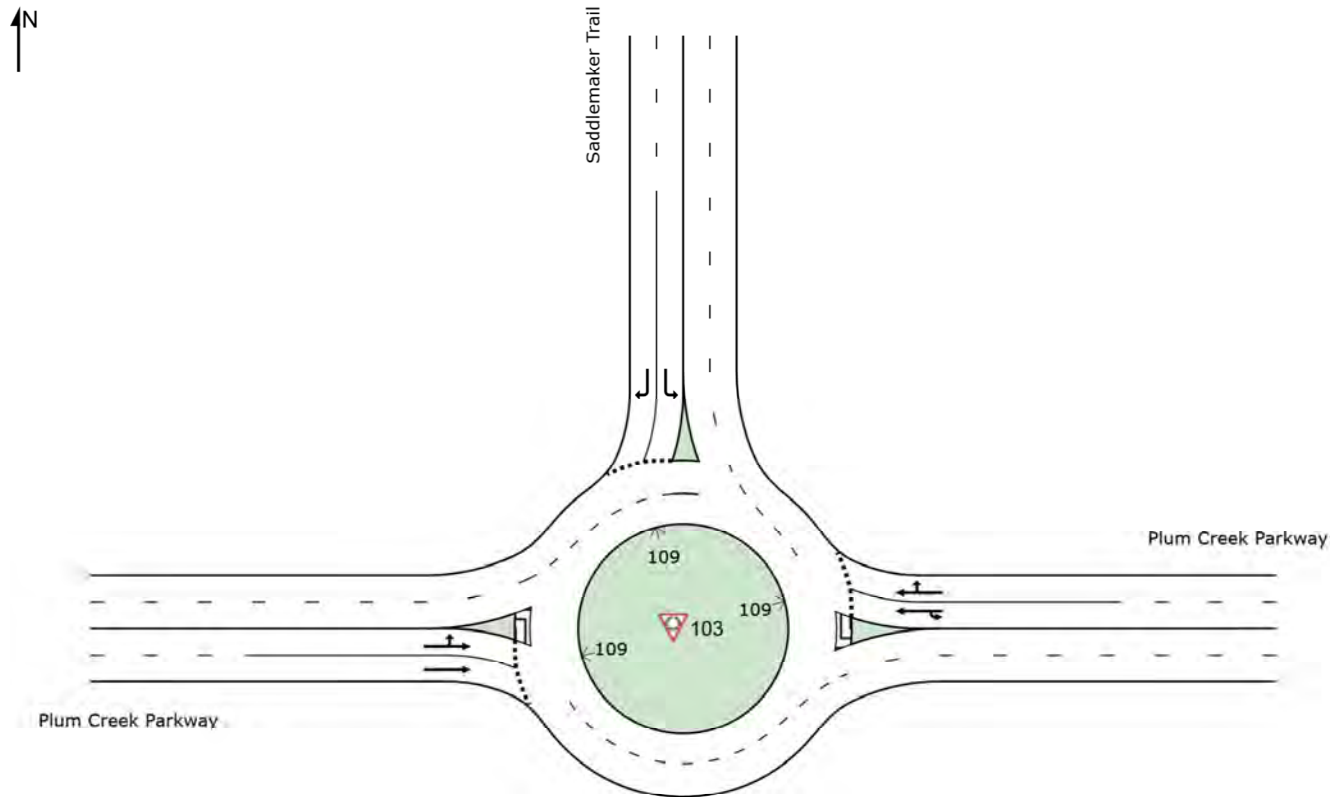
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Tuesday, October 13, 2020 10:44:54 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Plum Creek & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

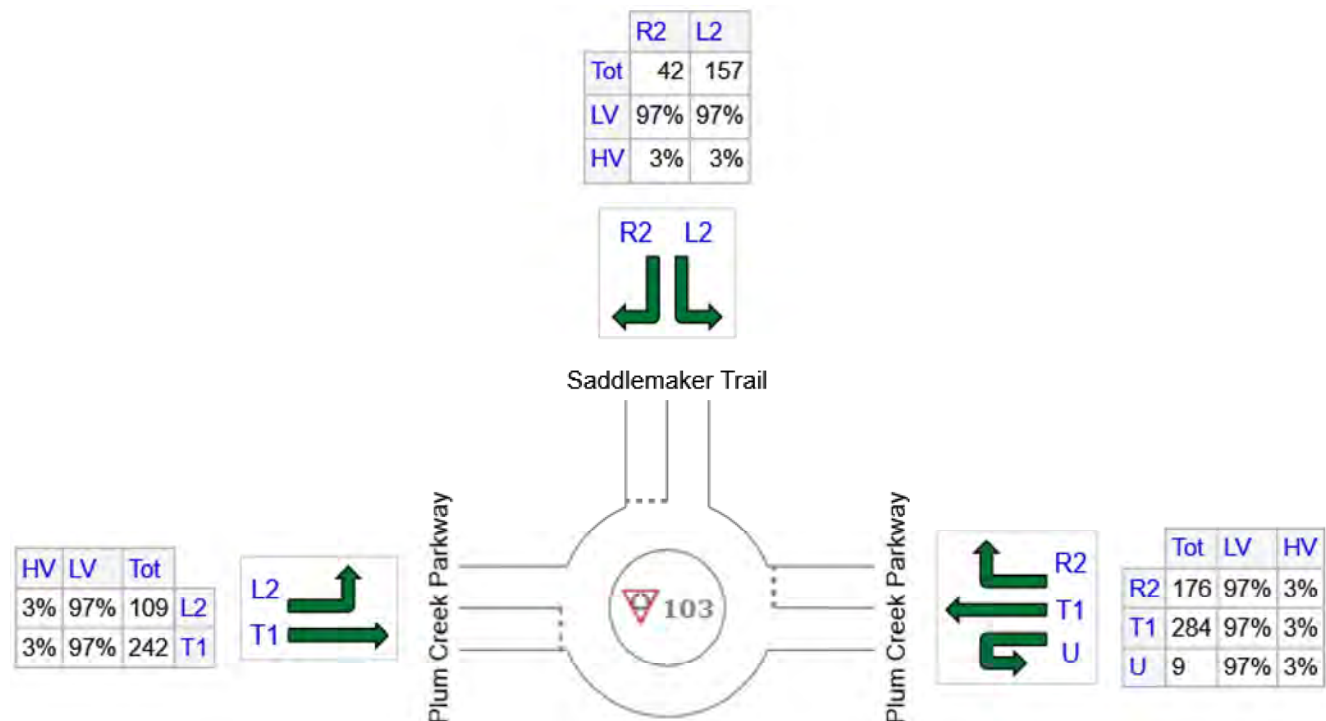
 Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL AM]

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
E: Plum Creek Parkway	469	455	14
N: Saddlemaker Trail	199	193	6
W: Plum Creek Parkway	351	340	11
Total	1019	988	31

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:06:12 AM

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL AM]

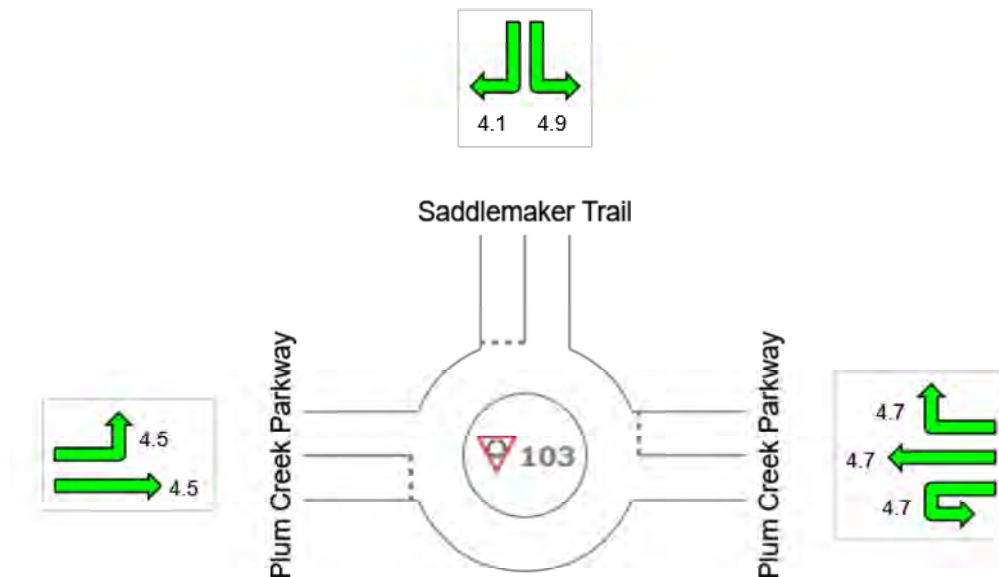
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches			Intersection
	East	North	West	
Delay (Control)	4.7	4.8	4.5	4.7
LOS	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL AM]**

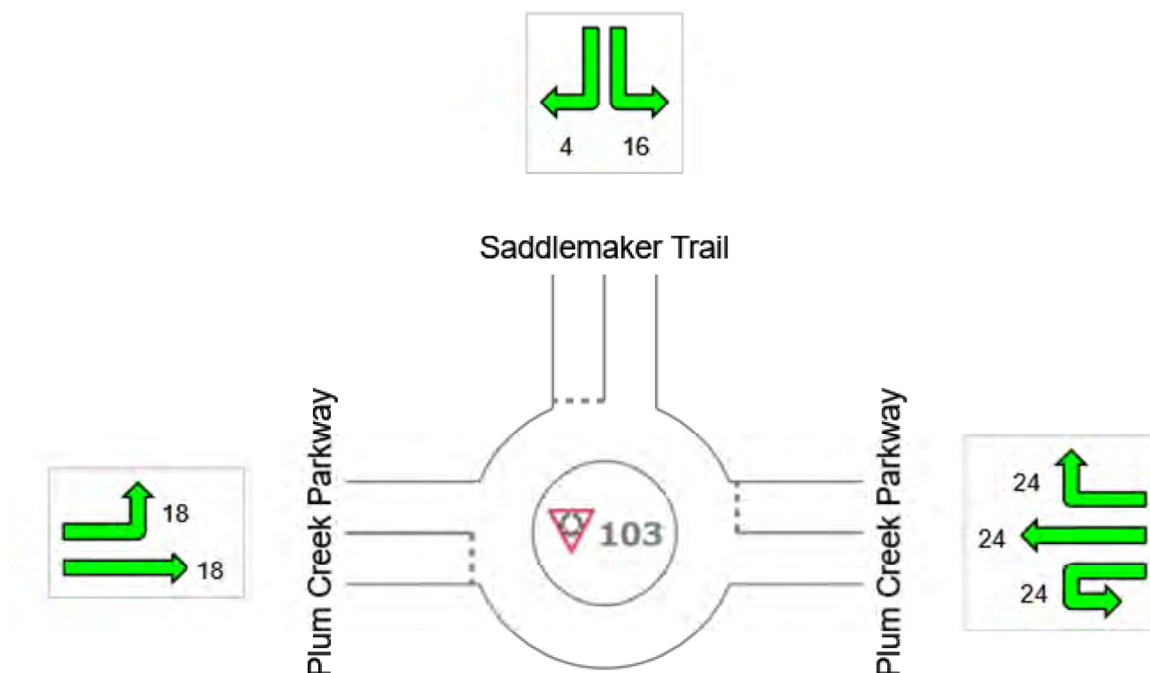
New Site

Site Category: (None)

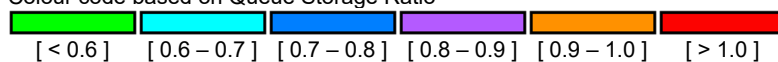
Roundabout

All Movement Classes

	Approaches			Intersection
	East	North	West	
Vehicle Queue (%ile)	24	16	18	24



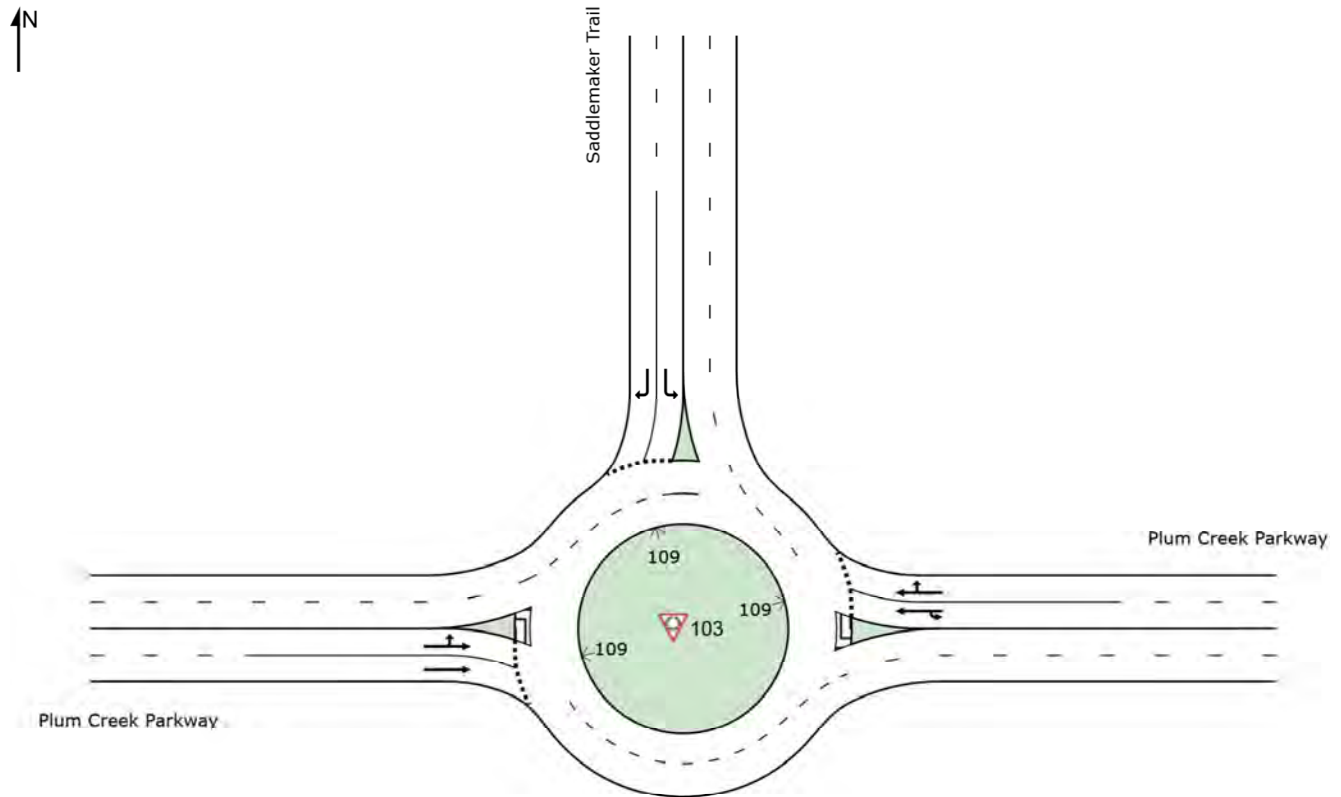
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Tuesday, October 13, 2020 10:45:33 AM

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INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

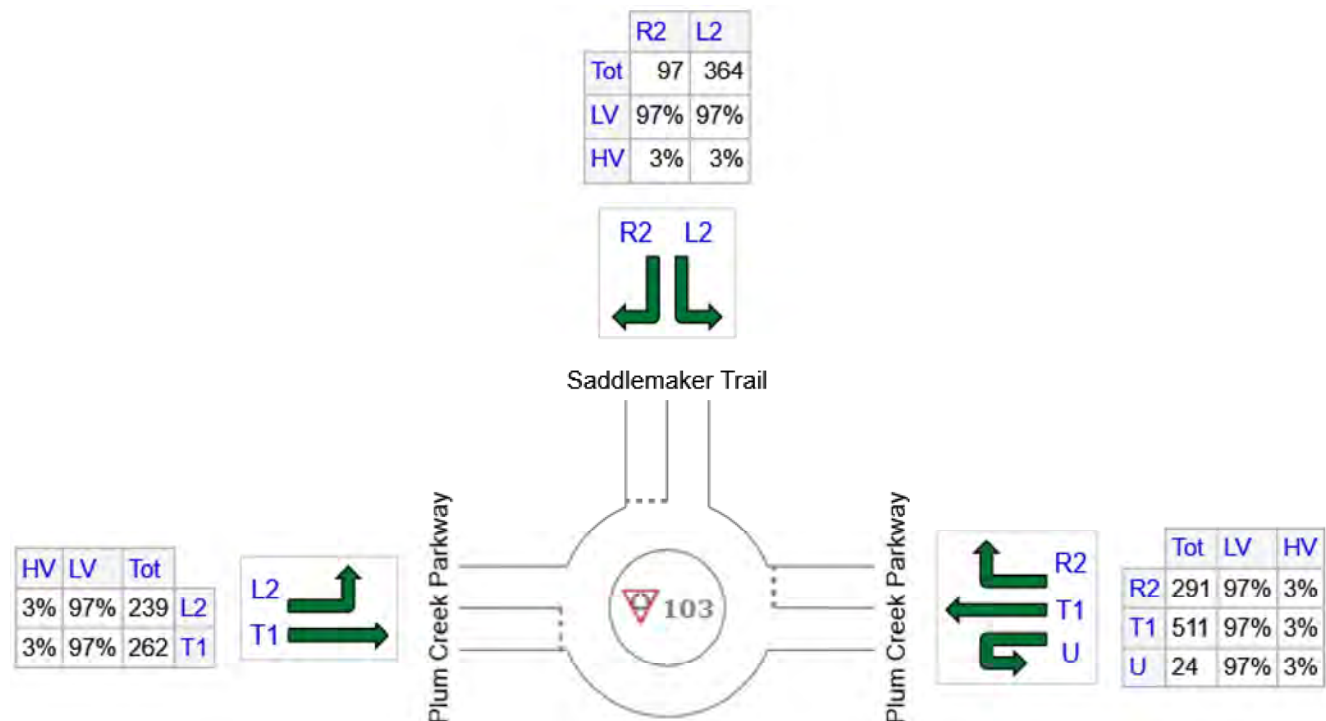
 Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL PM]

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
E: Plum Creek Parkway	826	801	25
N: Saddlemaker Trail	461	447	14
W: Plum Creek Parkway	501	486	15
Total	1788	1734	54

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:06:34 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Plum Creek & Saddlemaker.sip8

DELAY (CONTROL)

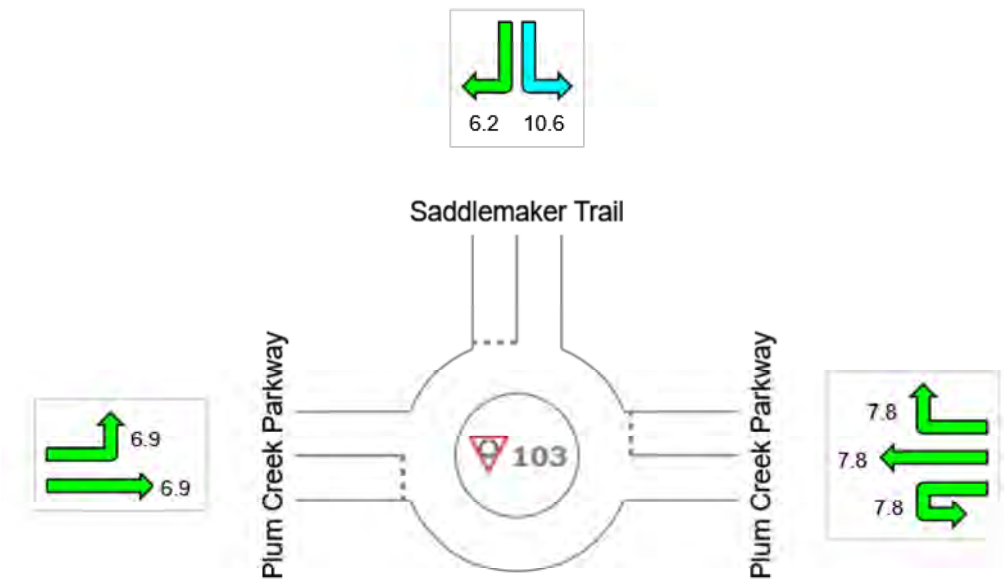
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL PM]**

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches			Intersection
	East	North	West	
Delay (Control)	7.8	9.7	6.9	8.0
LOS	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_27 TOTAL PM]**

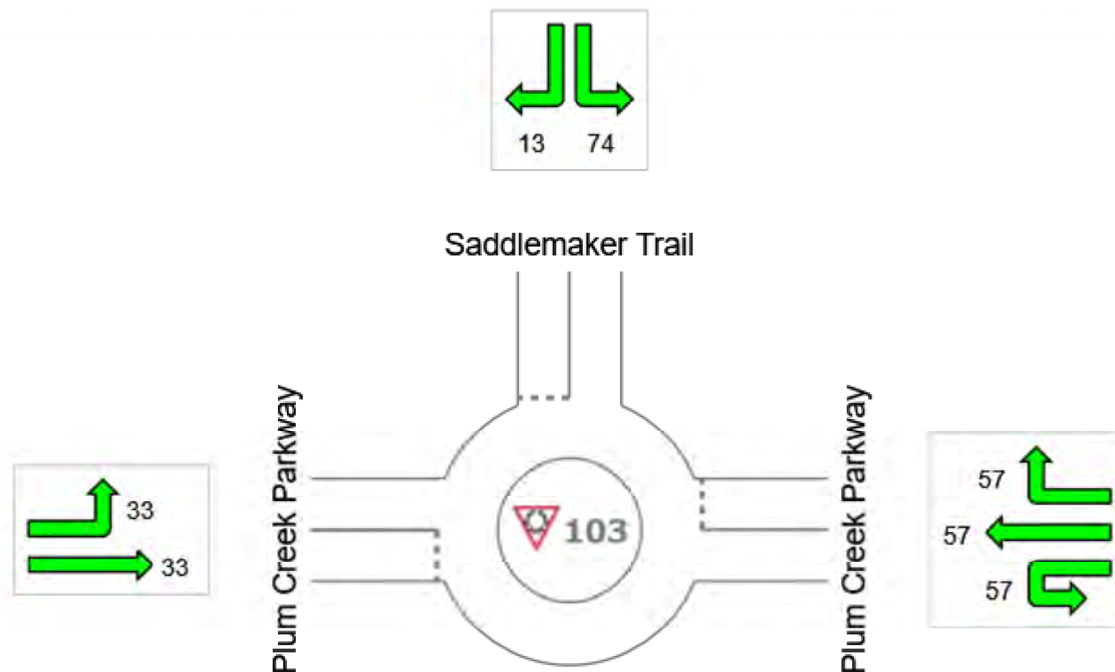
New Site

Site Category: (None)

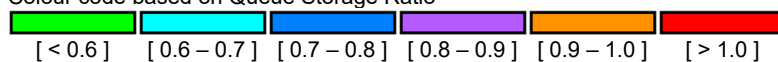
Roundabout

All Movement Classes

	Approaches			Intersection
	East	North	West	
Vehicle Queue (%ile)	57	74	33	74



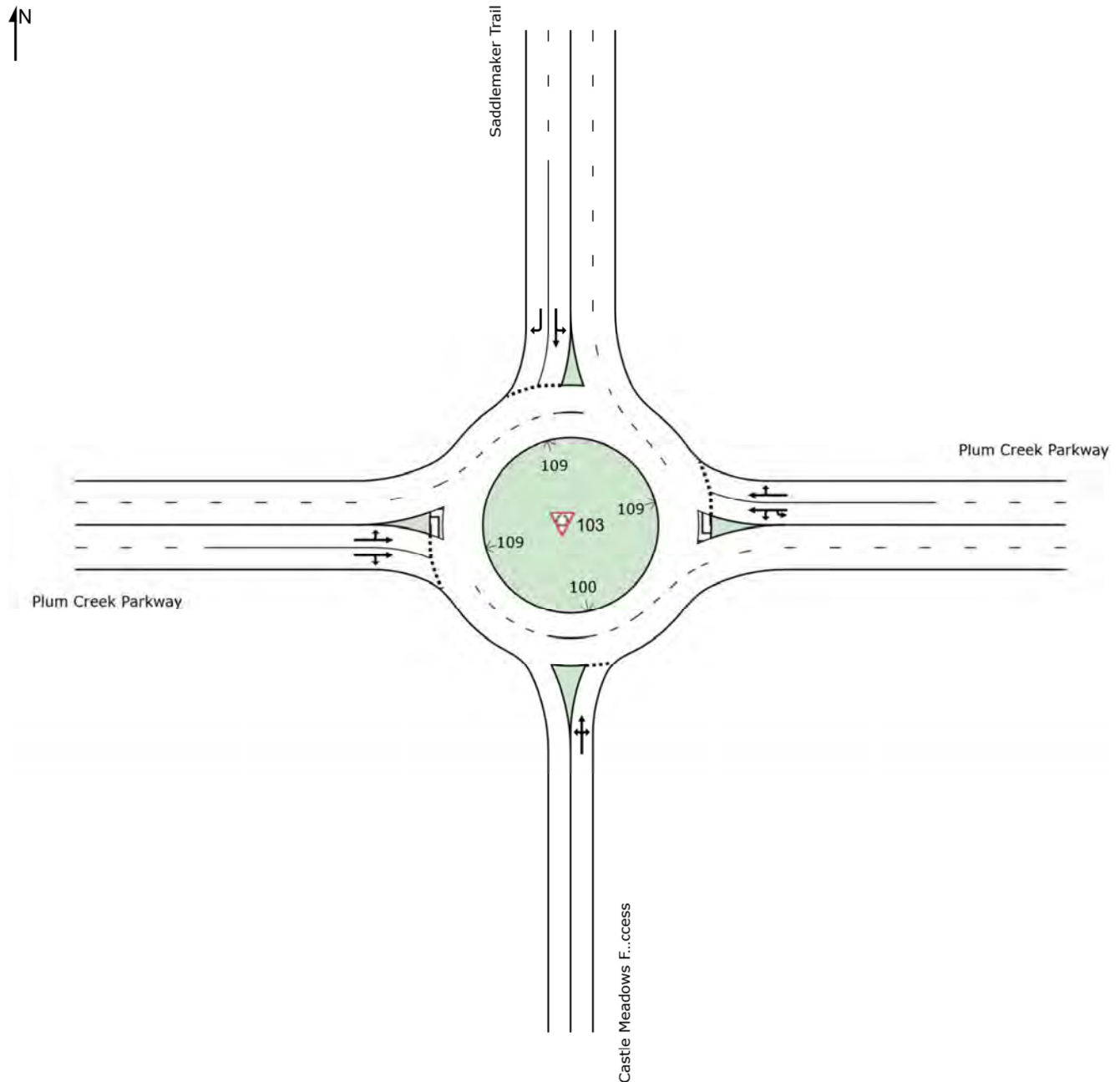
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

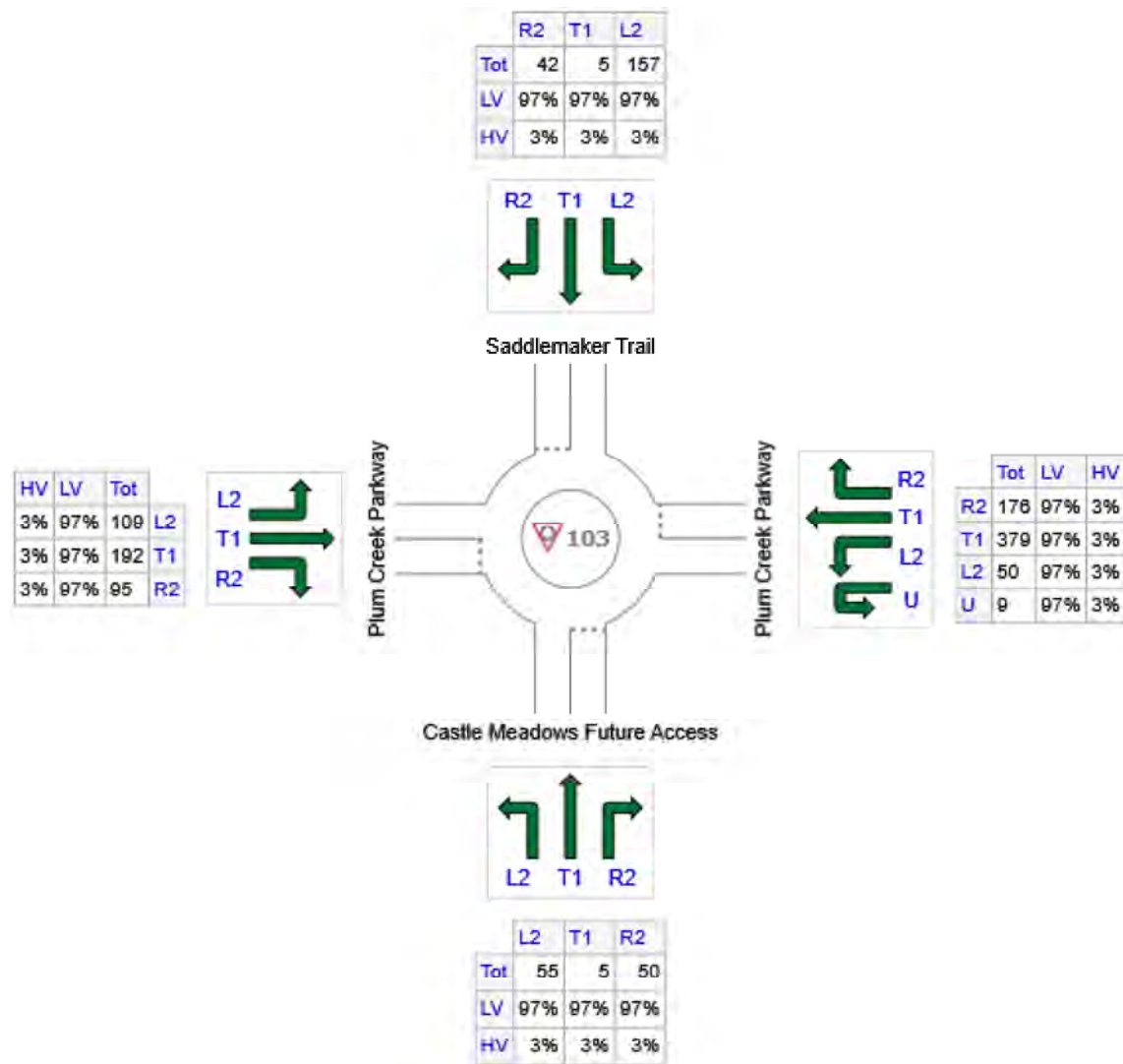
 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Castle Meadows Future Access	110	107	3
E: Plum Creek Parkway	614	596	18
N: Saddlemaker Trail	204	198	6
W: Plum Creek Parkway	396	384	12
Total	1324	1284	40

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL AM]

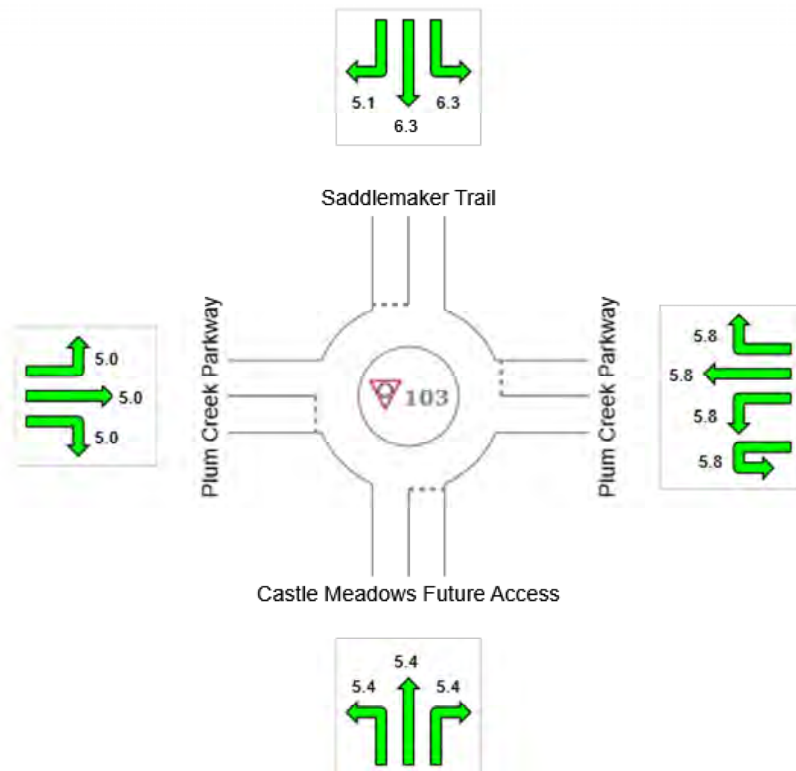
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.4	5.8	6.0	5.0	5.6
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL AM]**

