

TRAFFIC IMPACT STUDY

For

**Chateau Valley
Castle Rock, Colorado**

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I. Introduction

Project Overview

This traffic impact study addresses the capacity, geometric, and control requirements associated with the development entitled Chateau Valley.

This traffic impact study has been revised pursuant to the collection of new traffic count data, as well as to address Town review comments regarding additional assessment of alternative site connectivity including limited access to adjacent roadway networks.

This proposed residential development consists of a mix of single family and multifamily housing units. The development is located along Valley Drive north of Plum Creek Parkway in Castle Rock, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the intersections of Valley Drive with Plum Creek Parkway, South Street, and 5th Street, as well as the intersections of Plum Creek Parkway with Ridge Road, Eaton Street, S Gilbert Street, and S Gilbert Street with Elm Avenue, and Ash Avenue.

Figure 1 illustrates location of the site and study intersections.

Site Description

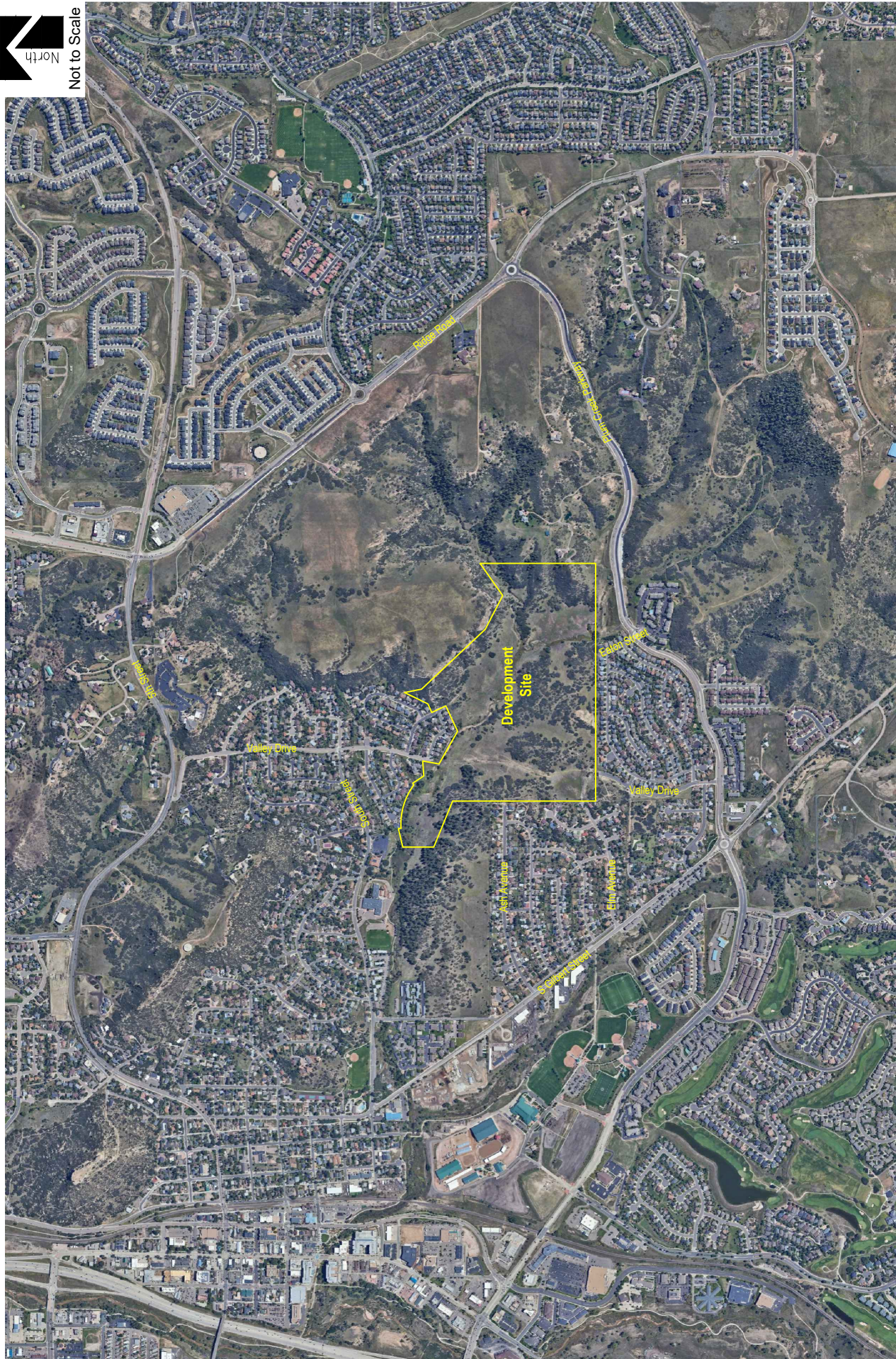
Land for the development is currently vacant and surrounded by a mix of residential, educational, and open space land uses.

The proposed development is understood to entail the new construction of approximately 257 single-family detached housing units and 158 multifamily housing units.

Proposed access to the development is generally provided using the following existing roadways and intersection locations: Plum Creek Parkway with Eaton Street and Valley Drive, S Gilbert Street with Ash Avenue and Elm Avenue, and South Street with Valley Drive.

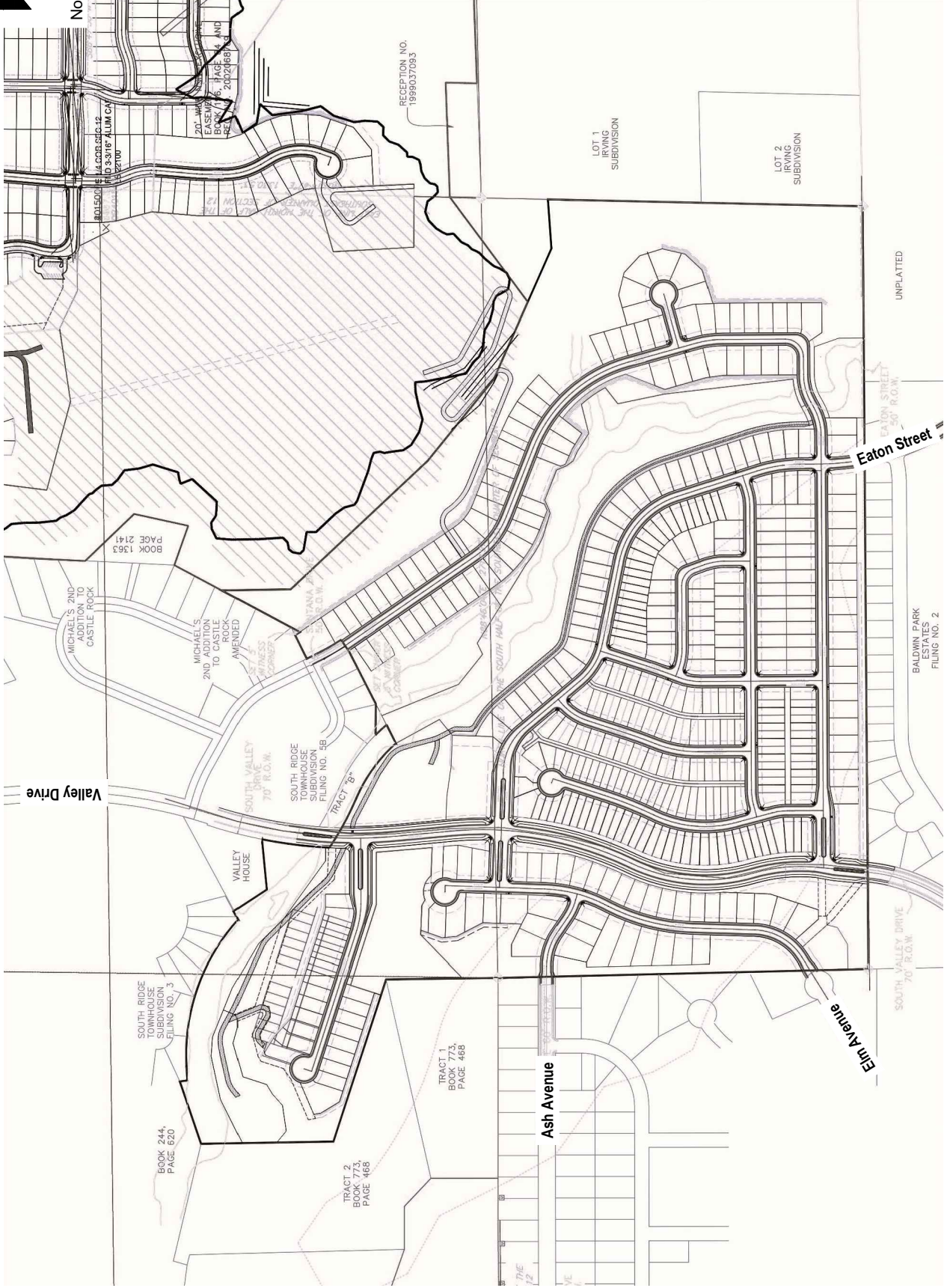
For purposes of this study, it is anticipated that development construction would be completed by end of Year 2027.

A conceptual site plan, as prepared by Highline Engineering & Surveying, is shown on Figure 2. This plan is provided for illustrative purposes.





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Existing and Committed Surface Transportation Network

Within the study area, Valley Drive is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include Plum Creek Parkway, S Gilbert Street, Ridge Road, 5th Street, South Street, Ash Avenue, Elm Avenue, and Eaton Street. A brief description of each roadway is provided below:

Valley Drive is a north-south collector roadway having two through lanes (one lane in each direction) with a combination of shared and exclusive turn lanes at the intersections within the study area. Valley Drive provides a posted speed limit of 25 MPH.

Plum Creek Parkway is an east-west arterial roadway having two through lanes (one lane in each direction) east of the intersection with Eaton Street and four through lanes (two lanes in each direction) west of Eaton Street, with a combination of shared and exclusive turn lanes at the study intersections. Plum Creek Parkway provides a posted speed limit of 35 MPH.

S Gilbert Street is a north-south collector roadway having two through lanes (one lane in each direction) with a combination of shared and exclusive turn lanes at the study intersection. The posted speed limit on S Gilbert Street is 35 MPH. It is noted that S Gilbert Street becomes Lake Gulch Road south of Plum Creek Parkway. For ease of analysis Lake Gulch Road is not directly referenced and occurrences of S Gilbert Street are generalized to refer to both the northern and southern legs of the intersection.

Ridge Road is a north-south arterial roadway having two through lanes (one lane in each direction) with a combination of shared and exclusive turn lanes at the intersection within the study area. Ridge Road provides a posted speed limit of 45 MPH.

5th Street is an east-west arterial roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersection within the study area. 5th Street provides a posted speed limit of 45 MPH.

South Street is an east-west local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. South Street provides a posted speed limit of 25 MPH.

Ash Avenue is an east-west local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Ash Avenue provides a posted speed limit of 25 MPH.

Elm Avenue is an east-west local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Elm Avenue provides a posted speed limit of 25 MPH.

Eaton Street is a north-south local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Eaton Street provides a posted speed limit of 25 MPH.

The study intersections of Plum Creek Parkway with Ridge Road, Eaton Street, and S Gilbert Street operate as roundabouts. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more “STOP” signs.

Pursuant to Town’s comprehensive plan¹, 5th Street will be widened from two to four through lanes within the study area by year 2030. Additionally, pursuant to Town Staff, it is anticipated that the intersection of 5th Street with Valley Drive will be signalized in the near future. For analysis purposes, this is assumed to have occurred by Year 2027. Provision for a dedicated northbound left turn lane will also be made. No other regional or specific improvements for the above-described roadways are known to be planned or committed at this time. The study area roadways appear to be built to their ultimate cross-sections.

¹ 2030 Comprehensive Master Plan, Town of Castle Rock, 2017.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of Plum Creek Parkway with Ridge Road, Eaton Street, Valley Drive, and S Gilbert Street, as well as the intersections of S Gilbert Street with Elm Avenue and Ash Avenue, and the intersections of Valley Drive with South Street and 5th Street. Average daily (24-hour) traffic volumes were collected on Valley Drive and S Gilbert Street. Counts were collected in January 2025, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

In addition to collected counts, average daily traffic (ADT) volumes along adjacent internal neighborhood roadways were calculated utilizing trip generation rates established by the Institute of Transportation Engineers (ITE) and in reference to collected data where applicable. Rates utilized for the existing single-family residences correspond to those described in Section IV of this report for the proposed development. To estimate volumes at a given location, existing residential dwelling units expected to utilize that section of roadway were tallied and multiplied by the rates provided by ITE. These were then rounded up to the nearest five-value to present a conservative estimate. Collected and calculated count data is shown on Figure 3.

Traffic count data is included for reference in Appendix A.



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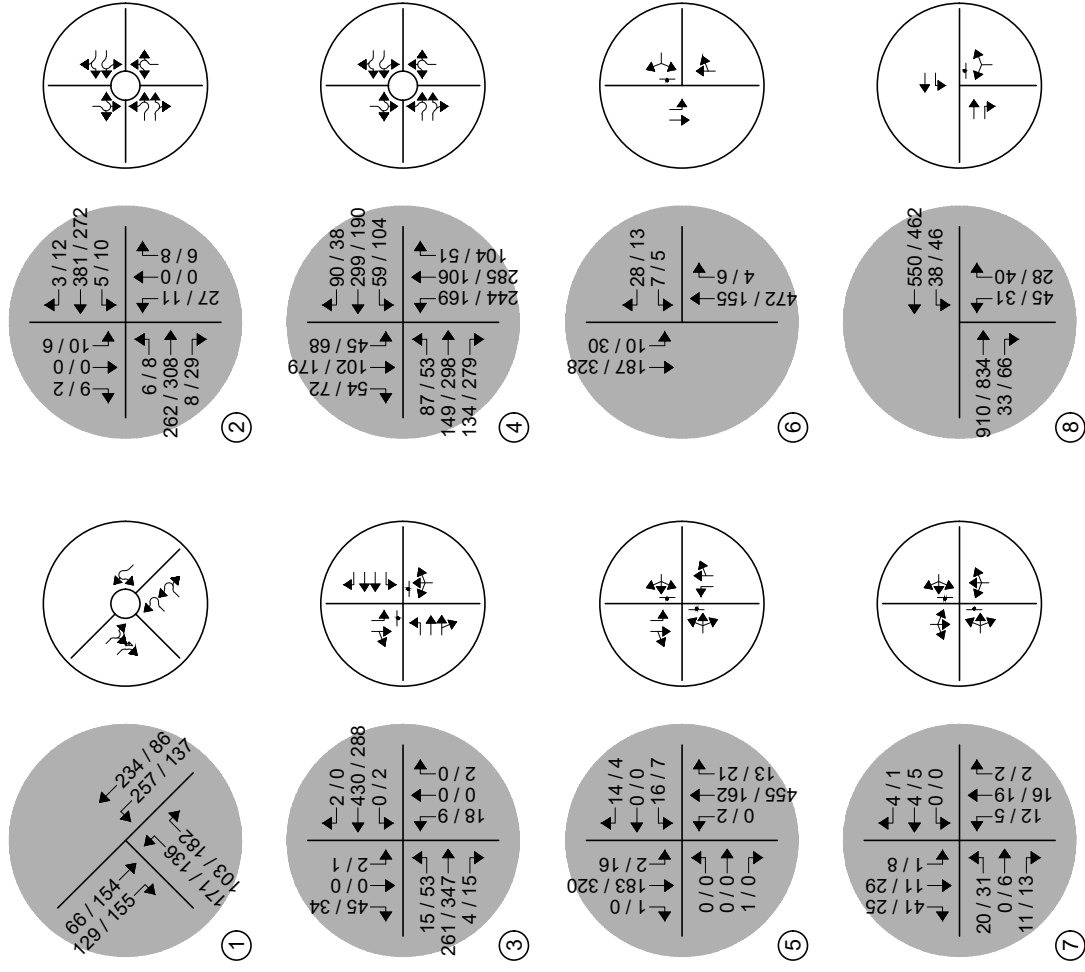
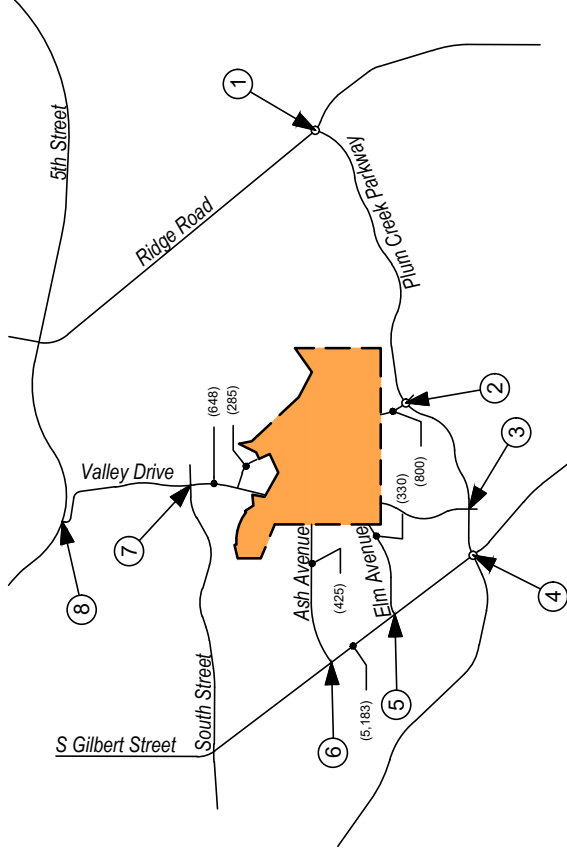


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

The Unsignalized and Roundabout Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM) by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on congestion, volume to capacity ratio, and control delay for each movement or approach.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix B and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.0)	A (4.3)
Eastbound Left and Right	A (3.6)	A (4.4)
Northbound Left and Through	A (7.8)	A (4.7)
Southbound Through	A (3.9)	A (4.1)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (3.6)	A (3.9)
Eastbound Through and Right	A (3.5)	A (3.8)
Westbound Left and Through	A (4.1)	A (3.7)
Westbound Through and Right	A (4.0)	A (3.6)
Northbound Left, Through and Right	A (3.7)	A (3.6)
Southbound Left, Through and Right	A (3.9)	A (3.4)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (8.4)	A (8.0)
Westbound Left	A (0.0)	A (8.1)
Northbound Left, Through and Right	B (14.3)	C (16.7)
Southbound Left	C (15.3)	C (15.2)
Southbound Through and Right	B (10.0)	A (9.4)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (5.0)	A (7.7)
Eastbound Through and Right	A (4.8)	A (7.4)
Westbound Left and Through	A (9.2)	A (5.5)
Westbound Through and Right	A (8.5)	A (5.3)
Northbound Left, Through and Right	B (12.5)	A (8.0)
Southbound Left, Through and Right	A (7.7)	A (8.4)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.3)	A (0.0)
Westbound Left, Through and Right	B (14.1)	B (12.1)
Northbound Left	A (0.0)	A (8.0)
Southbound Left	A (8.4)	A (7.7)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	B (12.6)	B (10.3)
Southbound Left	A (8.5)	A (7.6)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.0)	A (9.3)
Westbound Left, Through and Right	A (9.0)	A (9.5)
Northbound Left, Through and Right	A (7.3)	A (7.3)
Southbound Left, Through and Right	A (7.3)	A (7.3)
Valley Drive / 5th Street (Stop-Controlled)		
Westbound Left	B (10.7)	B (10.5)
Northbound Left and Right	F (65.4)	E (36.0)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the roundabout intersection of Ridge Road with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The roundabout intersection of Eaton Street with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Valley Drive with Plum Creek Parkway has turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

The roundabout intersection of S Gilbert Street with Plum Creek Parkway has turning movement operations at or better than LOS B during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The unsignalized intersection of S Gilbert Street with Elm Avenue has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of S Gilbert Street with Ash Avenue has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Valley Drive with South Street has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Valley Drive with 5th Street has turning movement operations at LOS B during both the morning and afternoon peak traffic hours. Exceptions would include the northbound turning movements which operate at LOS F during the AM peak traffic hour and LOS E during the PM peak traffic hour. The LOS E and F operations are attributed to the high through traffic volumes along 5th Street and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2027 and 2045, a compounded annual growth rate of approximately two percent was applied to existing traffic volumes. This annual growth rate was coordinated with Town Staff and is consistent with regional growth projections and the level of in-fill development expected within the area. It is to be noted that average daily traffic volumes along adjacent neighborhood roadways are not considered subject to the applied growth rate given that only the proposed development is expected to add volumes to these roadways and no other potential areas for development are currently identified.