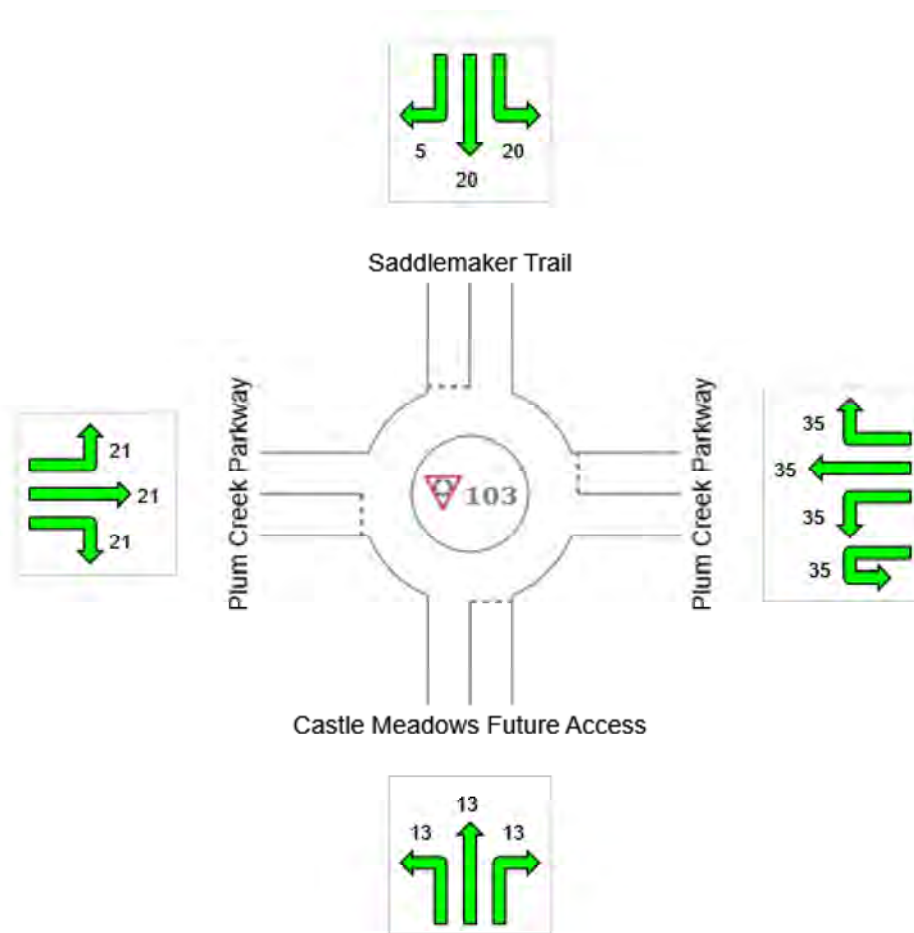
New Site

Site Category: (None)

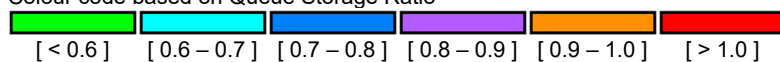
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	13	35	20	21	35



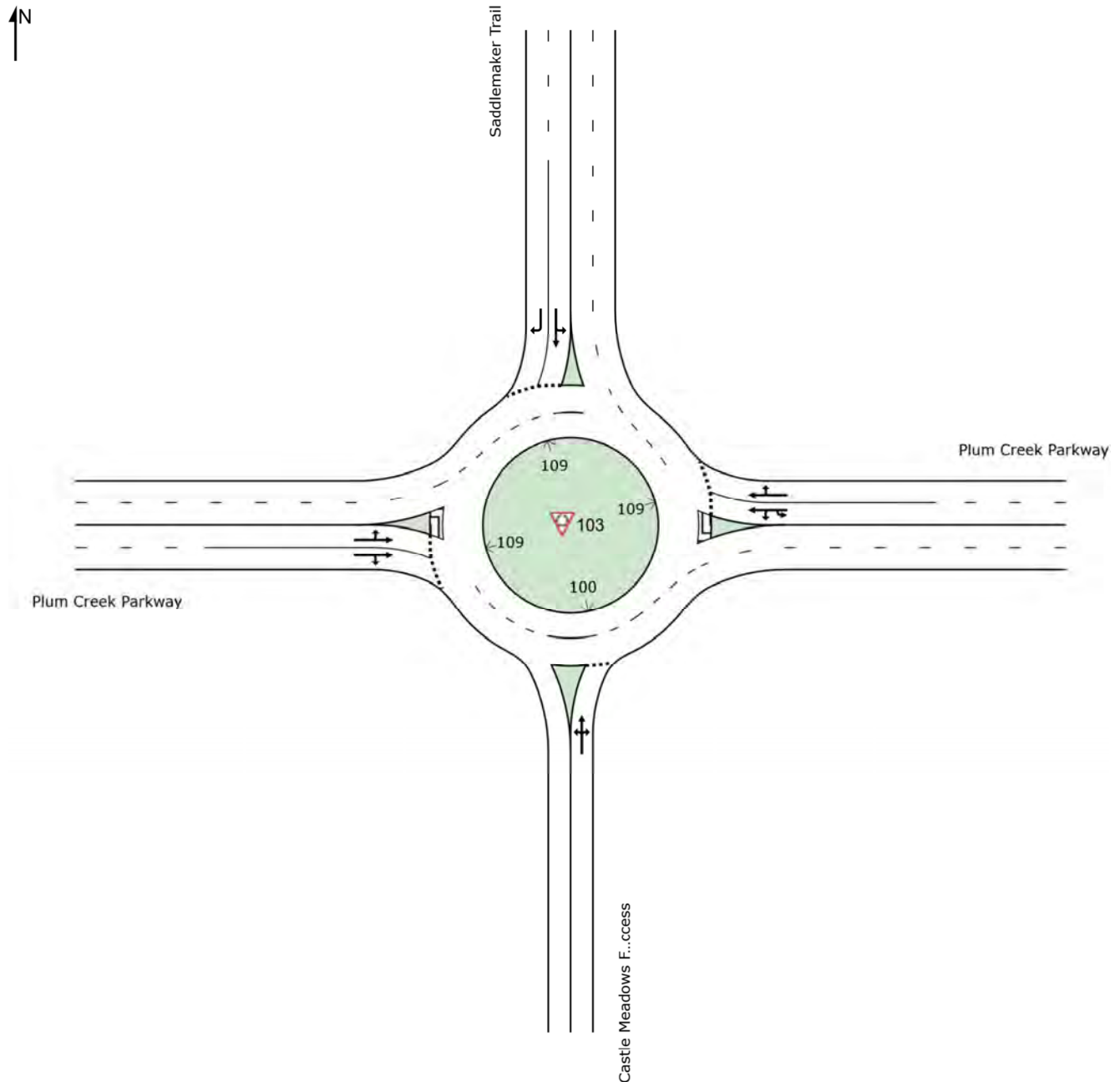
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

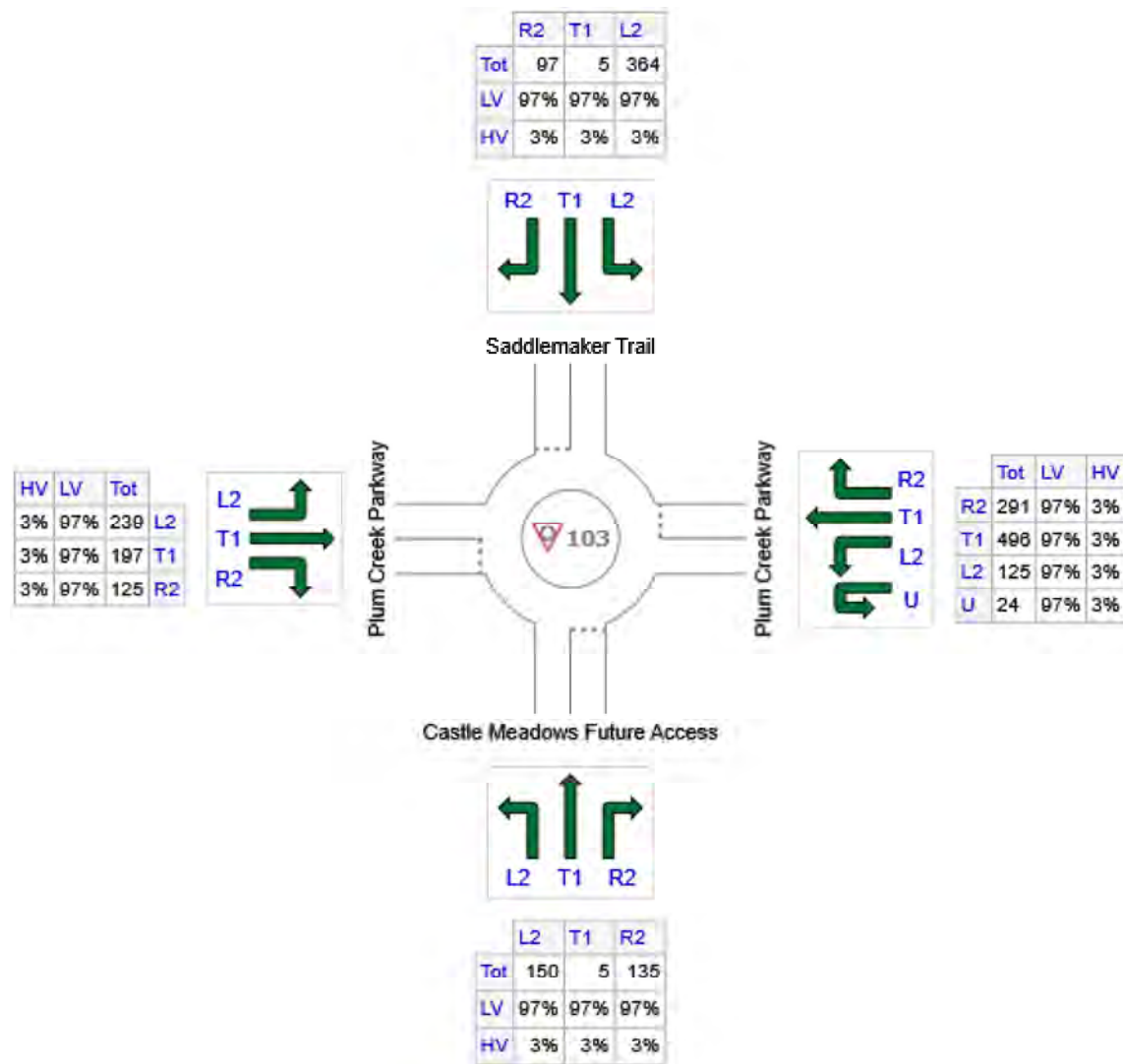
 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Castle Meadows Future Access	290	281	9
E: Plum Creek Parkway	936	908	28
N: Saddlemaker Trail	466	452	14
W: Plum Creek Parkway	561	544	17
Total	2253	2185	68

DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL PM]**

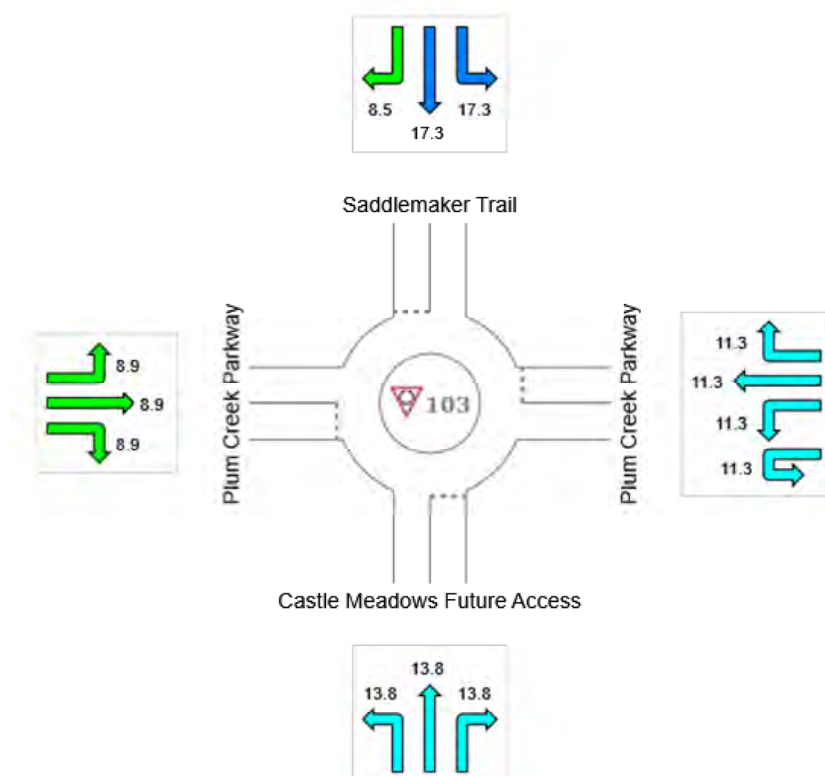
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	13.8	11.3	15.5	8.9	11.9
LOS	B	B	C	A	B



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_30 TOTAL PM]**

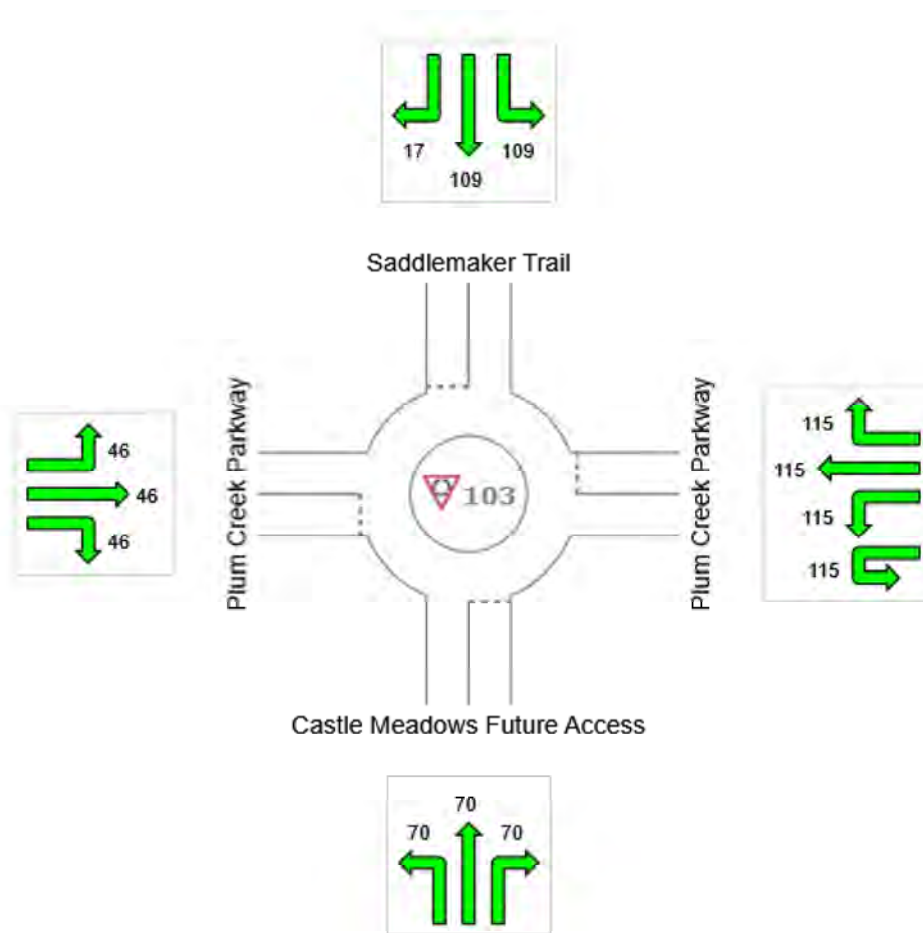
New Site

Site Category: (None)

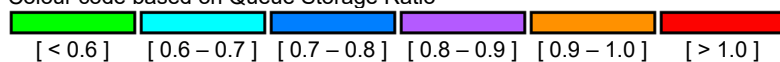
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	70	115	109	46	115



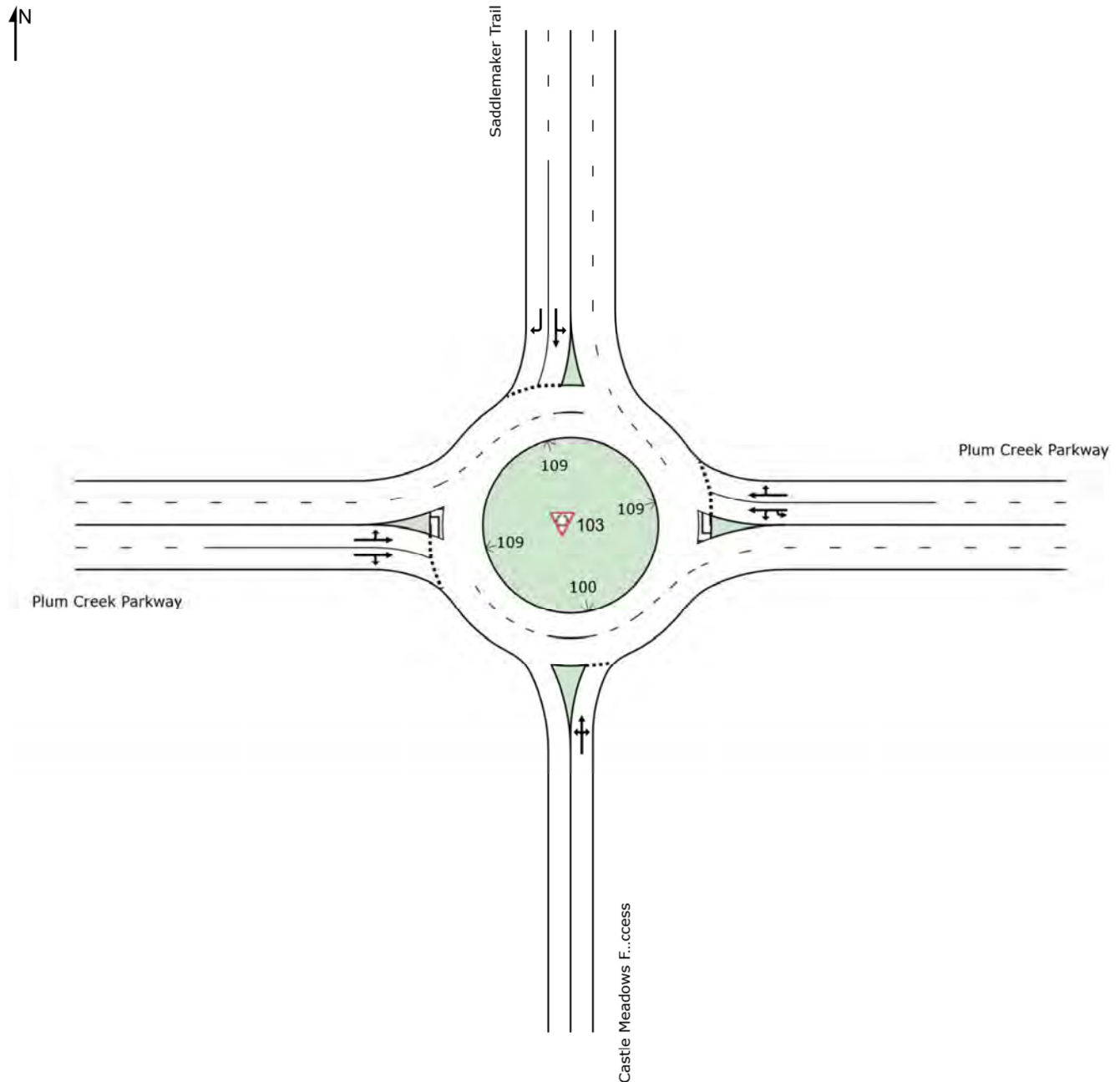
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL AM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

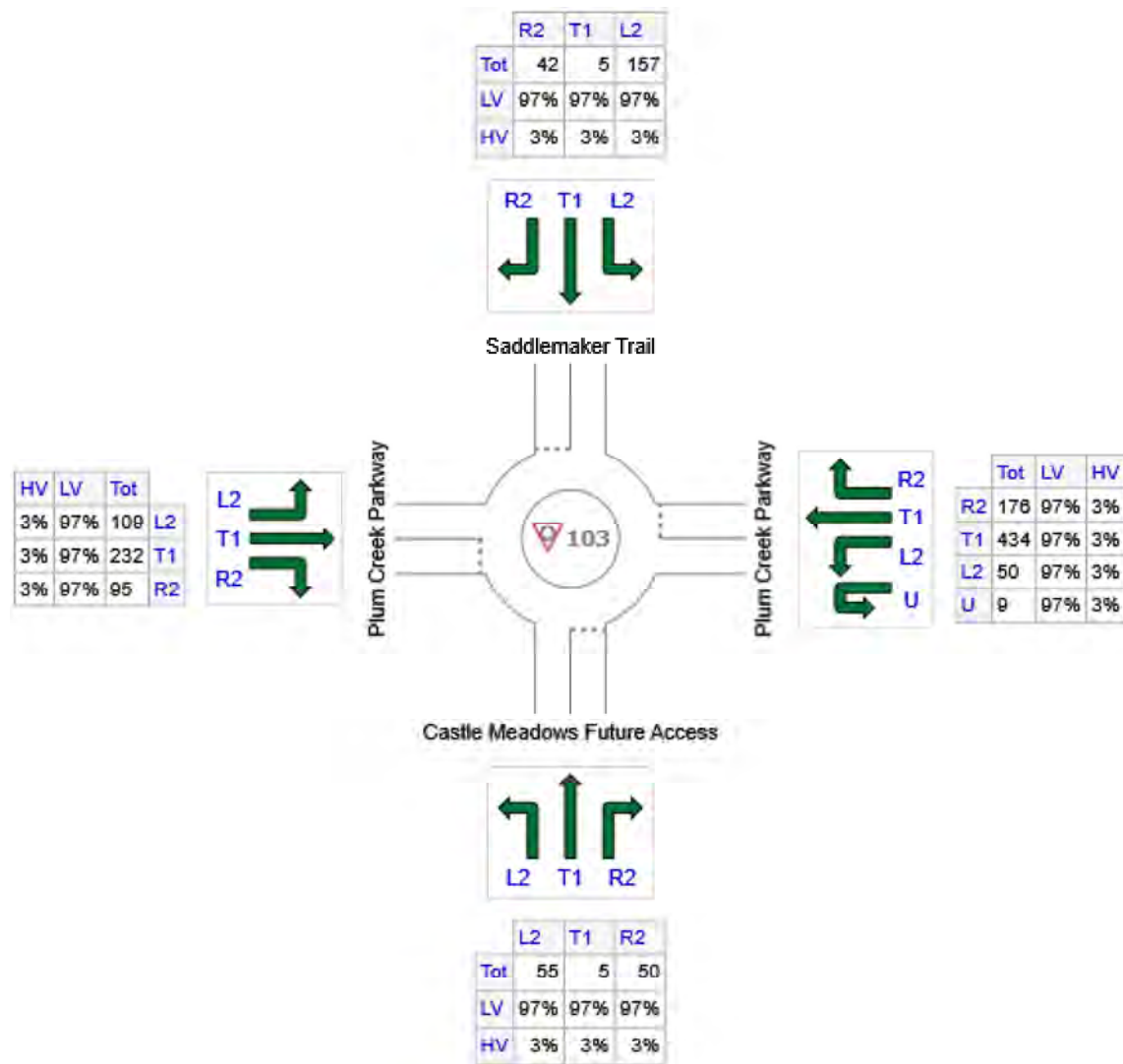
 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL AM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Castle Meadows Future Access	110	107	3
E: Plum Creek Parkway	669	649	20
N: Saddlemaker Trail	204	198	6
W: Plum Creek Parkway	436	423	13
Total	1419	1376	43

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DELAY (CONTROL)

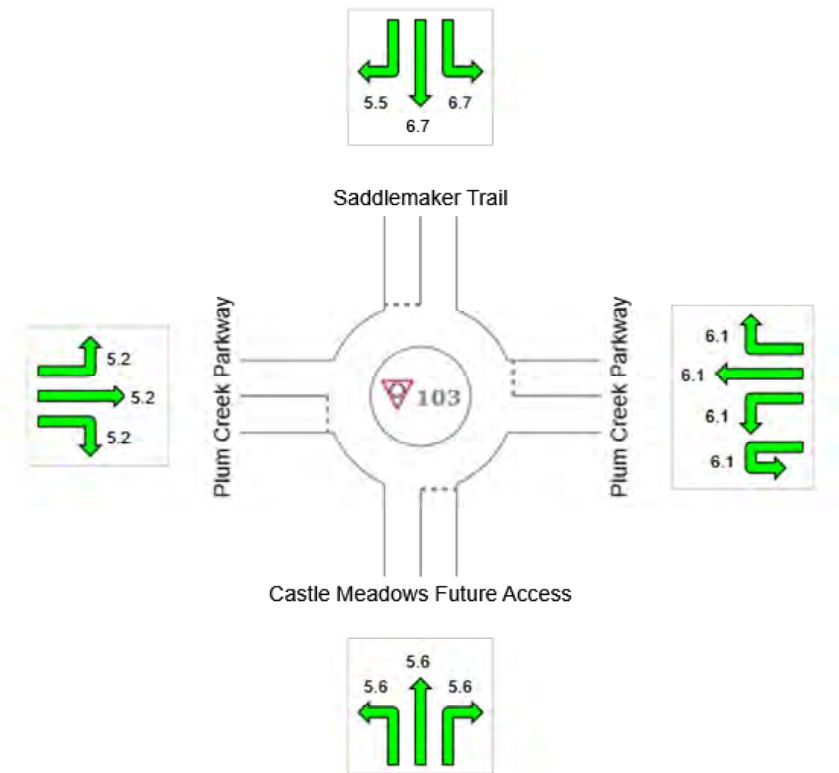
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL AM]**

New Site
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.6	6.1	6.4	5.2	5.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL AM]**

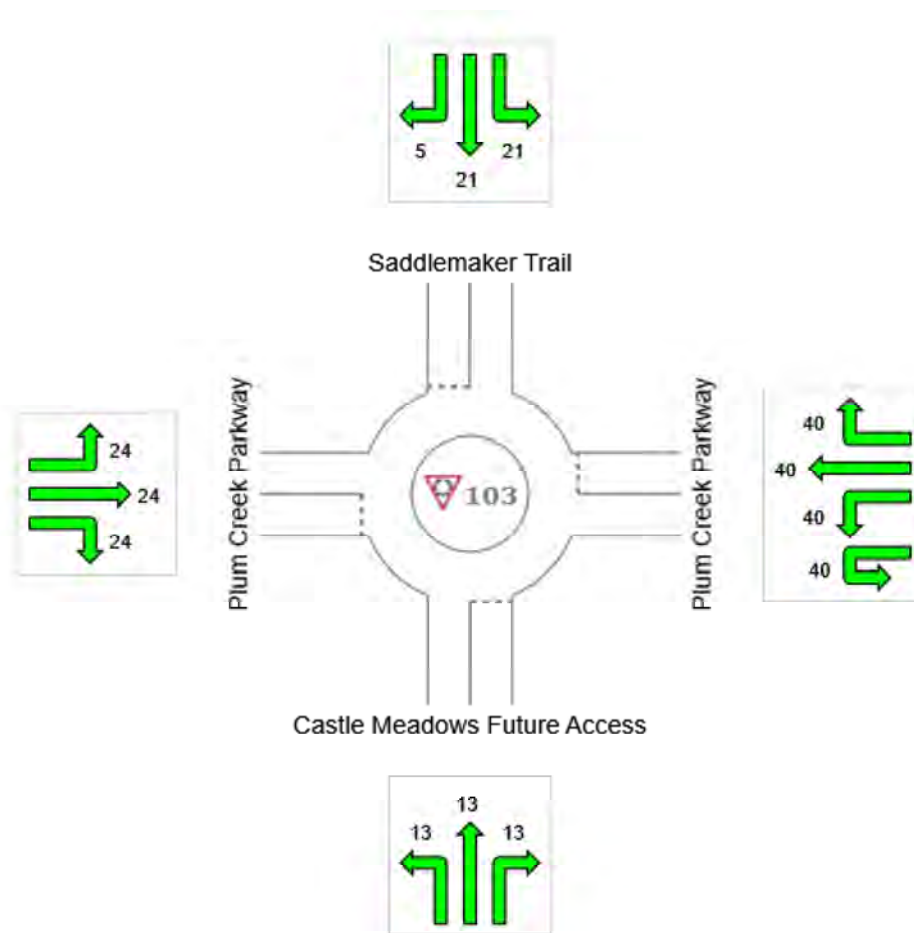
New Site

Site Category: (None)

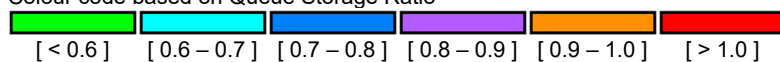
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	13	40	21	24	40



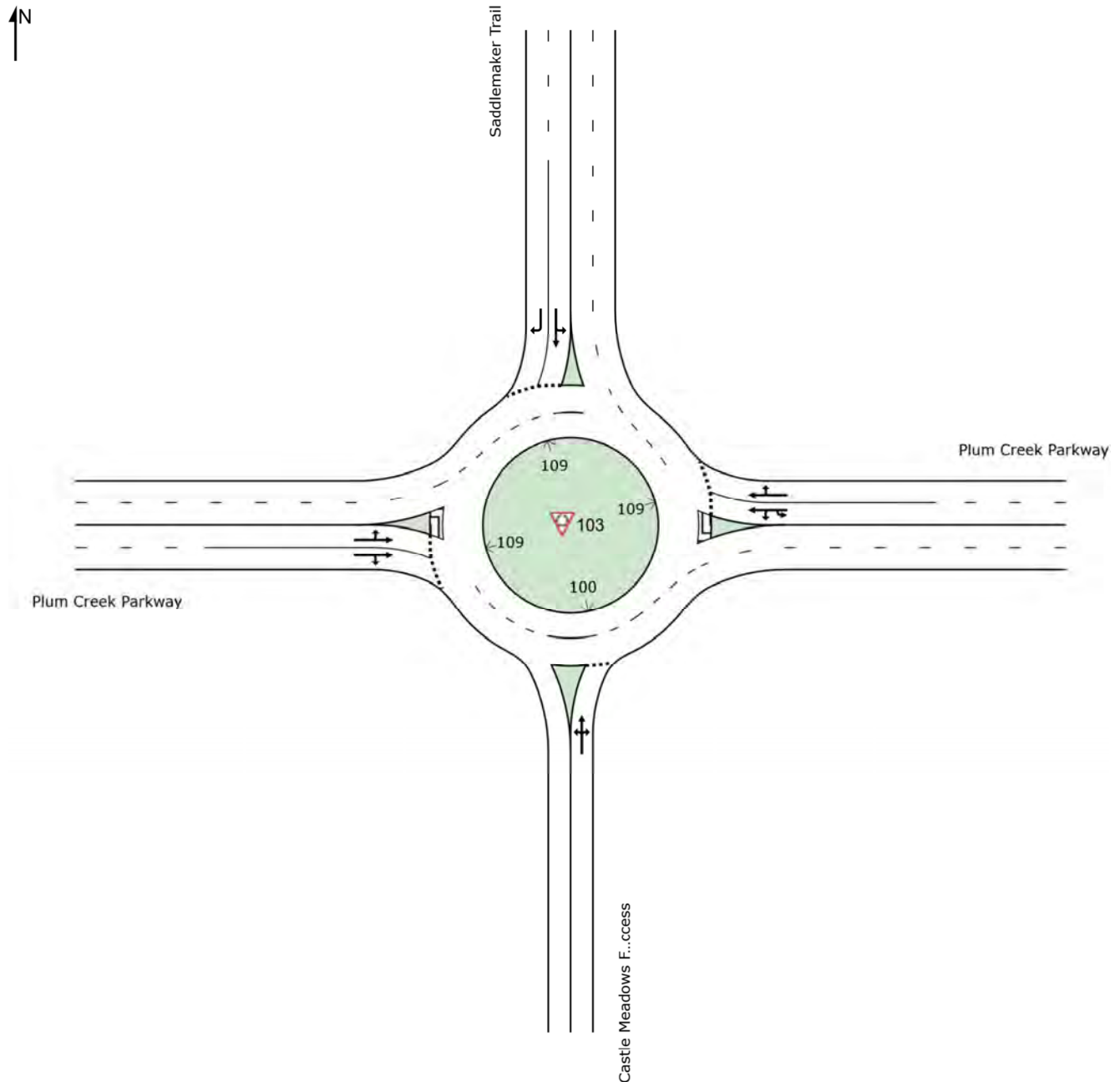
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL PM]**