A signal warrant analysis, using Year 2027 and Year 2045 background traffic volumes, was conducted for the 5th Street intersection with Valley Drive in order to review potential for traffic signal control. Signal warrant analysis, using Year 2045 traffic volumes, was also performed for the Plum Creek Parkway intersection with Valley Drive. Analysis results conclude that the 5th Street and Valley Drive intersection was found to be at the minimum vehicle volumes required to meet Warrant 3 – Peak Hour, from the Manual on Uniform Traffic Control Devices (MUTCD), for the installation of a traffic signal. Therefore, pursuant to anticipated signalization by Year 2027, the study intersection was analyzed under a signalized condition. The intersection of Plum Creek Parkway with Valley Drive was found to be below minimum volumes. As such, analysis for said study intersection remained a stop-controlled condition. Warrant study worksheets are provided for reference in Appendix D.

Warrant 3 is intended for use at locations where traffic conditions are such that for a minimum of one hour on an average day, the minor-street (Valley Drive) traffic suffer undue delay when entering or crossing the major street (5th Street and Plum Creek Parkway). This assumption provides for a conservative analysis. Said study intersections should be monitored further by City Staff as area development occurs to determine when signal installation is most appropriate.

Pursuant to the area roadway improvements discussed in Section I, Year 2027 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. Year 2045 assumes the widening of Ridge Road and 5th Street from two to four through lanes. This assumption provides for a conservative analysis.

Projected background traffic volumes and intersection geometry for Years 2027 and 2045 are shown on Figure 4 and Figure 5, respectively.



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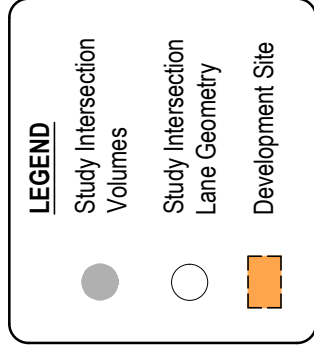
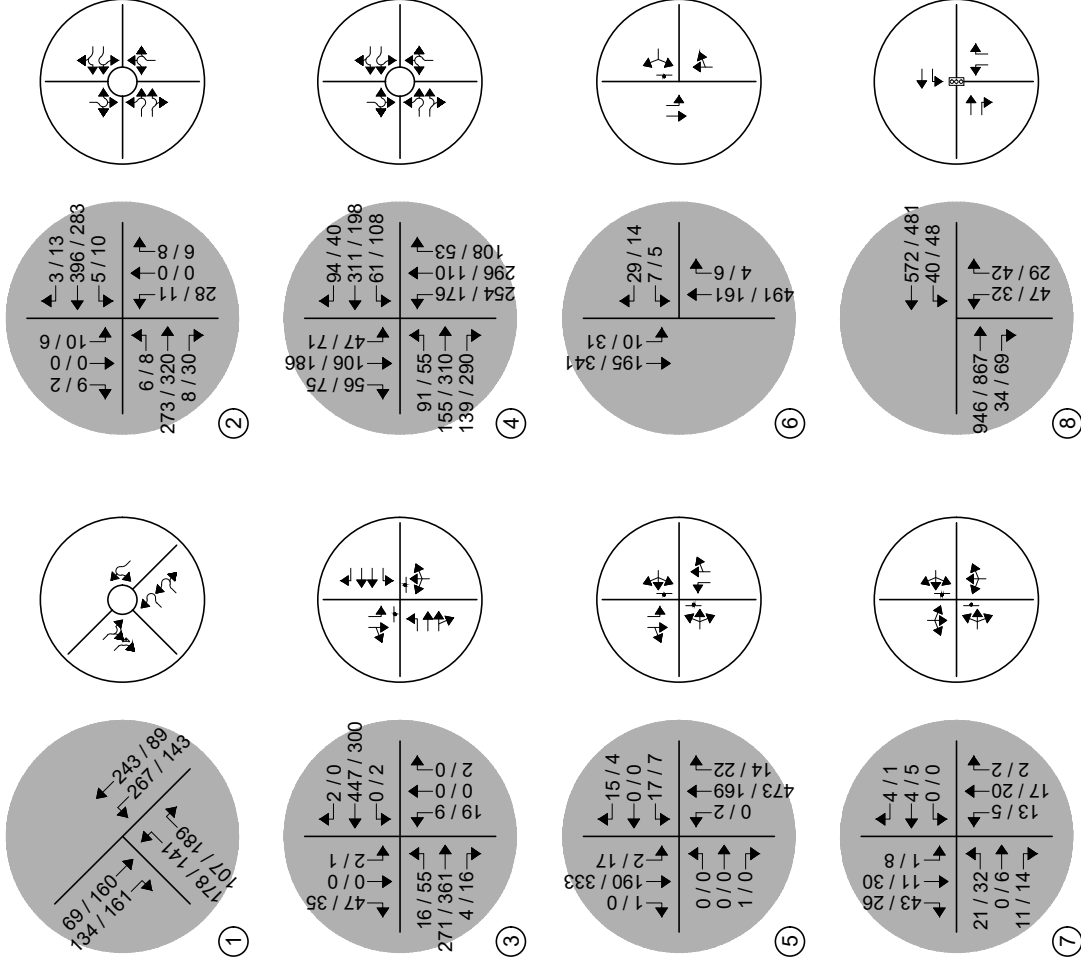
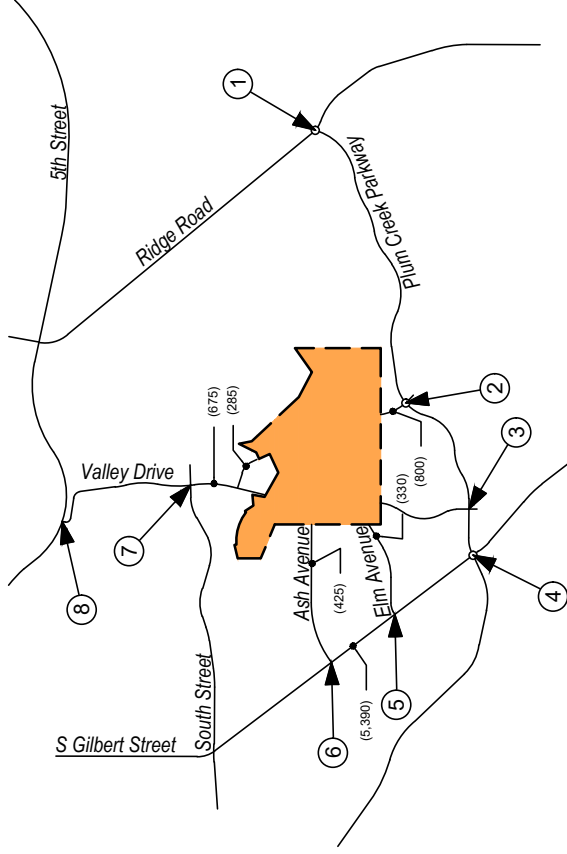


Figure 4
BACKGROUND TRAFFIC - YEAR 2027
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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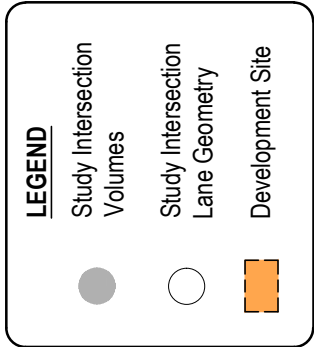
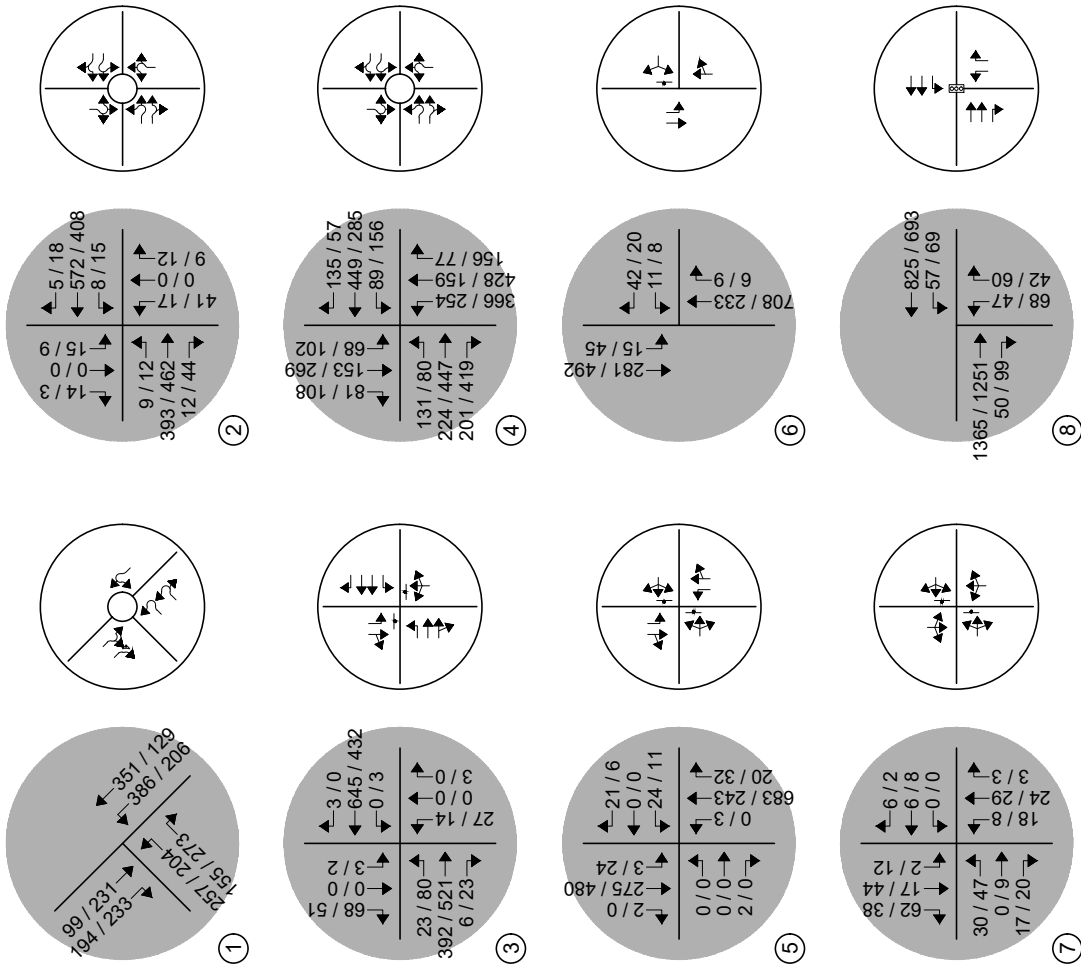
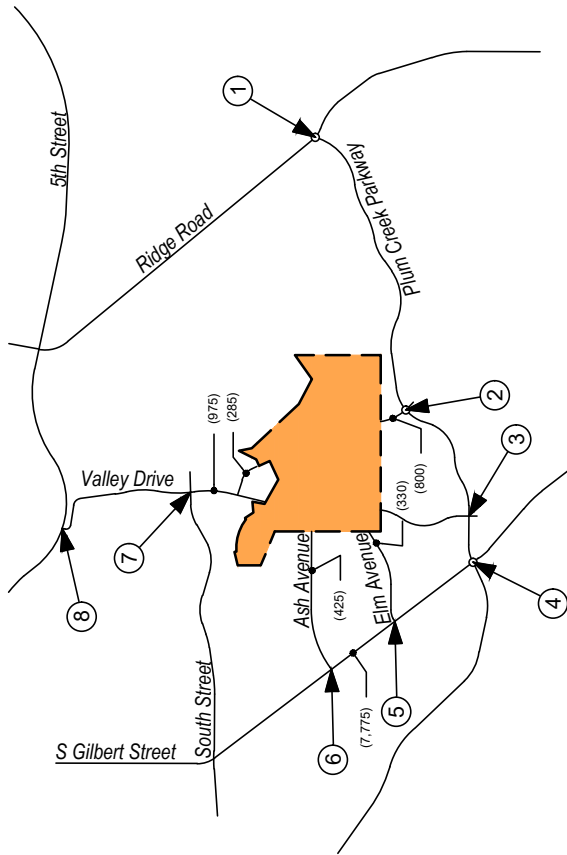


Figure 5
BACKGROUND TRAFFIC - YEAR 2045
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2027 are listed in Table 2. Year 2045 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2027

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.0)	A (4.4)
Eastbound Left and Right	A (3.7)	A (4.5)
Northbound Left and Through	A (8.1)	A (4.8)
Southbound Through	A (3.9)	A (4.2)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (3.7)	A (3.9)
Eastbound Through and Right	A (3.6)	A (3.8)
Westbound Left and Through	A (4.2)	A (3.7)
Westbound Through and Right	A (4.1)	A (3.7)
Northbound Left, Through and Right	A (3.7)	A (3.6)
Southbound Left, Through and Right	A (4.0)	A (3.4)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (8.4)	A (8.1)
Westbound Left	A (0.0)	A (8.1)
Northbound Left, Through and Right	B (14.8)	C (17.3)
Southbound Left	C (15.7)	C (15.7)
Southbound Through and Right	B (10.1)	A (9.4)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (5.1)	A (8.0)
Eastbound Through and Right	A (4.9)	A (7.8)
Westbound Left and Through	A (9.7)	A (5.7)
Westbound Through and Right	A (9.0)	A (5.4)
Northbound Left, Through and Right	B (13.6)	A (8.5)
Southbound Left, Through and Right	A (8.1)	A (8.9)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	C (16.0)	A (0.0)
Westbound Left, Through and Right	B (14.5)	B (12.3)
Northbound Left	A (0.0)	A (8.0)
Southbound Left	A (8.5)	A (7.7)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	B (12.9)	B (10.4)
Southbound Left	A (8.5)	A (7.6)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.0)	A (9.3)
Westbound Left, Through and Right	A (9.1)	A (9.5)
Northbound Left, Through and Right	A (7.4)	A (7.3)
Southbound Left, Through and Right	A (7.3)	A (7.3)
Valley Drive / 5th Street (Signalized)	B (10.1)	A (8.3)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Background Traffic Analysis Results – Year 2027

Year 2027 background traffic analysis indicates that the roundabout intersection of Ridge Road with Plum Creek Parkway has turning movement operations at LOS A or better during both the morning and afternoon peak traffic hours.

The roundabout intersection of Eaton Street with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Valley Drive with Plum Creek Parkway has turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

The roundabout intersection of S Gilbert Street with Plum Creek Parkway has turning movement operations at or better than LOS B during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The unsignalized intersection of S Gilbert Street with Elm Avenue has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

The unsignalized intersection of S Gilbert Street with Ash Avenue has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Valley Drive with South Street has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The signalized intersection of Valley Drive with 5th Street has overall operations at LOS B during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2045

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.8)	A (5.4)
Eastbound Left and Right	A (4.2)	A (5.7)
Northbound Left and Through	C (15.4)	A (6.2)
Southbound Through	A (4.7)	A (5.1)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (4.1)	A (4.5)
Eastbound Through and Right	A (4.1)	A (4.5)
Westbound Left and Through	A (4.9)	A (4.3)
Westbound Through and Right	A (4.9)	A (4.2)
Northbound Left, Through and Right	A (4.4)	A (4.3)
Southbound Left, Through and Right	A (4.9)	A (4.0)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (9.2)	A (8.6)
Westbound Left	A (0.0)	A (8.7)
Northbound Left, Through and Right	C (22.1)	D (28.3)
Southbound Left	C (23.0)	C (23.0)
Southbound Through and Right	B (11.3)	B (10.1)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (6.7)	C (15.2)
Eastbound Through and Right	A (6.5)	B (14.8)
Westbound Left and Through	C (23.2)	A (8.1)
Westbound Through and Right	C (21.0)	A (7.8)
Northbound Left, Through and Right	F (81.8)	C (18.0)
Southbound Left, Through and Right	C (16.0)	C (20.2)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.9)	A (0.0)
Westbound Left, Through and Right	C (21.7)	C (15.9)
Northbound Left	A (0.0)	A (8.5)
Southbound Left	A (9.3)	A (7.9)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	C (17.5)	B (12.1)
Southbound Left	A (9.4)	A (7.9)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.3)	A (9.8)
Westbound Left, Through and Right	A (9.3)	A (9.8)
Northbound Left, Through and Right	A (7.4)	A (7.4)
Southbound Left, Through and Right	A (7.3)	A (7.3)
Valley Drive / 5th Street (Signalized)	A (7.8)	A (6.6)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Background Traffic Analysis Results – Year 2045

By Year 2045 and without the proposed development, the study intersection of Ridge Road with Plum Creek Parkway has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The study intersection of Eaton Street with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with Plum Creek Parkway has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour.

The study intersection of S Gilbert Street with Plum Creek Parkway has turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours. Exceptions would include the northbound turning movements which operate at LOS F during the morning peak traffic hour. The LOS F operation is attributed to the high through traffic volumes along Plum Creek Parkway and the high northbound left turning volume on S Gilbert Street.

It is noted that in order to provide mitigation to projected long-term operations, provision for additional through lanes along S Gilbert Street may be applicable to accommodate future volumes. Widening of S Gilbert Street from two to four through lanes (two in each direction) is expected to improve intersection operations. Additional analysis of potential improvements is provided in Section VII.

The study intersection of S Gilbert Street with Elm Avenue has turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

The study intersection of S Gilbert Street with Ash Avenue has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

The study intersection of Valley Drive with South Street has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with 5th Street has overall operations at LOS A during both the morning and afternoon peak traffic hours.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use codes 210 (Single-Family Detached Housing) and 220 (Multifamily Housing (Low-Rise)) were used for estimating trip generation because of their best fit to the proposed land use descriptions.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

ITE CODELAND USEUNIT			TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached Housing	DU	9.43	0.18	0.53	0.70	0.59	0.35	0.94
220	Multifamily Housing (Low-Rise)	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected average daily traffic (ADT), AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

ITE CODELAND USESIZE				TOTAL TRIPS GENERATED						
				24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
					ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached Housing	257	DU	2,424	45	135	180	152	89	242
220	Multifamily Housing (Low-Rise)	158	DU	1,065	15	48	63	51	30	81
Total:				3,488	60	183	243	203	119	322

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 3,488 daily trips with 243 of those occurring during the morning peak hour and 322 during the afternoon peak hour.

Adjustments to Trip Generation Rates

It is probable that the proximity of regional pedestrian and bike trails could provide a reduction in vehicle trip generation for the proposed residential development. An exact vehicle trip reduction cannot be determined at this time, but could be as little as 10 percent. Moreover, a development of this type is not likely to attract pass-by trips from the adjacent roadway system. As such, no trip reduction was taken in this study.