New Site
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

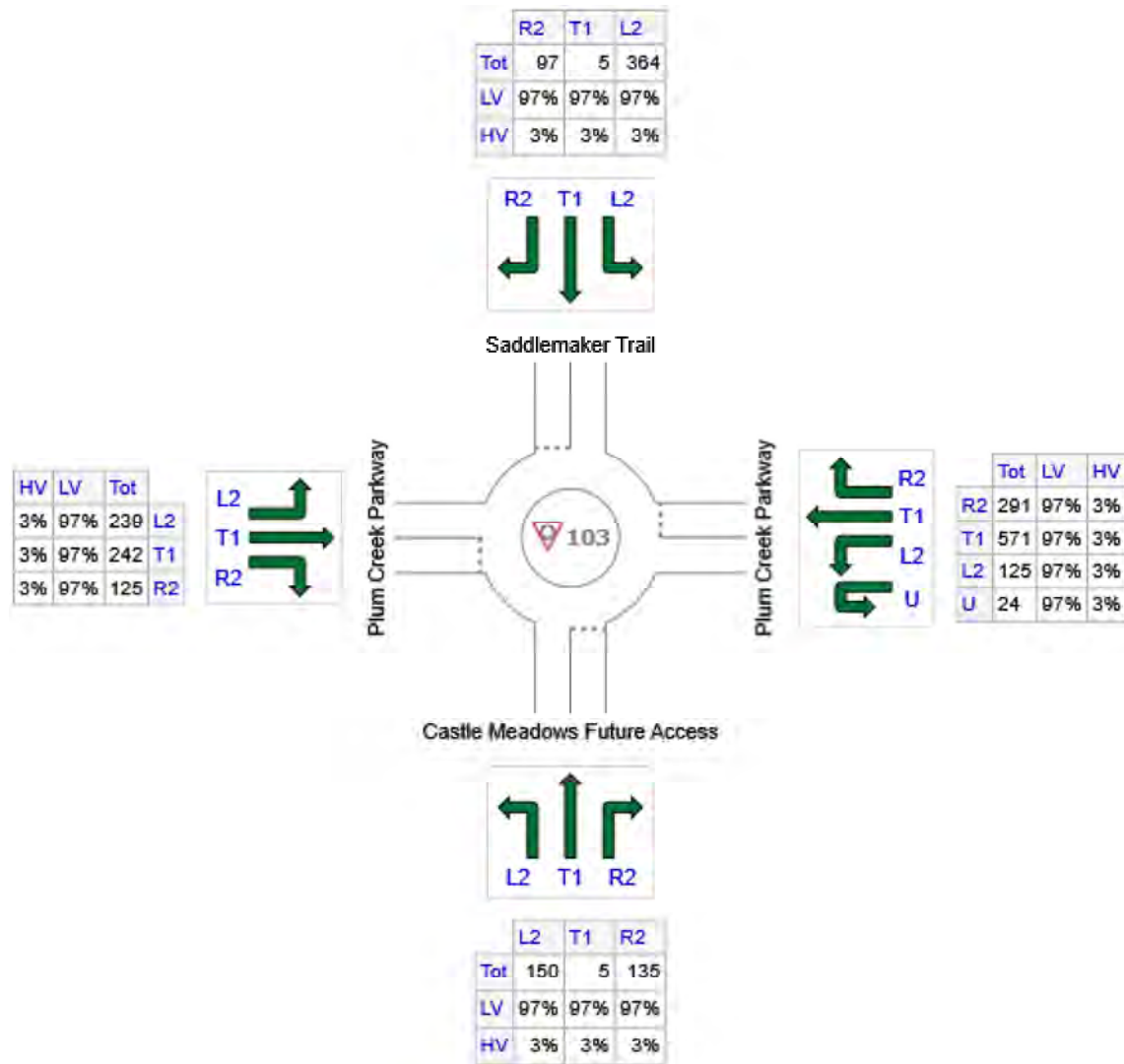
 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL PM]**

New Site

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Castle Meadows Future Access	290	281	9
E: Plum Creek Parkway	1011	981	30
N: Saddlemaker Trail	466	452	14
W: Plum Creek Parkway	606	588	18
Total	2373	2302	71

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]

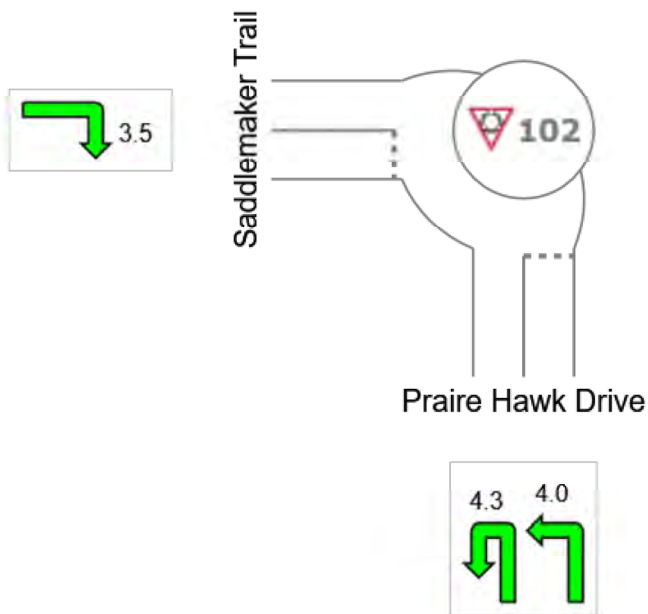
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Delay (Control)	4.1	3.5	3.9
LOS	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

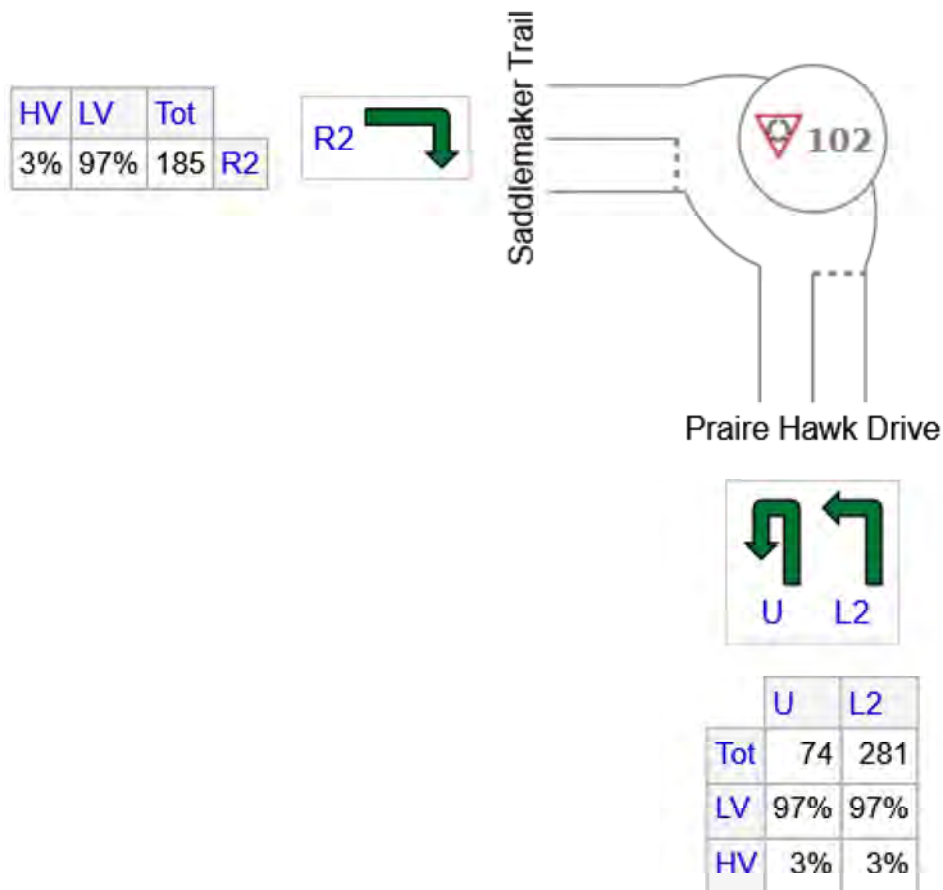
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Praire Hawk Drive	355	344	11
W: Saddlemaker Trail	185	179	6
Total	540	524	16

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:21:28 AM

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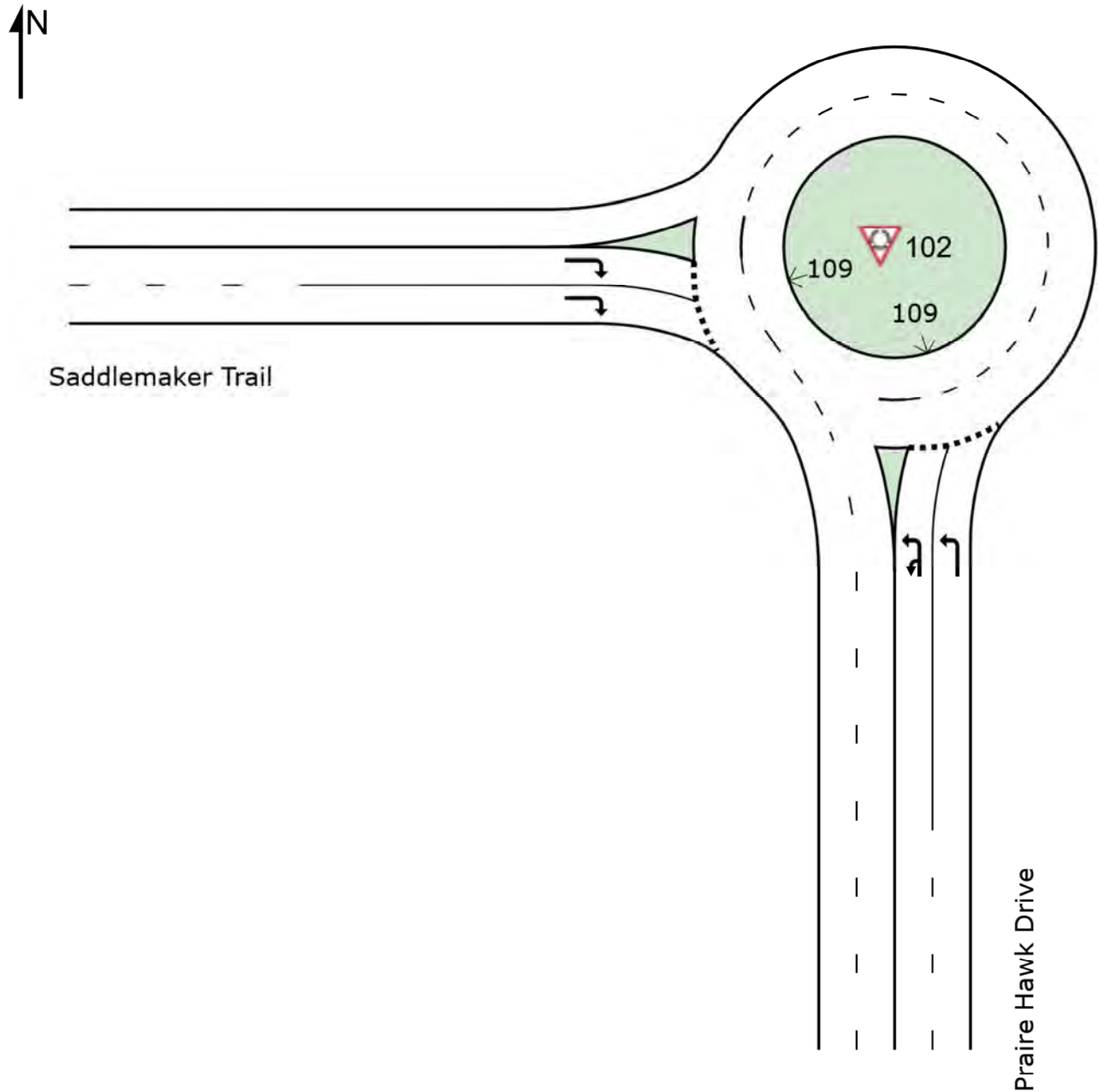
SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout



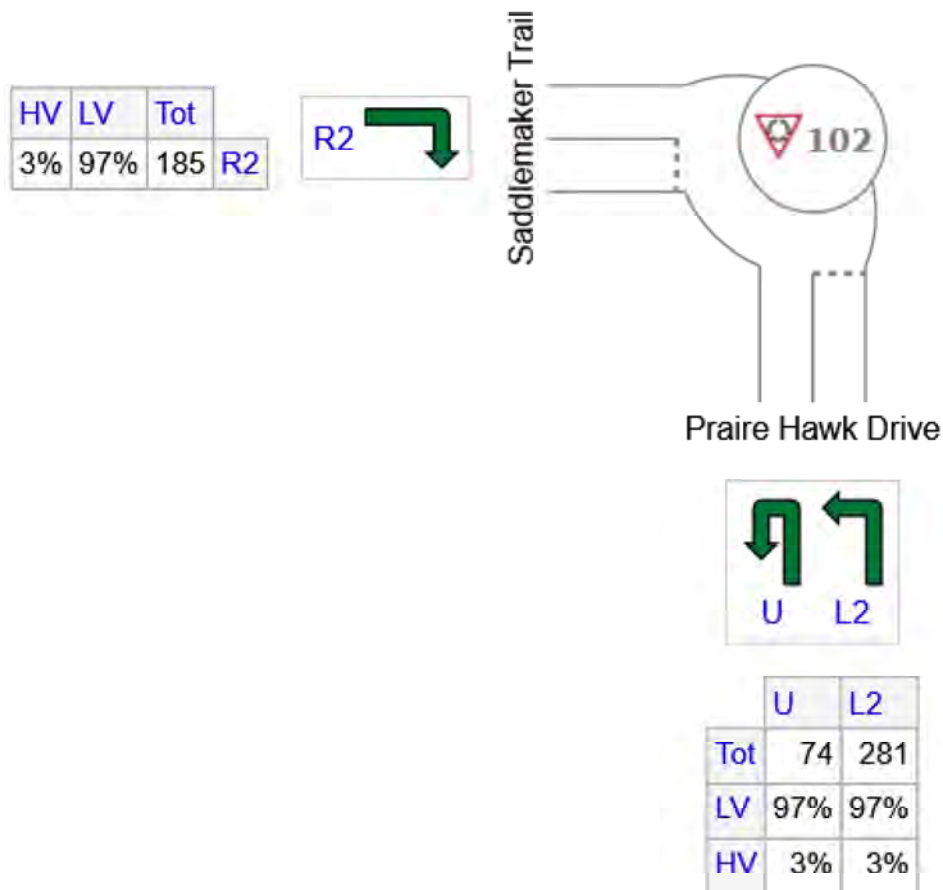
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Praire Hawk Drive	355	344	11
W: Saddlemaker Trail	185	179	6
Total	540	524	16

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:21:28 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

DELAY (CONTROL)

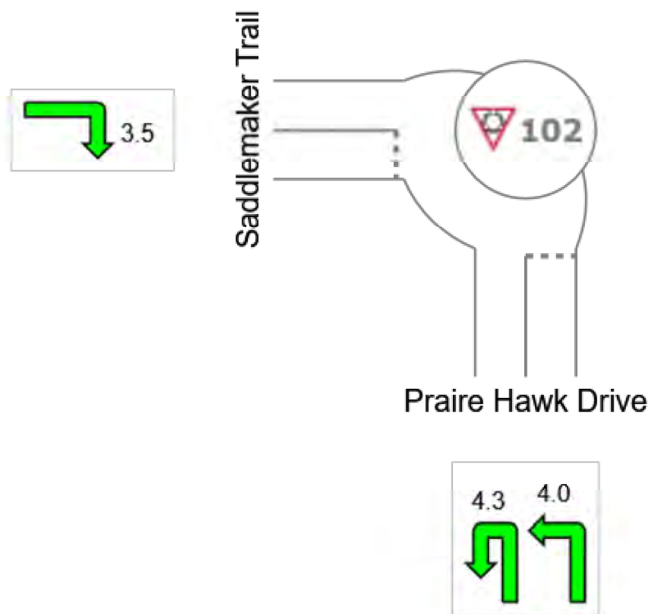
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Delay (Control)	4.1	3.5	3.9
LOS	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

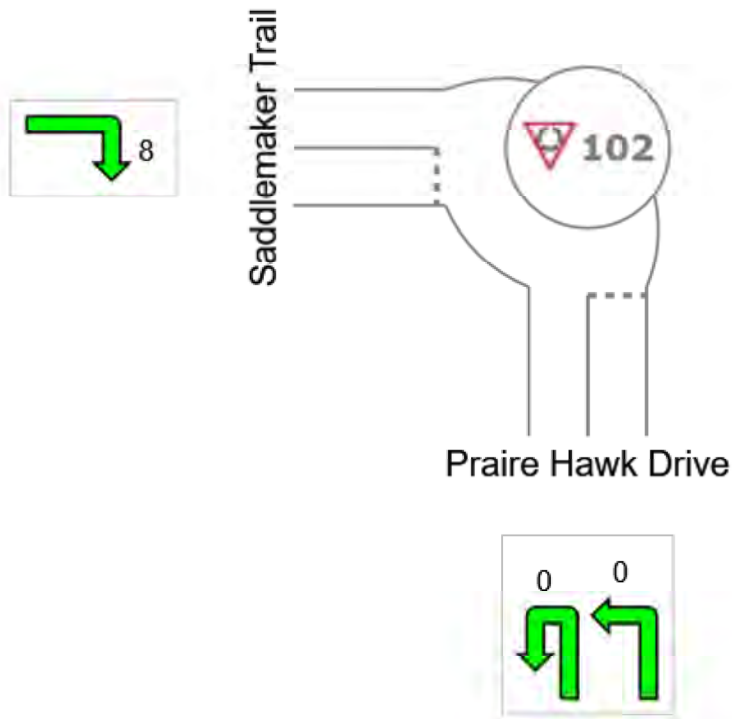
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

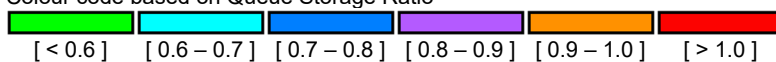
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Vehicle Queue (%ile)	0	8	8



Colour code based on Queue Storage Ratio



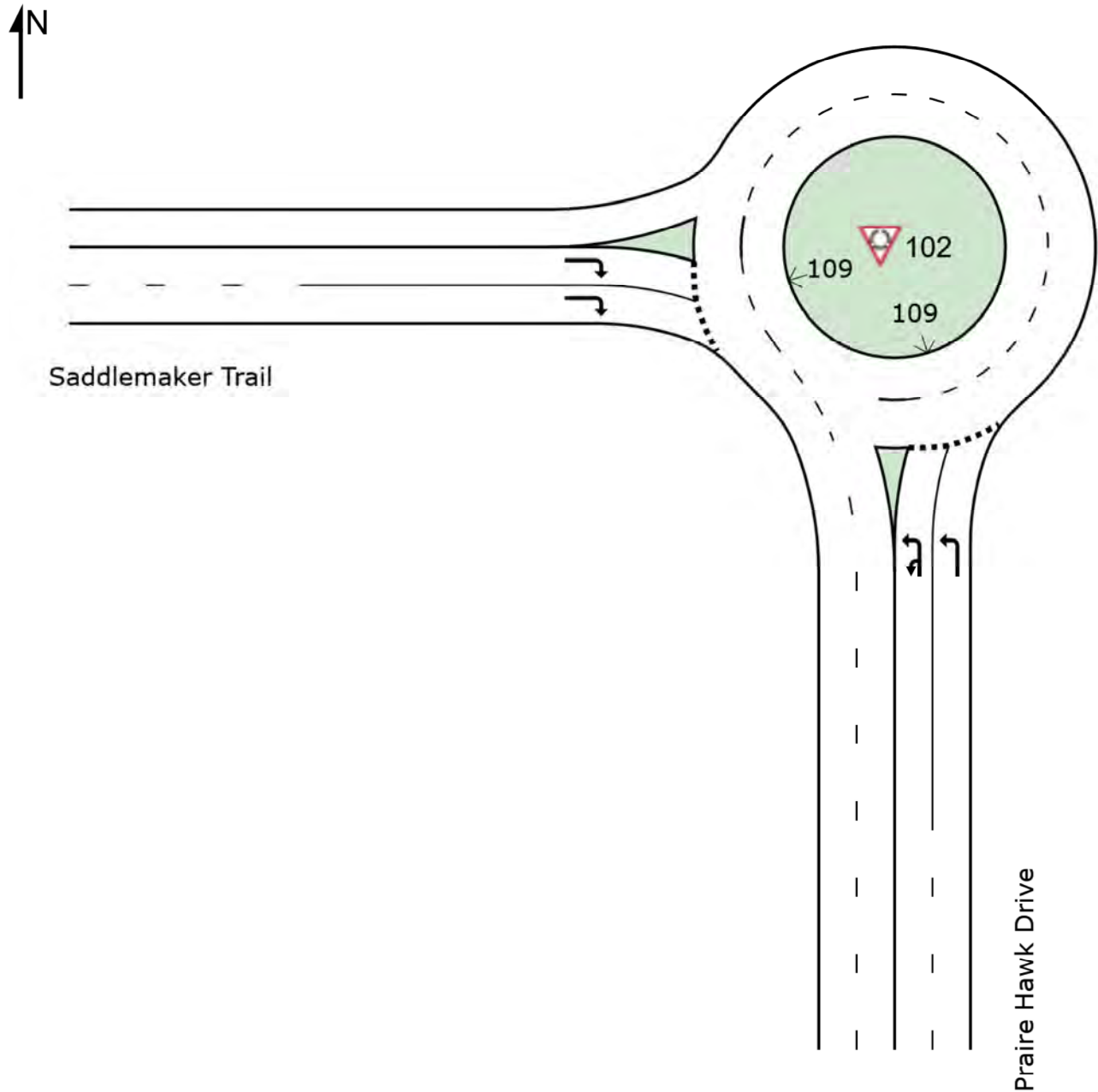
SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout



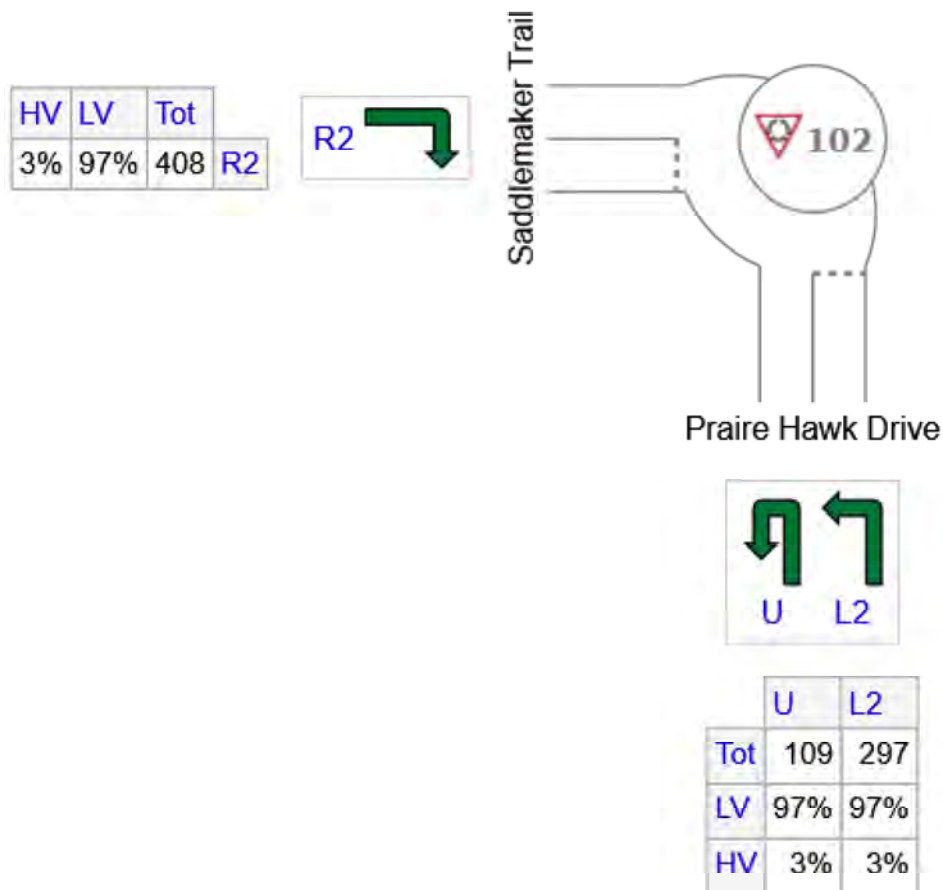
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Praire Hawk Drive	406	394	12
W: Saddlemaker Trail	408	396	12
Total	814	790	24

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:21:50 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

DELAY (CONTROL)

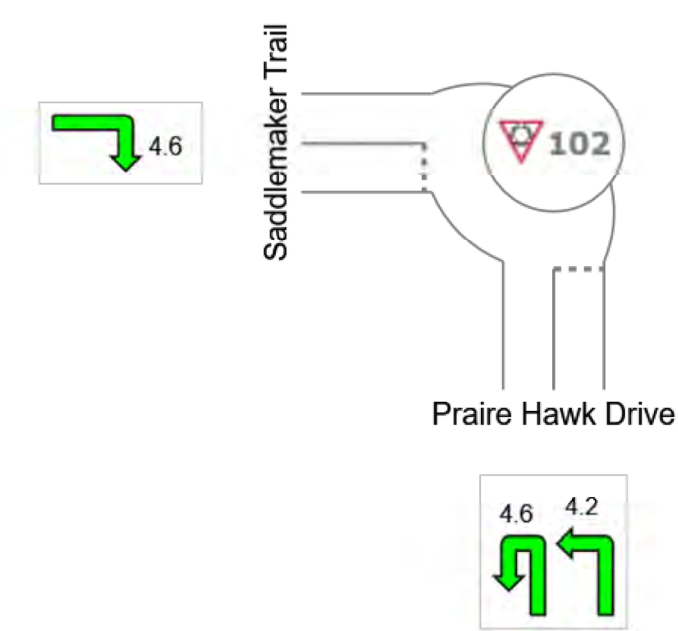
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Delay (Control)	4.3	4.6	4.4
LOS	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

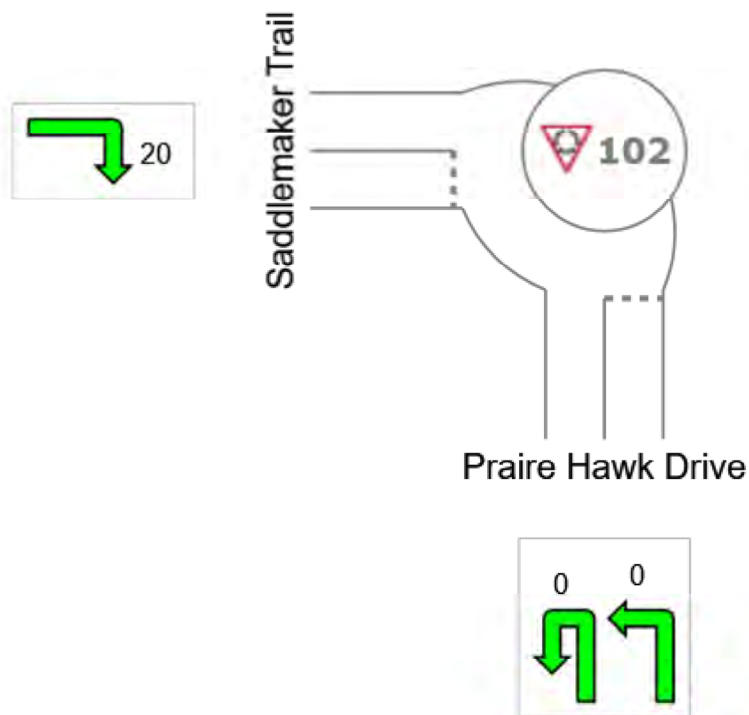
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

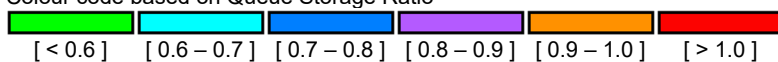
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Vehicle Queue (%ile)	0	20	20



Colour code based on Queue Storage Ratio



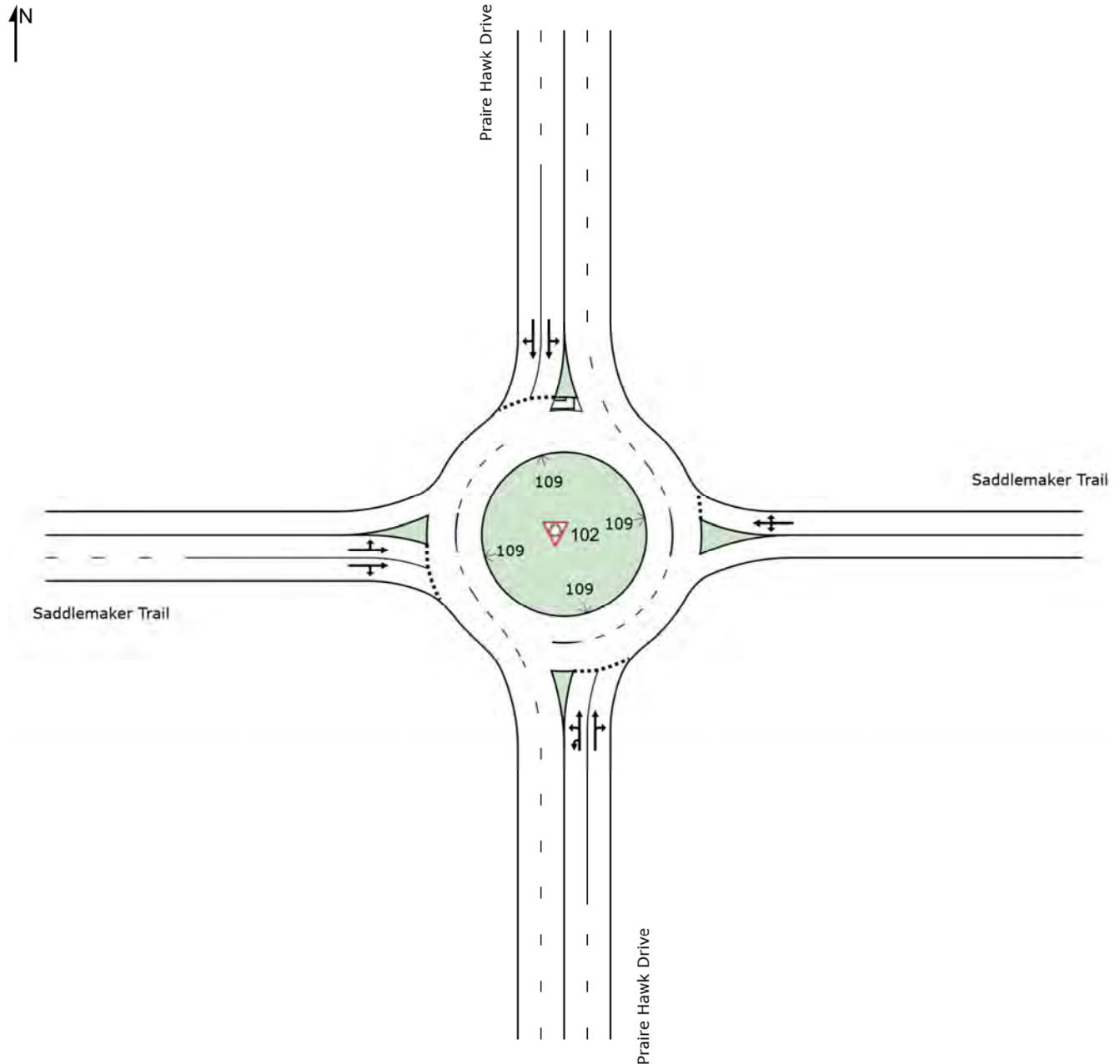
SITE LAYOUT

Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

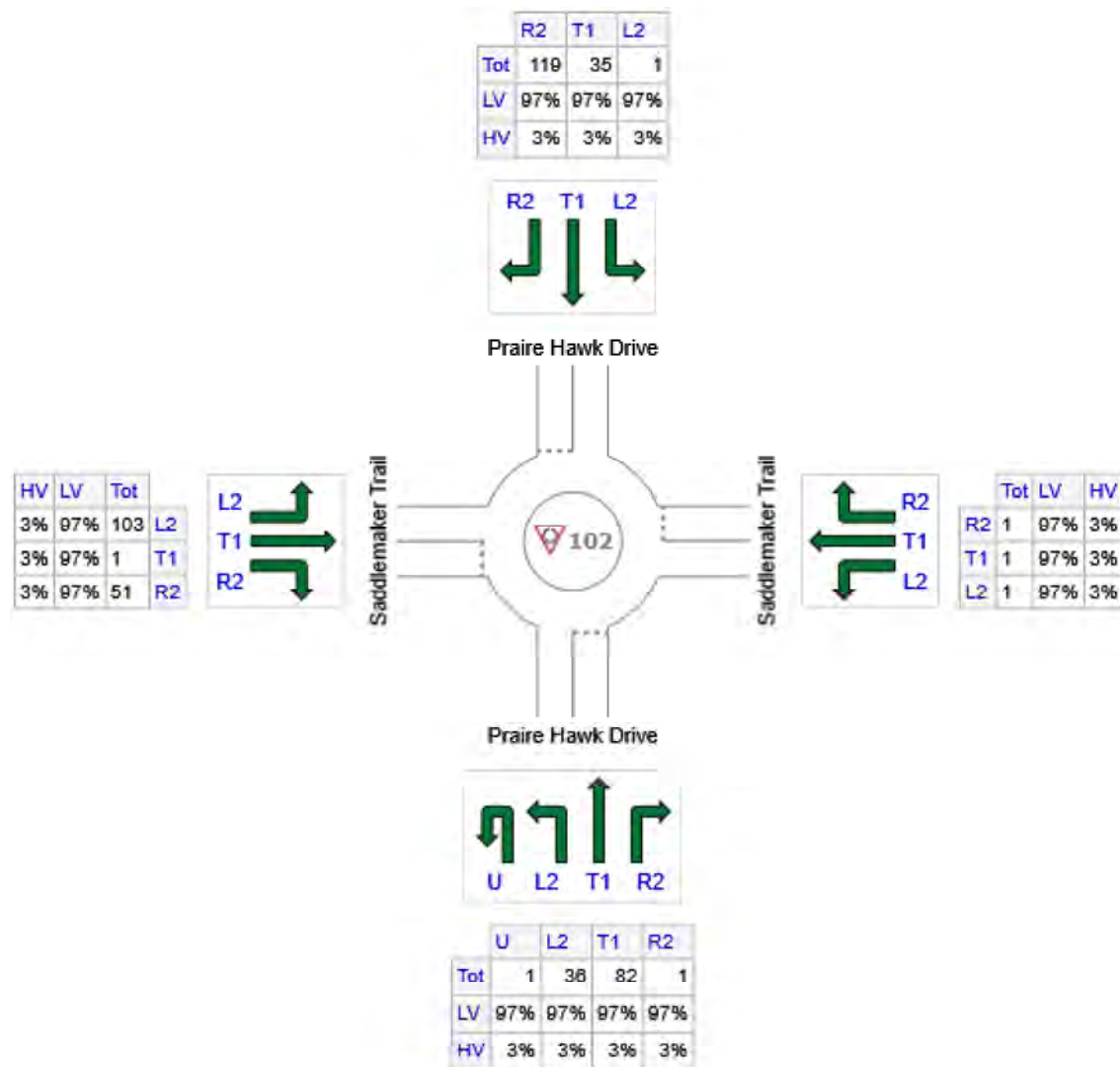
 Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	120	116	4
E: Saddlemaker Trail	3	3	0
N: Prairie Hawk Drive	155	150	5
W: Saddlemaker Trail	155	150	5
Total	433	420	13