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the Town, proposed and existing area land uses, allowed turning movements, and available roadway network.

Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

Trip assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.



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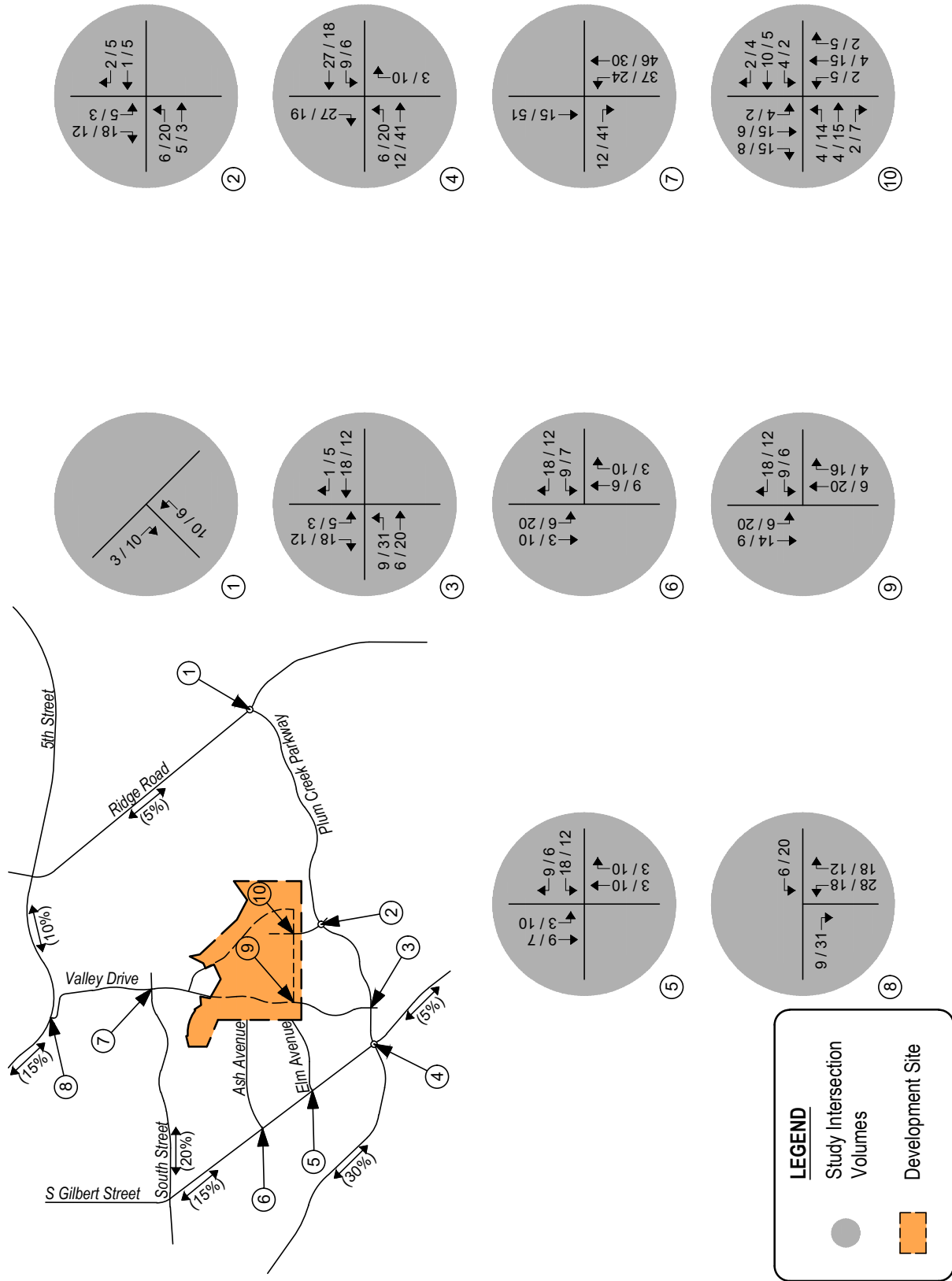


Figure 6

SITE DEVELOPMENT DISTRIBUTION

(%) : Overall

SITE-GENERATED

AM / PM Peak Hour

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V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2027 and 2045 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2027.

Pursuant to area roadway improvement discussions provided in Section III, Year 2027 and Year 2045 total traffic conditions assume no additional roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

A signal warrant analysis, using Year 2045 total traffic volumes, was conducted for the Plum Creek Parkway and Valley Drive intersection to review potential for traffic signal control. Analysis results conclude that the study intersection does not have the minimum volume required for consideration of traffic signal control. The analysis of said intersection was continued as a stop-controlled, unsignalized intersection.

Projected Year 2027 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2045.



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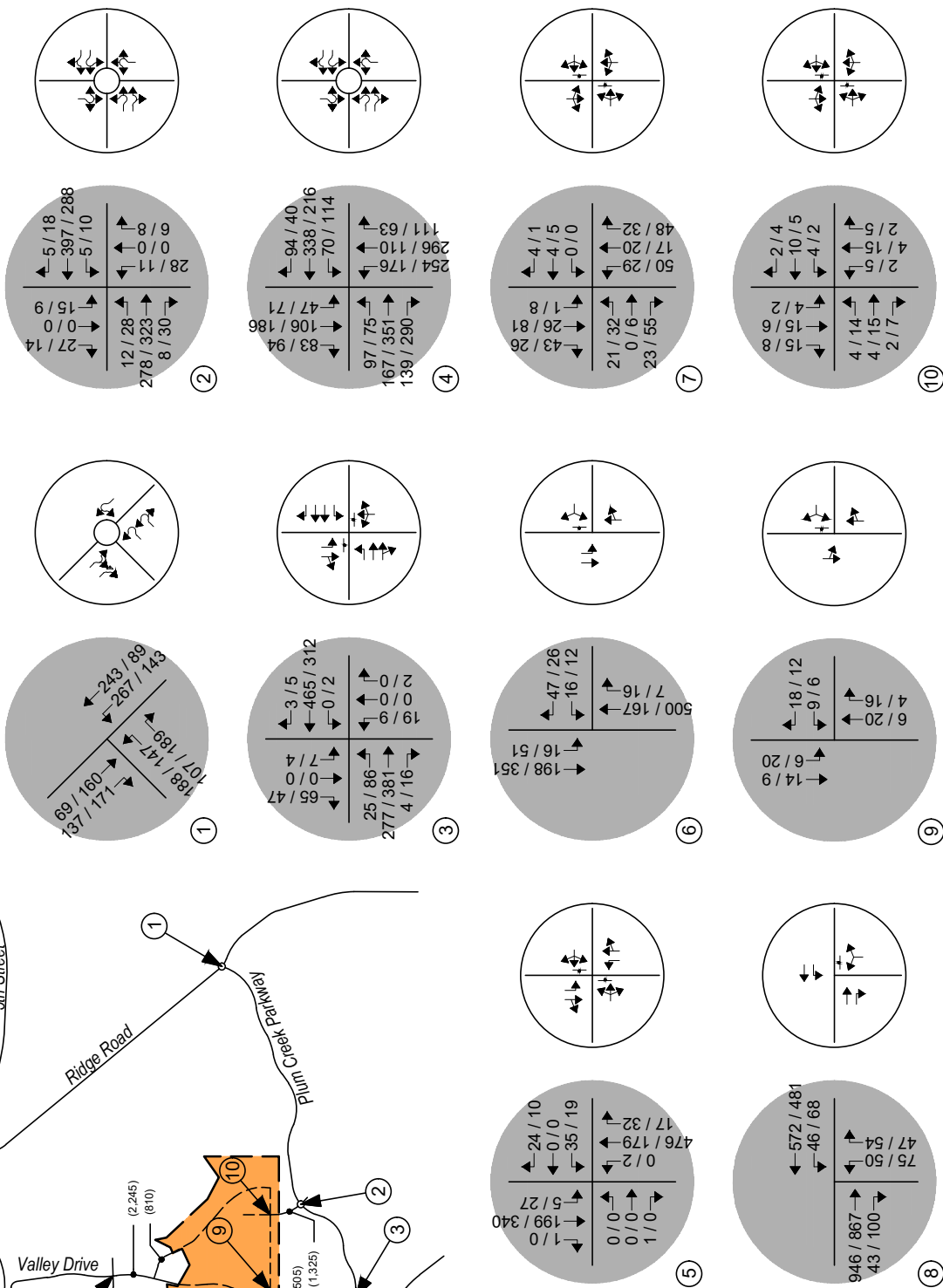
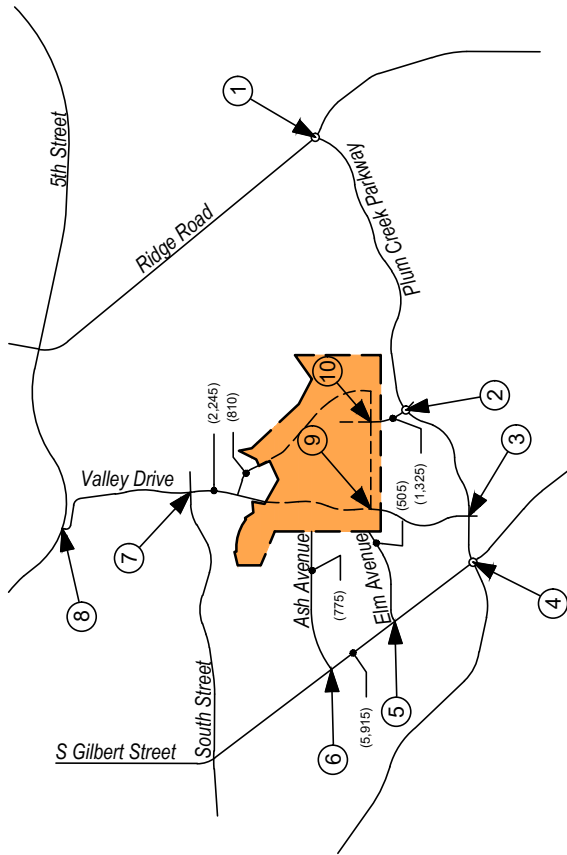


Figure 7
TOTAL TRAFFIC - YEAR 2027
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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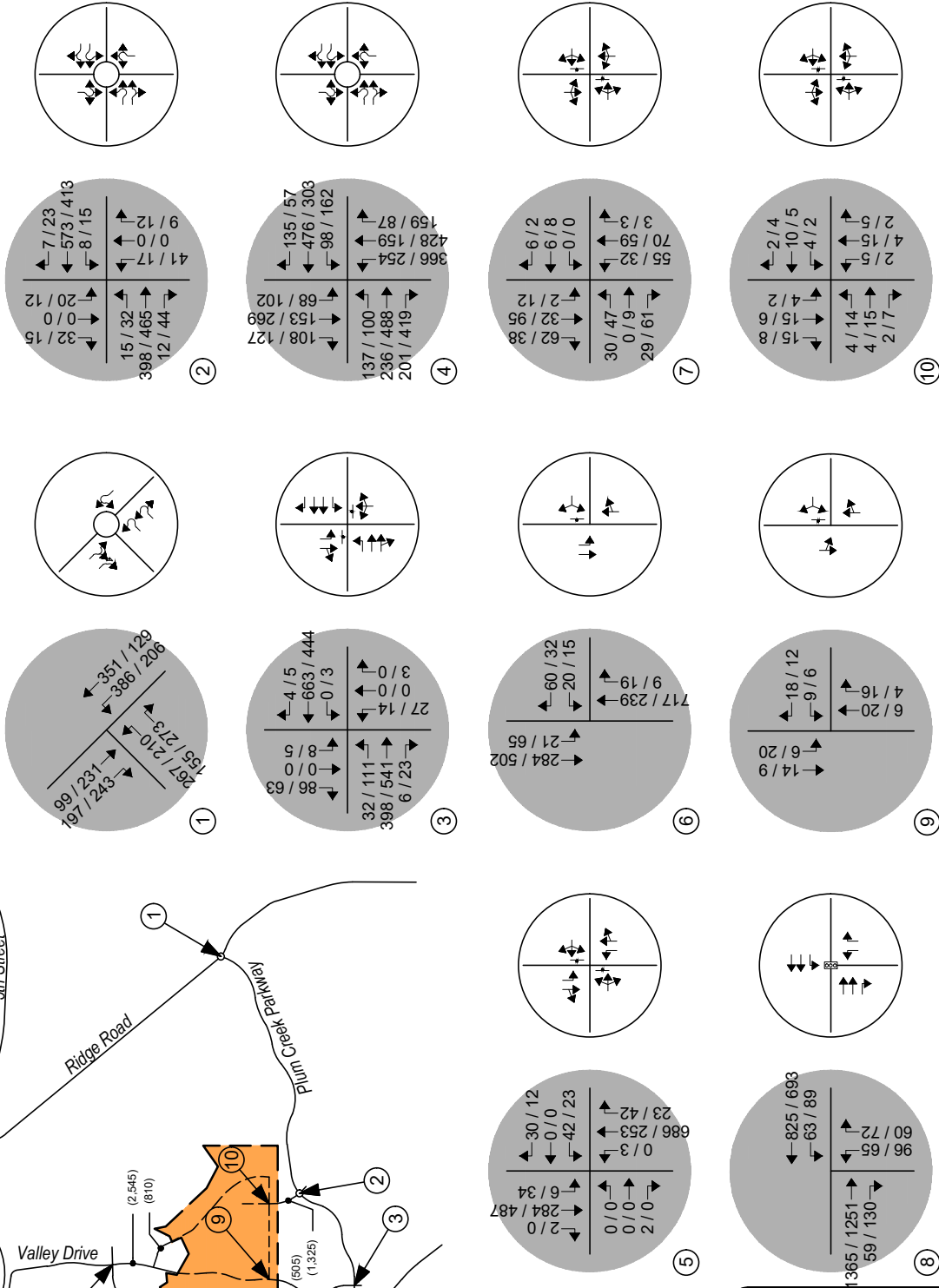
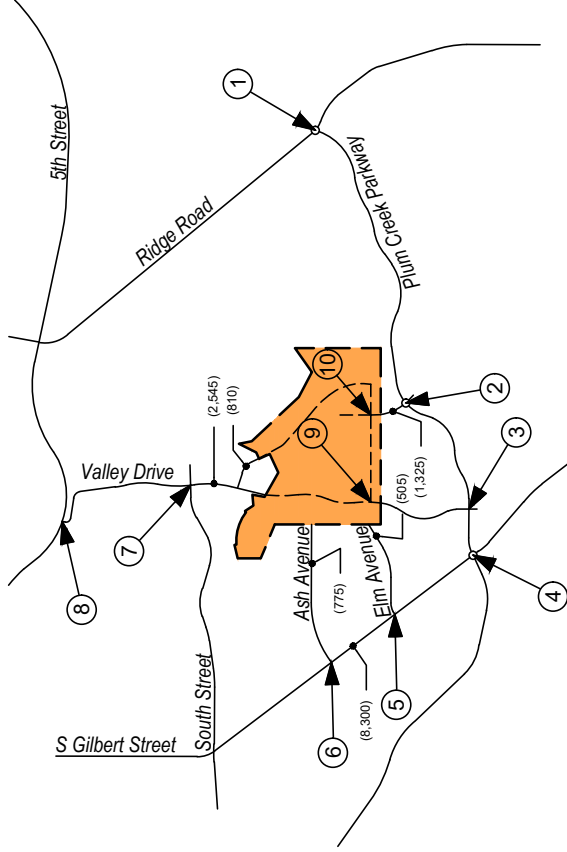


Figure 8
TOTAL TRAFFIC - YEAR 2045
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the Highway Capacity Manual (HCM) and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2027 and 2045 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2027

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.1)	A (4.4)
Eastbound Left and Right	A (3.7)	A (4.5)
Northbound Left and Through	A (8.2)	A (4.8)
Southbound Through	A (3.9)	A (4.2)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (3.7)	A (4.0)
Eastbound Through and Right	A (3.6)	A (3.9)
Westbound Left and Through	A (4.2)	A (3.9)
Westbound Through and Right	A (4.1)	A (3.8)
Northbound Left, Through and Right	A (3.8)	A (3.7)
Southbound Left, Through and Right	A (4.3)	A (3.6)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (8.5)	A (8.2)
Westbound Left	A (0.0)	A (8.2)
Northbound Left, Through and Right	C (15.9)	C (20.3)
Southbound Left	C (16.9)	C (18.0)
Southbound Through and Right	B (10.3)	A (9.5)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (5.2)	A (8.7)
Eastbound Through and Right	A (5.0)	A (8.4)
Westbound Left and Through	B (10.2)	A (6.0)
Westbound Through and Right	A (9.6)	A (5.7)
Northbound Left, Through and Right	B (14.3)	A (9.5)
Southbound Left, Through and Right	A (9.0)	A (9.6)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.4)	A (0.0)
Westbound Left, Through and Right	C (16.1)	B (13.3)
Northbound Left	A (0.0)	A (8.0)
Southbound Left	A (8.5)	A (7.7)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	B (13.9)	B (11.2)
Southbound Left	A (8.6)	A (7.7)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.4)	A (9.9)
Westbound Left, Through and Right	A (9.6)	B (10.3)
Northbound Left, Through and Right	A (7.4)	A (7.5)
Southbound Left, Through and Right	A (7.4)	A (7.3)
Valley Drive / 5th Street (Signalized)	B (12.2)	A (9.5)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Table 7 Continued – Intersection Capacity Analysis Summary – Total Traffic – Year 2027

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Valley Drive / Internal Drive (Stop-Controlled)		
Westbound Left and Right	A (8.6)	A (8.7)
Southbound Left and Through	A (7.2)	A (7.3)
Eaton Street / Santana Drive (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.0)	A (9.1)
Westbound Left, Through and Right	A (9.1)	A (8.9)
Northbound Left, Through and Right	A (7.3)	A (7.3)
Southbound Left, Through and Right	A (7.2)	A (7.3)

Key: Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)

Table 8 – Intersection Capacity Analysis Summary – Total Traffic – Year 2045

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.8)	A (5.5)
Eastbound Left and Right	A (4.3)	A (5.7)
Northbound Left and Through	C (15.9)	A (6.2)
Southbound Through	A (4.7)	A (5.1)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (4.2)	A (4.6)
Eastbound Through and Right	A (4.1)	A (4.6)
Westbound Left and Through	A (5.0)	A (4.4)
Westbound Through and Right	A (5.0)	A (4.3)
Northbound Left, Through and Right	A (4.4)	A (4.4)
Southbound Left, Through and Right	A (5.4)	A (4.1)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (9.3)	A (8.8)
Westbound Left	A (0.0)	A (8.8)
Northbound Left, Through and Right	C (24.3)	D (34.7)
Southbound Left	D (25.2)	D (27.2)
Southbound Through and Right	B (11.6)	B (10.2)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (6.9)	C (17.0)
Eastbound Through and Right	A (6.7)	C (16.6)
Westbound Left and Through	D (25.7)	A (8.6)
Westbound Through and Right	C (23.3)	A (8.2)
Northbound Left, Through and Right	F (90.4)	C (21.9)
Southbound Left, Through and Right	C (19.0)	C (23.6)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.9)	A (0.0)
Westbound Left, Through and Right	D (26.1)	C (17.7)
Northbound Left	A (0.0)	A (8.5)
Southbound Left	A (9.3)	A (8.0)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	C (20.0)	B (13.3)
Southbound Left	A (9.5)	A (8.0)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	B (10.1)	B (10.7)
Westbound Left, Through and Right	B (10.0)	B (10.7)
Northbound Left, Through and Right	A (7.5)	A (7.6)
Southbound Left, Through and Right	A (7.4)	A (7.4)
Valley Drive / 5th Street (Signalized)	A (9.7)	A (7.8)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Table 9 Continued – Intersection Capacity Analysis Summary – Total Traffic – Year 2045

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Valley Drive / Internal Drive (Stop-Controlled) Westbound Left and Right Southbound Left and Through	A (8.6) A (7.2)	A (8.7) A (7.3)
Eaton Street / Santana Drive (Stop-Controlled) Eastbound Left, Through and Right Westbound Left, Through and Right Northbound Left, Through and Right Southbound Left, Through and Right	A (9.0) A (9.1) A (7.3) A (7.2)	A (9.1) A (8.9) A (7.3) A (7.3)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2045 and upon development build-out, the study intersection of Ridge Road with Plum Creek Parkway has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The study intersection of Eaton Street with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with Plum Creek Parkway has turning movement operations at or better than LOS D during both the morning and afternoon peak traffic hours.

The study intersection of S Gilbert Street with Plum Creek Parkway generally has turning movement operations at LOS D or better during the morning peak traffic hour and at or better than LOS C during the afternoon peak traffic hour. As with background conditions, exceptions still include the northbound turning movements which operate at LOS F during the AM peak traffic hour. The LOS F operation is attributed to the high through traffic volumes along Plum Creek Parkway and the high northbound left turning volume on S Gilbert Street.

As noted under background traffic conditions, provision for future widening of S Gilbert Street from two to four through lanes may provide mitigation to projected long-term intersection operations and would better accommodate future traffic volumes. Additional analysis of potential improvements is provided in Section VII.

The study intersection of S Gilbert Street with Elm Avenue has turning movement operations at or better than LOS D during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The study intersection of S Gilbert Street with Ash Avenue has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

The study intersection of Valley Drive with South Street has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with 5th Street has overall operations at LOS B during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The study intersection of Valley Drive with the southernmost Internal Drive has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Eaton Street with Santana Drive has turning movement operations at LOS A during both peak traffic hours. It is expected that other internal intersections to the development site will have operations comparable to or better than those projected for the adjacent study intersections.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

These intersection operations are noted to be similar to background conditions.

Queue Length Analysis - Synchro

Queue lengths for existing study intersections were analyzed using Year 2045 total traffic conditions. Synchro analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

Some queuing at study area intersections was observed, however it is noted that indicated queues may be better than shown due to the high probability of vehicles trips self-regulating upon experiencing any delay. The greatest queue anticipated occurs during the morning peak hour at the intersection of Valley Drive and 5th Street. The queue for the northbound left turning movement is projected at 131 feet, or approximately 5 to 6 vehicles.

VII. Additional Analysis

Additional analysis was conducted to further assess future roadway and intersection operations including pedestrian connectivity, vehicle queues, auxiliary lane requirements, and other improvements anticipated in order to meet Town operational goals.

Pedestrian Assessment

Due to location of the proposed subdivision and adjacent regional trails, an assessment to pedestrian connectivity was evaluated.

The proposed development is anticipated to accommodate pedestrians and bicyclists by providing connections to the existing pedestrian trails located north and south of the development area. This would also include trail connections to the South Ridge Elementary School. Additional pedestrian facilities as required by Town design standards are to be coordinated with Town Staff.

All-Way-Stop Warrant Analysis – Valley Drive & South Street

An All-Way-Stop control warrant analysis, considering existing, background and total traffic volumes, was conducted for the Valley Drive intersection with South Street in order to review potential for implementing STOP signs on all approaches. It is noted that the study intersection is a four-leg intersection with an existing stop-controlled condition including a STOP sign for the eastbound and westbound approaches on South Street. The northbound and southbound approaches along Valley Drive allow for free movements.

Placement of STOP signs at a given intersection is understood to be regulated by the Manual on Uniform Traffic Control Devices (MUTCD). All-Way, or Multi-Way, stop control is to be determined in accordance with Section 2B.07 of the MUTCD.

Consideration of the standards outlined in the MUTCD for All-Way-Stop control at the intersection of Valley Drive and South Street, with regard to collected hourly volumes at the study intersection, concludes that the study intersection does not meet sufficient warrants for the implementation of an All-Way-Stop control condition. It is noted that the addition of new STOP signs may not necessarily benefit an intersection where drivers are accustomed to there being a lack of STOP signs.

Auxiliary Lane Analysis

Auxiliary lanes for site development intersections are to be based on the Town's *Transportation Design Criteria Manual*. Pursuant to Section 2.8 of the Town's Design Criteria, the need for auxiliary lanes is based on the Colorado Department of Transportation (CDOT) *State Highway Access Code* (SHAC).

Considering development build-out, existing auxiliary lanes at study area intersections are generally determined to be adequate.

Plum Creek Parkway & S Gilbert Street – Roundabout Improvements

As previously discussed under both background and total conditions, by Year 2045 the intersection of Plum Creek Parkway with S Gilbert Street is projected to experience LOS F operations for the northbound turning movements during the morning peak traffic hour. These operations are primarily attributed to high through volumes along Plum Creek Parkway and high northbound left turning volumes. In order to improve these operations possible mitigation may include the widening of S Gilbert Street from two to four through lanes (two lanes in each direction). Applying this improved geometry to Year 2045 background and total traffic conditions provides the following improved level of service results. Intersection capacity worksheets are provided in Appendix E.

Table 8 – Plum Creek Parkway & S Gilbert Street – Year 2045 Improved LOS Results

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
<u>Year 2045 Background Traffic with Improvements</u>		
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (6.7)	C (15.2)
Eastbound Through and Right	A (6.5)	B (14.8)
Westbound Left and Through	C (23.2)	A (8.1)
Westbound Through and Right	C (21.0)	A (7.8)
Northbound Left and Through	B (12.3)	B (10.5)
Northbound Through and Right	B (12.0)	A (8.7)
Southbound Left and Through	B (11.1)	B (10.7)
Southbound Through and Right	B (10.0)	A (9.9)
<u>Year 2043 Total Traffic with Improvements</u>		
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (6.9)	C (17.0)
Eastbound Through and Right	A (6.7)	C (16.6)
Westbound Left and Through	D (25.7)	A (8.6)
Westbound Through and Right	C (23.3)	A (8.2)
Northbound Left and Through	B (12.8)	B (11.6)
Northbound Through and Right	B (12.6)	A (9.7)
Southbound Left and Through	B (12.2)	B (11.4)
Southbound Through and Right	B (10.9)	B (10.6)

Key: Roundabout Intersection: Level of Service (Control Delay in sec/veh)

As Table 8 shows, the provision of additional entry lanes for the northbound and southbound approaches provides turning movement operations of LOS C or better during both peak traffic hours under background traffic conditions. Upon development build-out, operations are projected to support LOS D or better during the AM peak traffic hour, and LOS C or better during the PM peak traffic hour.

It is recommended that the Town continues to monitor the study intersection in order to determine what mitigation measures may be most beneficial and when it may be most appropriate to install them.

SimTraffic Analysis

Pursuant to Town review comments, additional analysis was conducted utilizing the SimTraffic software associated with Synchro. Where Synchro generally provides a macroscopic approach to traffic operational analysis by utilizing mathematical methods established by the Highway Capacity Manual (HCM), SimTraffic provides a more microscopic analysis through simulation of individual vehicle behaviors. This analysis method can be useful for further analyzing the effect of adjacent intersection operations on neighboring ones including queueing behavior, blocking effects, lane change difficulties, and other related issues. Simulations are created using established parameters for assumed typical driver behaviors. SimTraffic generates different driving patterns through use of random number generation to determine when a new vehicle may enter the roadway network. Following these methods, multiple simulation runs are performed to establish an average result. It is to be noted that SimTraffic analysis is not a replacement of the results obtained through the standard HCM calculations performed by Synchro in this report. Rather, this SimTraffic analysis is provided for comparison purposes and to give a more detailed perspective on adjacent intersection interactions in terms of typical driver behaviors. Actual conditions may vary considerably from simulation results due to unforeseen, or unconventional driver behaviors, particularly for long-term analysis periods.

SimTraffic simulation analysis was performed for Year 2045 background and total traffic conditions. Simulation parameters for each scenario include ten separate runs each for a 60-minute analysis period with the average of all runs being reported. Analysis results produced include intersection performances in terms of total delay per vehicle per movement, as well as queueing and blocking analysis. Simulation worksheets are provided for reference in Appendix F.

Year 2045 Background Traffic Simulation Analysis Results

By Year 2045 background traffic conditions, and without implementation of potential improvements, simulation analysis reports intersection performance results comparable to the operations indicated by Synchro level of service results.

Queueing and blocking analysis results generally indicate no significant blocking caused by the anticipated queue lengths. Exceptions include the northbound movements at the intersection of S Gilbert Street and Plum Creek Parkway which observed a simulated average 95th percentile queue of 696 feet during the morning peak traffic hour. This queue is further estimated to potentially block upstream access drives 94 percent of the time during the morning peak hour. No other blocking potential at study area intersections is indicated.

Year 2045 Background Traffic Simulation Analysis Results – With Improvements

Further analysis of Year 2045 background traffic conditions was conducted with implementation of various potential improvements as discussed previously in this report. These improvements include widening S Gilbert Street from two to four through lanes (two-lanes in each direction). Performance results from the simulation analysis indicate an overall improvement to intersection operations compared to results without the improvements listed.

The greatest projected 95th percentile queue length indicated for the northbound movements at the intersection of S Gilbert Street and Plum Creek Parkway include a queue of 295 feet during the morning peak traffic hour. Blocking potential for upstream access drives is expected to be eliminated during the morning peak traffic hour with improvement implementation.

It is recommended that as area development continues to occur, that Town Staff continues to monitor the study intersection in order to determine when or if specific mitigation methods may be feasible or necessary.

Year 2045 Total Traffic Simulation Analysis Results

By Year 2045 total traffic conditions upon build-out of the proposed development, and without implementation of potential improvements, simulation analysis reports intersection performance results comparable to the operations indicated by Synchro level of service results.

Queueing and blocking analysis results generally indicate no significant blocking caused by the anticipated queue lengths. Exceptions still include the northbound movements at the intersection of S Gilbert Street and Plum Creek Parkway which observed a simulated average 95th percentile queue of 669 feet during the morning peak traffic hour. This queue is further estimated to potentially block upstream access drives 95 percent of the time during the morning peak hour. Compared to background traffic analysis results, the addition of site-generated traffic from the proposed development is not expected to significantly impact projected vehicle queues or blocking potential. No other blocking potential at study area intersections is indicated.

Year 2045 Total Traffic Simulation Analysis Results – With Improvements

As with background conditions, further analysis of Year 2045 total traffic conditions upon build-out of the proposed development was conducted with implementation of various potential improvements as discussed previously in this report. Performance results from the simulation analysis indicate an overall improvement to intersection operations compared to results without the improvements listed.

The greatest projected 95th percentile queue lengths indicated for the northbound movements at the intersection of S Gilbert Street and Plum Creek Parkway include a queue of 348 feet during the morning peak traffic hour. Blocking potential for upstream access drives is expected to be eliminated during the morning peak traffic hour with improvement implementation. As with background conditions, the vehicle queues identified during the morning peak hour are primarily attributed to the high volume of northbound left turning vehicles. It is noted that with the addition of site-generated traffic, no volumes are added to the northbound left turning movement.

It is recommended that as area development continues to occur, that Town Staff continues to monitor the study intersection in order to determine when or if specific mitigation methods may be feasible or necessary.

Alternative Roadway Connectivity Assessment

Pursuant to Town review comments, additional analysis was performed to assess impacts associated with development site-generated traffic under an alternative roadway connectivity concept. This concept considers a scenario in which the proposed development is only provided connection to the existing roadway network via completion of Valley Drive, with no other connections to adjacent neighborhoods including Eaton Street, Elm Street, Ash Street, and Santana Drive.

Applying the same methodologies used previously within this report to develop expected site trip distribution patterns and trip assignment results in an increase in trips expected to utilize Valley Drive. Modified site-generated distribution and trip assignments are shown on Figure 9.

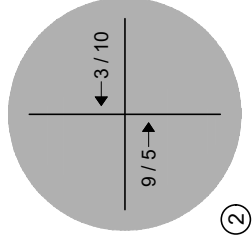
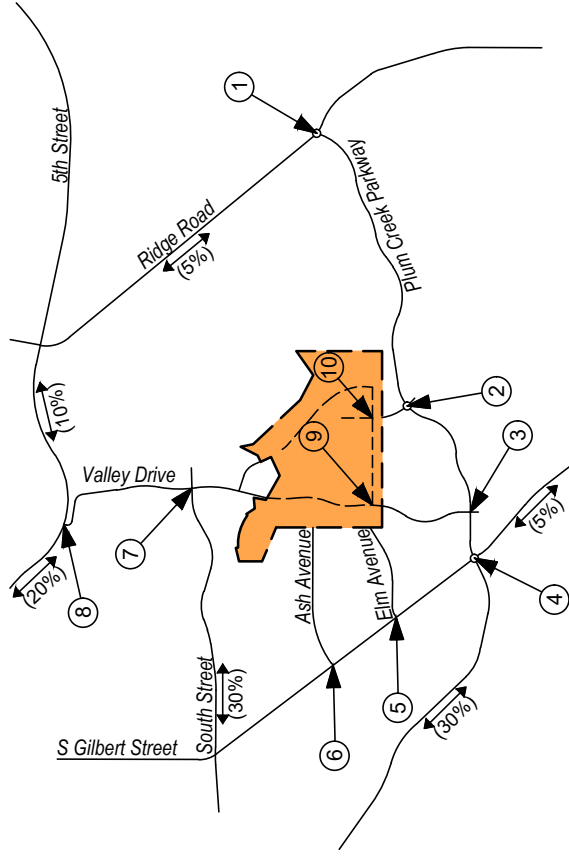
Site-generated trips were then added to Year 2045 background traffic volumes in order to develop Year 2045 total traffic conditions under the alternative connectivity scenario. These modified total traffic volumes are shown on Figure 10.

The operations of the study intersections were then analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Year 2045 under the applied alternative connectivity scenario are summarized in Table 9.

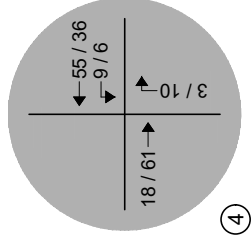
Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix G.



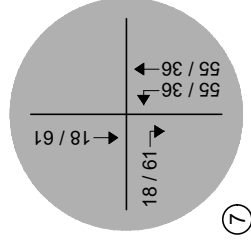
Not to Scale



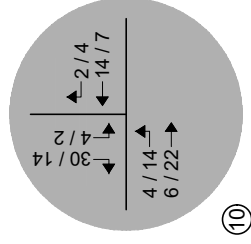
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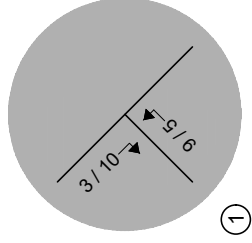
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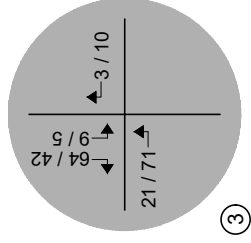
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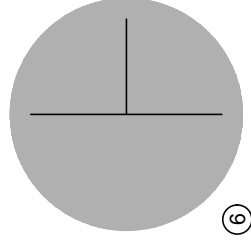
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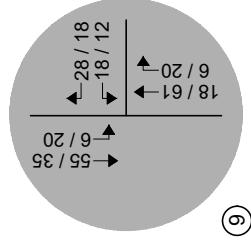
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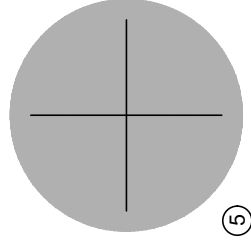
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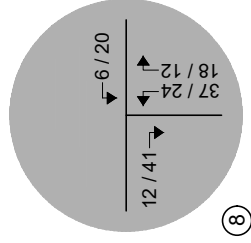
⑤



⑨



⑥



⑧

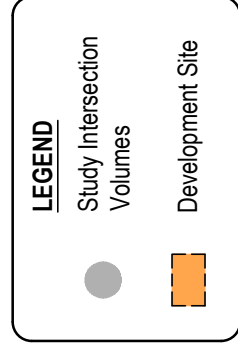


Figure 9

SITE DEVELOPMENT DISTRIBUTION - ALTERNATIVE CONNECTIVITY (%) : Overall

SITE-GENERATED

AM / PM Peak Hour

CHATEAU VALLEY
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants



Not to Scale

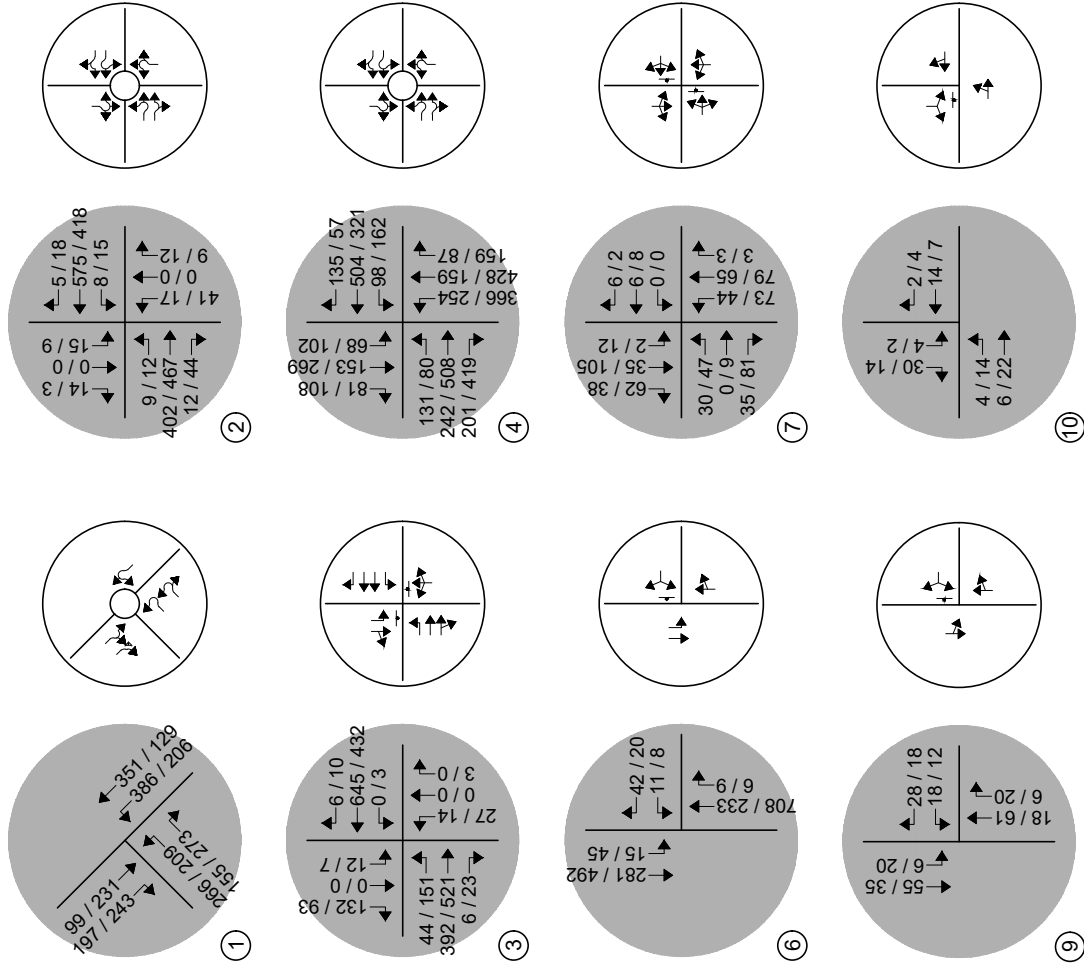
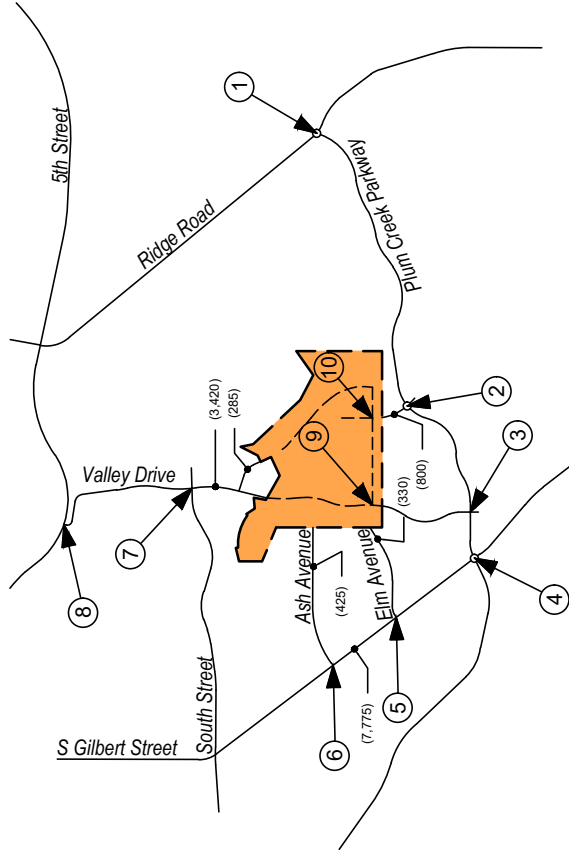