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

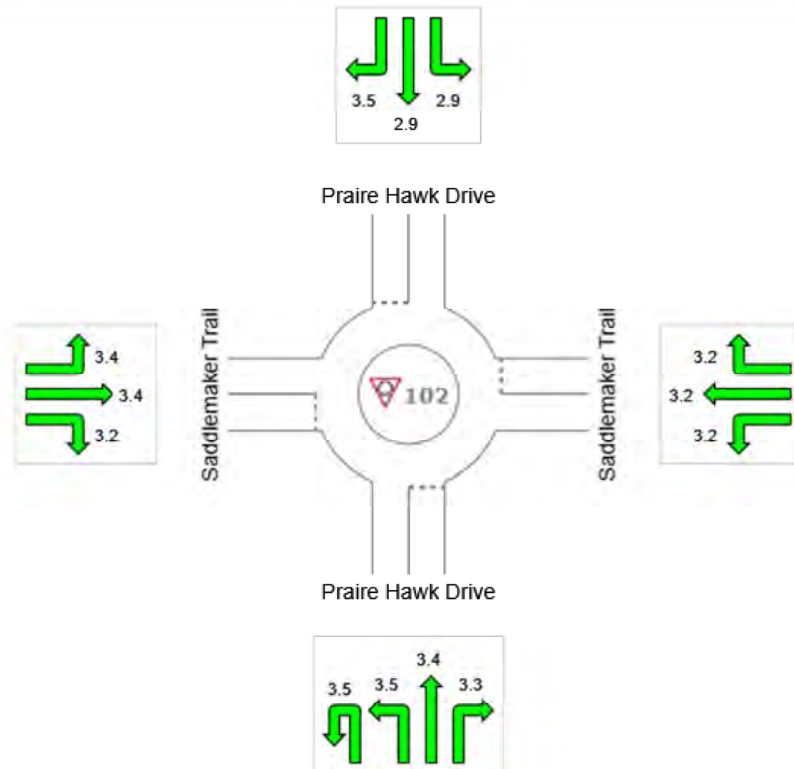
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	3.4	3.2	3.4	3.3	3.4
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

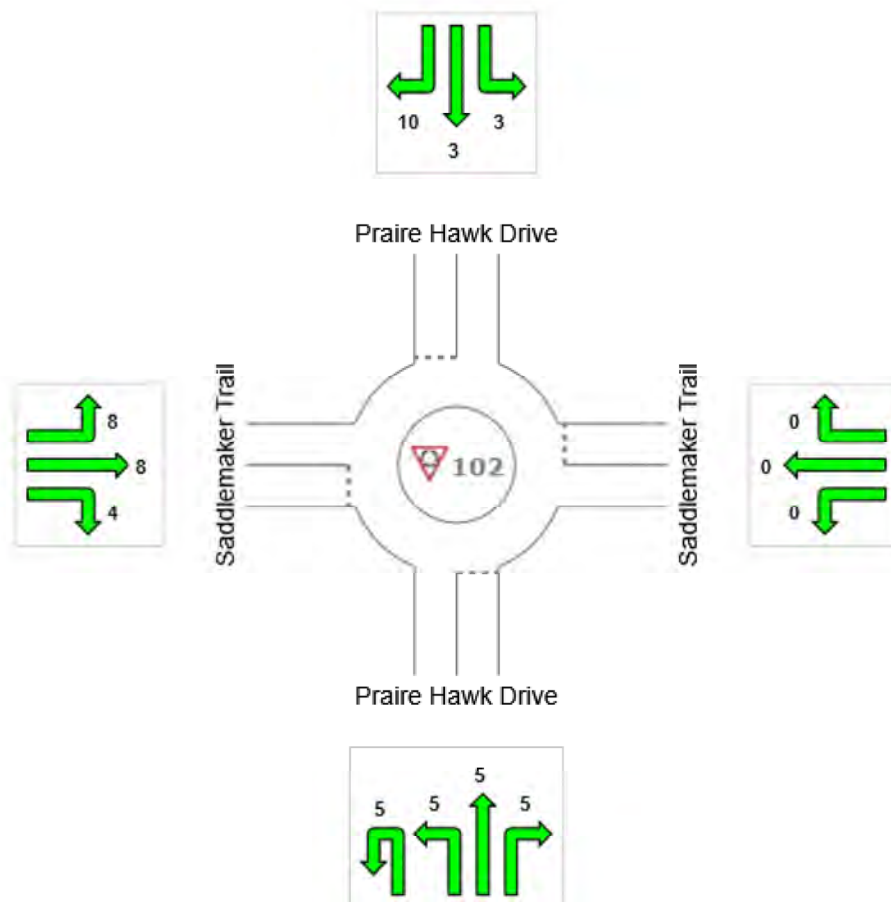
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]**

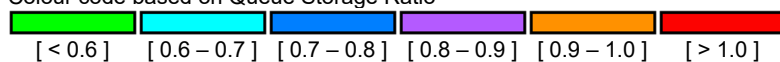
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	5	0	10	8	10



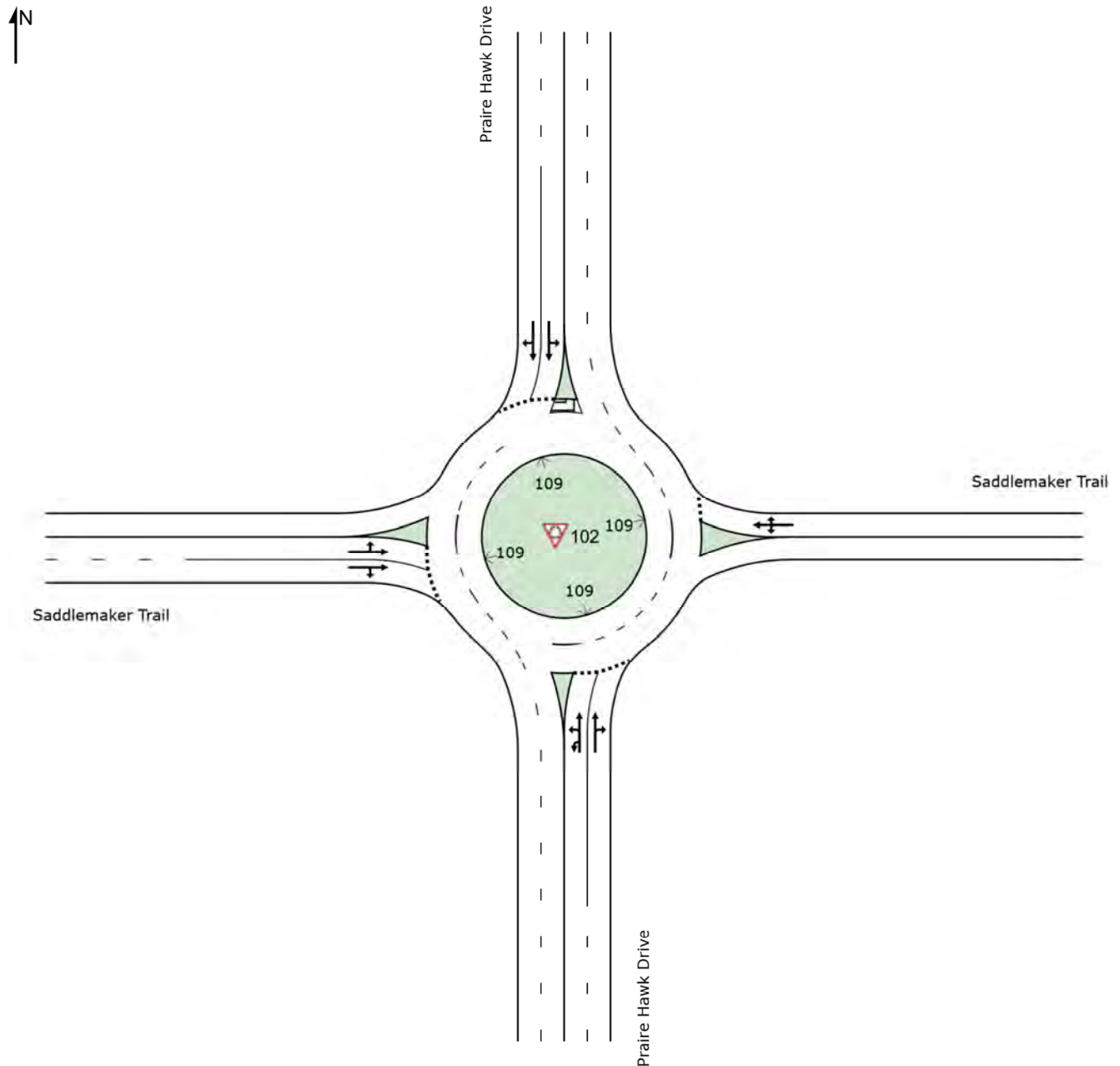
Colour code based on Queue Storage Ratio



SITE LAYOUT

Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

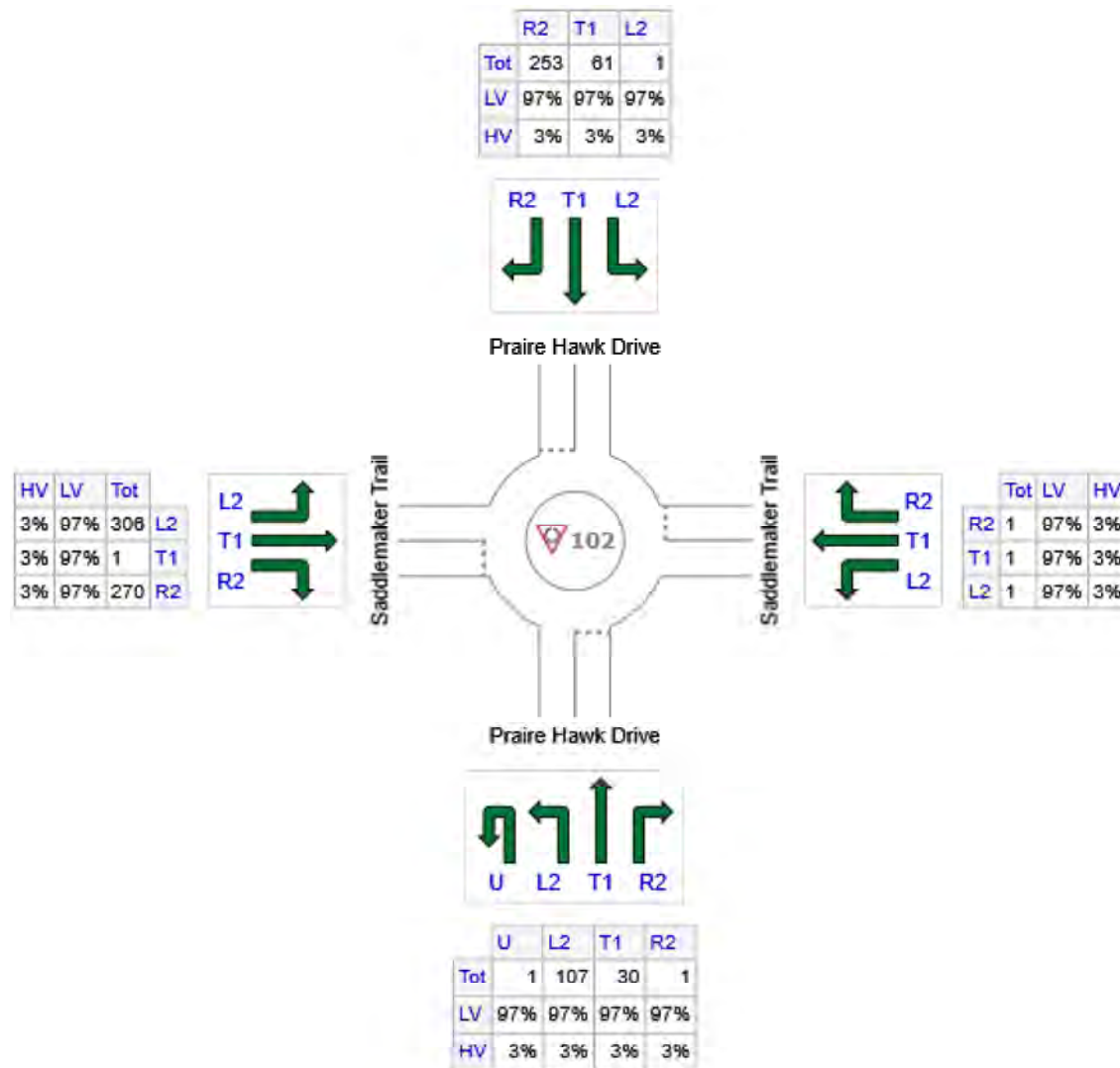
 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	139	135	4
E: Saddlemaker Trail	3	3	0
N: Prairie Hawk Drive	315	306	9
W: Saddlemaker Trail	577	560	17
Total	1034	1003	31

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

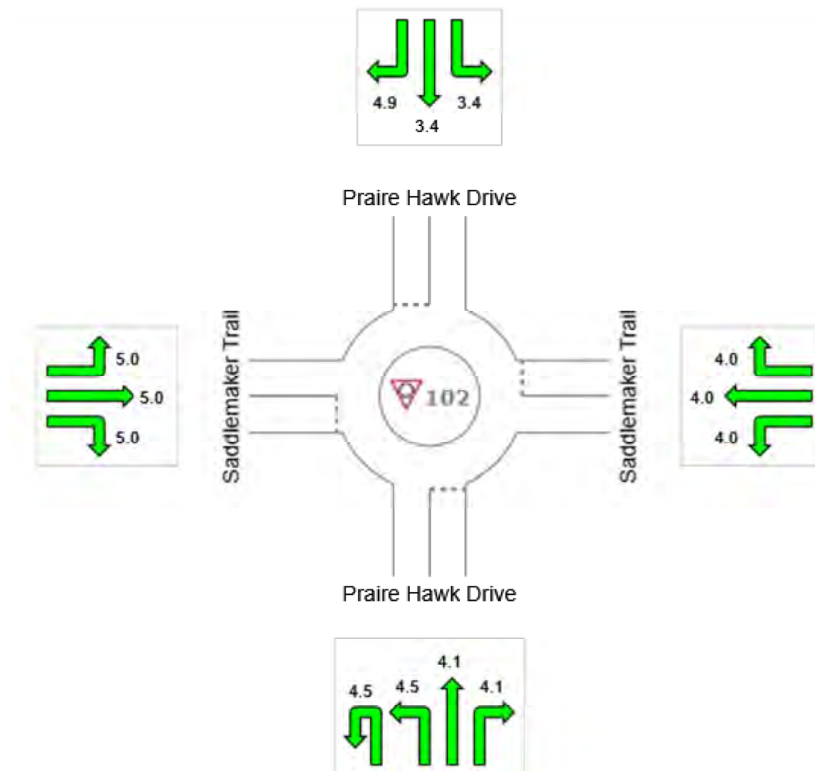
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.4	4.0	4.6	5.0	4.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

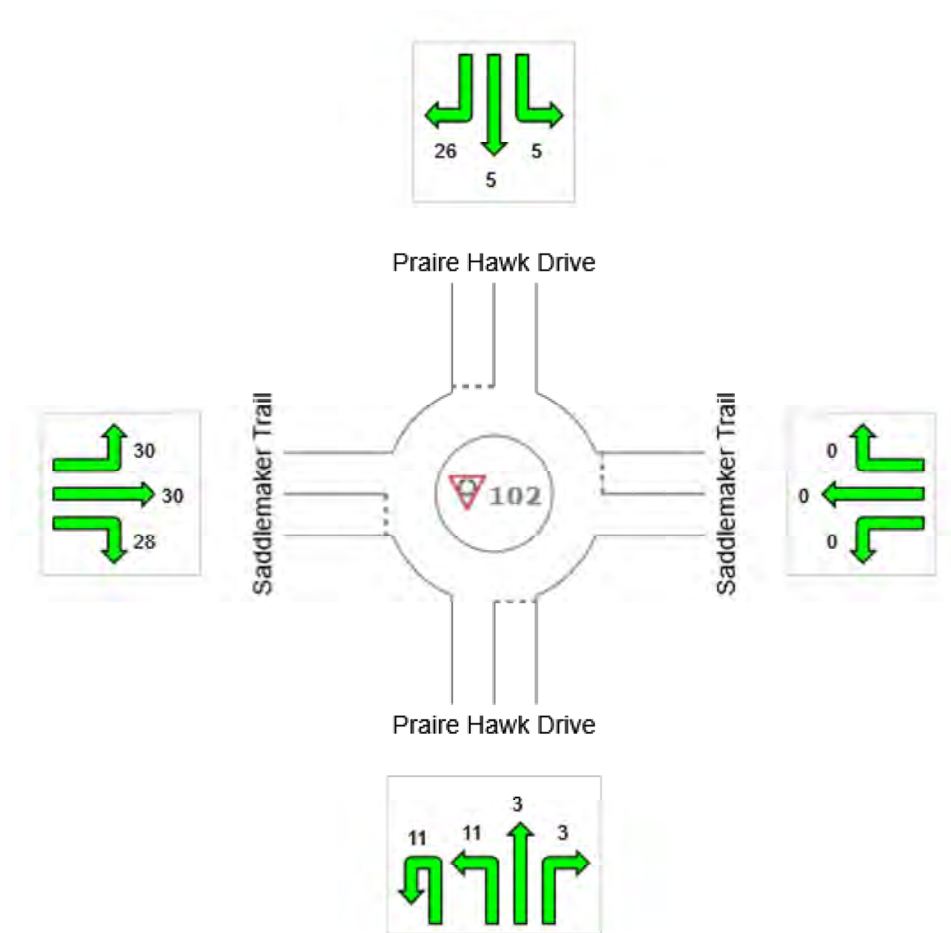
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

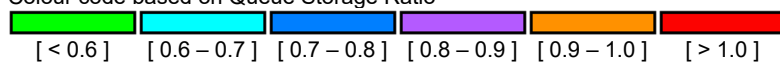
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	11	0	26	30	30



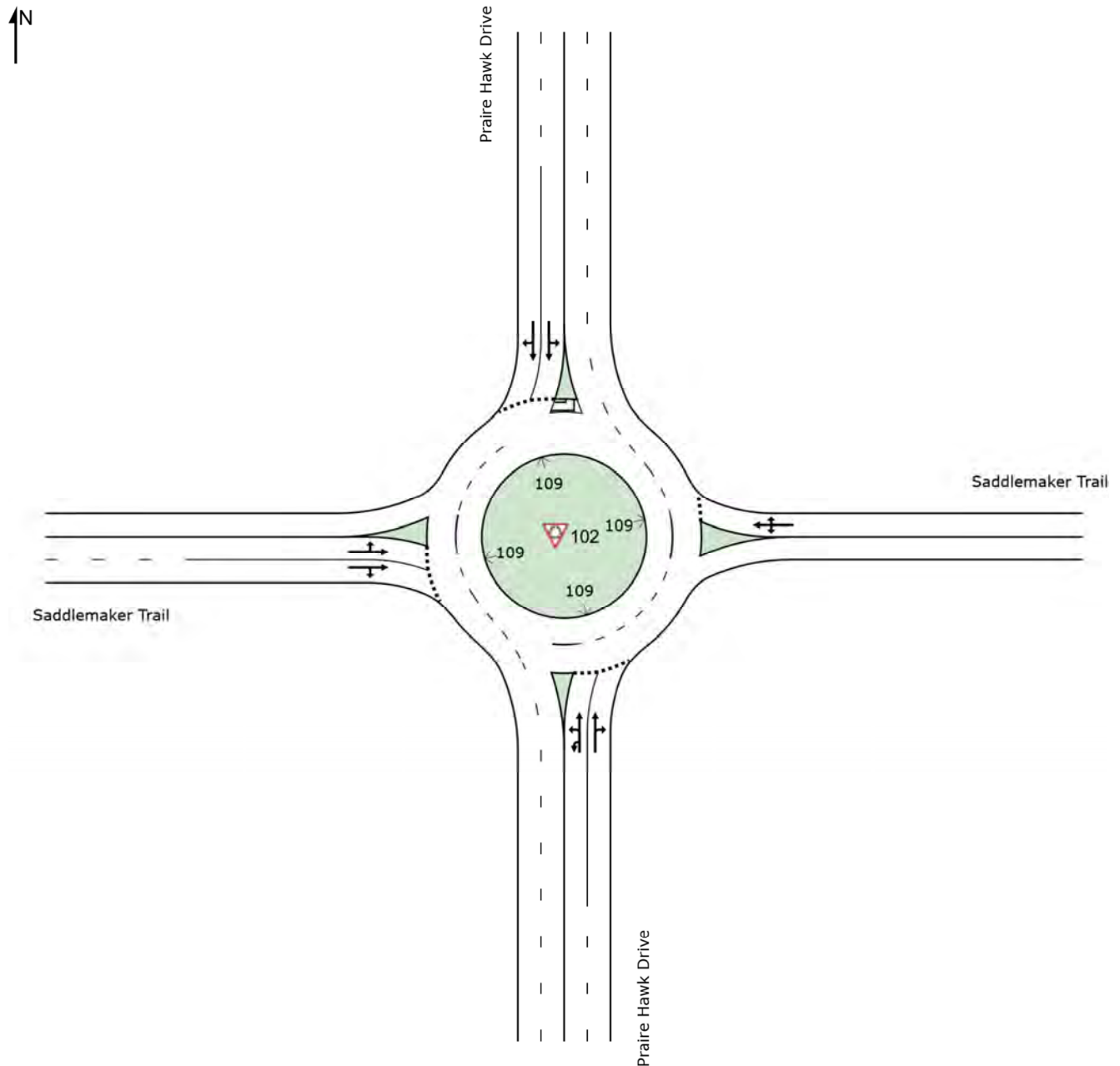
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

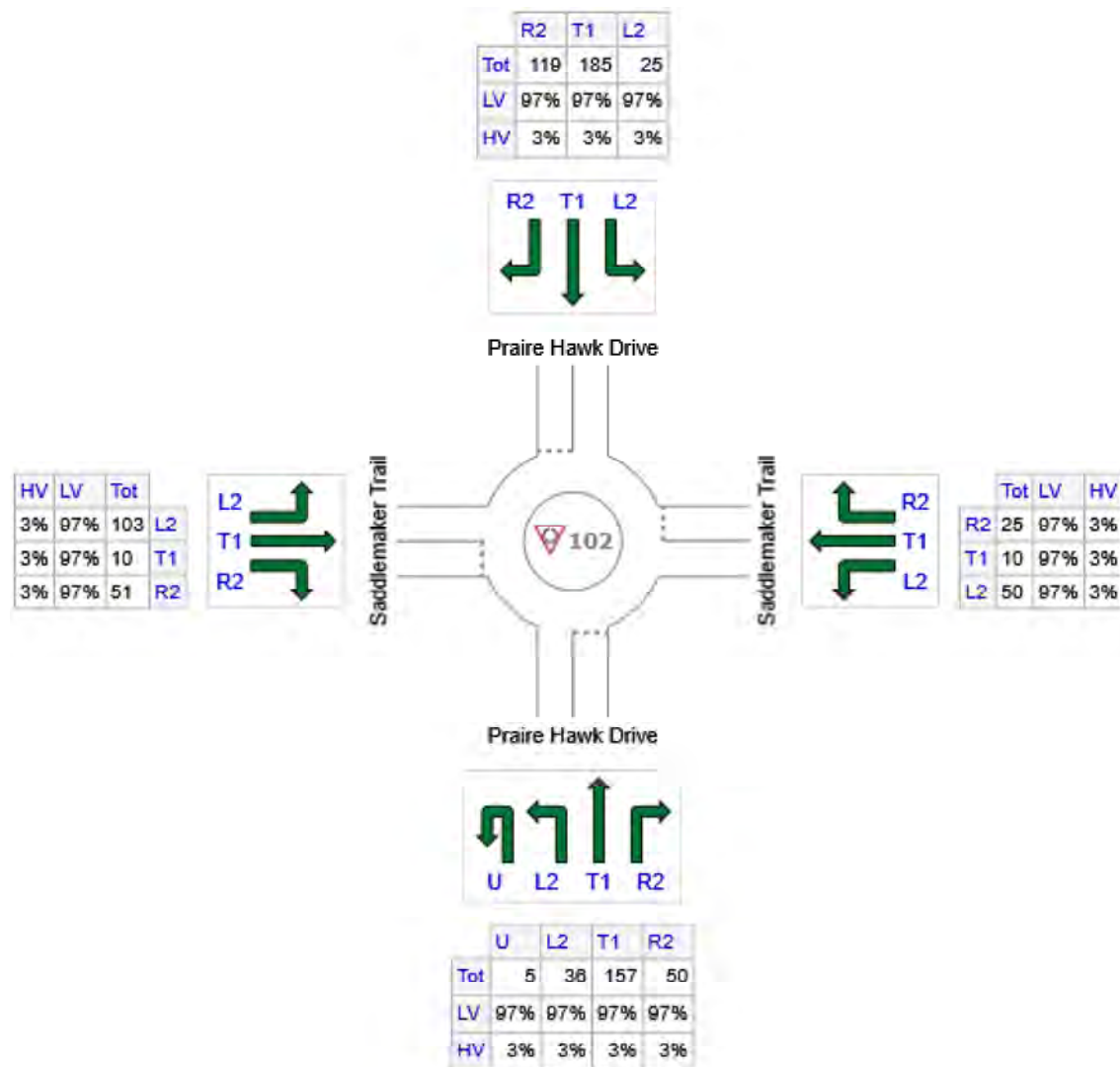
 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	248	241	7
E: Saddlemaker Trail	85	82	3
N: Prairie Hawk Drive	329	319	10
W: Saddlemaker Trail	164	159	5
Total	826	801	25

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]

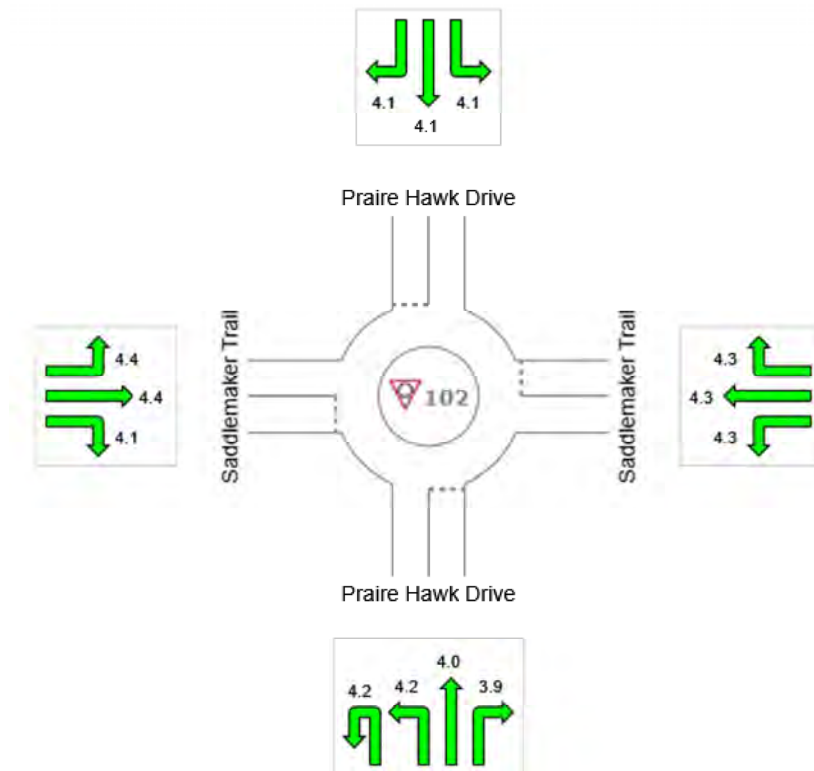
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.0	4.3	4.1	4.3	4.1
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

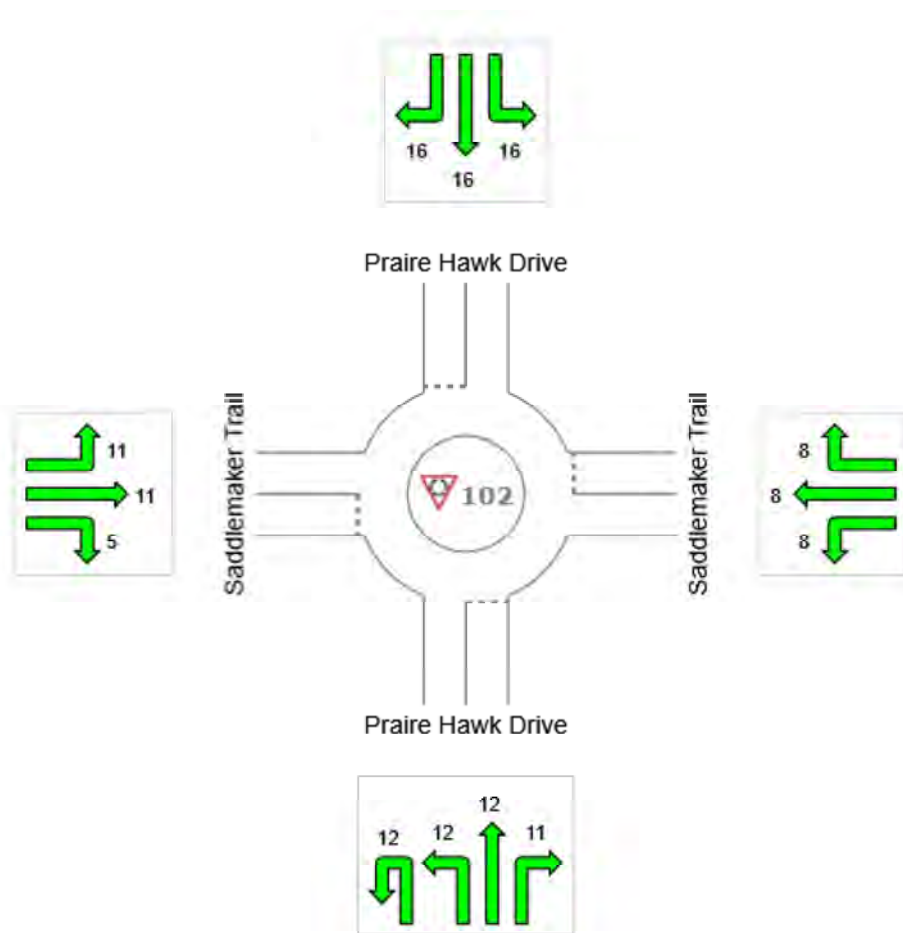
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]**

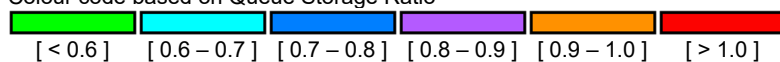
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	12	8	16	11	16



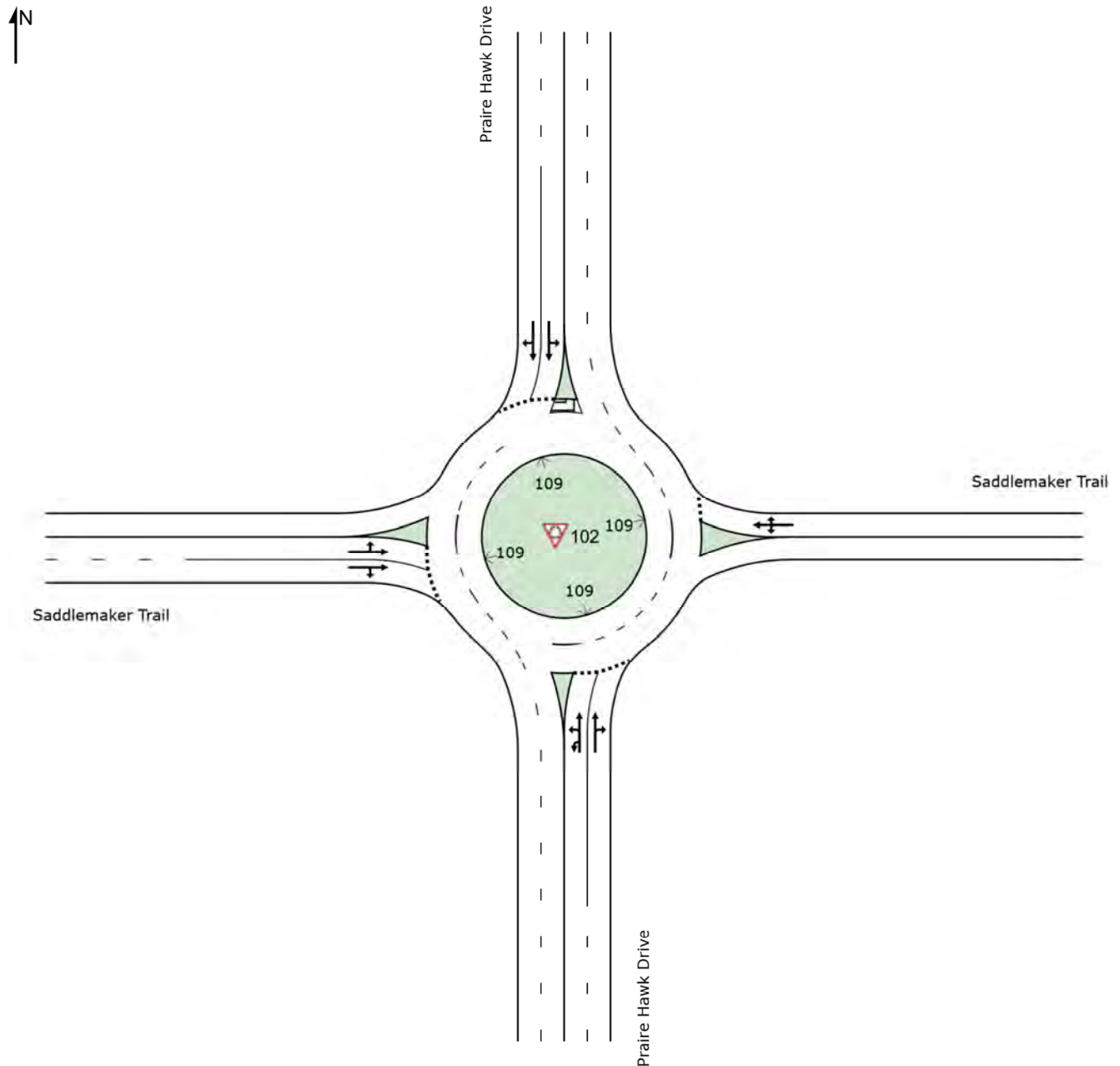
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

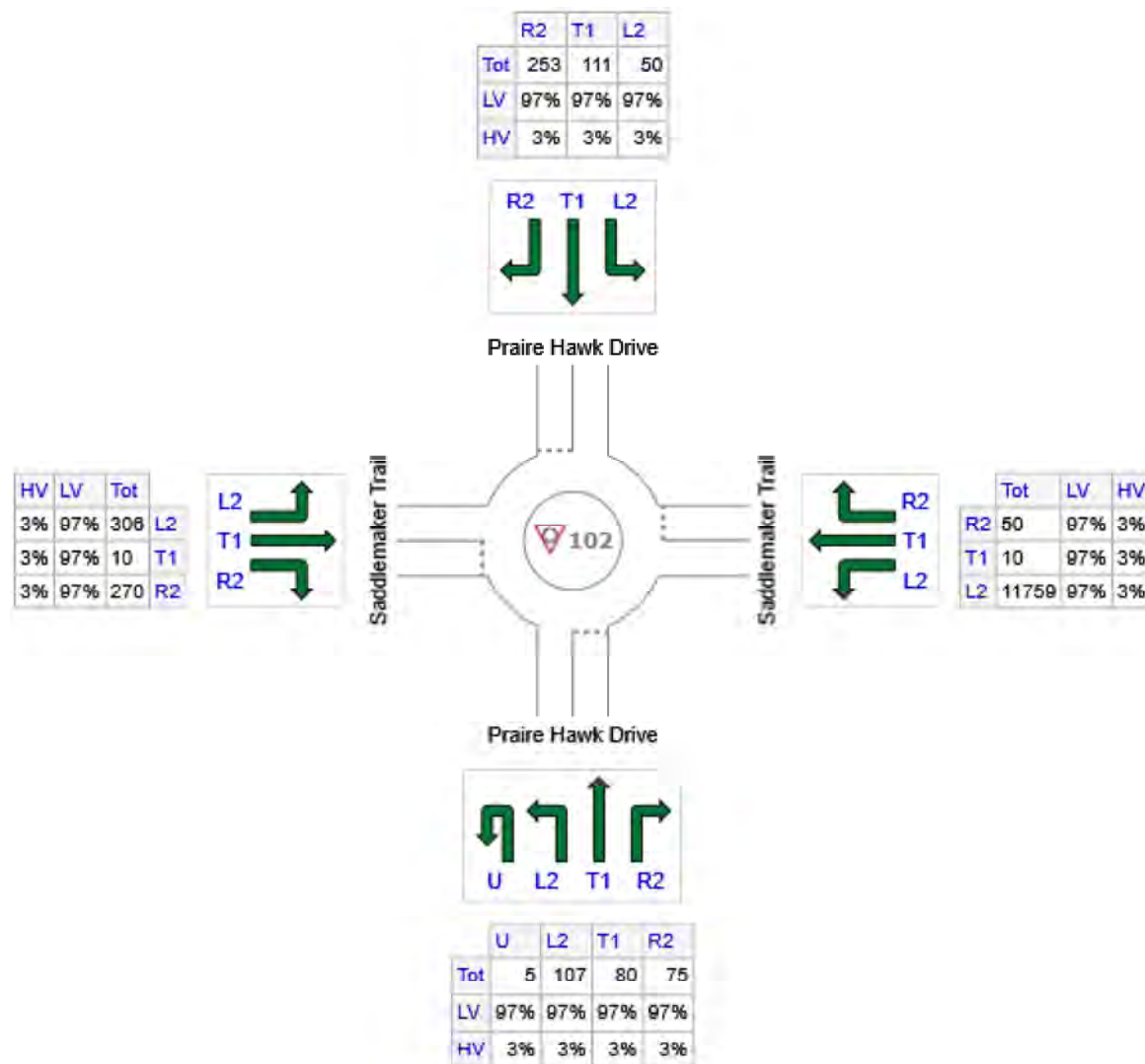
 Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	267	259	8
E: Saddlemaker Trail	11819	11464	355
N: Prairie Hawk Drive	414	402	12
W: Saddlemaker Trail	586	568	18
Total	13086	12693	393

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

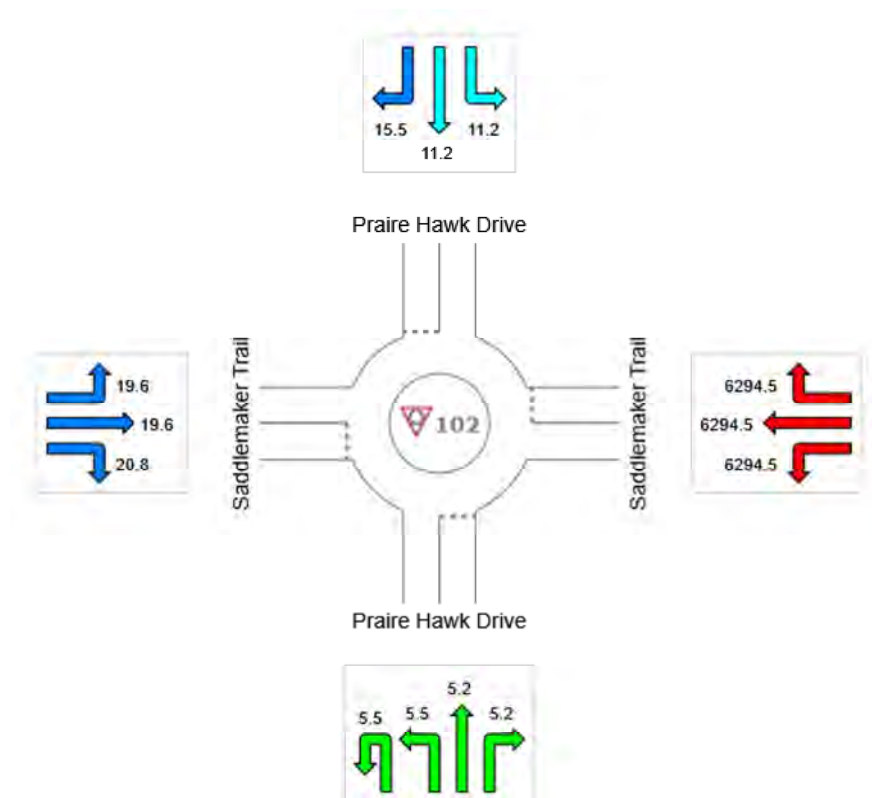
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.3	6294.5	13.8	20.2	5686.5
LOS	A	F	B	C	F



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

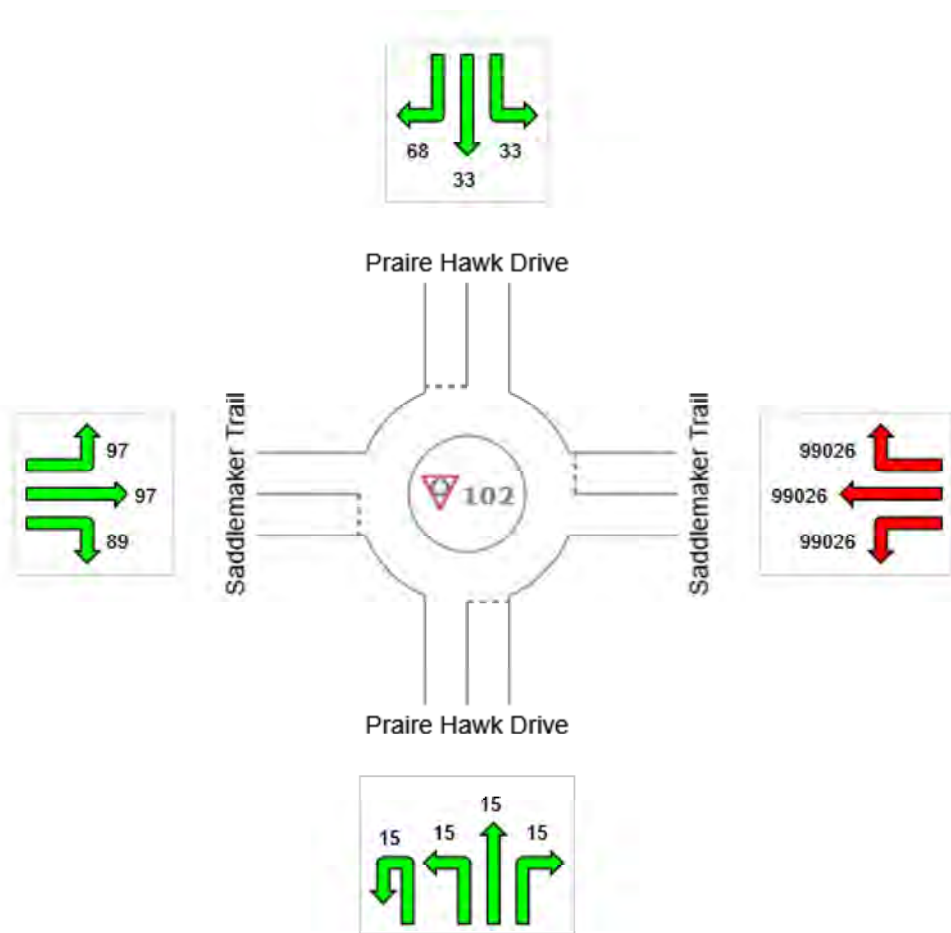
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

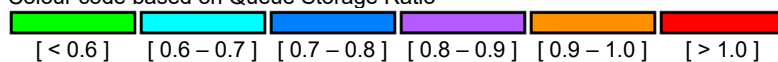
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	15	99026	68	97	99026



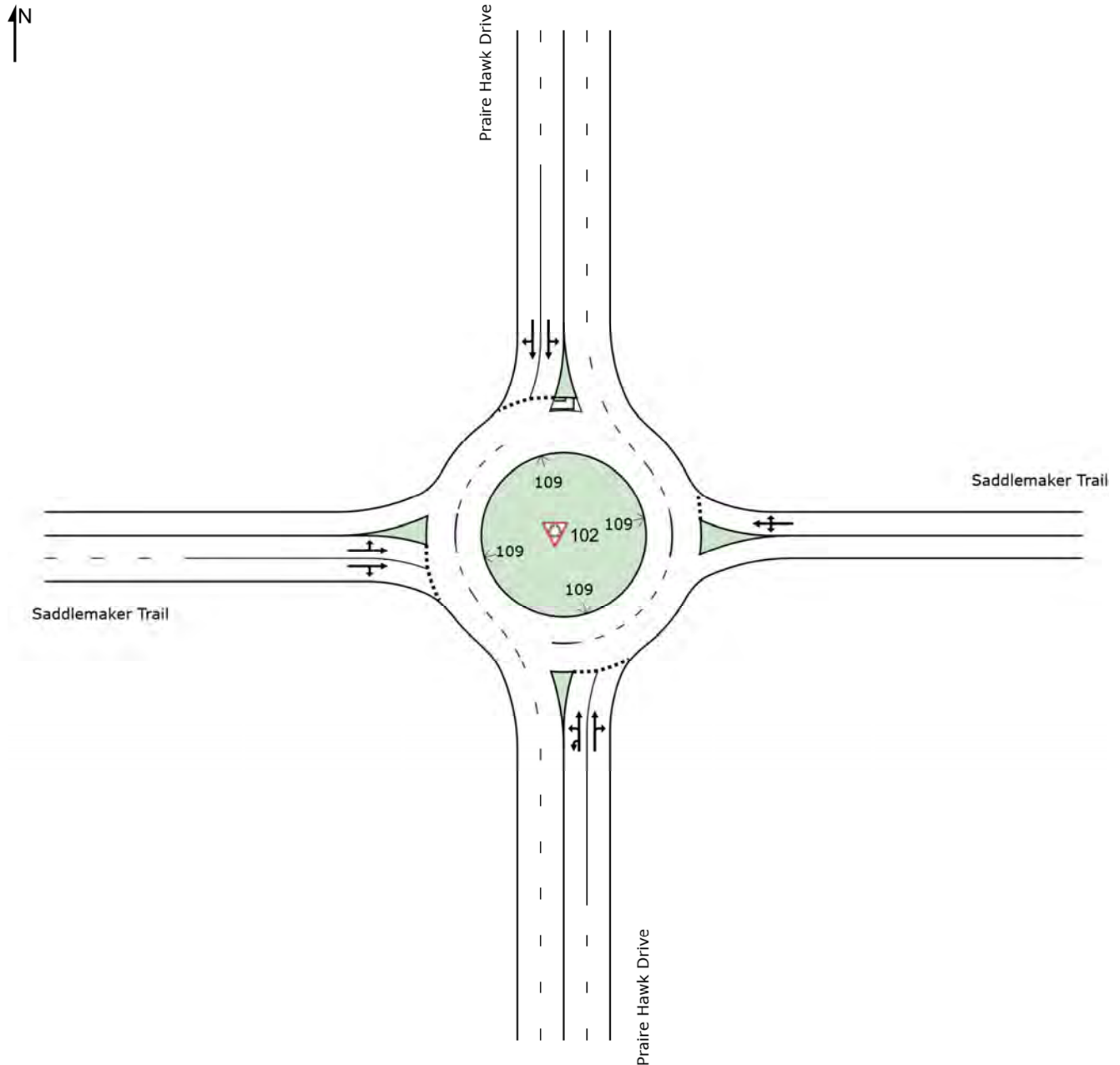
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

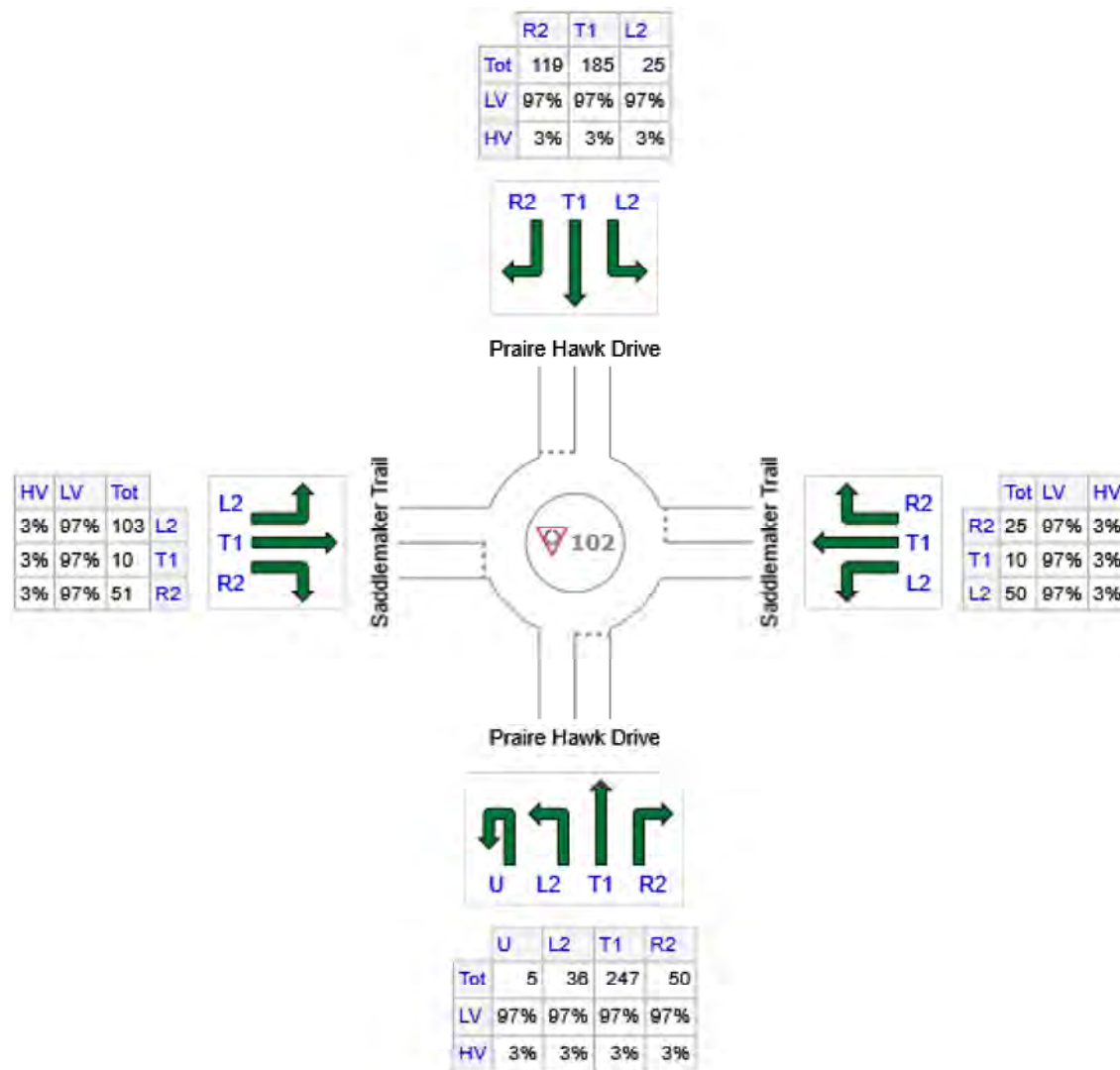
 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	338	328	10
E: Saddlemaker Trail	85	82	3
N: Prairie Hawk Drive	329	319	10
W: Saddlemaker Trail	164	159	5
Total	916	889	27

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]

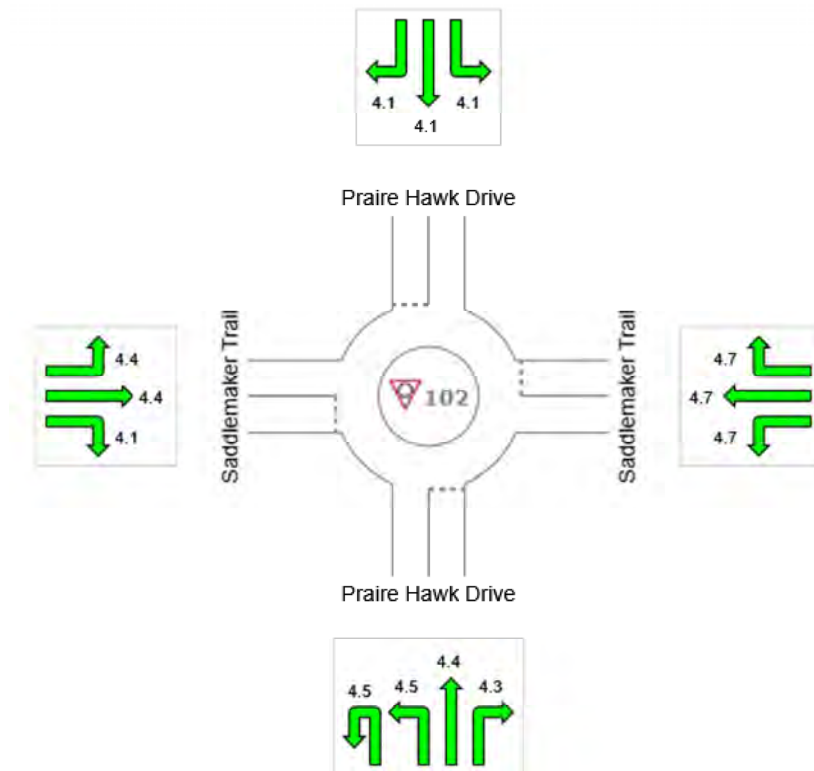
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.4	4.7	4.1	4.3	4.3
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

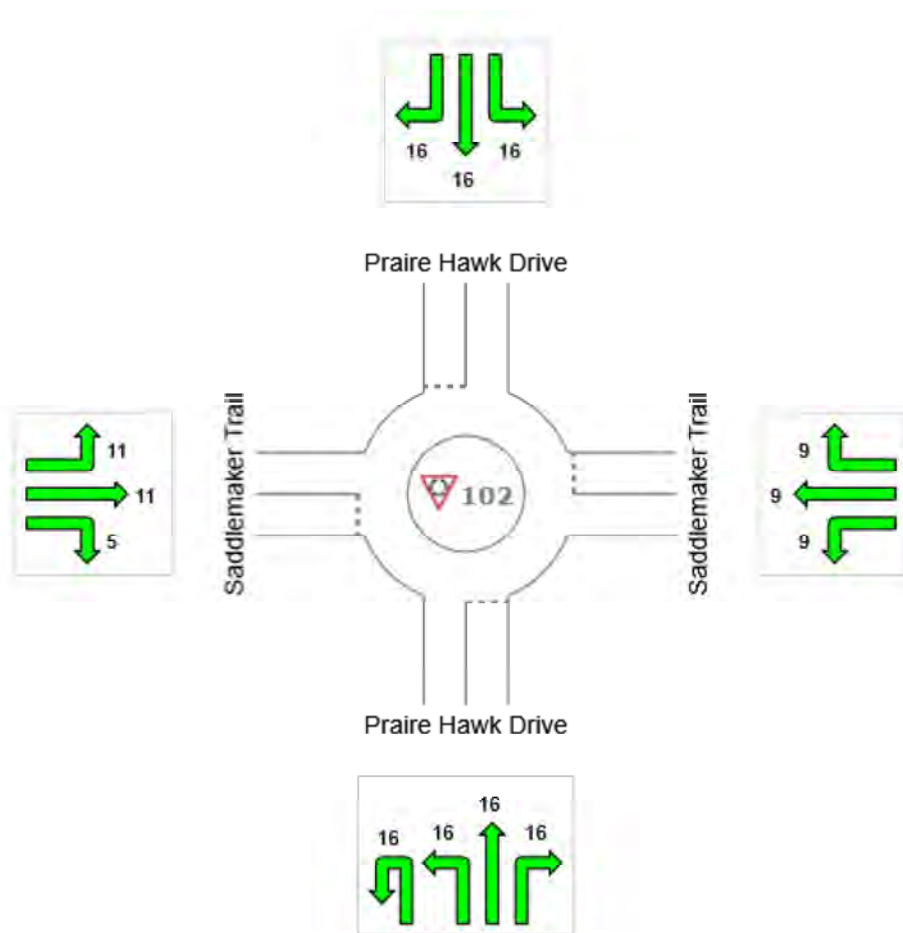
Miller's Landing Master Traffic Study

Site Category: (None)

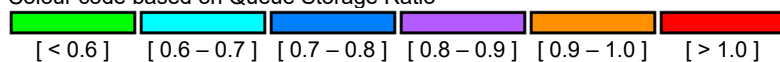
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	16	9	16	11	16



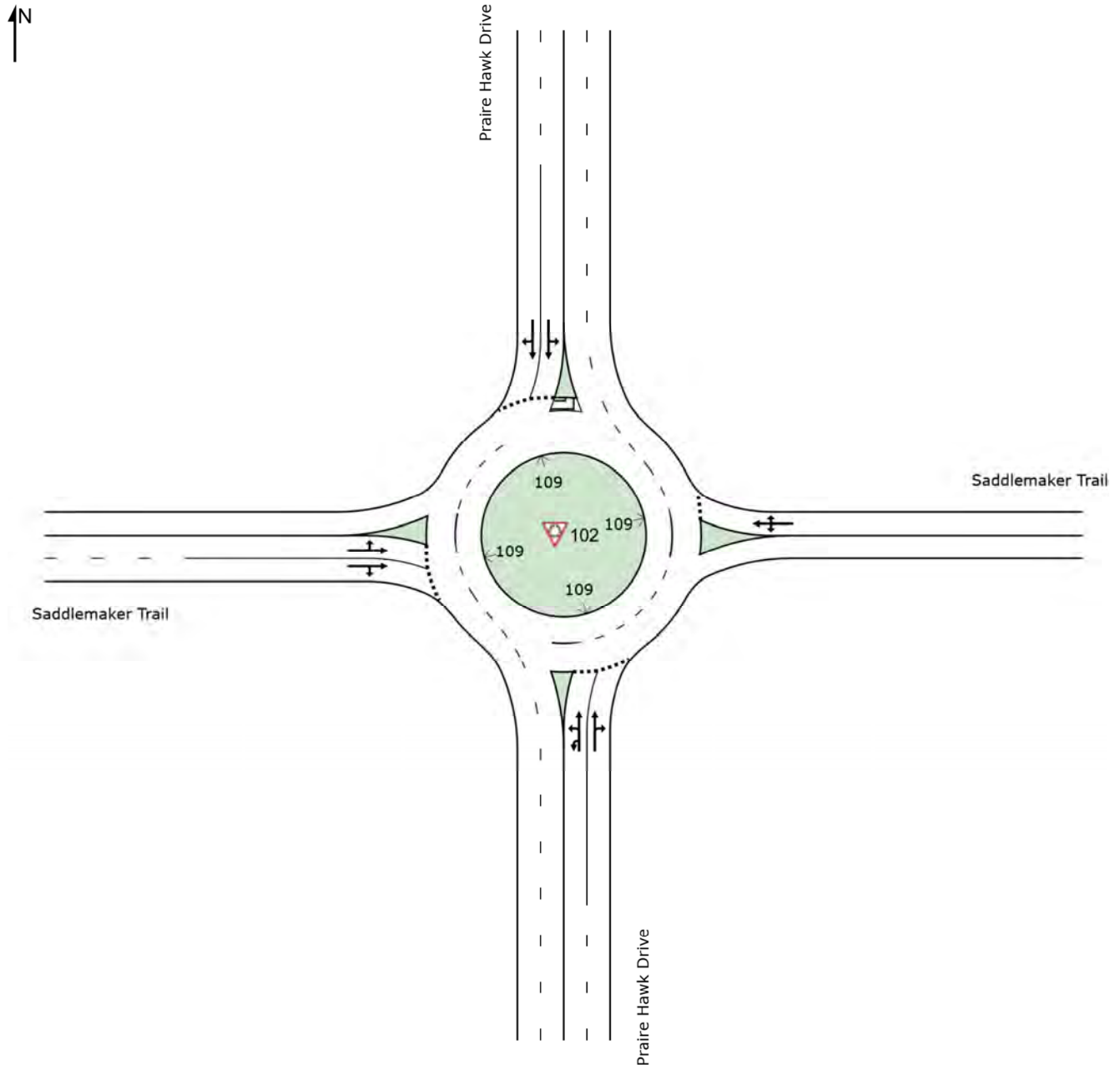
Colour code based on Queue Storage Ratio



SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

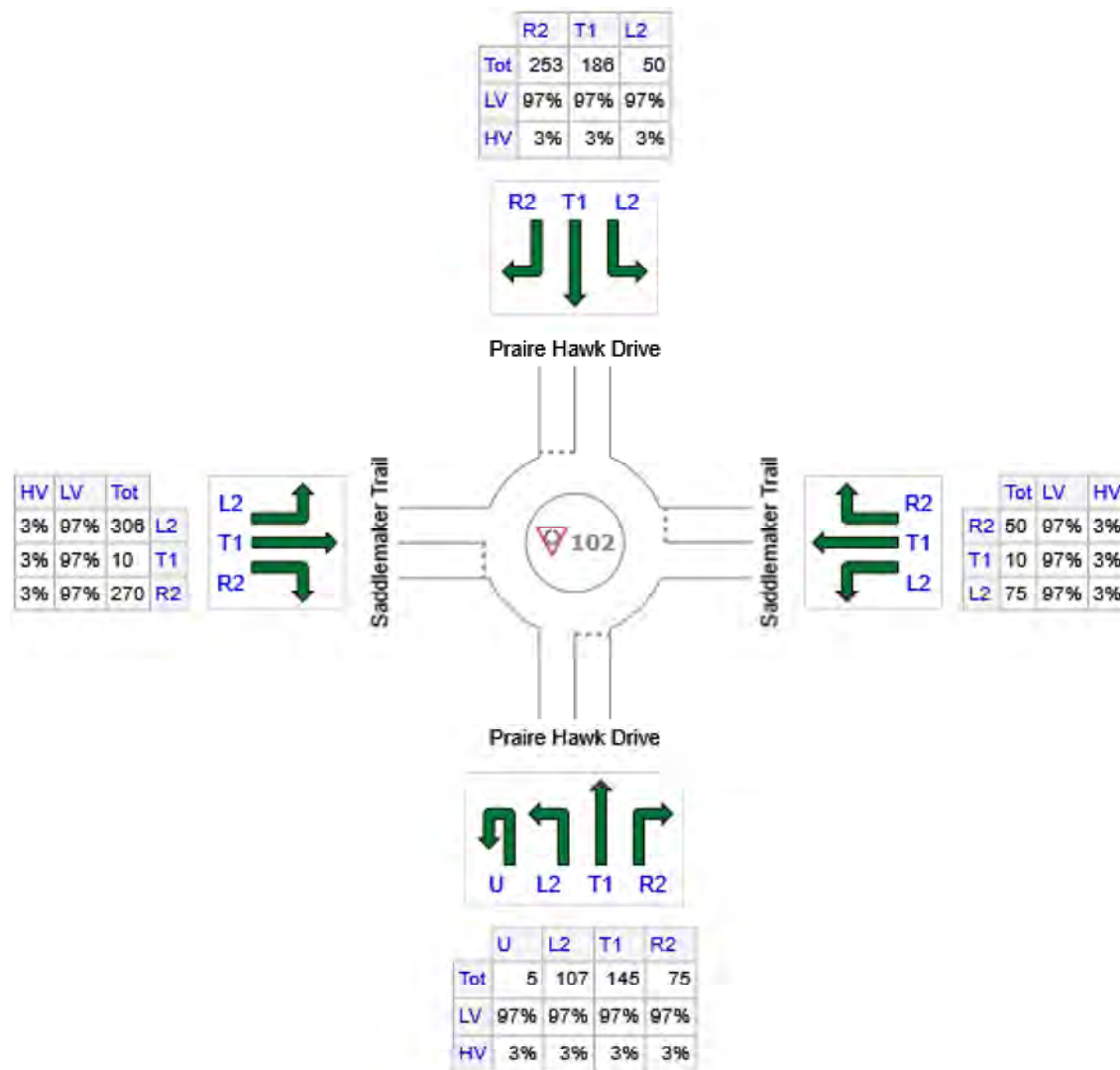
 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	332	322	10
E: Saddlemaker Trail	135	131	4
N: Prairie Hawk Drive	489	474	15
W: Saddlemaker Trail	586	568	18
Total	1542	1496	46

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DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

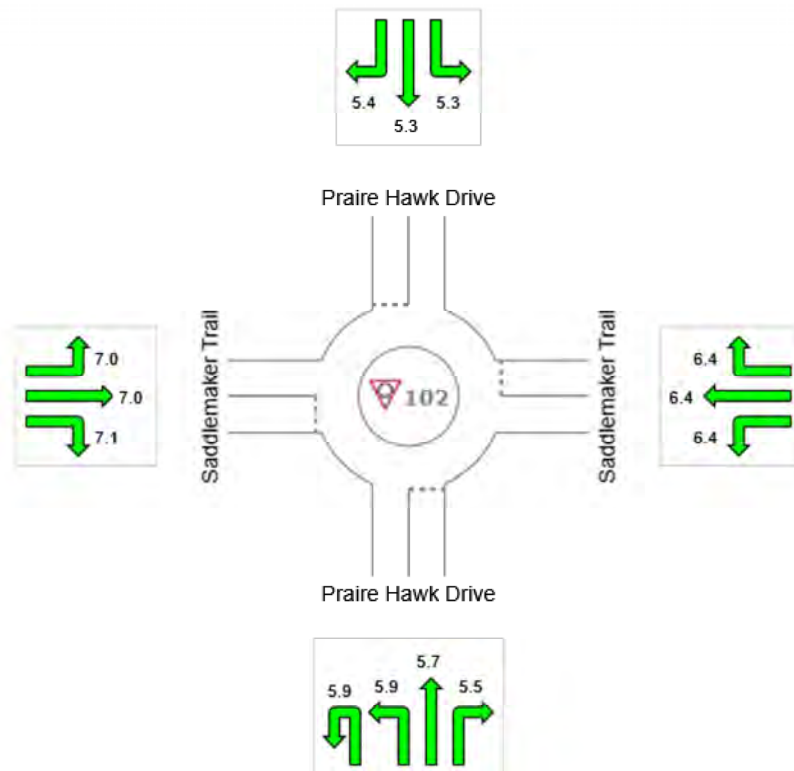
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.7	6.4	5.4	7.0	6.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