Figure 10
TOTAL TRAFFIC - YEAR 2045 - ALTERNATIVE CONNECTIVITY
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

CHATEAU VALLEY
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants

Table 9 – Intersection Capacity Analysis Summary – Total Traffic Year 2045 - Alternative Connectivity

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Ridge Road / Plum Creek Parkway (Roundabout)		
Eastbound Left	A (4.8)	A (5.5)
Eastbound Left and Right	A (4.3)	A (5.7)
Northbound Left and Through	C (15.8)	A (6.2)
Southbound Through	A (4.7)	A (5.1)
Southbound Right	A (0.0)	A (0.0)
Eaton Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (4.2)	A (4.6)
Eastbound Through and Right	A (4.1)	A (4.5)
Westbound Left and Through	A (4.9)	A (4.3)
Westbound Through and Right	A (4.9)	A (4.2)
Northbound Left, Through and Right	A (4.4)	A (4.3)
Southbound Left, Through and Right	A (5.0)	A (4.0)
Valley Drive / Plum Creek Parkway (Stop-Controlled)		
Eastbound Left	A (9.3)	A (8.9)
Westbound Left	A (0.0)	A (8.7)
Northbound Left, Through and Right	D (27.3)	E (41.9)
Southbound Left	D (26.2)	D (31.4)
Southbound Through and Right	B (12.2)	B (10.4)
S Gilbert Street / Plum Creek Parkway (Roundabout)		
Eastbound Left and Through	A (6.9)	C (17.0)
Eastbound Through and Right	A (6.7)	C (16.6)
Westbound Left and Through	D (27.2)	A (8.6)
Westbound Through and Right	C (24.8)	A (8.1)
Northbound Left, Through and Right	F (90.0)	C (21.9)
Southbound Left, Through and Right	C (18.1)	C (22.6)
S Gilbert Street / Elm Avenue (Stop-Controlled)		
Eastbound Left, Through and Right	A (9.9)	A (0.0)
Westbound Left, Through and Right	C (21.7)	C (15.9)
Northbound Left	A (0.0)	A (8.5)
Southbound Left	A (9.3)	A (7.9)
S Gilbert Street / Ash Avenue (Stop-Controlled)		
Westbound Left and Right	C (17.5)	B (12.1)
Southbound Left	A (9.4)	A (7.9)
Valley Drive / South Street (Stop-Controlled)		
Eastbound Left, Through and Right	B (10.3)	B (11.1)
Westbound Left, Through and Right	B (10.3)	B (11.1)
Northbound Left, Through and Right	A (7.6)	A (7.6)
Southbound Left, Through and Right	A (7.4)	A (7.4)
Valley Drive / 5th Street (Signalized)	B (10.2)	A (8.1)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Table 9 Continued – Intersection Capacity Analysis Summary – Total Traffic Year 2045 - Alternative Connectivity

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Valley Drive / Internal Drive (Stop-Controlled) Westbound Left and Right Southbound Left and Through	A (8.8) A (7.3)	A (9.1) A (7.4)
Eaton Street / Santana Drive (Stop-Controlled) Eastbound Left and Through Westbound Through and Right Southbound Left and Right	A (7.3) A (0.0) A (8.5)	A (7.3) A (0.0) A (8.5)

Key: Roundabout & Stop-Controlled Intersection: Level of Service (Control Delay in sec/veh)
Signalized Intersection: Level of Service (delay in veh/sec)

Total Traffic Analysis Year 2045 – Alternative Connectivity

Table 9 illustrates how, by Year 2045 upon development build-out, and with consideration for limited connectivity to the existing roadway network via Valley Drive, the study intersection of Ridge Road with Plum Creek Parkway has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The study intersection of Eaton Street with Plum Creek Parkway has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with Plum Creek Parkway has turning movement operations at or better than LOS D during both the morning and afternoon peak traffic hours. Exceptions would include the northbound turning movements which experience LOS E operations during the afternoon peak traffic hour. The LOS E operation is attributed to the high through volumes along Plum Creek Parkway and the stop-controlled nature of the intersection.

The study intersection of S Gilbert Street with Plum Creek Parkway generally has turning movement operations at LOS D or better during the morning peak traffic hour and at or better than LOS C during the afternoon peak traffic hour. As with background conditions, exceptions still include the northbound turning movements which operate at LOS F during the AM peak traffic hour. The LOS F operation is attributed to the high through traffic volumes along Plum Creek Parkway and the high northbound left turning volume on S Gilbert Street. As previously discussed, widening of S Gilbert Street is likely to improve this operation.

The study intersection of S Gilbert Street with Elm Avenue has turning movement operations at or better than LOS D during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The study intersection of S Gilbert Street with Ash Avenue has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B or better during the afternoon peak traffic hour.

The study intersection of Valley Drive with South Street has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The study intersection of Valley Drive with 5th Street has overall operations at LOS B during the morning peak traffic hour and LOS A during the afternoon peak traffic hour.

The study intersection of Valley Drive with the southernmost Internal Drive has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The study intersection of Eaton Street with Santana Drive has turning movement operations at LOS A during both peak traffic hours. It is expected that other internal intersections to the development site will have operations comparable to or better than those projected for the adjacent study intersections.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Compared to previous analysis results, these intersection operations are generally similar, with a few notable exceptions. Restriction of the proposed development's connectivity to the adjacent neighborhoods is shown to likely increase delays at intersections located along Valley Drive. Such restrictions may interfere with the development's ability to equally distribute traffic within the site and out to available roadways, thus impacting existing and future traffic in the surrounding area and potentially cause the adjacent roadway network to be used in a manner not intended or cause additional delay that could impact emergency response times. Under such conditions delays at the intersection of Valley Drive and Plum Creek Parkway are likely to require additional mitigation measures under long-term conditions such as signalization, roundabout conversion, or restriction of turning movements.

VIII. Executive Summary & Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled Chateau Valley. This proposed residential development consists of a mix of single family and multifamily housing units. The development is located along Valley Drive north of Plum Creek Parkway in Castle Rock, Colorado.

The study area examined in this analysis encompassed the intersections of Valley Drive with Plum Creek Parkway, South Street, and 5th Street, as well as the intersections of Plum Creek Parkway with Ridge Road, Eaton Street, S Gilbert Street, and S Gilbert Street with Elm Avenue, and Ash Avenue.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2027 and Year 2045 background traffic conditions, and Year 2027 and Year 2045 total traffic conditions.

Analysis of existing traffic conditions indicates that the study intersections generally experience turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours. Exceptions would include the northbound turning movements at the intersection of Valley Drive and 5th Street which operate at LOS F during the morning peak traffic period and LOS E during the afternoon peak traffic period. The LOS E and F operations indicated are attributed to the high through volumes along 5th Street and the stop-controlled nature of the intersection.

Without the proposed development, Year 2027 background operational analysis shows that the study intersections generally experience turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours. Pursuant to performed signal warrants and Town improvement plans, it is anticipated that installation of a traffic signal at the study intersection of Valley Drive and 5th Street will result in improved operations of LOS B or better compared to existing conditions.

By Year 2045 and without the proposed development, the study intersections generally experience turning movement operations at or better than LOS C during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions include the northbound turning movements at S Gilbert Street and Plum Creek Parkway. These movements operate at LOS F during the morning peak traffic period. LOS F operation indicated is generally attributed to the high through volumes along Plum Creek Parkway, as well as high northbound left turning volumes on S Gilbert Street. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. Additional mitigation measures to study intersections may include the widening of S Gilbert Street from two to four through lanes in order to better accommodate future volumes.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon consideration of the various roadway and intersection control improvements assumed within this analysis. Although some delays are identified for the intersection of Plum Creek Parkway with S Gilbert Street, simulation analysis indicates that the majority of these delays are caused by high through and left turning volumes not associated with site-generated traffic. As with background traffic conditions, implementation of future roadway improvements including widening of S Gilbert Street to four through lanes, is expected to mitigate the delays identified. It is understood that as area development continues to occur, said development is expected to further coordinate with Town Staff regarding planned improvement projects and potential contributions as may be applicable. With all conservative assumptions defined in this analysis, the study intersections upon development build-out are projected to operate at future levels of service comparable to Year 2045 background traffic conditions.

A summary of key impact areas for which the proposed development may be subject to transportation impact fees or other contributions as required by the Town of Castle Rock are as follows:

1. Signalization of 5th Street and Valley Drive.
2. Roundabout expansion at Plum Creek Parkway and S Gilbert Street including potential addition of exclusive northbound and southbound left turn approach lanes.

With the implementation of these mitigation methods, in coordination with planned Town improvement projects, future roadway and intersection operations are projected to be within acceptable levels of service matching the growing urban character of the surrounding community. It is concluded that the proposed development can be accommodated while mitigating potential transportation impacts as described in this report through conformance with Town engineering design standards and procedures. All proposed roadway cross-sections and pedestrian connections proposed are expected to meet Town standard roadway design requirements.

APPENDIX A

Traffic Count Data



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(303) 216-2439

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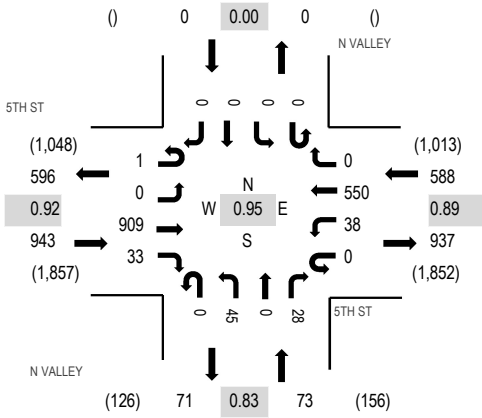
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Date: Thursday, January 9, 2025

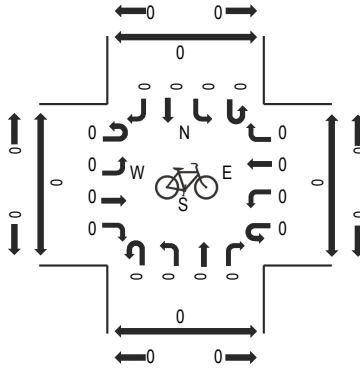
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Peak 15-Minutes: 08:15 AM - 08:30 AM

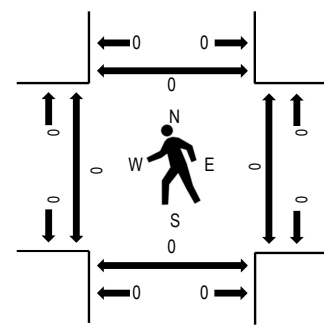
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	5TH ST Eastbound				5TH ST Westbound				N VALLEY Northbound				N VALLEY Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	192	7	0	3	94	0	0	10	0	6	0	0	0	0	312	1,422	0	0	0	0
7:15 AM	0	0	216	6	0	6	91	0	0	16	0	8	0	0	0	0	343	1,524	0	0	0	0
7:30 AM	0	0	238	8	0	9	89	0	0	11	0	7	0	0	0	0	362	1,602	0	0	0	0
7:45 AM	0	0	238	9	0	7	126	0	0	15	0	10	0	0	0	0	405	1,599	0	0	0	0
8:00 AM	0	0	270	9	0	7	114	0	0	8	0	6	0	0	0	0	414	1,604	0	0	0	0
8:15 AM	0	0	244	8	0	9	145	0	0	10	0	5	0	0	0	0	421		0	0	0	0
8:30 AM	1	0	163	7	0	7	159	0	0	13	0	9	0	0	0	0	359		0	0	0	0
8:45 AM	0	0	232	9	0	15	132	0	0	14	0	8	0	0	0	0	410		0	0	0	0
Count Total	1	0	1,793	63	0	63	950	0	0	97	0	59	0	0	0	0	3,026		0	0	0	0
Peak Hour	1	0	909	33	0	38	550	0	0	45	0	28	0	0	0	0	1,604		0	0	0	0



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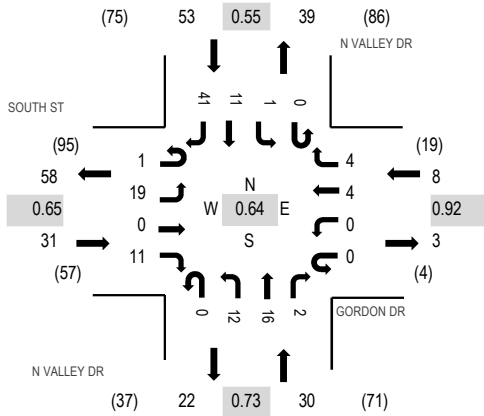
Location: 2 N VALLEY DR & GORDON DR AM

Date: Thursday, January 9, 2025

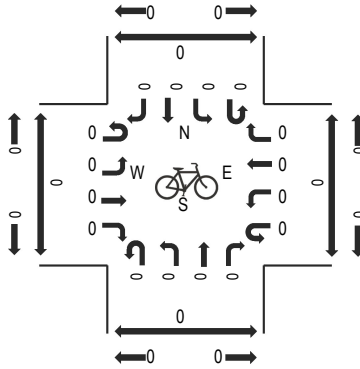
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

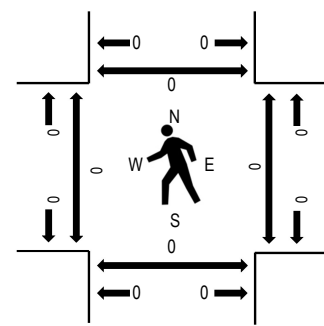
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTH ST Eastbound				GORDON DR Westbound				N VALLEY DR Northbound				N VALLEY DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	6	0	1	0	0	3	0	0	3	4	0	0	0	2	0	19	100	0	0	0	0
7:15 AM	0	3	0	1	0	0	0	3	0	5	9	0	0	0	4	2	27	104	0	0	0	0
7:30 AM	0	5	0	3	0	0	2	1	0	5	2	0	0	0	0	9	27	98	0	0	0	0
7:45 AM	0	4	1	2	0	0	2	0	0	3	10	0	0	0	2	3	27	101	0	0	0	0
8:00 AM	0	1	0	2	0	0	0	2	0	1	3	1	0	1	4	8	23	122	0	0	0	0
8:15 AM	0	5	0	2	0	0	1	1	0	3	4	0	0	0	0	5	21		0	0	0	0
8:30 AM	1	7	0	1	0	0	2	0	0	3	5	0	0	0	4	7	30		0	0	0	0
8:45 AM	0	6	0	6	0	0	1	1	0	5	4	1	0	0	3	21	48		0	0	0	0
Count Total	1	37	1	18	0	0	11	8	0	28	41	2	0	1	19	55	222		0	0	0	0
Peak Hour	1	19	0	11	0	0	4	4	0	12	16	2	0	1	11	41	122		0	0	0	0



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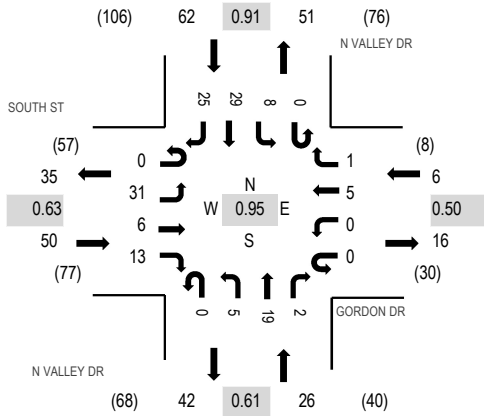
Location: 2 N VALLEY DR & GORDON DR PM

Date: Thursday, January 9, 2025

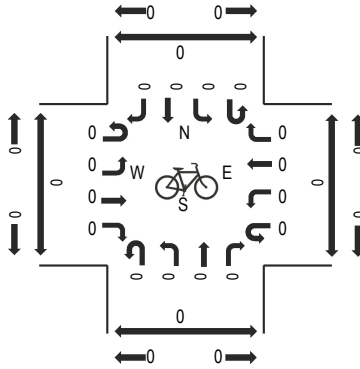
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

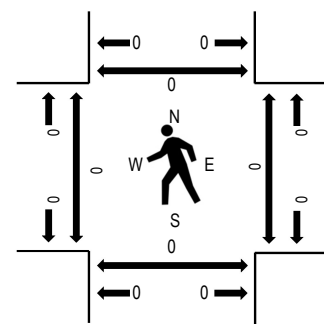
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SOUTH ST Eastbound				GORDON DR Westbound				N VALLEY DR Northbound				N VALLEY DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	12	3	5	0	0	1	0	0	0	3	0	0	3	6	5	38	144	0	0	0	0
4:15 PM	0	9	2	3	0	0	1	0	0	1	5	0	0	2	7	8	38	128	0	0	0	0
4:30 PM	0	5	0	3	0	0	2	1	0	2	8	1	0	2	7	6	37	112	0	0	0	0
4:45 PM	0	5	1	2	0	0	1	0	0	2	3	1	0	1	9	6	31	95	0	0	0	0
5:00 PM	0	3	1	3	0	0	0	0	0	1	3	0	0	3	2	6	22	87	0	0	0	0
5:15 PM	0	2	3	2	0	0	0	2	0	1	3	0	0	1	5	3	22		0	0	0	0
5:30 PM	0	5	4	1	0	0	0	0	0	0	3	0	0	0	5	2	20		0	0	0	0
5:45 PM	0	1	0	2	0	0	0	0	0	0	3	0	0	2	6	9	23		0	0	0	0
Count Total	0	42	14	21	0	0	5	3	0	7	31	2	0	14	47	45	231		0	0	0	0
Peak Hour	0	31	6	13	0	0	5	1	0	5	19	2	0	8	29	25	144		0	0	0	0



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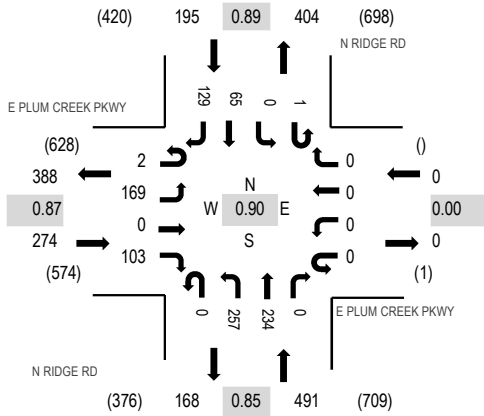
Location: 3 N RIDGE RD & E PLUM CREEK PKWY AM