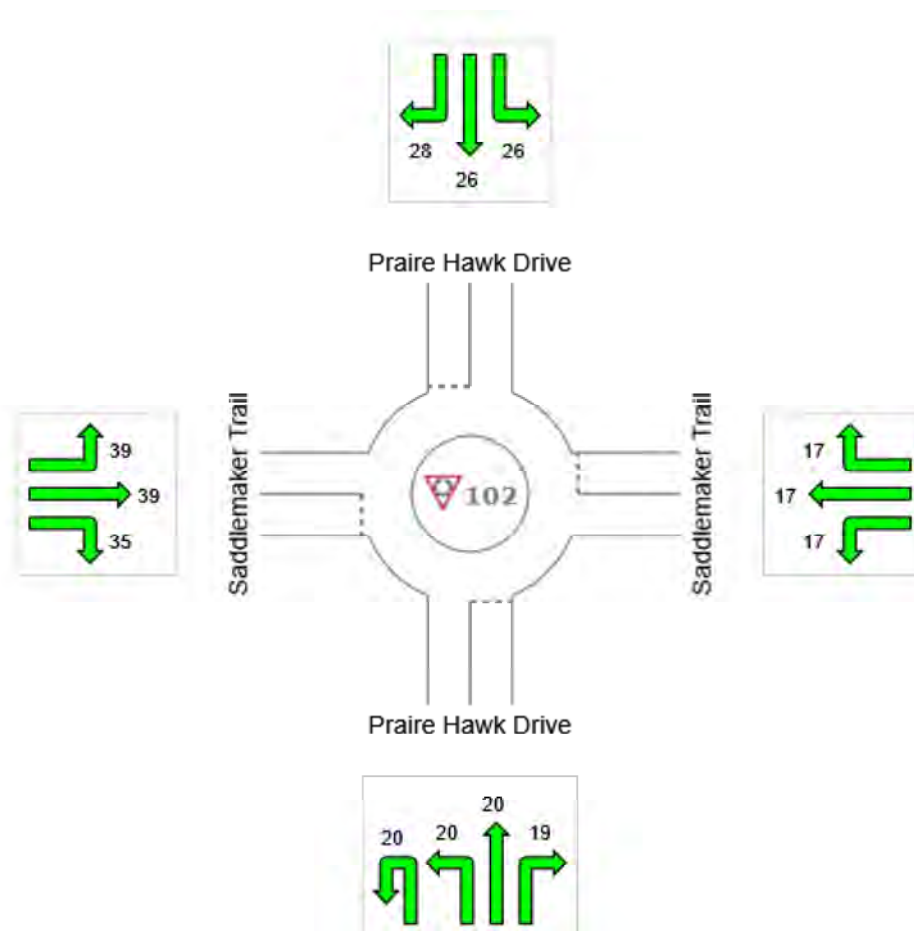
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

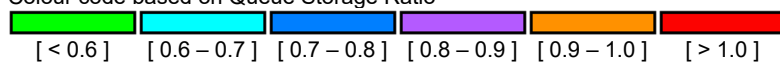
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	20	17	28	39	39



Colour code based on Queue Storage Ratio



QUEUE DISTANCE (%ILE)

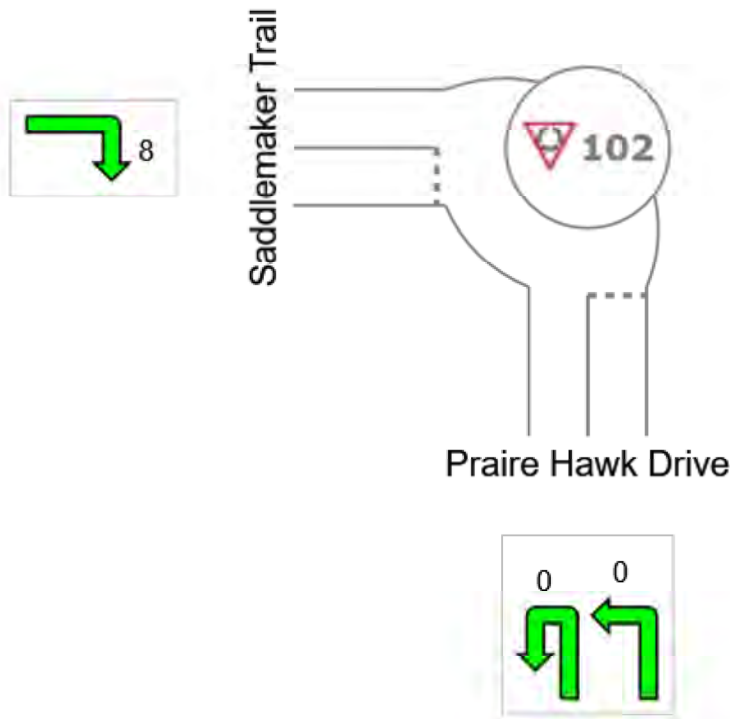
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL AM]**

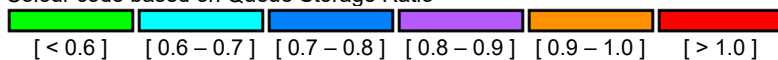
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Vehicle Queue (%ile)	0	8	8



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

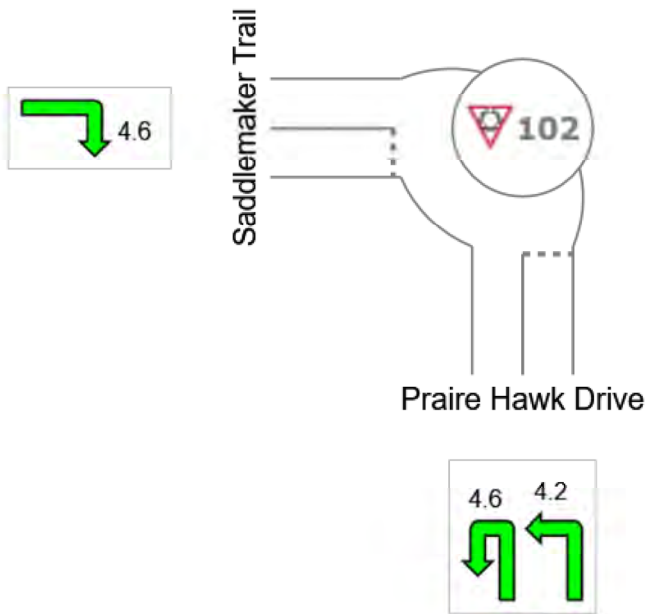
Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Delay (Control)	4.3	4.6	4.4
LOS	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Roundabout Level of Service Method: Same as Sign Control
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

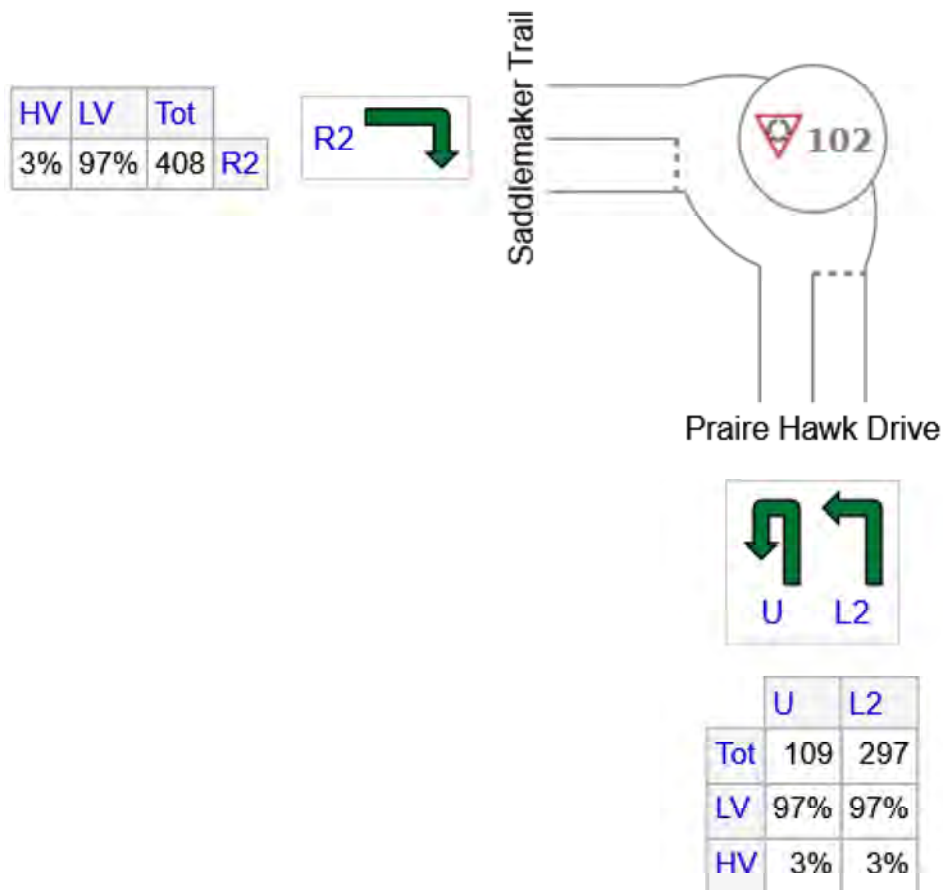
INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Praire Hawk Drive	406	394	12
W: Saddlemaker Trail	408	396	12
Total	814	790	24

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:21:50 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

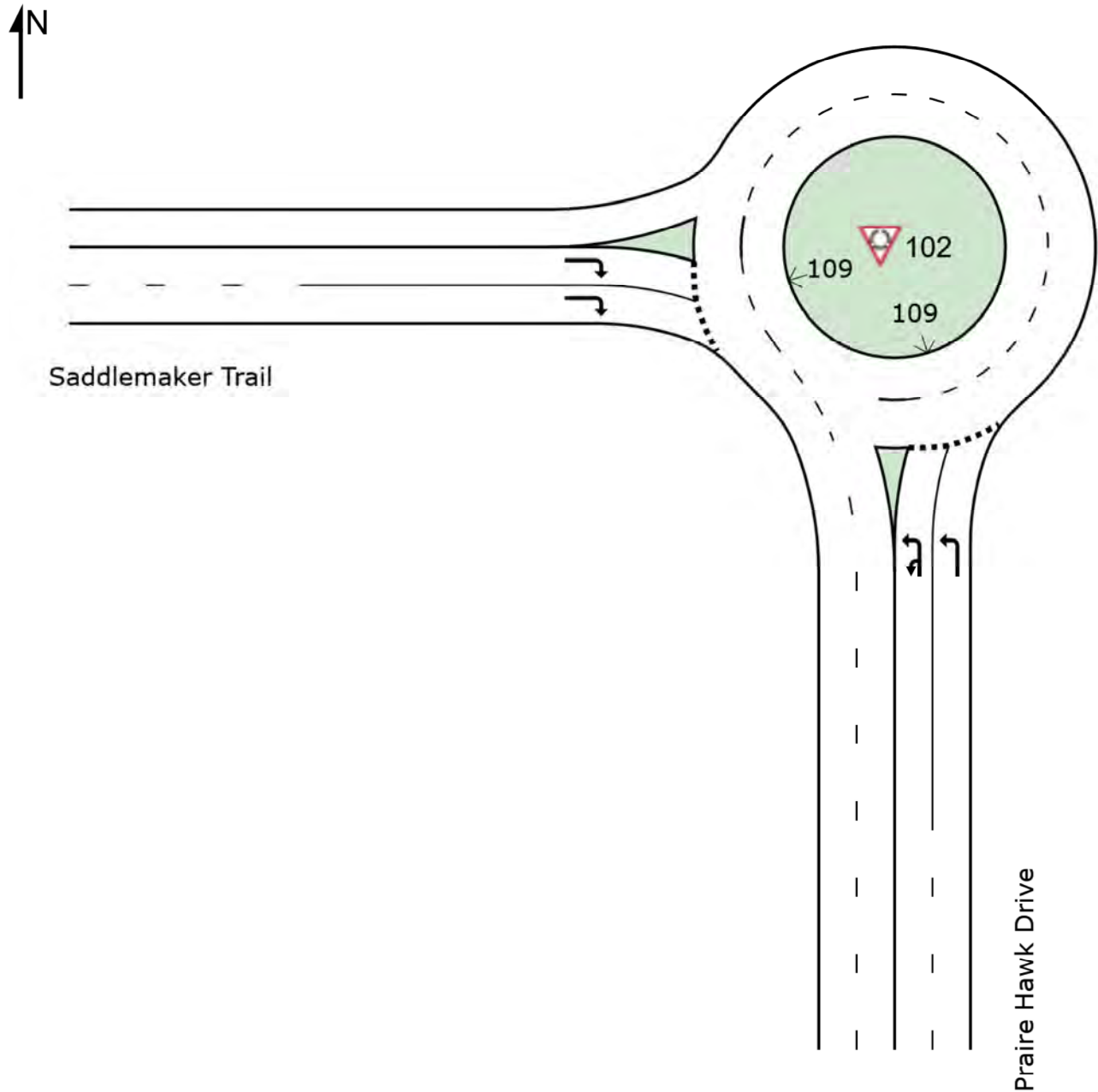
SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout



QUEUE DISTANCE (%ILE)

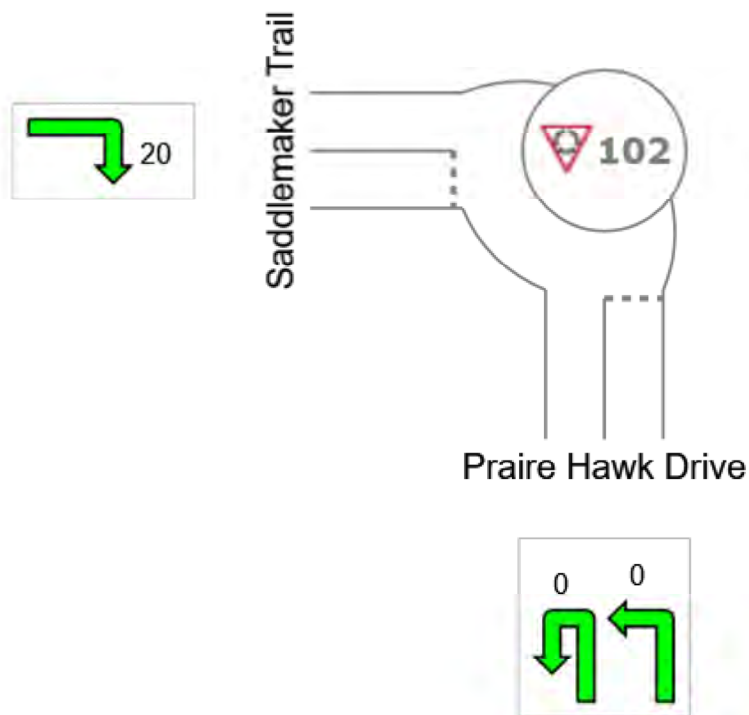
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_23 TOTAL PM]**

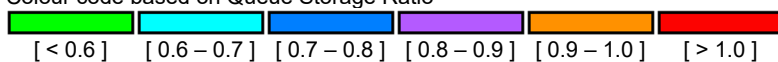
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches		Intersection
	South	West	
Vehicle Queue (%ile)	0	20	20



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

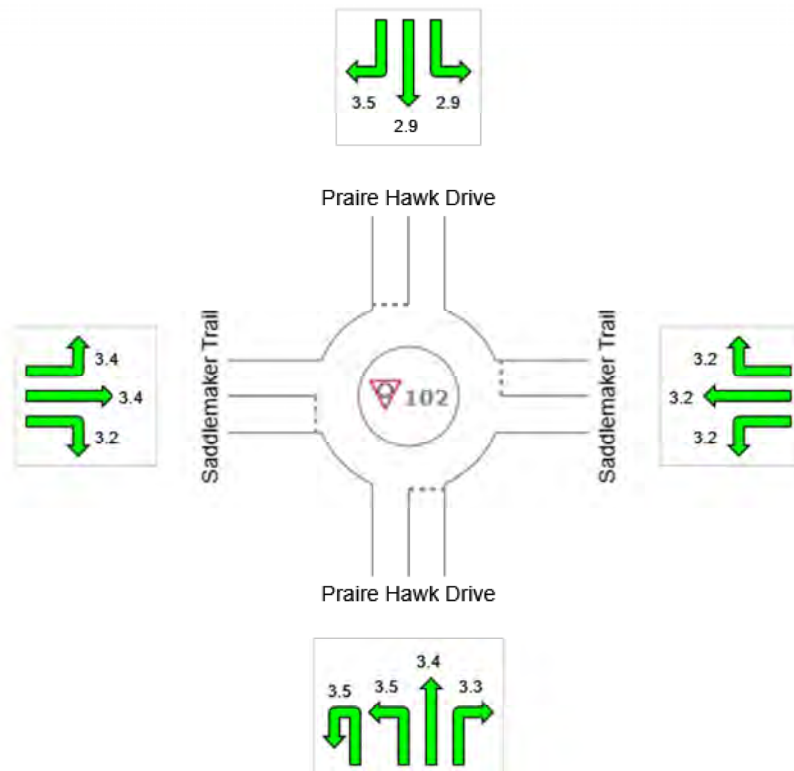
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	3.4	3.2	3.4	3.3	3.4
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

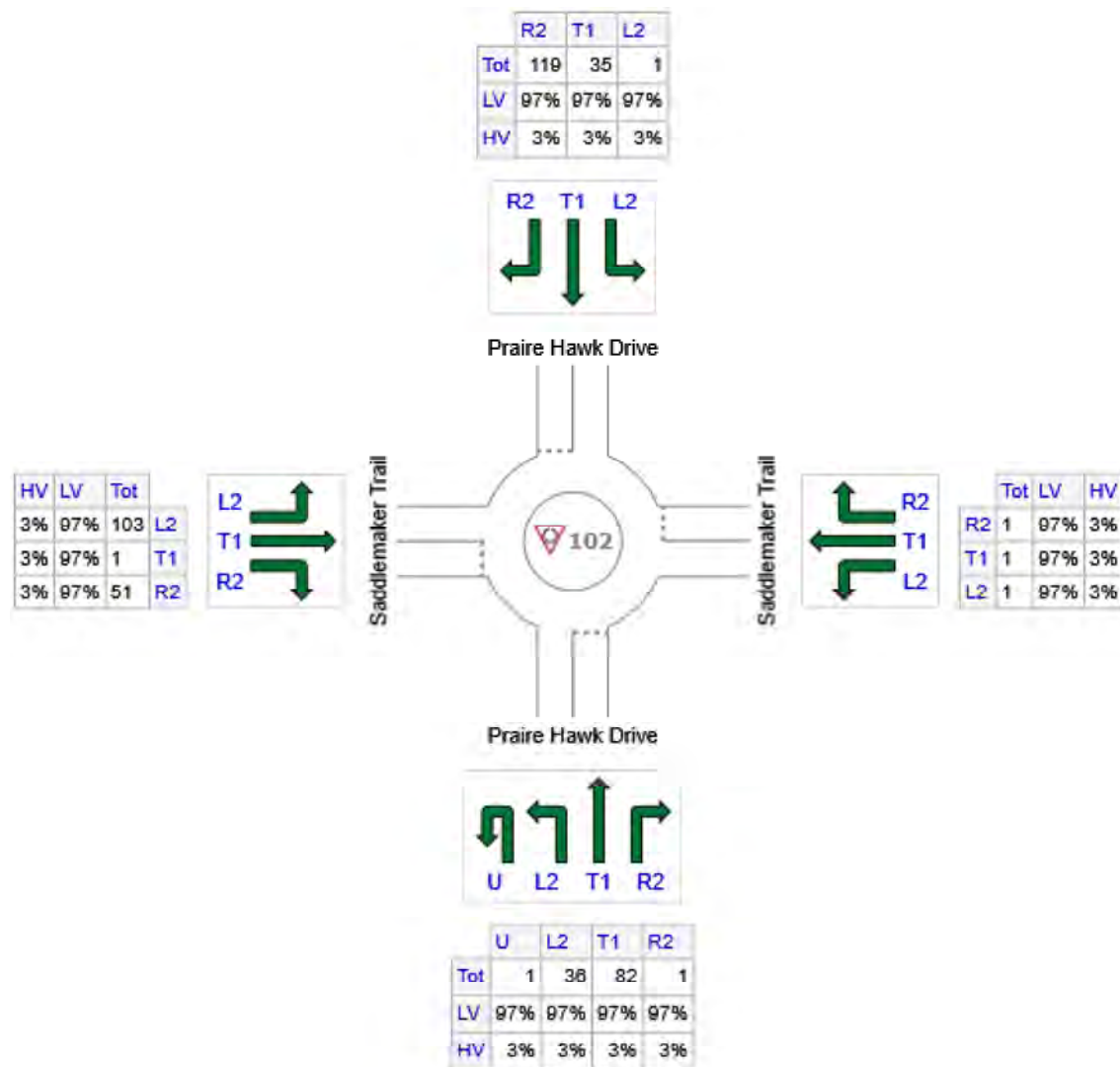
 Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	120	116	4
E: Saddlemaker Trail	3	3	0
N: Prairie Hawk Drive	155	150	5
W: Saddlemaker Trail	155	150	5
Total	433	420	13

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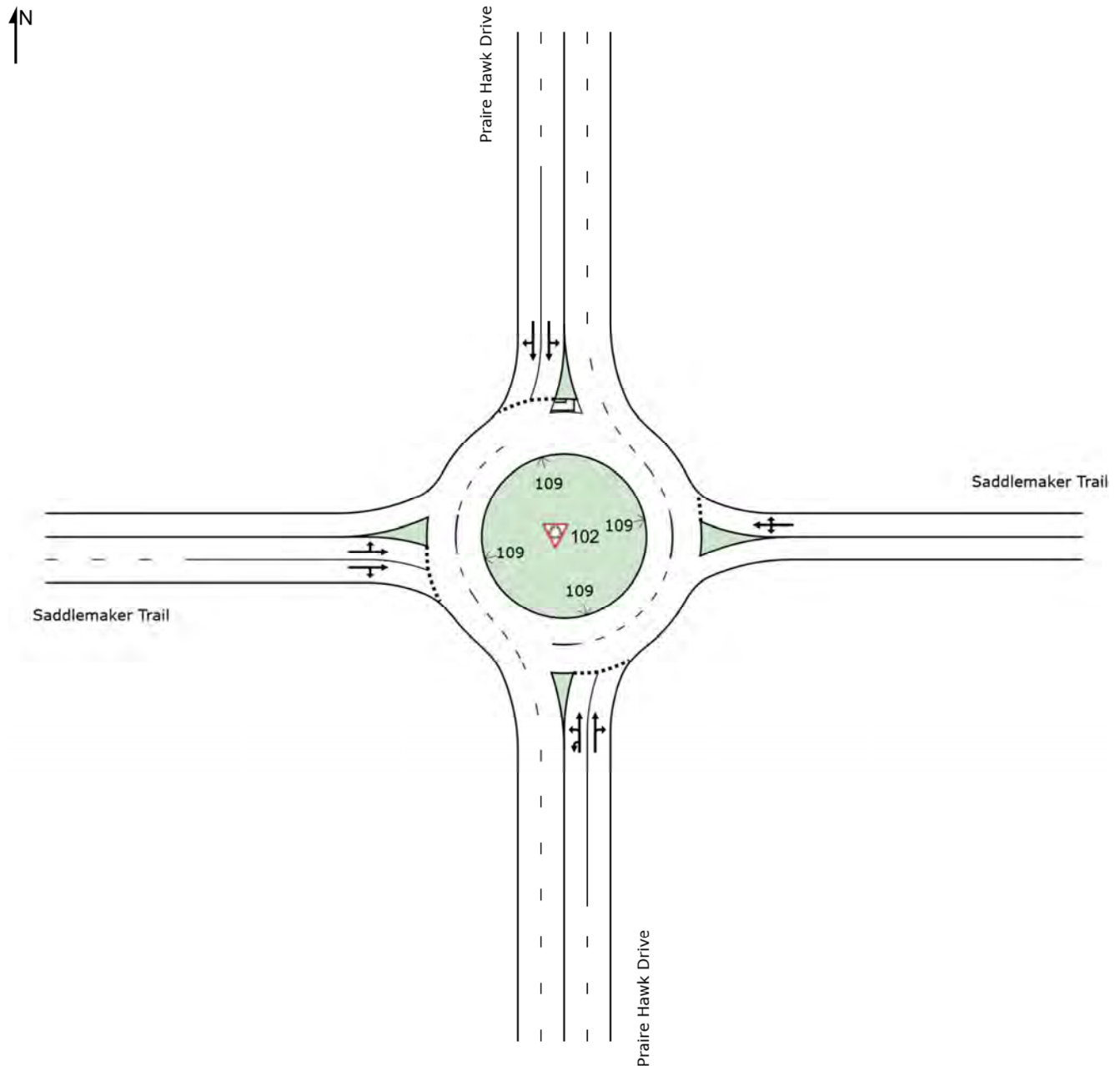
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:22:11 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

SITE LAYOUT

Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



QUEUE DISTANCE (%ILE)

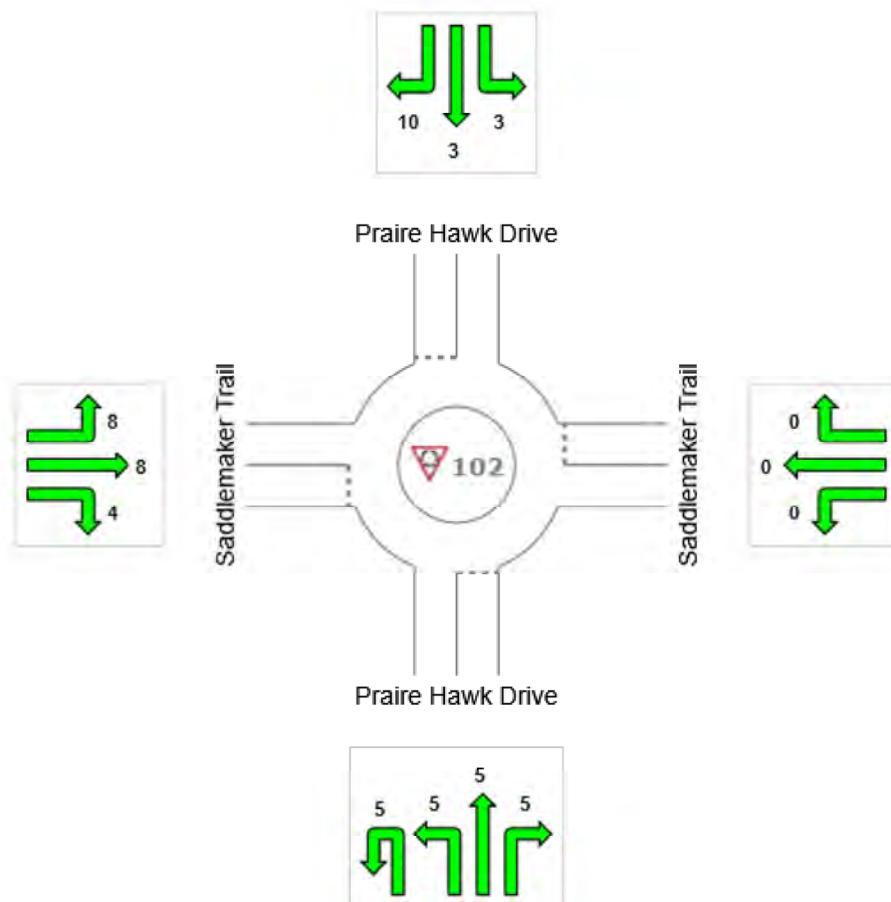
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL AM]**

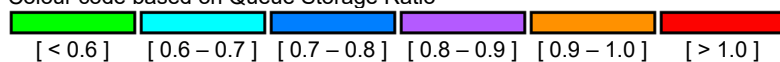
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	5	0	10	8	10



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

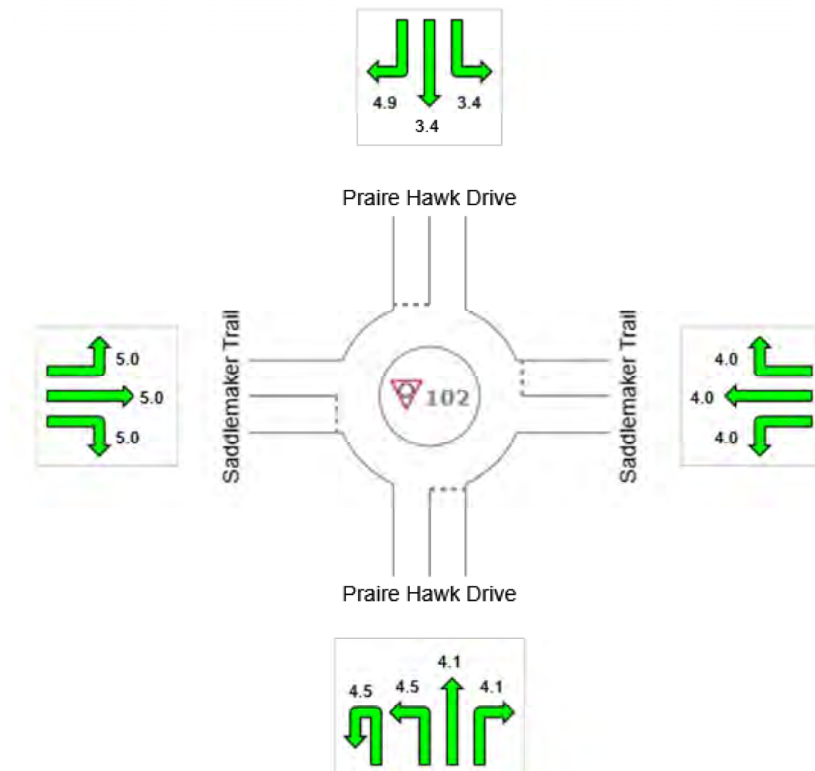
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.4	4.0	4.6	5.0	4.8
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Processed: Friday, May 14, 2021 9:21:12 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

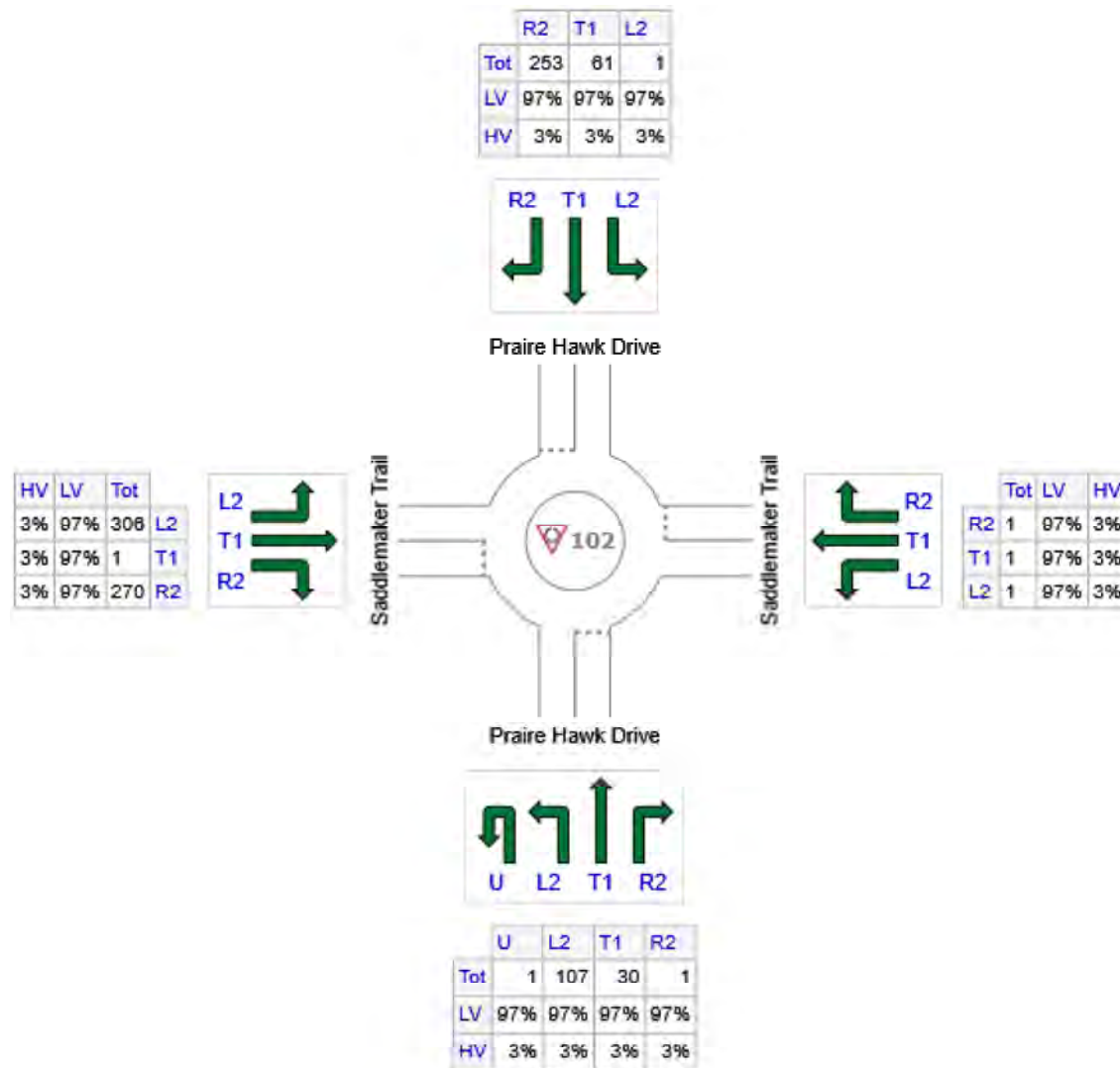
 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	139	135	4
E: Saddlemaker Trail	3	3	0
N: Prairie Hawk Drive	315	306	9
W: Saddlemaker Trail	577	560	17
Total	1034	1003	31

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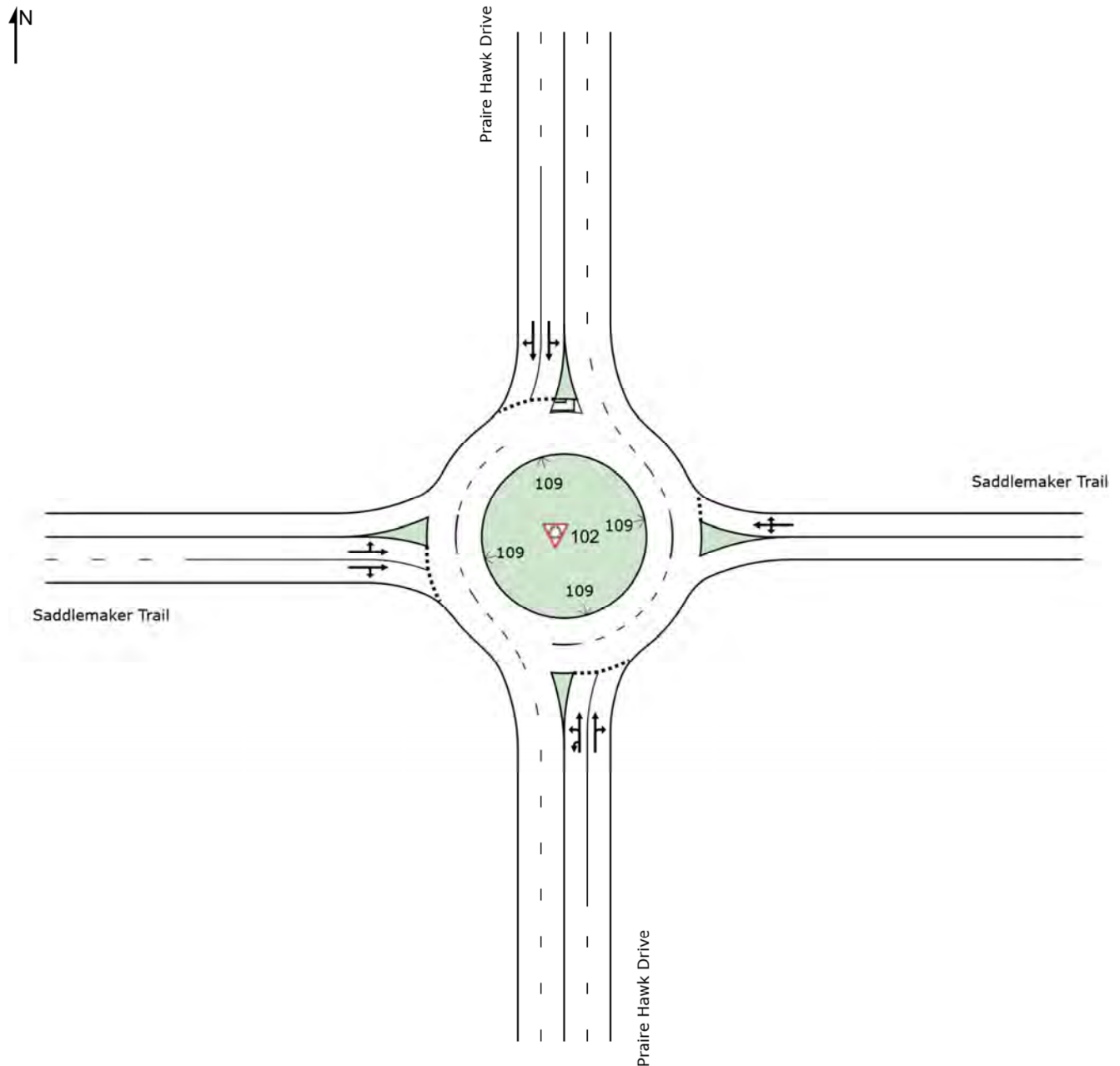
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:22:30 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

SITE LAYOUT

Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



QUEUE DISTANCE (%ILE)

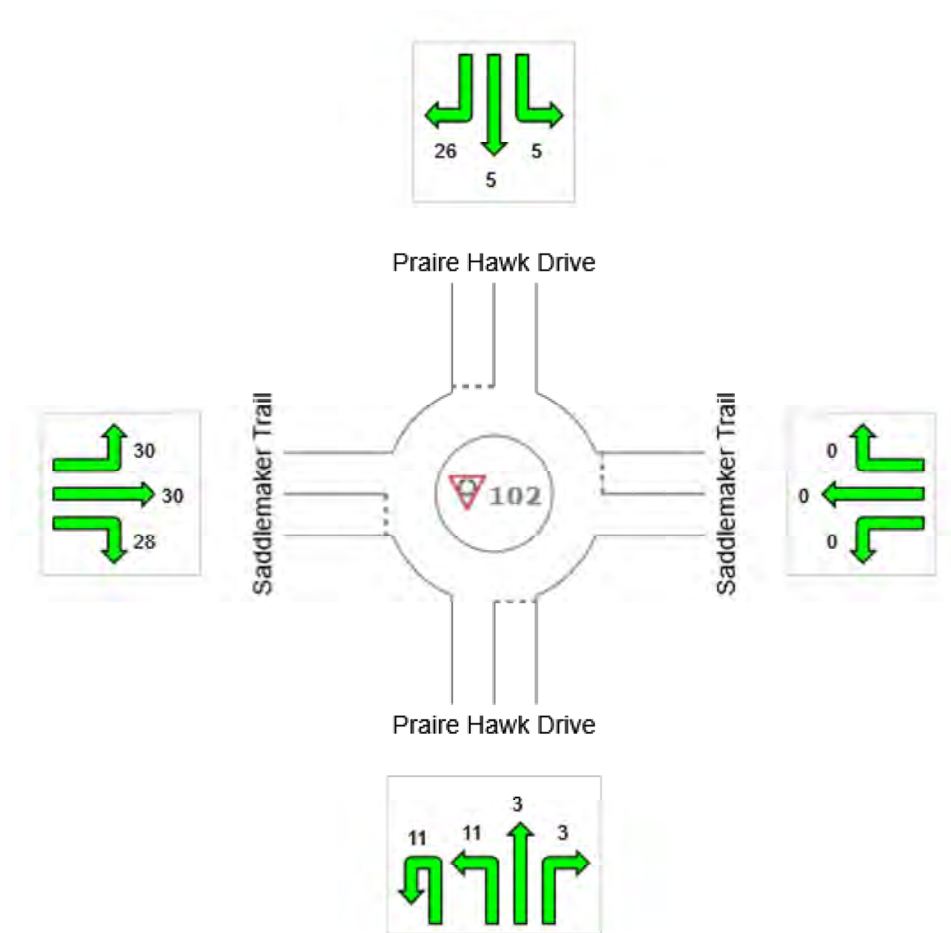
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_27 TOTAL PM]**

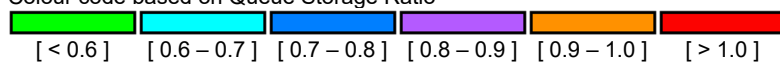
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	11	0	26	30	30



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]

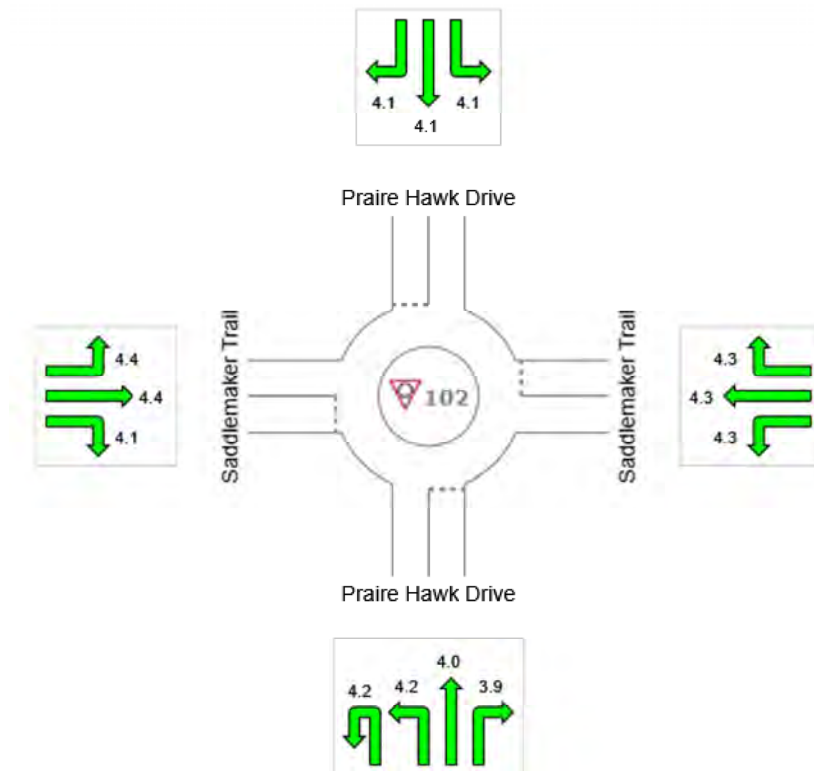
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.0	4.3	4.1	4.3	4.1
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Processed: Friday, May 14, 2021 9:21:12 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

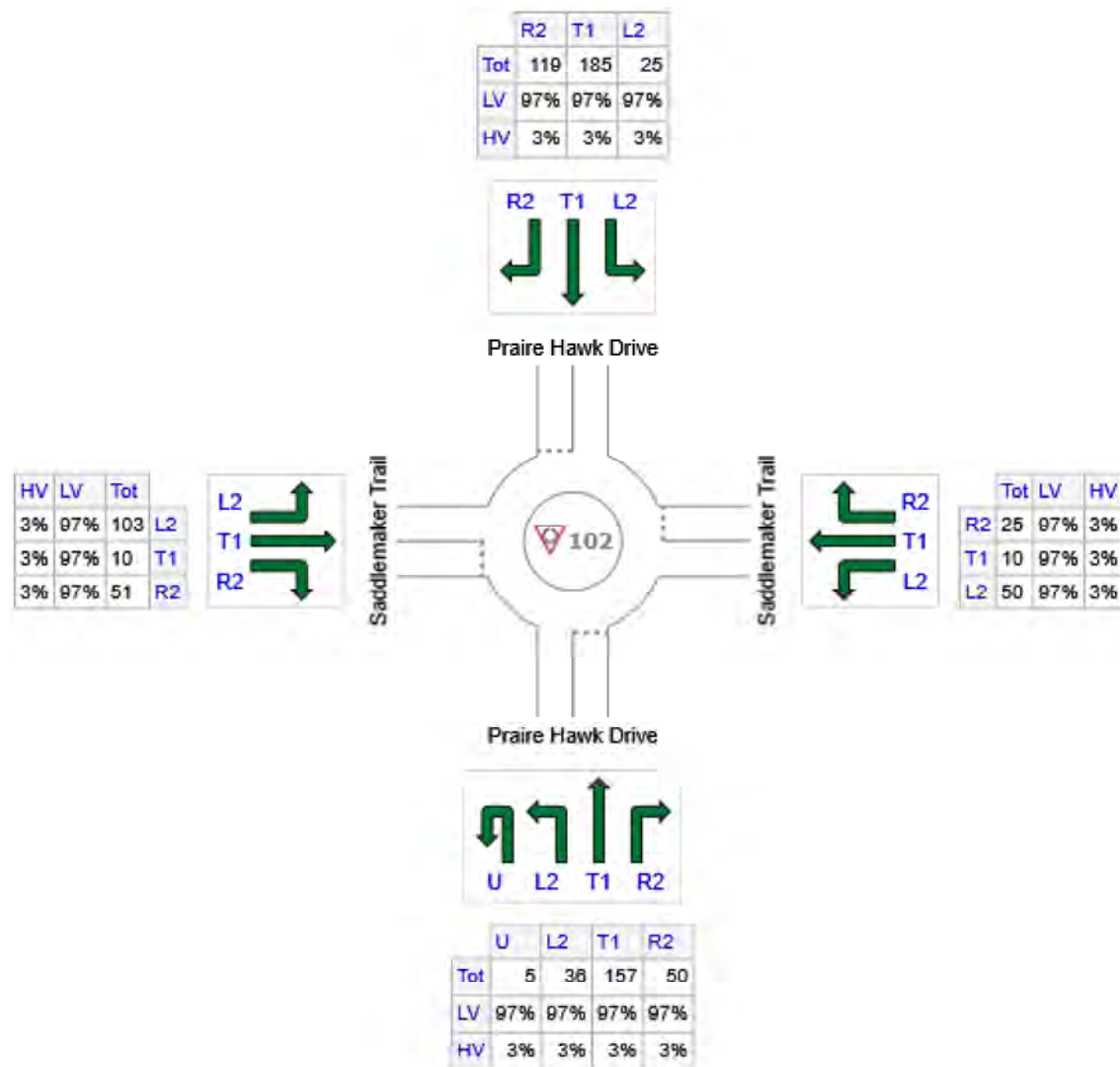
 Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	248	241	7
E: Saddlemaker Trail	85	82	3
N: Prairie Hawk Drive	329	319	10
W: Saddlemaker Trail	164	159	5
Total	826	801	25

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Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:22:51 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

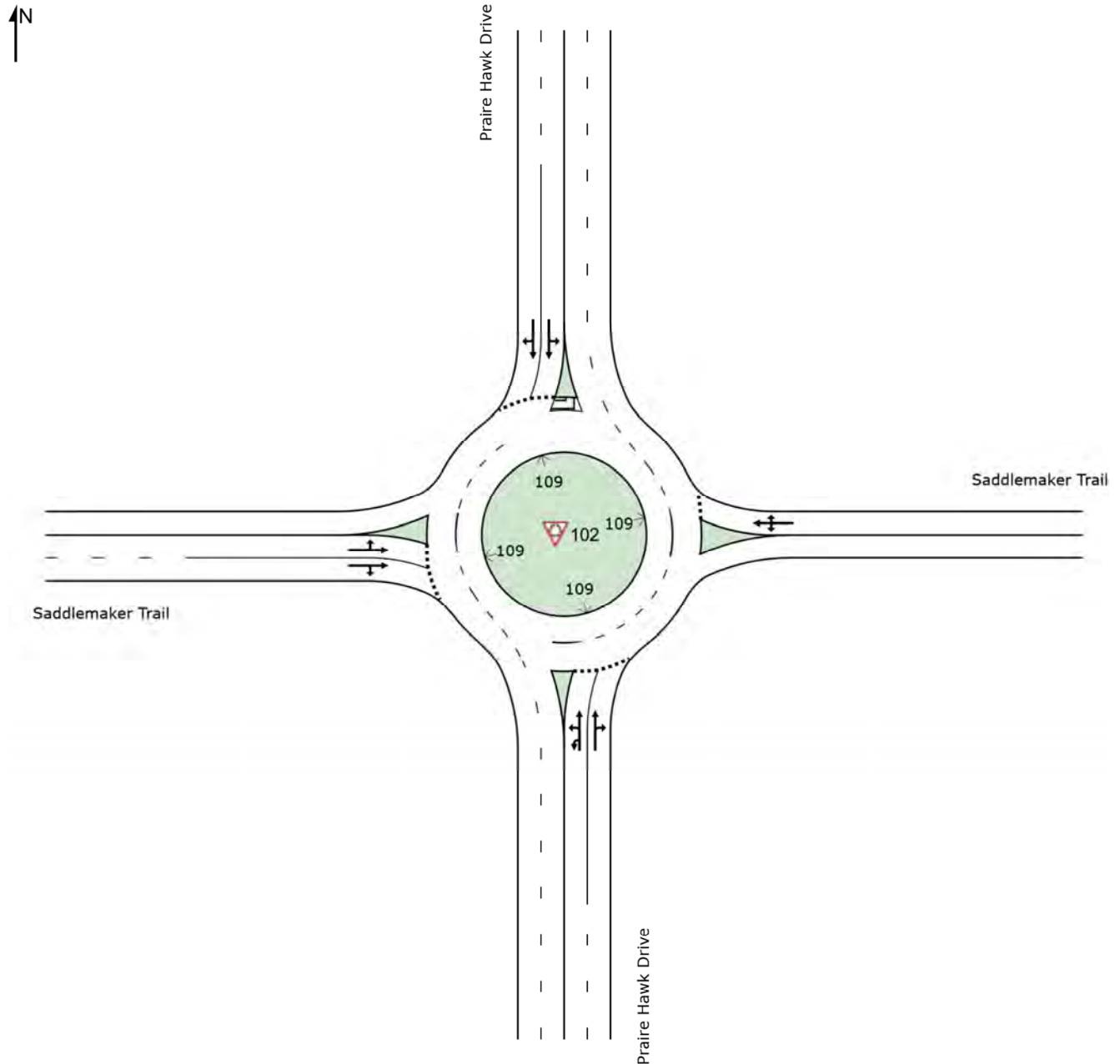
SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout



QUEUE DISTANCE (%ILE)

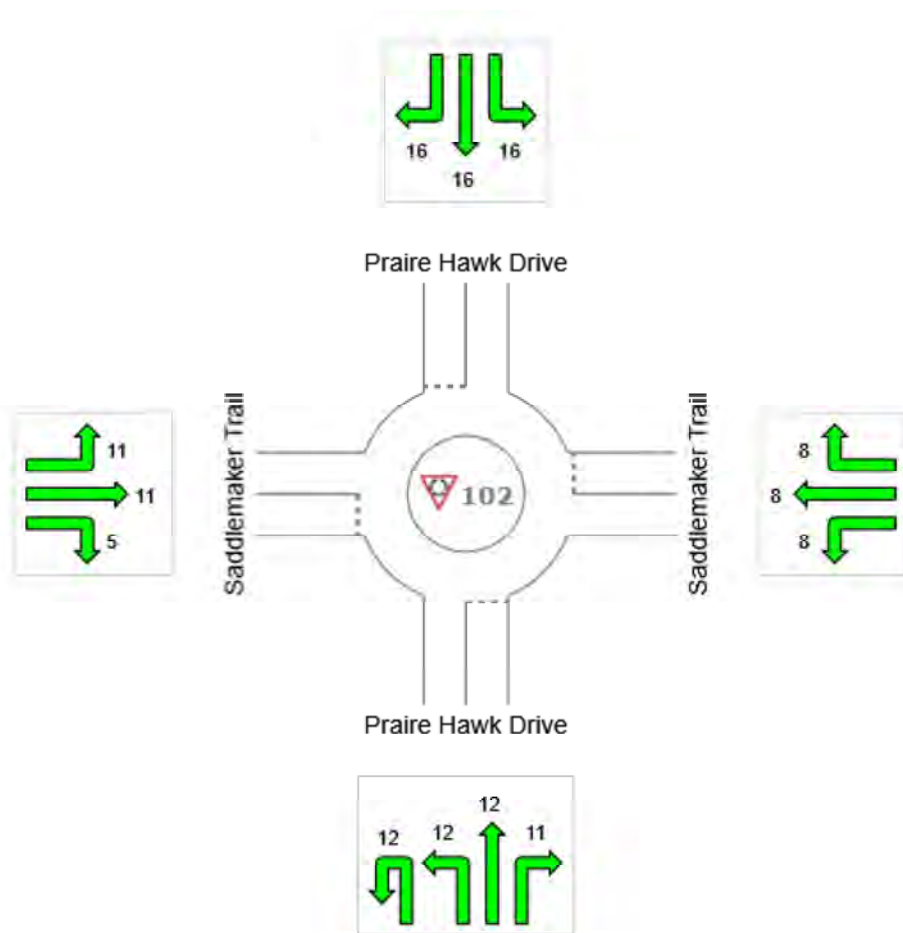
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL AM]**

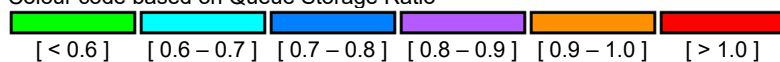
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	12	8	16	11	16



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

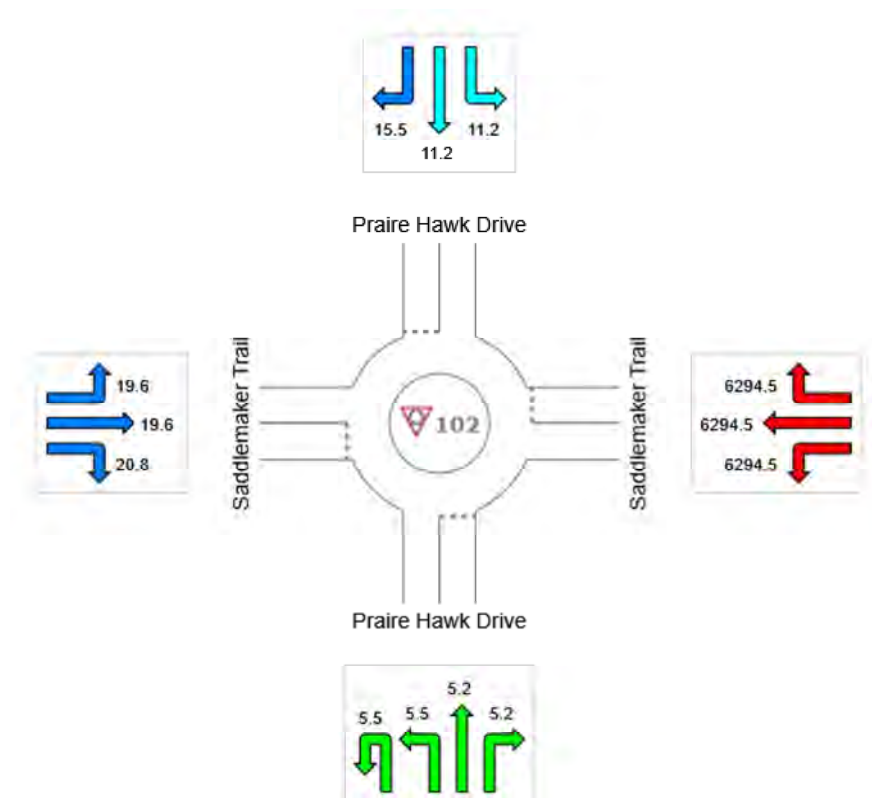
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.3	6294.5	13.8	20.2	5686.5
LOS	A	F	B	C	F



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Processed: Friday, May 14, 2021 9:21:12 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

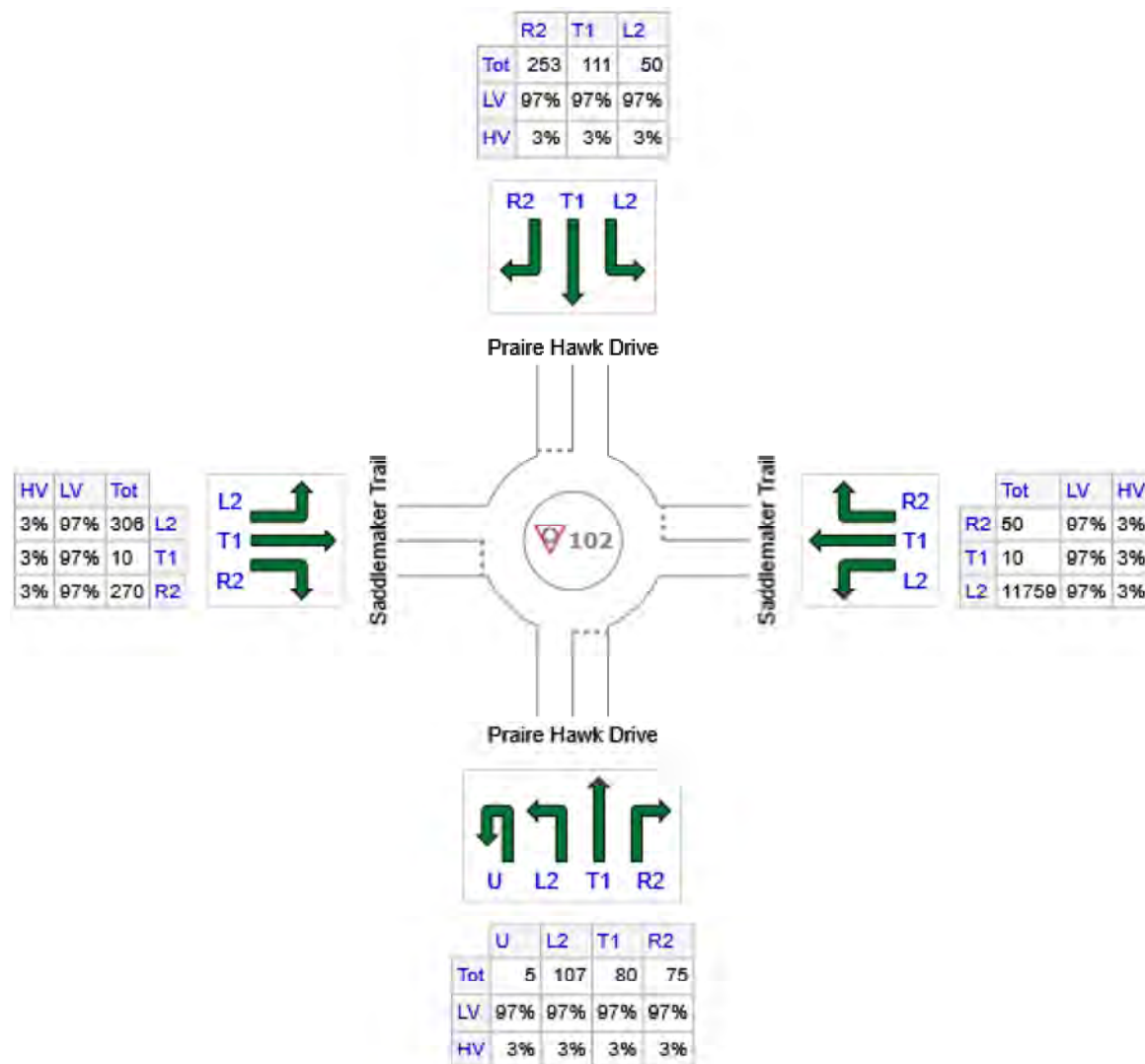
 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	267	259	8
E: Saddlemaker Trail	11819	11464	355
N: Prairie Hawk Drive	414	402	12
W: Saddlemaker Trail	586	568	18
Total	13086	12693	393

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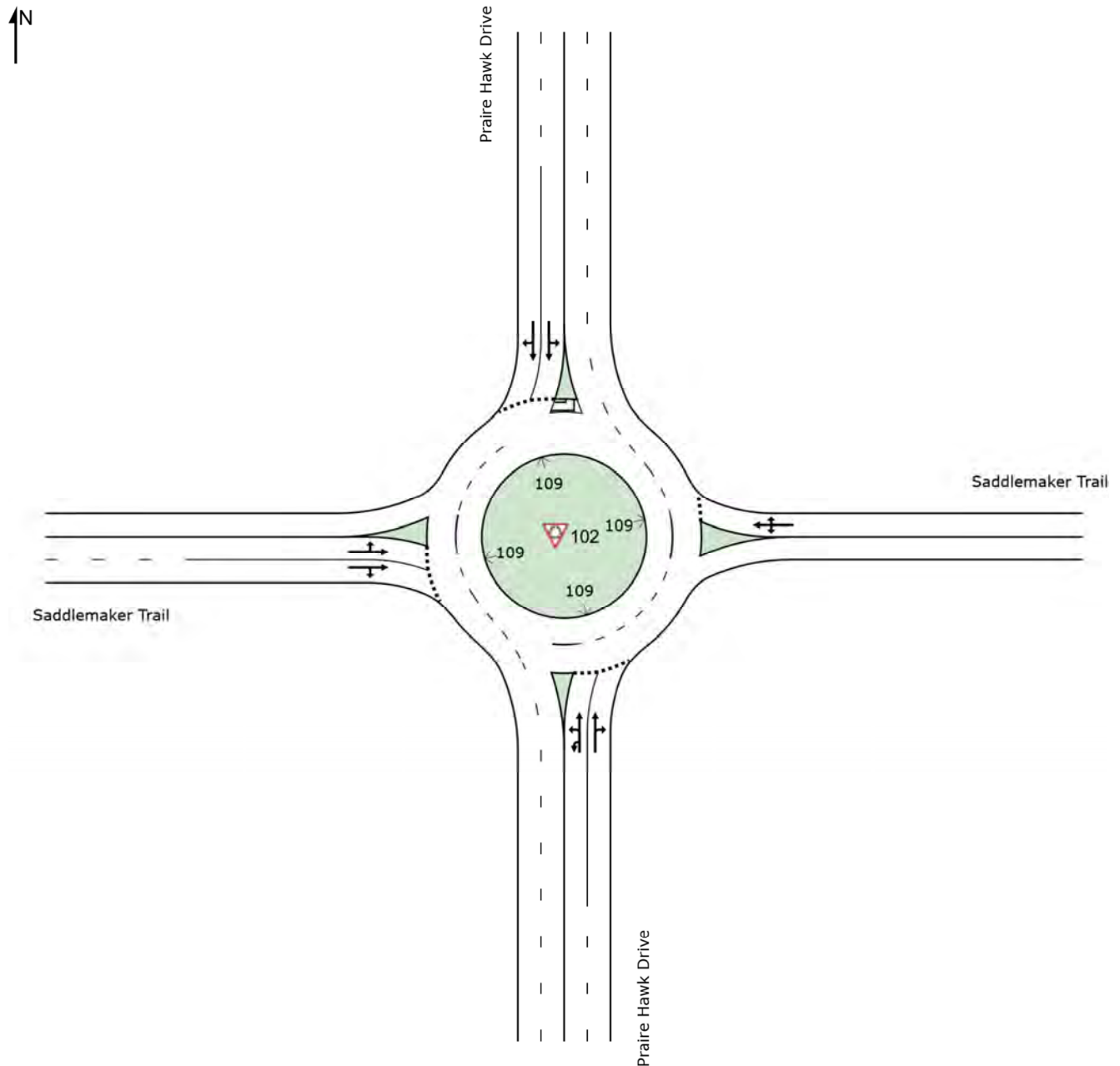
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:23:10 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



QUEUE DISTANCE (%ILE)

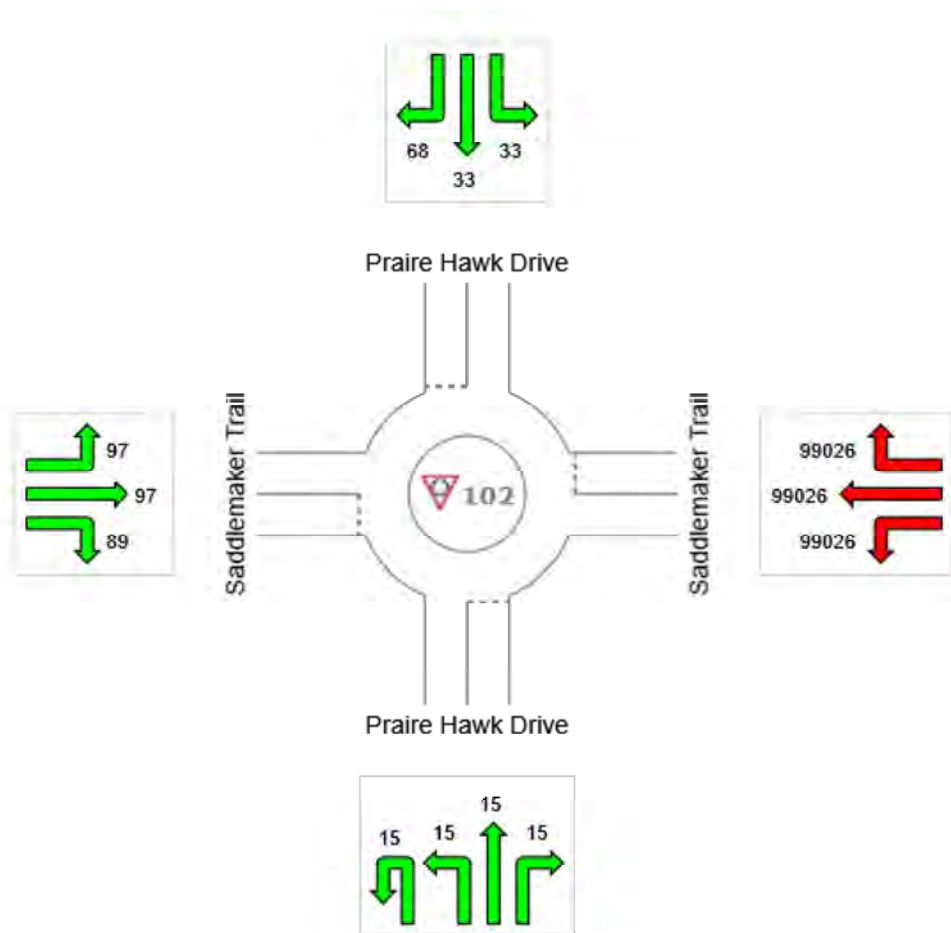
Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_30 TOTAL PM]**