Date: Thursday, January 9, 2025

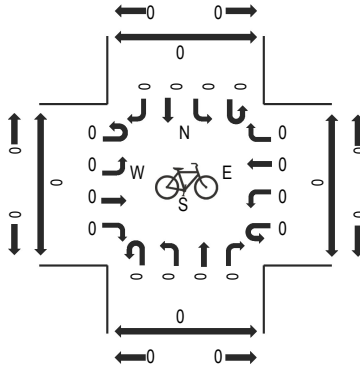
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

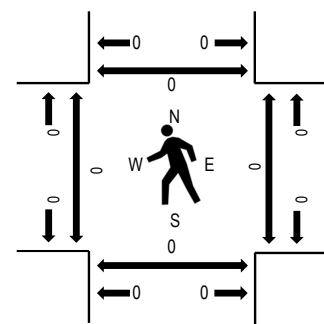
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				N RIDGE RD Northbound				N RIDGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	2	38	0	41	0	0	0	0	0	62	60	0	0	0	15	19	237	960	0	0	0	0
7:15 AM	0	40	0	29	0	0	0	0	0	62	83	0	0	0	14	38	266	902	0	0	0	0
7:30 AM	0	45	0	18	0	0	0	0	0	80	50	0	1	0	15	35	244	846	0	0	0	0
7:45 AM	0	46	0	15	0	0	0	0	0	53	41	0	0	0	21	37	213	794	0	0	0	0
8:00 AM	1	49	0	33	0	0	0	0	0	23	29	0	0	0	20	24	179	743	0	0	0	0
8:15 AM	0	58	0	29	0	0	0	0	0	32	32	0	1	0	12	46	210		0	0	0	0
8:30 AM	0	34	0	37	0	0	0	0	0	26	32	0	0	1	20	42	192		0	0	0	0
8:45 AM	0	31	0	28	0	0	0	0	0	19	25	0	3	0	29	27	162		0	0	0	0
Count Total	3	341	0	230	0	0	0	0	0	357	352	0	5	1	146	268	1,703		0	0	0	0
Peak Hour	2	169	0	103	0	0	0	0	0	257	234	0	1	0	65	129	960		0	0	0	0



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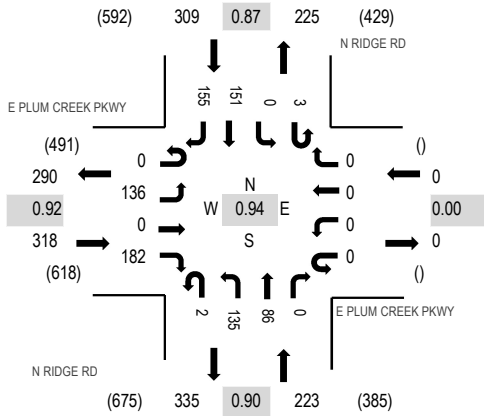
Location: 3 N RIDGE RD & E PLUM CREEK PKWY PM

Date: Thursday, January 9, 2025

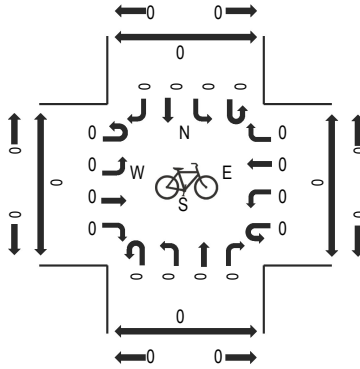
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

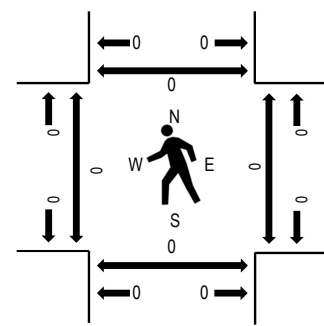
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				N RIDGE RD Northbound				N RIDGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	27	0	44	0	0	0	0	1	32	26	0	2	0	34	48	214	850	0	0	0	0
4:15 PM	0	31	0	44	0	0	0	0	1	47	14	0	1	0	42	46	226	833	0	0	0	0
4:30 PM	0	39	0	47	0	0	0	0	0	30	22	0	0	0	32	27	197	786	0	0	0	0
4:45 PM	0	39	0	47	0	0	0	0	0	26	24	0	0	0	43	34	213	773	0	0	0	0
5:00 PM	0	44	0	48	0	0	0	0	0	18	24	0	2	0	39	22	197	745	0	0	0	0
5:15 PM	0	28	0	38	0	0	0	0	0	18	16	0	1	0	41	37	179		0	0	0	0
5:30 PM	0	26	0	46	0	0	0	0	0	20	23	0	1	0	36	32	184		0	0	0	0
5:45 PM	0	23	0	47	0	0	0	0	0	28	15	0	1	0	45	26	185		0	0	0	0
Count Total	0	257	0	361	0	0	0	0	2	219	164	0	8	0	312	272	1,595		0	0	0	0
Peak Hour	0	136	0	182	0	0	0	0	2	135	86	0	3	0	151	155	850		0	0	0	0



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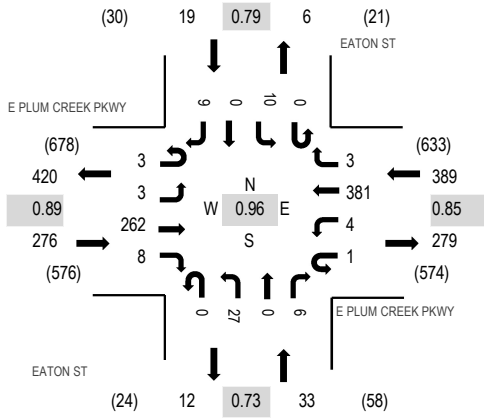
Location: 4 EATON ST & E PLUM CREEK PKWY AM

Date: Thursday, January 9, 2025

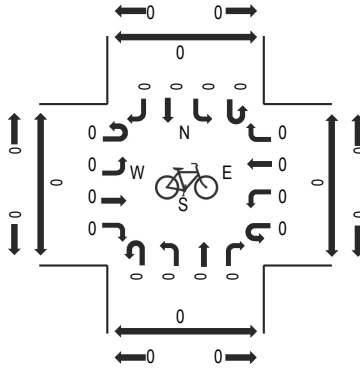
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

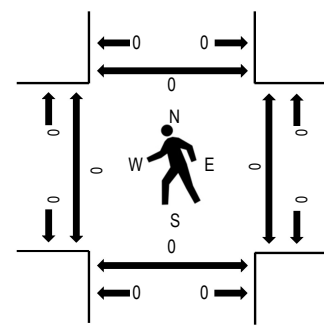
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				EATON ST Northbound				EATON ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	2	75	2	1	1	82	0	0	9	0	1	0	4	0	2	179	717	0	0	0	0
7:15 AM	1	0	65	5	0	1	97	1	0	10	0	1	0	3	0	3	187	683	0	0	0	0
7:30 AM	1	0	55	1	0	1	112	1	0	5	0	4	0	2	0	2	184	657	0	0	0	0
7:45 AM	1	1	67	0	0	1	90	1	0	3	0	0	0	1	0	2	167	628	0	0	0	0
8:00 AM	0	0	76	3	0	0	47	3	2	8	0	2	0	2	0	2	145	580	0	0	0	0
8:15 AM	0	0	84	2	0	0	69	0	0	3	0	0	0	2	1	0	161		0	0	0	0
8:30 AM	1	0	70	2	0	0	68	5	0	6	0	0	0	1	0	2	155		0	0	0	0
8:45 AM	0	4	57	1	1	1	47	3	0	4	0	0	0	0	0	1	119		1	0	0	0
Count Total	4	7	549	16	2	5	612	14	2	48	0	8	0	15	1	14	1,297		1	0	0	0
Peak Hour	3	3	262	8	1	4	381	3	0	27	0	6	0	10	0	9	717		0	0	0	0



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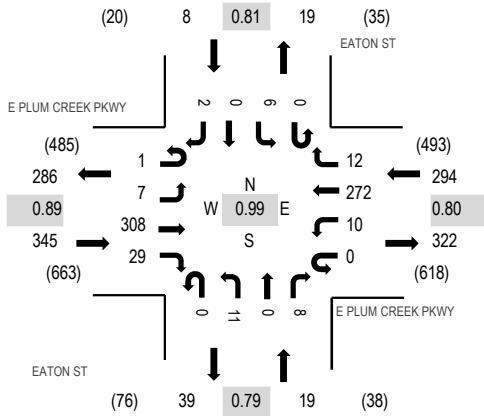
Location: 4 EATON ST & E PLUM CREEK PKWY PM

Date: Thursday, January 9, 2025

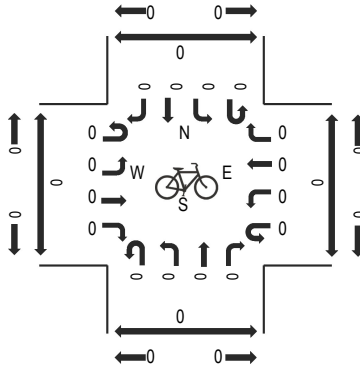
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

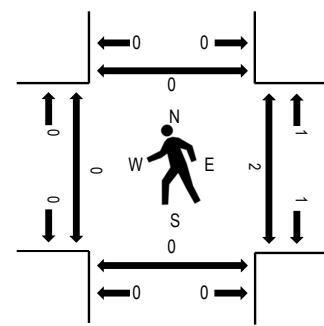
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				EATON ST Northbound				EATON ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	2	72	6	0	1	73	4	0	4	0	2	0	1	0	0	165	666	0	0	0	0
4:15 PM	0	2	63	6	0	3	85	4	0	2	0	3	0	0	0	1	169	642	0	0	0	0
4:30 PM	0	2	91	9	0	0	51	3	0	3	0	2	0	2	0	0	163	610	0	2	0	0
4:45 PM	1	1	82	8	0	6	63	1	0	2	0	1	0	3	0	1	169	579	0	0	0	0
5:00 PM	2	2	83	7	0	1	35	1	0	5	0	2	0	3	0	0	141	548	0	0	1	0
5:15 PM	0	1	68	8	0	3	43	3	0	4	0	3	0	2	0	2	137		0	0	0	0
5:30 PM	0	2	69	6	0	2	44	4	0	2	0	1	0	0	0	2	132		0	0	0	0
5:45 PM	0	0	63	7	0	3	57	3	0	1	0	1	0	1	0	2	138		0	1	0	0
Count Total	3	12	591	57	0	19	451	23	0	23	0	15	0	12	0	8	1,214		0	3	1	0
Peak Hour	1	7	308	29	0	10	272	12	0	11	0	8	0	6	0	2	666		0	2	0	0



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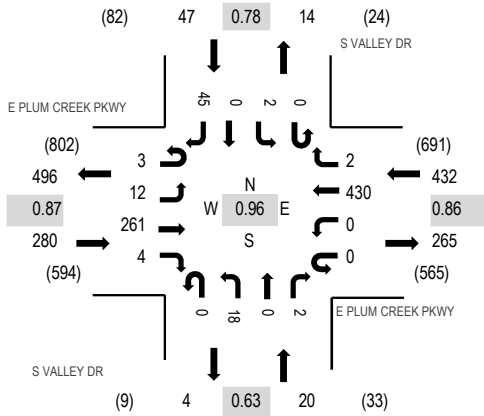
Location: 5 S VALLEY DR & E PLUM CREEK PKWY AM

Date: Thursday, January 9, 2025

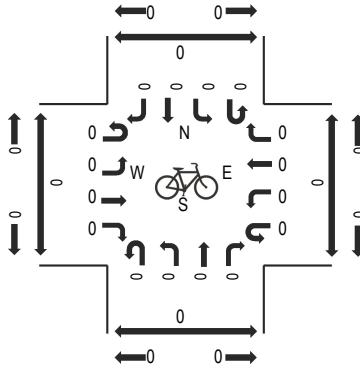
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

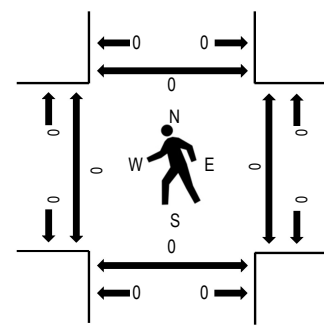
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				S VALLEY DR Northbound				S VALLEY DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	1	1	71	1	0	0	94	0	0	5	0	0	0	0	0	13	186	779	0	0	0	0
7:15 AM	0	3	71	2	0	0	106	1	0	3	0	1	0	0	0	15	202	749	0	0	0	0
7:30 AM	1	1	53	1	0	0	124	1	0	7	0	1	0	1	0	8	198	716	0	0	0	0
7:45 AM	1	7	66	0	0	0	106	0	0	3	0	0	0	1	0	9	193	676	0	0	0	0
8:00 AM	1	2	87	1	0	0	58	0	0	2	0	0	0	0	0	5	156	621	0	0	0	0
8:15 AM	1	2	82	2	0	0	68	0	0	3	0	0	0	1	0	10	169		0	0	2	0
8:30 AM	0	2	63	0	1	0	78	0	0	5	0	0	0	0	0	9	158		0	0	0	0
8:45 AM	0	4	66	1	0	1	53	0	0	3	0	0	0	0	0	10	138		0	0	0	0
Count Total	5	22	559	8	1	1	687	2	0	31	0	2	0	3	0	79	1,400		0	0	2	0
Peak Hour	3	12	261	4	0	0	430	2	0	18	0	2	0	2	0	45	779		0	0	0	0



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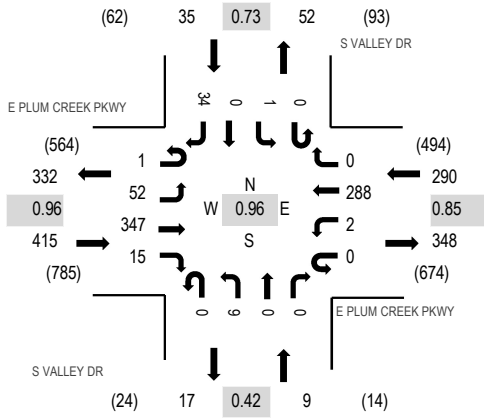
Location: 5 S VALLEY DR & E PLUM CREEK PKWY PM

Date: Thursday, January 9, 2025

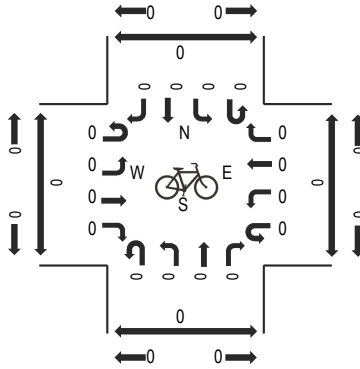
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

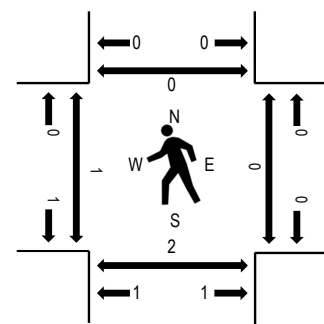
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				S VALLEY DR Northbound				S VALLEY DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	1	15	80	5	0	1	77	0	0	1	0	0	0	0	0	3	183	749	0	0	0	0
4:15 PM	0	13	76	5	0	1	84	0	0	1	0	0	0	0	0	15	195	733	0	0	0	0
4:30 PM	0	9	99	3	0	0	59	0	0	1	0	0	0	0	0	7	178	687	0	0	0	0
4:45 PM	0	15	92	2	0	0	68	0	0	6	0	0	0	1	0	9	193	651	1	0	2	0
5:00 PM	0	11	96	4	0	0	44	0	0	0	0	0	0	0	0	12	167	606	0	0	0	0
5:15 PM	0	11	77	3	0	0	47	2	0	2	0	0	0	1	0	6	149		0	0	0	0
5:30 PM	0	11	75	0	0	0	49	0	0	2	0	0	0	0	0	5	142		0	0	0	0
5:45 PM	0	6	76	0	0	0	62	0	0	1	0	0	0	1	0	2	148		0	0	0	0
Count Total	1	91	671	22	0	2	490	2	0	14	0	0	0	3	0	59	1,355		1	0	2	0
Peak Hour	1	52	347	15	0	2	288	0	0	9	0	0	0	1	0	34	749		1	0	2	0



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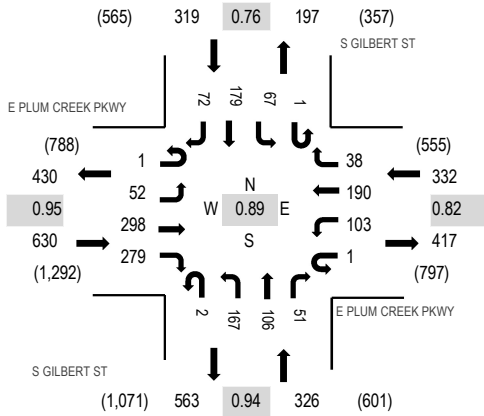
Location: 6 S GILBERT ST & E PLUM CREEK PKWY PM

Date: Thursday, January 9, 2025

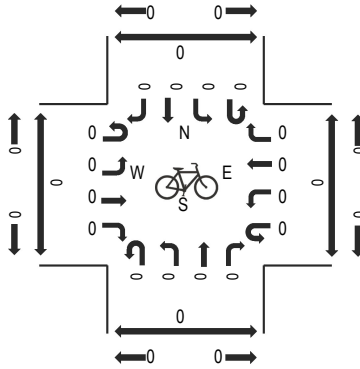
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:15 PM - 04:30 PM

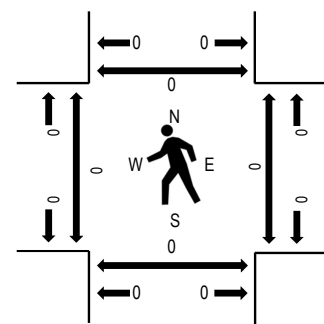
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E PLUM CREEK PKWY Eastbound				E PLUM CREEK PKWY Westbound				S GILBERT ST Northbound				S GILBERT ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	13	69	63	1	27	40	12	0	40	27	13	0	15	44	20	384	1,607	0	0	0	0
4:15 PM	0	15	69	82	0	33	55	13	0	38	33	10	1	25	53	26	453	1,595	0	0	0	0
4:30 PM	0	14	82	73	0	20	41	3	1	42	21	14	0	10	45	17	383	1,533	0	0	0	0
4:45 PM	1	10	78	61	0	23	54	10	1	47	25	14	0	17	37	9	387	1,491	0	0	0	0
5:00 PM	0	15	82	80	1	9	33	10	0	44	14	13	0	14	38	19	372	1,406	0	0	0	0
5:15 PM	0	17	72	87	0	14	32	8	1	46	27	9	0	16	45	17	391		0	0	0	0
5:30 PM	0	8	70	91	0	14	28	11	0	38	22	4	0	12	30	13	341		0	0	0	0
5:45 PM	1	6	71	62	0	14	41	8	0	34	14	9	0	7	23	12	302		0	0	0	0
Count Total	2	98	593	599	2	154	324	75	3	329	183	86	1	116	315	133	3,013		0	0	0	0
Peak Hour	1	52	298	279	1	103	190	38	2	167	106	51	1	67	179	72	1,607		0	0	0	0