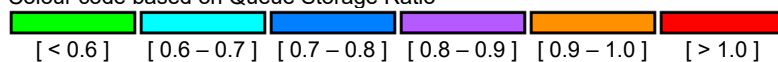
Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	15	99026	68	97	99026



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)



Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]

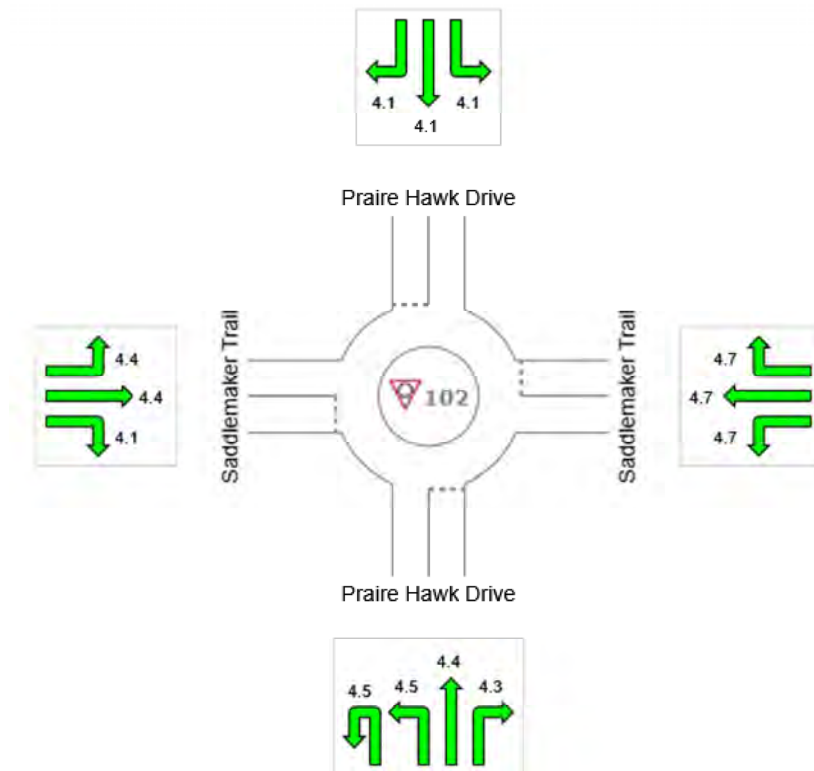
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	4.4	4.7	4.1	4.3	4.3
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Processed: Friday, May 14, 2021 9:21:13 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

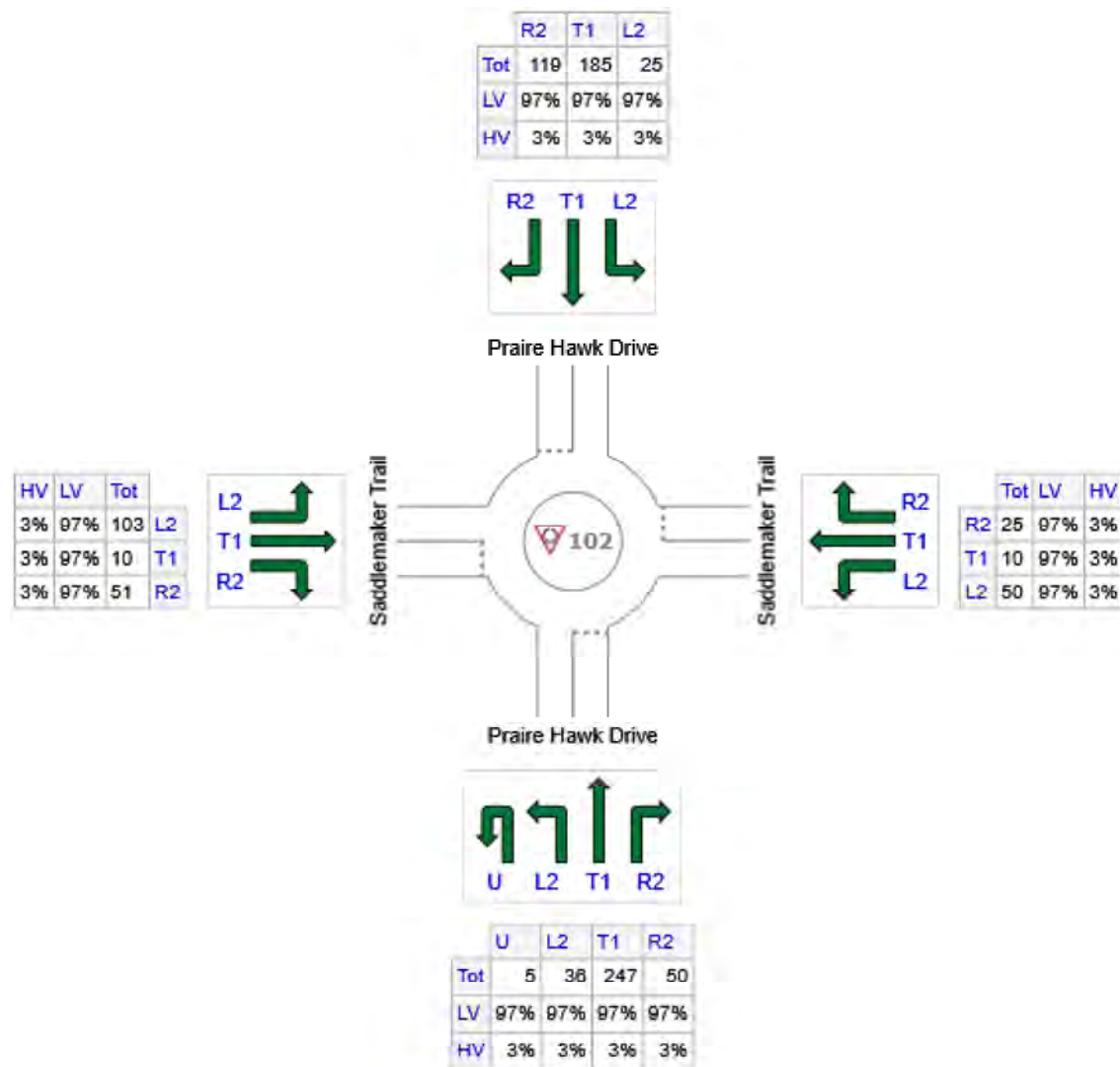
 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %

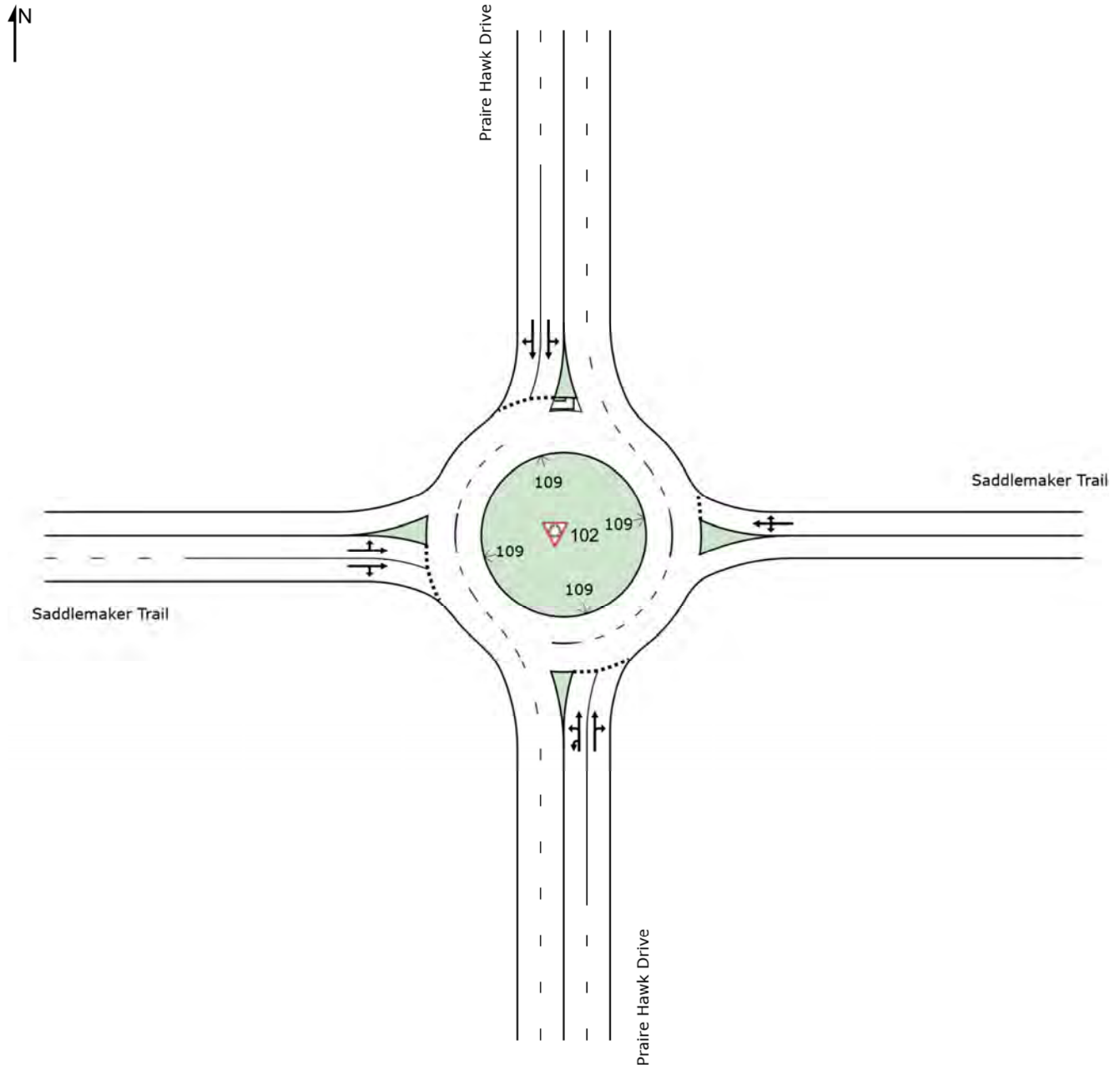


	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	338	328	10
E: Saddlemaker Trail	85	82	3
N: Prairie Hawk Drive	329	319	10
W: Saddlemaker Trail	164	159	5
Total	916	889	27

SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL AM]**

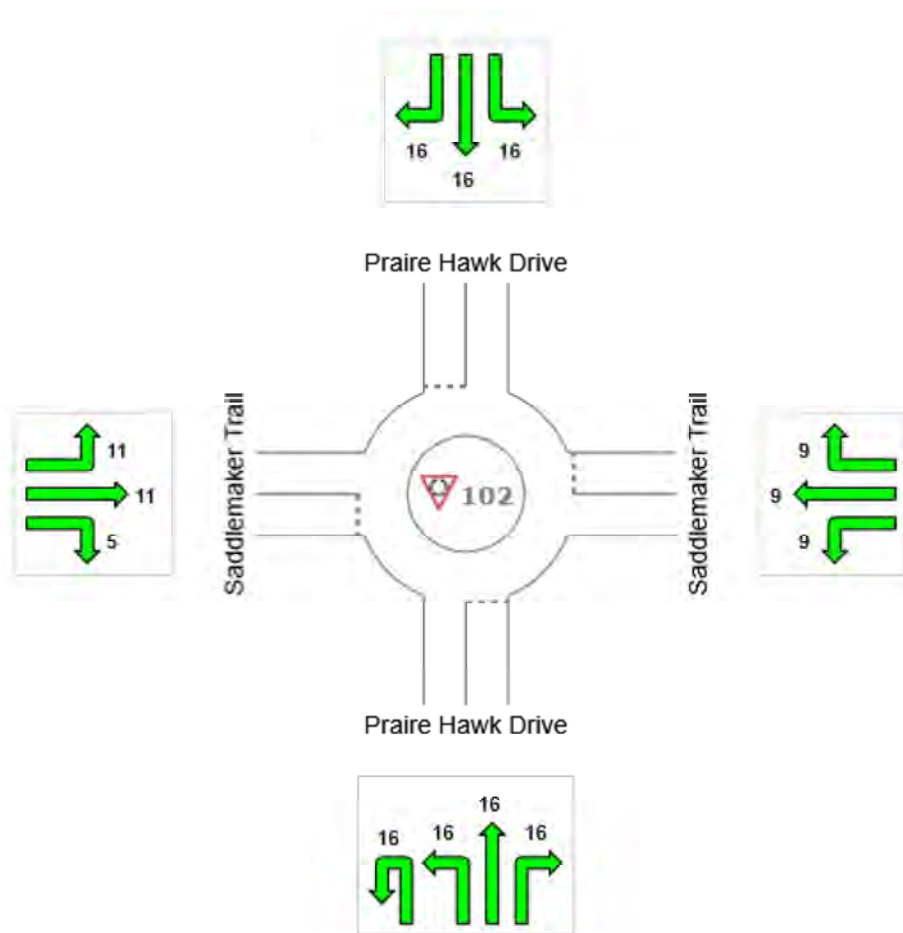
Miller's Landing Master Traffic Study

Site Category: (None)

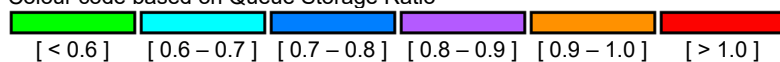
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	16	9	16	11	16



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

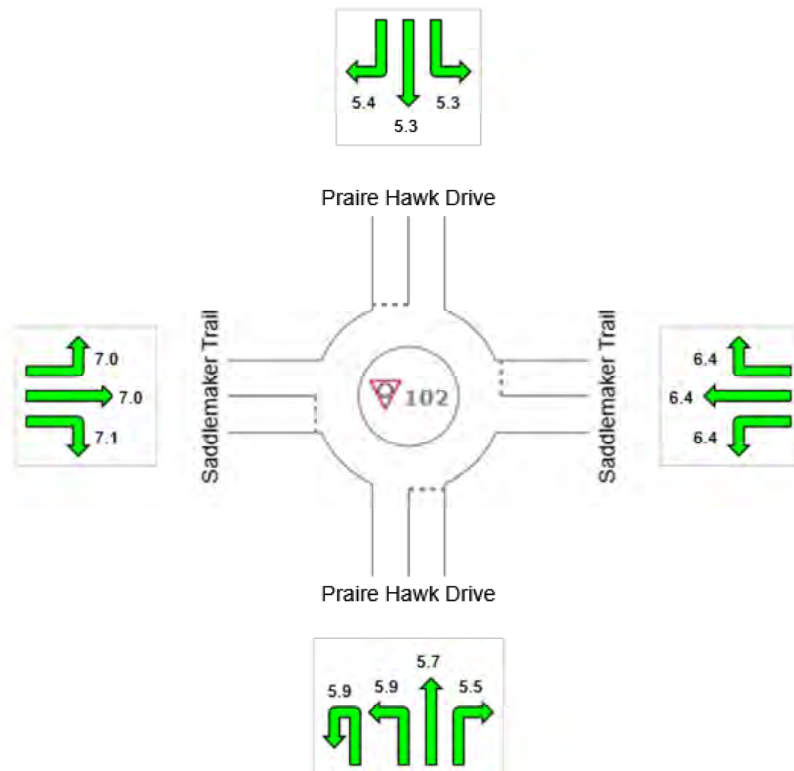
Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	5.7	6.4	5.4	7.0	6.2
LOS	A	A	A	A	A



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Organisation: FOX TUTTLE TRANSPORTATION GROUP | Processed: Friday, May 14, 2021 9:21:13 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

INPUT VOLUMES

Vehicles and pedestrians per 60 minutes

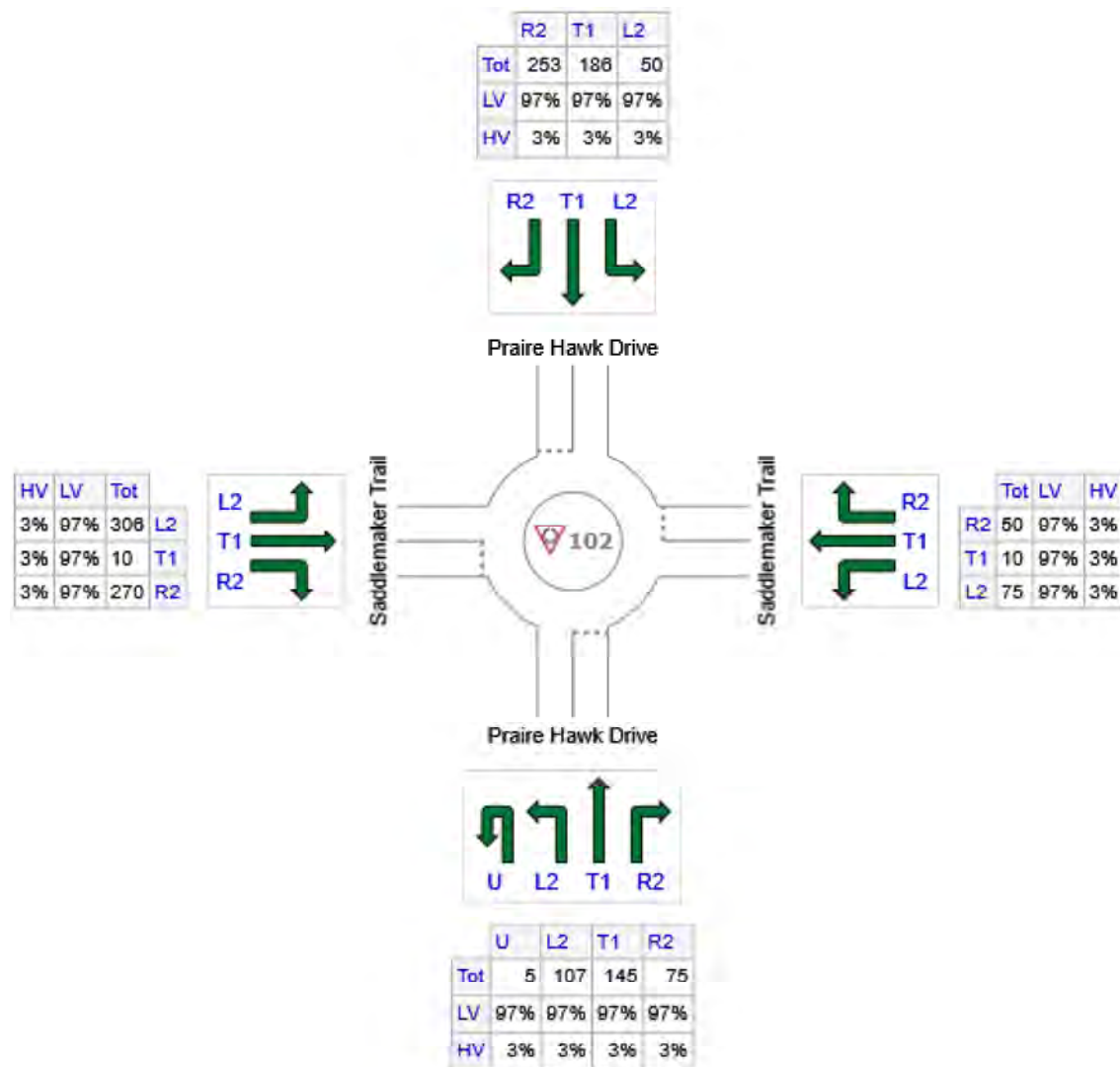
 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

Miller's Landing Master Traffic Study

Site Category: (None)

Roundabout

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Prairie Hawk Drive	332	322	10
E: Saddlemaker Trail	135	131	4
N: Prairie Hawk Drive	489	474	15
W: Saddlemaker Trail	586	568	18
Total	1542	1496	46

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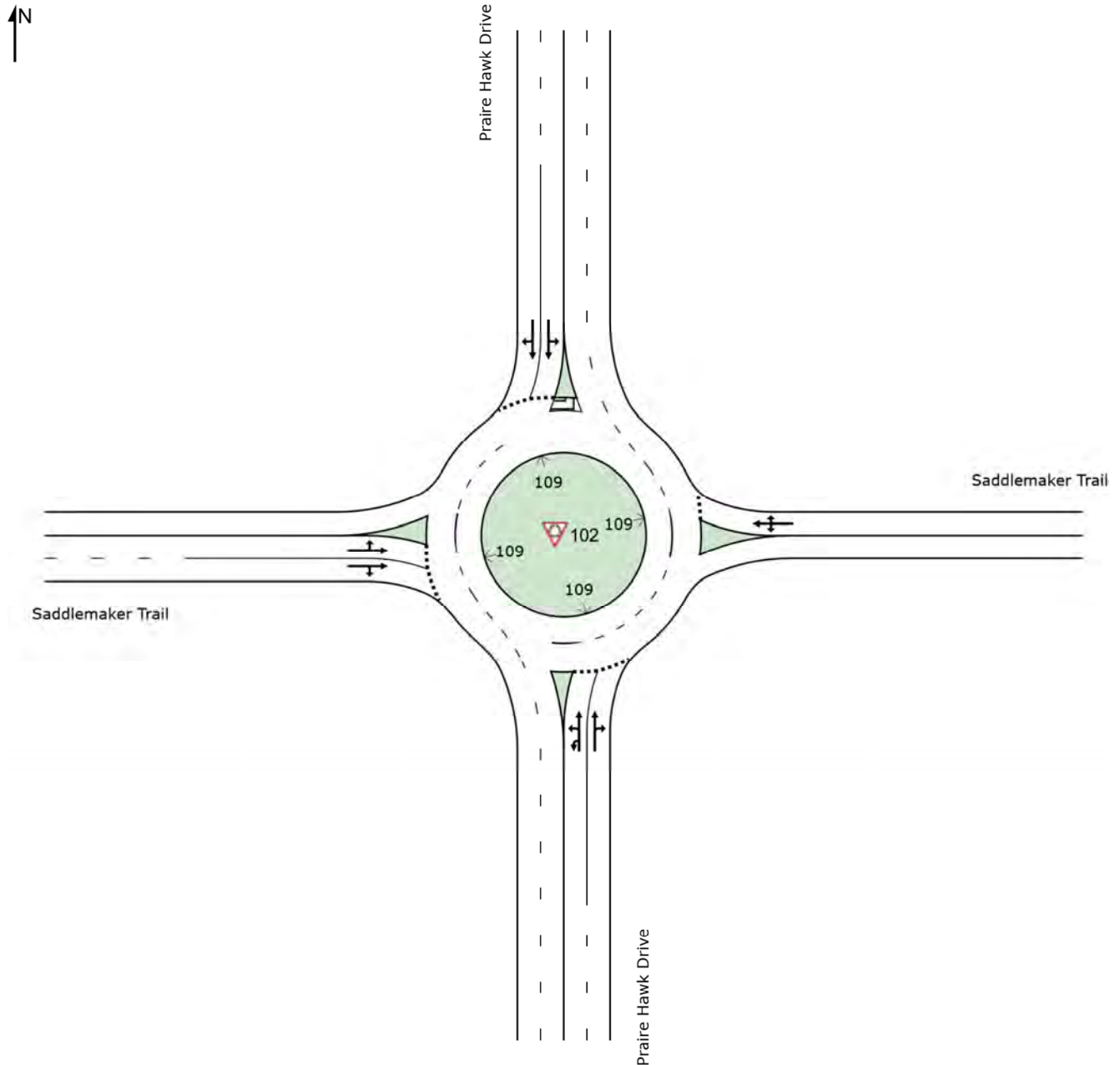
Organisation: FOX TUTTLE TRANSPORTATION GROUP | Created: Friday, May 14, 2021 9:24:55 AM

Project: E:\Dropbox (Fox Tuttle)\FT\FT Team Only\Projects\2020\20041 Miller's Landing TIS Update\analysis\Sidra\Prairie Hawk & Saddlemaker.sip8

SITE LAYOUT

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

Miller's Landing Master Traffic Study
Site Category: (None)
Roundabout



QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 102 [Prairie Hawk & Saddlemaker_40 TOTAL PM]**

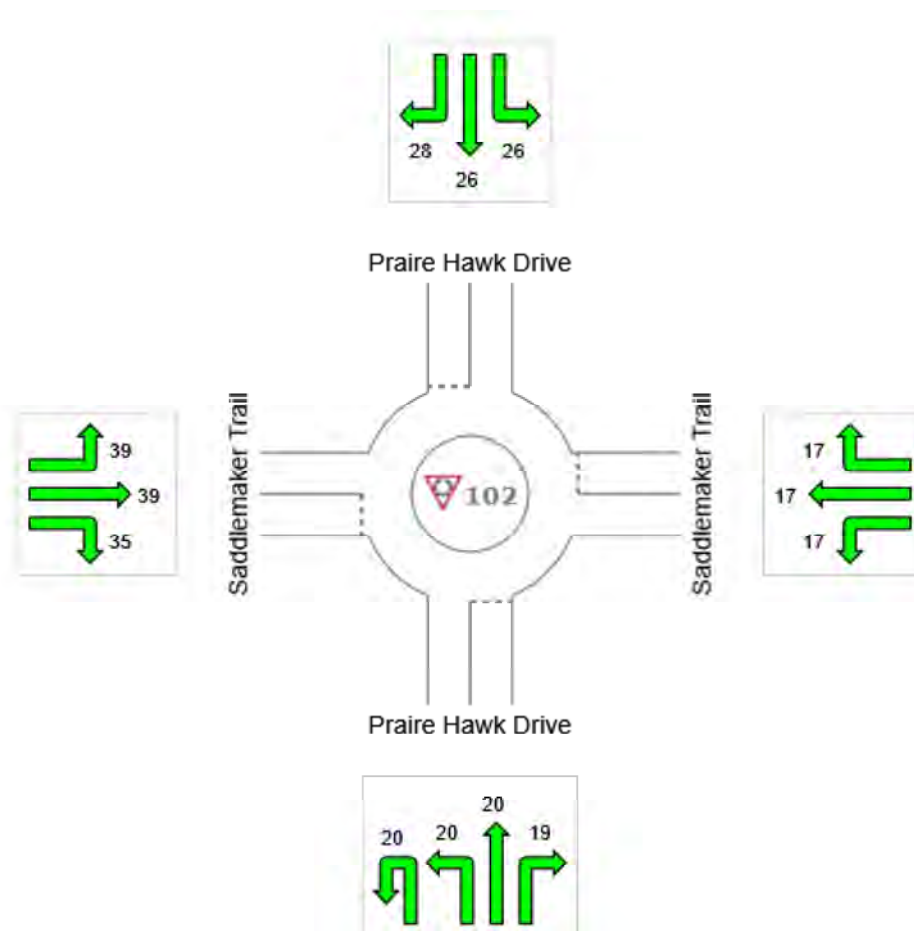
Miller's Landing Master Traffic Study

Site Category: (None)

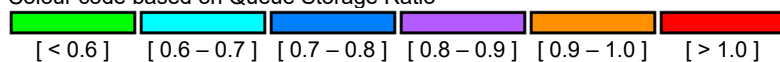
Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	20	17	28	39	39



Colour code based on Queue Storage Ratio



DELAY (CONTROL)

Average control delay per vehicle, or average pedestrian delay (seconds)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL PM]**

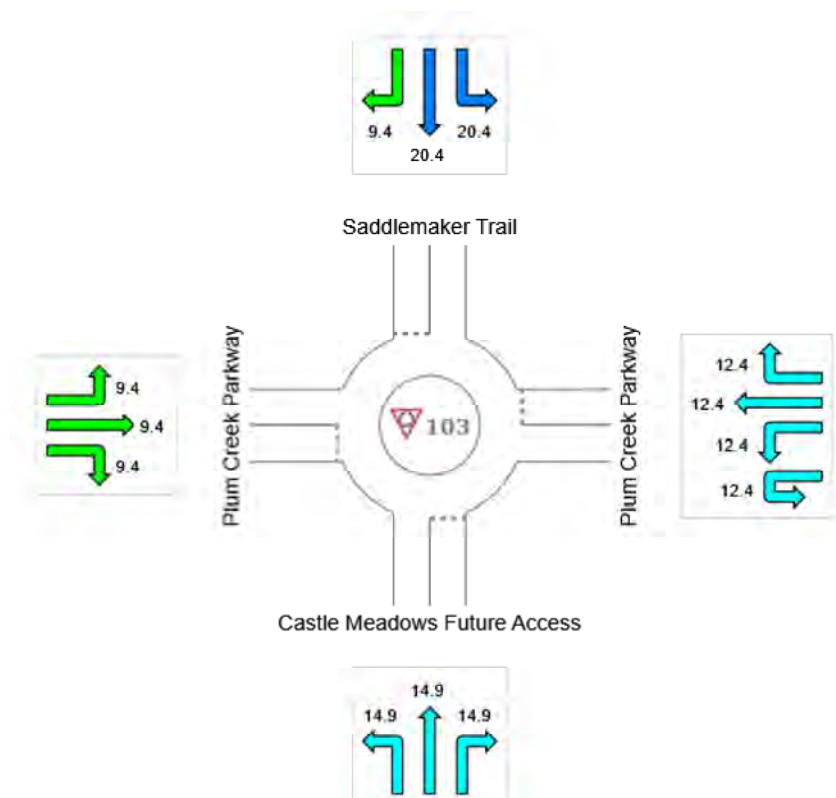
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Delay (Control)	14.9	12.4	18.1	9.4	13.1
LOS	B	B	C	A	B



Colour code based on Level of Service



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Roundabout Level of Service Method: Same as Sign Control

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

QUEUE DISTANCE (%ILE)

Largest 95% Back of Queue Distance for any lane used by vehicle movement (feet)

 **Site: 103 [Plum Creek Parkway & Saddlemaker Trail_40 TOTAL PM]**

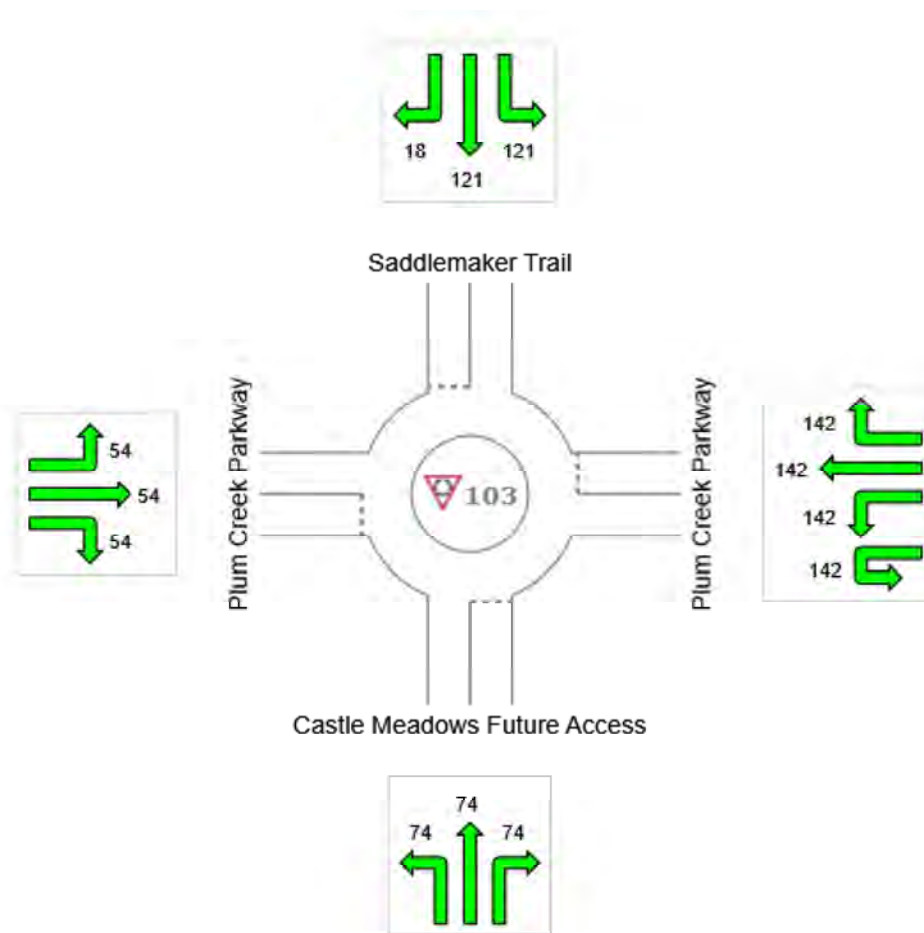
New Site

Site Category: (None)

Roundabout

All Movement Classes

	Approaches				Intersection
	South	East	North	West	
Vehicle Queue (%ile)	74	142	121	54	142



Colour code based on Queue Storage Ratio