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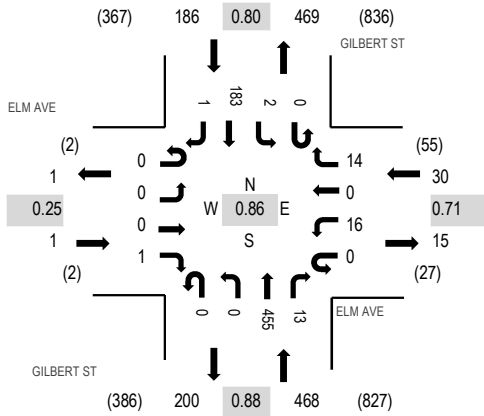
Location: 7 GILBERT ST & ELM AVE AM

Date: Thursday, January 9, 2025

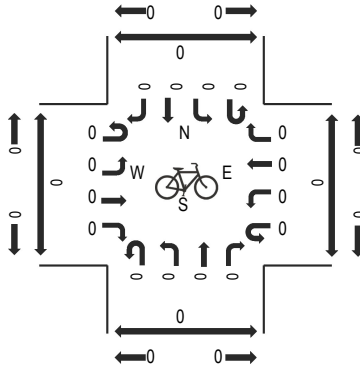
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

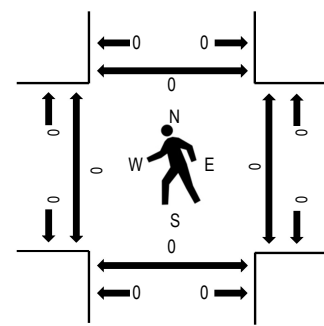
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ELM AVE Eastbound				ELM AVE Westbound				GILBERT ST Northbound				GILBERT ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	1	0	5	0	8	0	0	85	0	0	0	25	1	125	647	0	0	0	0
7:15 AM	0	0	0	0	0	4	0	3	0	0	125	2	0	0	40	0	174	685	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	8	0	0	101	2	0	0	36	0	148	655	0	0	0	0
7:45 AM	0	0	0	0	0	7	0	1	0	0	127	6	0	0	58	1	200	639	0	0	0	0
8:00 AM	0	0	0	1	0	4	0	2	0	0	102	3	0	2	49	0	163	604	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	2	0	0	96	1	0	3	42	0	144		0	0	0	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	80	5	0	1	45	0	132		0	0	0	0
8:45 AM	0	0	0	0	0	5	0	4	0	0	92	0	0	2	62	0	165		0	0	0	0
Count Total	0	0	0	2	0	27	0	28	0	0	808	19	0	8	357	2	1,251		0	0	0	0
Peak Hour	0	0	0	1	0	16	0	14	0	0	455	13	0	2	183	1	685		0	0	0	0



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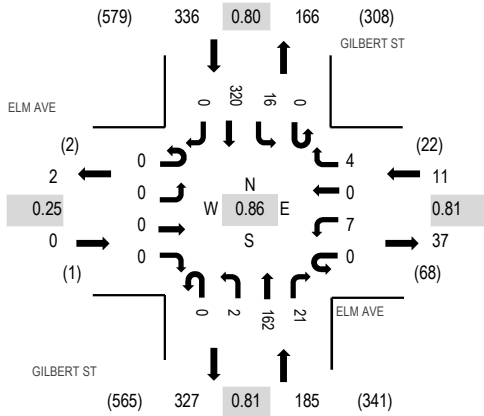
Location: 7 GILBERT ST & ELM AVE PM

Date: Thursday, January 9, 2025

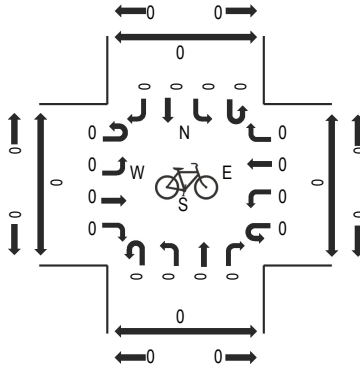
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

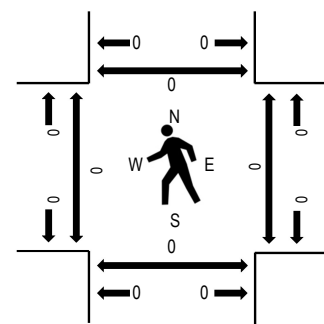
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ELM AVE Eastbound				ELM AVE Westbound				GILBERT ST Northbound				GILBERT ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	0	0	1	0	0	41	7	0	7	98	0	154	532	0	0	0	0
4:15 PM	0	0	0	0	0	3	0	1	0	1	50	6	0	5	84	0	150	491	0	0	0	0
4:30 PM	0	0	0	0	0	2	0	1	0	1	34	3	0	2	68	0	111	469	0	0	0	0
4:45 PM	0	0	0	0	0	2	0	1	0	0	37	5	0	2	70	0	117	461	0	0	0	0
5:00 PM	0	0	0	0	0	2	0	0	0	0	30	9	0	3	69	0	113	411	0	0	0	0
5:15 PM	0	0	0	0	0	1	0	3	0	0	42	5	0	4	73	0	128		0	0	0	0
5:30 PM	0	0	0	1	0	2	0	2	0	0	39	3	0	3	53	0	103		0	0	0	0
5:45 PM	0	0	0	0	0	1	0	0	0	0	26	2	0	2	36	0	67		0	0	0	0
Count Total	0	0	0	1	0	13	0	9	0	2	299	40	0	28	551	0	943		0	0	0	0
Peak Hour	0	0	0	0	0	7	0	4	0	2	162	21	0	16	320	0	532		0	0	0	0



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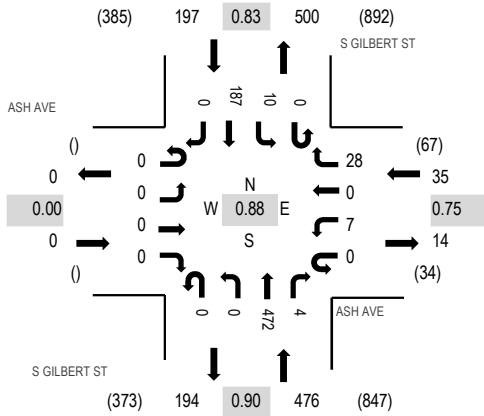
Location: 8 S GILBERT ST & ASH AVE AM

Date: Thursday, January 9, 2025

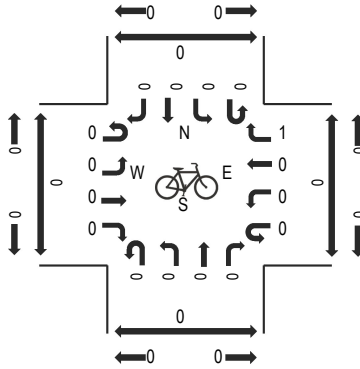
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

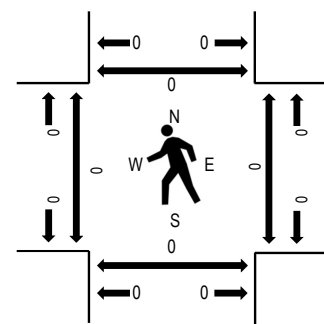
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ASH AVE Eastbound				ASH AVE Westbound				S GILBERT ST Northbound				S GILBERT ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	0	0	1	0	9	0	0	93	1	0	1	25	0	130	671	0	0	0	0
7:15 AM	0	0	0	0	0	3	0	5	0	0	131	1	0	1	42	0	183	708	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	6	0	0	111	0	0	4	35	0	156	680	0	0	0	0
7:45 AM	0	0	0	0	0	2	0	10	0	0	127	1	0	4	58	0	202	658	0	0	0	0
8:00 AM	0	0	0	0	0	2	0	7	0	0	103	2	0	1	52	0	167	628	0	0	0	0
8:15 AM	0	0	0	0	0	2	0	6	0	0	100	1	0	5	41	0	155		0	0	0	0
8:30 AM	0	0	0	0	0	0	0	6	0	0	74	3	0	3	48	0	134		0	0	0	0
8:45 AM	0	0	0	0	0	2	0	6	0	0	98	1	0	5	60	0	172		0	0	0	0
Count Total	0	0	0	0	0	12	0	55	0	0	837	10	0	24	361	0	1,299		0	0	0	0
Peak Hour	0	0	0	0	0	7	0	28	0	0	472	4	0	10	187	0	708		0	0	0	0



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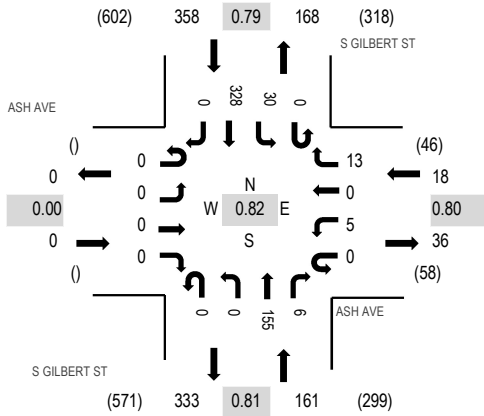
Location: 8 S GILBERT ST & ASH AVE PM

Date: Thursday, January 9, 2025

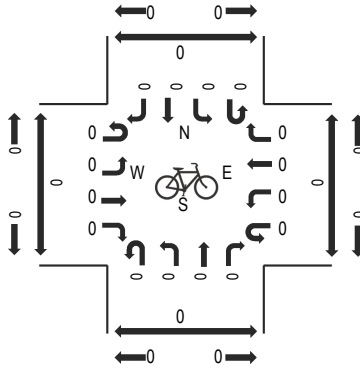
Peak Hour: 04:00 PM - 05:00 PM

Peak 15-Minutes: 04:00 PM - 04:15 PM

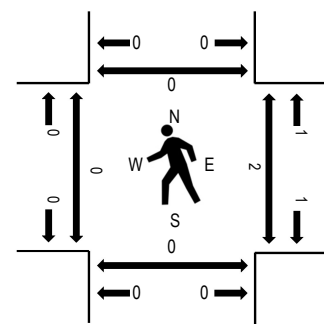
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	ASH AVE Eastbound				ASH AVE Westbound				S GILBERT ST Northbound				S GILBERT ST Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	2	0	4	0	0	43	1	0	7	107	0	164	537	0	2	0	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	48	2	0	10	84	0	145	481	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	3	0	0	31	1	0	5	70	0	110	462	0	0	0	0
4:45 PM	0	0	0	0	0	2	0	6	0	0	33	2	0	8	67	0	118	456	0	0	0	0
5:00 PM	0	0	0	0	0	3	0	2	0	0	28	2	0	3	70	0	108	410	0	0	0	0
5:15 PM	0	0	0	0	0	6	0	3	0	0	42	0	0	8	67	0	126		0	0	0	0
5:30 PM	0	0	0	0	0	3	0	7	0	0	39	1	0	2	52	0	104		0	0	0	0
5:45 PM	0	0	0	0	0	1	0	3	0	0	26	0	0	6	36	0	72		0	0	0	0
Count Total	0	0	0	0	0	18	0	28	0	0	290	9	0	49	553	0	947		0	2	0	0
Peak Hour	0	0	0	0	0	5	0	13	0	0	155	6	0	30	328	0	537		0	2	0	0

Start Time	09-Jan-25 Thu	NB	SB	Total
12:00 AM		2	2	4
01:00		0	2	2
02:00		1	0	1
03:00		1	0	1
04:00		6	0	6
05:00		12	0	12
06:00		32	4	36
07:00		41	15	56
08:00		30	22	52
09:00		21	14	35
10:00		12	15	27
11:00		14	11	25
12:00 PM		11	16	27
01:00		10	21	31
02:00		26	19	45
03:00		26	38	64
04:00		26	42	68
05:00		14	26	40
06:00		17	28	45
07:00		11	21	32
08:00		4	11	15
09:00		3	9	12
10:00		2	3	5
11:00		1	6	7
Total		323	325	648
Percent		49.8%	50.2%	
AM Peak	-	07:00	08:00	-
Vol.	-	41	22	-
PM Peak	-	14:00	16:00	-
Vol.	-	26	42	-
Grand Total		323	325	648
Percent		49.8%	50.2%	
ADT		ADT 648	AADT 648	

Start Time	09-Jan-25 Thu	NB	SB	Total
12:00 AM		4	11	15
01:00		2	3	5
02:00		1	2	3
03:00		3	1	4
04:00		23	7	30
05:00		56	16	72
06:00		200	50	250
07:00		458	161	619
08:00		378	206	584
09:00		173	211	384
10:00		115	117	232
11:00		115	114	229
12:00 PM		85	116	201
01:00		122	114	236
02:00		157	146	303
03:00		239	274	513
04:00		166	336	502
05:00		142	243	385
06:00		66	121	187
07:00		69	84	153
08:00		44	83	127
09:00		17	51	68
10:00		14	35	49
11:00		12	20	32
Total		2661	2522	5183
Percent		51.3%	48.7%	
AM Peak	-	07:00	09:00	-
Vol.	-	458	211	-
PM Peak	-	15:00	16:00	-
Vol.	-	239	336	-
Grand Total		2661	2522	5183
Percent		51.3%	48.7%	
ADT		ADT 5,183	AADT 5,183	

APPENDIX B

Level of Service Definitions

The following information is referenced from the Highway Capacity Manual: A Guide for Multimodal Mobility Analysis, 6th Edition, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections.

Motorized Vehicle Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

LOS A Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio ^a	
	$v/c \leq 1.0$	$v/c > 1.0$
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

Note: ^a For approach-based and intersectionwide assessments, LOS is defined solely by control delay.

The following information is referenced from the Highway Capacity Manual: A Guide for Multimodal Mobility Analysis, 6th Edition, Transportation Research Board, 2016: Chapter 20 – Two-Way Stop-Controlled Intersections, Chapter 21 – All-Way Stop-Controlled Intersections, and Chapter 22 - Roundabouts.

Motorized Vehicle Level of Service (LOS) for Unsignalized & Roundabout Intersections

LOS is a quantitative stratification of performance measure(s) representing quality of service. Quality of service describes how well a transportation facility or service operates from a traveler's perspective. LOS is measured on an A – F scale, with LOS A representing the best operating conditions from a traveler's perspective.

Control Delay (s/veh)	<u>LOS by Volume-to-Capacity Ratio^a</u>	
	$v/c \leq 1.0$	$v/c > 1.0$
0 – 10	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

^a For approaches and intersectionwide assessment, LOS is defined solely by control delay.

APPENDIX C

Capacity Worksheets

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Existing Traffic Volumes
AM Peak Hour

Intersection					
Intersection Delay, s/veh	5.3				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	298		533		212
Demand Flow Rate, veh/h	304		544		216
Vehicles Circulating, veh/h	73		190		285
Vehicles Exiting, veh/h	285		187		449
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	3.8		7.8		1.3
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.530	0.470	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	161	143	544	73	143
Cap Entry Lane, veh/h	1262	1335	1208	1115	1938
Entry HV Adj Factor	0.981	0.979	0.980	0.980	0.980
Flow Entry, veh/h	158	140	533	72	140
Cap Entry, veh/h	1238	1307	1184	1093	1900
V/C Ratio	0.128	0.107	0.450	0.065	0.074
Control Delay, s/veh	4.0	3.6	7.8	3.9	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	2	0	0

HCM 7th Roundabout
2: Eaton Street & Plum Creek Parkway

Existing Traffic Volumes
AM Peak Hour

Intersection						
Intersection Delay, s/veh 3.9						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	301		422		36	21
Demand Flow Rate, veh/h	307		430		37	21
Vehicles Circulating, veh/h	16		37		309	457
Vehicles Exiting, veh/h	462		309		14	10
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	3.6		4.1		3.7	3.9
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.469	0.531	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	144	163	202	228	37	21
Cap Entry Lane, veh/h	1330	1401	1305	1376	1092	963
Entry HV Adj Factor	0.983	0.980	0.981	0.980	0.973	1.000
Flow Entry, veh/h	142	160	198	224	36	21
Cap Entry, veh/h	1308	1372	1280	1349	1063	963
V/C Ratio	0.108	0.116	0.155	0.166	0.034	0.022
Control Delay, s/veh	3.6	3.5	4.1	4.0	3.7	3.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	1	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Existing Traffic Volumes
AM Peak Hour

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	15	261	4	0	430	2	18	0	2	2	0	45
Future Vol, veh/h	15	261	4	0	430	2	18	0	2	2	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	284	4	0	467	2	20	0	2	2	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	288	0	0	552	788	144	642	788	234
Stage 1	-	-	-	-	-	-	318	318	-	467	467	-
Stage 2	-	-	-	-	-	-	234	470	-	174	321	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1088	-	-	1271	-	-	416	322	877	359	322	768
Stage 1	-	-	-	-	-	-	667	652	-	545	560	-
Stage 2	-	-	-	-	-	-	748	559	-	810	650	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1088	-	-	1271	-	-	384	317	877	353	317	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	317	-	353	317	-
Stage 1	-	-	-	-	-	-	657	642	-	545	560	-
Stage 2	-	-	-	-	-	-	701	559	-	796	641	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.45	0	14.35	10.23
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	407	1088	-	-	1271	-	-	353	768
HCM Lane V/C Ratio	0.053	0.015	-	-	-	-	-	0.006	0.064
HCM Control Delay (s/veh)	14.3	8.4	-	-	0	-	-	15.3	10
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0	0.2

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Existing Traffic Volumes
AM Peak Hour

Intersection						
Intersection Delay, s/veh	9.2					
Intersection LOS	A					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	403		487		688	219
Demand Flow Rate, veh/h	411		497		701	223
Vehicles Circulating, veh/h	228		683		312	667
Vehicles Exiting, veh/h	662		330		327	513
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.9		8.8		12.5	7.7
Approach LOS	A		A		B	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	193	218	234	263	701	223
Cap Entry Lane, veh/h	1094	1170	720	795	1089	805
Entry HV Adj Factor	0.981	0.979	0.979	0.982	0.981	0.981
Flow Entry, veh/h	189	213	229	258	688	219
Cap Entry, veh/h	1073	1146	705	781	1069	790
V/C Ratio	0.176	0.186	0.325	0.331	0.644	0.277
Control Delay, s/veh	5.0	4.8	9.2	8.5	12.5	7.7
LOS	A	A	A	A	B	A
95th %tile Queue, veh	1	1	1	1	5	1

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Existing Traffic Volumes
AM Peak Hour

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	1	16	0	14	0	455	13	2	183	1
Future Vol, veh/h	0	0	1	16	0	14	0	455	13	2	183	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	17	0	15	0	495	14	2	199	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	698	713	199	705	706	502	200	0	0	509	0	0
Stage 1	204	204	-	502	502	-	-	-	-	-	-	-
Stage 2	495	509	-	203	204	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	355	357	842	351	361	570	1372	-	-	1056	-	-
Stage 1	798	733	-	552	542	-	-	-	-	-	-	-
Stage 2	557	538	-	799	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	345	357	842	350	360	570	1372	-	-	1056	-	-
Mov Cap-2 Maneuver	345	357	-	350	360	-	-	-	-	-	-	-
Stage 1	796	731	-	552	542	-	-	-	-	-	-	-
Stage 2	542	538	-	796	731	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.28		14.13		0		0.09	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1372	-	-	842	427	1056	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.076	0.002	-	-
HCM Control Delay (s/veh)	0	-	-	9.3	14.1	8.4	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	28	472	4	10	187
Future Vol, veh/h	7	28	472	4	10	187
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	-	-	-	75	-
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	8	30	513	4	11	203

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	740	515	0	0	517
Stage 1	515	-	-	-	-
Stage 2	225	-	-	-	-
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	384	560	-	-	1048
Stage 1	600	-	-	-	-
Stage 2	812	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	380	560	-	-	1048
Mov Cap-2 Maneuver	380	-	-	-	-
Stage 1	600	-	-	-	-
Stage 2	804	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.61	0	0.43
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	511	1048
HCM Lane V/C Ratio	-	-	0.074	0.01
HCM Control Delay (s/veh)	-	-	12.6	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Existing Traffic Volumes
AM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	0	11	0	4	4	12	16	2	1	11	41
Future Vol, veh/h	20	0	11	0	4	4	12	16	2	1	11	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	12	0	4	4	13	17	2	1	12	45

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	82	82	34	59	103	18	57	0	0	20	0	0
Stage 1	36	36	-	45	45	-	-	-	-	-	-	-
Stage 2	46	46	-	14	59	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	905	808	1039	938	787	1060	1548	-	-	1597	-	-
Stage 1	979	865	-	969	858	-	-	-	-	-	-	-
Stage 2	968	857	-	1006	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	888	801	1039	918	780	1060	1548	-	-	1597	-	-
Mov Cap-2 Maneuver	888	801	-	918	780	-	-	-	-	-	-	-
Stage 1	978	864	-	961	850	-	-	-	-	-	-	-
Stage 2	951	850	-	994	845	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	8.99		9.05		2.94		0.14	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	704	-	-	937	898	29	-	-
HCM Lane V/C Ratio	0.008	-	-	0.036	0.01	0.001	-	-
HCM Control Delay (s/veh)	7.3	0	-	9	9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 7th TWSC
8: Valley Drive & 5th Street

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	910	33	38	550	45	28
Future Vol, veh/h	910	33	38	550	45	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	65	120	-	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	989	36	41	598	49	30
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1025	0	1670	989
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	680	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	677	-	106	299
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	677	-	99	299
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	472	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.69		65.38	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	133	-	-	677	-	
HCM Lane V/C Ratio	0.594	-	-	0.061	-	
HCM Control Delay (s/veh)	65.4	-	-	10.7	-	
HCM Lane LOS	F	-	-	B	-	
HCM 95th %tile Q(veh)	3	-	-	0.2	-	

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Existing Traffic Volumes
PM Peak Hour

Intersection					
Intersection Delay, s/veh	3.6				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	346		242		335
Demand Flow Rate, veh/h	353		247		341
Vehicles Circulating, veh/h	170		151		152
Vehicles Exiting, veh/h	152		372		246
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.4		4.7		2.0
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.428	0.572	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	151	202	247	170	171
Cap Entry Lane, veh/h	1154	1229	1249	1248	1938
Entry HV Adj Factor	0.980	0.980	0.980	0.980	0.980
Flow Entry, veh/h	148	198	242	167	168
Cap Entry, veh/h	1131	1205	1224	1224	1900
V/C Ratio	0.131	0.164	0.198	0.136	0.088
Control Delay, s/veh	4.3	4.4	4.7	4.1	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Existing Traffic Volumes

PM Peak Hour

Intersection									
Intersection Delay, s/veh		3.7							
Intersection LOS		A							
Approach		EB		WB		NB		SB	
Entry Lanes		2		2		1		1	
Conflicting Circle Lanes		2		2		2		2	
Adj Approach Flow, veh/h		376		320		21		9	
Demand Flow Rate, veh/h		384		326		21		9	
Vehicles Circulating, veh/h		18		21		358		325	
Vehicles Exiting, veh/h		316		358		44		22	
Ped Vol Crossing Leg, #/h		0		0		0		0	
Ped Cap Adj		1.000		1.000		1.000		1.000	
Approach Delay, s/veh		3.8		3.7		3.6		3.4	
Approach LOS		A		A		A		A	
Lane		Left		Right		Left		Left	
Designated Moves		LT		TR		LT		TR	
Assumed Moves		LT		TR		LT		TR	
RT Channelized									
Lane Util		0.469		0.531		0.469		0.531	
Follow-Up Headway, s		2.667		2.535		2.667		2.535	
Critical Headway, s		4.645		4.328		4.645		4.328	
A (Intercept)		1350		1420		1350		1420	
B (Slope)		9.199e-4		8.501e-4		9.199e-4		8.501e-4	
Entry Flow, veh/h		180		204		153		173	
Cap Entry Lane, veh/h		1328		1399		1324		1395	
Entry HV Adj Factor		0.983		0.978		0.983		0.981	
Flow Entry, veh/h		177		199		150		170	
Cap Entry, veh/h		1304		1367		1302		1368	
V/C Ratio		0.136		0.146		0.116		0.124	
Control Delay, s/veh		3.9		3.8		3.7		3.6	
LOS		A		A		A		A	
95th %tile Queue, veh		0		1		0		0	

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Existing Traffic Volumes
PM Peak Hour

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	53	347	15	2	288	0	9	0	0	1	0	34
Future Vol, veh/h	53	347	15	2	288	0	9	0	0	1	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	377	16	2	313	0	10	0	0	1	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	313	0	0	393	0	0	661	818	197	621	826	157
Stage 1	-	-	-	-	-	-	501	501	-	317	317	-
Stage 2	-	-	-	-	-	-	161	317	-	304	509	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1244	-	-	1162	-	-	348	309	811	371	306	861
Stage 1	-	-	-	-	-	-	521	541	-	668	653	-
Stage 2	-	-	-	-	-	-	825	653	-	681	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1162	-	-	317	294	811	354	291	861
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	294	-	354	291	-
Stage 1	-	-	-	-	-	-	497	516	-	667	651	-
Stage 2	-	-	-	-	-	-	788	651	-	649	512	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.03			0.06			16.73			9.53		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	317	1244	-	-	1162	-	-	354	861
HCM Lane V/C Ratio	0.031	0.046	-	-	0.002	-	-	0.003	0.043
HCM Control Delay (s/veh)	16.7	8	-	-	8.1	-	-	15.2	9.4
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0	0.1

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Existing Traffic Volumes
PM Peak Hour

Intersection						
Intersection Delay, s/veh	7.4					
Intersection LOS	A					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	685		361		354	347
Demand Flow Rate, veh/h	698		368		361	354
Vehicles Circulating, veh/h	389		364		464	514
Vehicles Exiting, veh/h	479		461		623	218
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	7.6		5.4		8.0	8.4
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	328	370	173	195	361	354
Cap Entry Lane, veh/h	944	1020	966	1042	957	917
Entry HV Adj Factor	0.981	0.981	0.980	0.981	0.980	0.981
Flow Entry, veh/h	322	363	170	191	354	347
Cap Entry, veh/h	926	1000	947	1022	938	899
V/C Ratio	0.348	0.363	0.179	0.187	0.377	0.386
Control Delay, s/veh	7.7	7.4	5.5	5.3	8.0	8.4
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	2	1	1	2	2

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Existing Traffic Volumes
PM Peak Hour

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	7	0	4	2	162	21	16	320	0
Future Vol, veh/h	0	0	0	7	0	4	2	162	21	16	320	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	0	4	2	176	23	17	348	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	563	586	348	574	574	188	348	0	0	199	0	0
Stage 1	383	383	-	192	192	-	-	-	-	-	-	-
Stage 2	180	203	-	383	383	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	437	422	695	429	429	855	1211	-	-	1373	-	-
Stage 1	640	612	-	810	742	-	-	-	-	-	-	-
Stage 2	821	733	-	640	612	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	428	416	695	423	423	855	1211	-	-	1373	-	-
Mov Cap-2 Maneuver	428	416	-	423	423	-	-	-	-	-	-	-
Stage 1	632	605	-	808	740	-	-	-	-	-	-	-
Stage 2	816	732	-	632	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	12.11	0.09	0.36
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1211	-	-	-	518	1373	-
HCM Lane V/C Ratio	0.002	-	-	-	0.023	0.013	-
HCM Control Delay (s/veh)	8	-	-	0	12.1	7.7	-
HCM Lane LOS	A	-	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	13	155	6	30	328
Future Vol, veh/h	5	13	155	6	30	328
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	-	-	-	75	-
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	5	14	168	7	33	357

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	593	172	0	0	175
Stage 1	172	-	-	-	-
Stage 2	422	-	-	-	-
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	468	872	-	-	1401
Stage 1	858	-	-	-	-
Stage 2	662	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	457	872	-	-	1401
Mov Cap-2 Maneuver	457	-	-	-	-
Stage 1	858	-	-	-	-
Stage 2	646	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v10.32		0	0.64
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	696	1401
HCM Lane V/C Ratio	-	-	0.028	0.023
HCM Control Delay (s/veh)	-	-	10.3	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Existing Traffic Volumes
PM Peak Hour

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	31	6	13	0	5	1	5	19	2	8	29	25
Future Vol, veh/h	31	6	13	0	5	1	5	19	2	8	29	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	7	14	0	5	1	5	21	2	9	32	27

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	97	96	45	85	109	22	59	0	0	23	0	0
Stage 1	63	63	-	33	33	-	-	-	-	-	-	-
Stage 2	34	34	-	52	76	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	886	794	1025	902	781	1055	1545	-	-	1592	-	-
Stage 1	949	843	-	984	868	-	-	-	-	-	-	-
Stage 2	982	867	-	961	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	871	787	1025	874	774	1055	1545	-	-	1592	-	-
Mov Cap-2 Maneuver	871	787	-	874	774	-	-	-	-	-	-	-
Stage 1	943	838	-	980	865	-	-	-	-	-	-	-
Stage 2	971	864	-	935	827	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.29		9.48		1.41		0.94	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	340	-	-	894	810	213	-	-
HCM Lane V/C Ratio	0.004	-	-	0.061	0.008	0.005	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.3	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM 7th TWSC
8: Valley Drive & 5th Street

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	834	66	46	462	31	40
Future Vol, veh/h	834	66	46	462	31	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	65	120	-	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	907	72	50	502	34	43

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	978
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	705
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	705
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.95	35.97
HCM LOS	E		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	191	-	-	705	-
HCM Lane V/C Ratio	0.403	-	-	0.071	-
HCM Control Delay (s/veh)	36	-	-	10.5	-
HCM Lane LOS	E	-	-	B	-
HCM 95th %tile Q(veh)	1.8	-	-	0.2	-

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Background Traffic Volumes
AM Peak Hour - Year 2027

Intersection					
Intersection Delay, s/veh	5.5				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	309		554		221
Demand Flow Rate, veh/h	315		565		226
Vehicles Circulating, veh/h	76		197		296
Vehicles Exiting, veh/h	296		195		466
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	3.9		8.1		1.3
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.530	0.470	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	167	148	565	77	149
Cap Entry Lane, veh/h	1259	1331	1201	1104	1938
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.980
Flow Entry, veh/h	164	145	554	75	146
Cap Entry, veh/h	1234	1306	1177	1083	1900
V/C Ratio	0.133	0.111	0.470	0.070	0.077
Control Delay, s/veh	4.0	3.7	8.1	3.9	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	3	0	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Background Traffic Volumes

AM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh 3.9						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	313		438		37	21
Demand Flow Rate, veh/h	319		447		38	21
Vehicles Circulating, veh/h	16		38		321	475
Vehicles Exiting, veh/h	480		321		14	10
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	3.6		4.1		3.7	4.0
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	150	169	210	237	38	21
Cap Entry Lane, veh/h	1330	1401	1303	1375	1081	948
Entry HV Adj Factor	0.981	0.982	0.981	0.980	0.974	1.000
Flow Entry, veh/h	147	166	206	232	37	21
Cap Entry, veh/h	1305	1375	1279	1348	1053	948
V/C Ratio	0.113	0.121	0.161	0.172	0.035	0.022
Control Delay, s/veh	3.7	3.6	4.2	4.1	3.7	4.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	1	0	0

HCM 7th TWSC

3: Valley Drive & Plum Creek Parkway

Background Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	16	271	4	0	447	2	19	0	2	2	0	47
Future Vol, veh/h	16	271	4	0	447	2	19	0	2	2	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	295	4	0	486	2	21	0	2	2	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	488	0	0	299	0	0	574	820	149	668	820	243
Stage 1	-	-	-	-	-	-	332	332	-	486	486	-
Stage 2	-	-	-	-	-	-	243	488	-	182	334	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1071	-	-	1259	-	-	401	308	870	344	308	758
Stage 1	-	-	-	-	-	-	656	643	-	532	549	-
Stage 2	-	-	-	-	-	-	739	548	-	802	642	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1071	-	-	1259	-	-	368	303	870	337	303	758
Mov Cap-2 Maneuver	-	-	-	-	-	-	368	303	-	337	303	-
Stage 1	-	-	-	-	-	-	645	633	-	532	549	-
Stage 2	-	-	-	-	-	-	689	548	-	787	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.46	0	14.81	10.32
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	390	1071	-	-	1259	-	-	337	758
HCM Lane V/C Ratio	0.059	0.016	-	-	-	-	-	0.006	0.067
HCM Control Delay (s/veh)	14.8	8.4	-	-	0	-	-	15.7	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0	0.2

HCM 7th Roundabout

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes

AM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh	9.8					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		2		1	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	418		506		715	
Demand Flow Rate, veh/h	426		516		729	
Vehicles Circulating, veh/h	236		711		324	
Vehicles Exiting, veh/h	689		342		338	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	5.0		9.3		13.6	
Approach LOS	A		A		B	
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.469	0.531	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	200	226	243	273	729	231
Cap Entry Lane, veh/h	1086	1162	702	776	1078	787
Entry HV Adj Factor	0.981	0.979	0.979	0.983	0.980	0.981
Flow Entry, veh/h	196	221	238	268	715	227
Cap Entry, veh/h	1066	1138	687	763	1057	773
V/C Ratio	0.184	0.194	0.346	0.352	0.676	0.293
Control Delay, s/veh	5.1	4.9	9.7	9.0	13.6	8.1
LOS	A	A	A	A	B	A
95th %tile Queue, veh	1	1	2	2	6	1

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Background Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	0	0	17	0	15	0	473	14	2	190	1
Future Vol, veh/h	1	0	0	17	0	15	0	473	14	2	190	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	0	18	0	16	0	514	15	2	207	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	726	741	207	733	734	522	208	0	0	529	0	0
Stage 1	211	211	-	522	522	-	-	-	-	-	-	-
Stage 2	514	529	-	211	212	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	340	344	833	336	347	555	1363	-	-	1038	-	-
Stage 1	791	727	-	538	531	-	-	-	-	-	-	-
Stage 2	543	527	-	791	727	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	329	344	833	336	347	555	1363	-	-	1038	-	-
Mov Cap-2 Maneuver	329	344	-	336	347	-	-	-	-	-	-	-
Stage 1	789	726	-	538	531	-	-	-	-	-	-	-
Stage 2	527	527	-	790	725	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v15.96		14.54	0	0.09
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	329 412	1038	-	-
HCM Lane V/C Ratio	-	-	-	0.003 0.084	0.002	-	-
HCM Control Delay (s/veh)	0	-	-	16 14.5	8.5	-	-
HCM Lane LOS	A	-	-	C B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0.3	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Background Traffic Volumes
AM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	29	491	4	10	195
Future Vol, veh/h	7	29	491	4	10	195
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	-	-	-	75	-
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	8	32	534	4	11	212

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	770	536	0	0	538
Stage 1	536	-	-	-	-
Stage 2	234	-	-	-	-
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	369	545	-	-	1030
Stage 1	587	-	-	-	-
Stage 2	805	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	365	545	-	-	1030
Mov Cap-2 Maneuver	365	-	-	-	-
Stage 1	587	-	-	-	-
Stage 2	797	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.86	0	0.42
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	497	1030
HCM Lane V/C Ratio	-	-	0.079	0.011
HCM Control Delay (s/veh)	-	-	12.9	8.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Background Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	21	0	11	0	4	4	13	17	2	1	11	43
Future Vol, veh/h	21	0	11	0	4	4	13	17	2	1	11	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	0	12	0	4	4	14	18	2	1	12	47

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	86	86	35	62	109	20	59	0	0	21	0	0
Stage 1	38	38	-	48	48	-	-	-	-	-	-	-
Stage 2	49	49	-	14	61	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	899	804	1037	933	781	1058	1545	-	-	1595	-	-
Stage 1	978	864	-	966	855	-	-	-	-	-	-	-
Stage 2	964	854	-	1006	844	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	882	796	1037	913	774	1058	1545	-	-	1595	-	-
Mov Cap-2 Maneuver	882	796	-	913	774	-	-	-	-	-	-	-
Stage 1	977	863	-	957	847	-	-	-	-	-	-	-
Stage 2	947	846	-	994	844	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.02		9.07		2.99		0.13	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	716	-	-	930	894	28	-
HCM Lane V/C Ratio	0.009	-	-	0.037	0.01	0.001	-
HCM Control Delay (s/veh)	7.4	0	-	9	9.1	7.3	0
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
AM Peak Hour - Year 2027

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Volume (vph)	946	34	40	572	47	29
Future Volume (vph)	946	34	40	572	47	29
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.180		0.950	
Satd. Flow (perm)	1863	1583	335	1863	1770	1583
Satd. Flow (RTOR)		12				32
Lane Group Flow (vph)	1028	37	43	622	51	32
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	86.0	86.0	10.0	96.0	24.0	24.0
Total Split (%)	71.7%	71.7%	8.3%	80.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	94.6	94.6	103.3	103.5	8.8	8.8
Actuated g/C Ratio	0.79	0.79	0.86	0.86	0.07	0.07
v/c Ratio	0.70	0.02	0.11	0.38	0.39	0.22
Control Delay (s/veh)	11.9	3.5	2.5	3.2	60.9	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	11.9	3.5	2.5	3.2	60.9	20.1
LOS	B	A	A	A	E	C
Approach Delay (s/veh)	11.7			3.2	45.2	
Approach LOS	B			A	D	
Queue Length 50th (ft)	394	4	4	90	38	0
Queue Length 95th (ft)	652	15	11	154	78	31
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	1468	1250	359	1606	280	277
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	0.70	0.03	0.12	0.39	0.18	0.12
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
AM Peak Hour - Year 2027

Maximum v/c Ratio: 0.70

Intersection Signal Delay (s/veh): 10.1

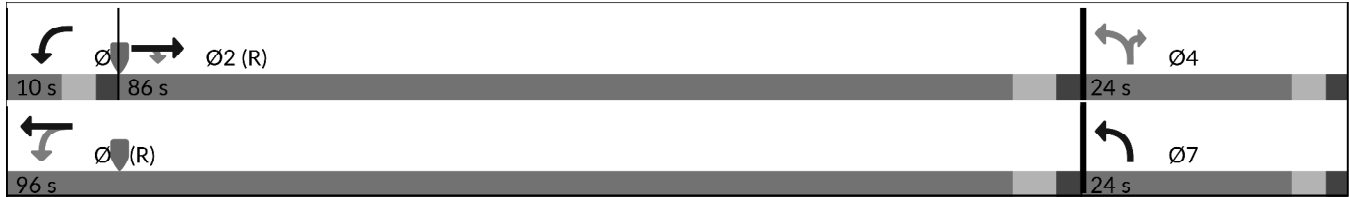
Intersection LOS: B

Intersection Capacity Utilization 63.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Background Traffic Volumes
PM Peak Hour - Year 2027

Intersection					
Intersection Delay, s/veh	3.7				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	358		252		349
Demand Flow Rate, veh/h	365		257		356
Vehicles Circulating, veh/h	177		156		158
Vehicles Exiting, veh/h	158		386		255
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.4		4.8		2.1
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.427	0.573	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	156	209	257	177	179
Cap Entry Lane, veh/h	1147	1222	1244	1242	1938
Entry HV Adj Factor	0.981	0.981	0.981	0.980	0.980
Flow Entry, veh/h	153	205	252	174	175
Cap Entry, veh/h	1125	1198	1220	1217	1900
V/C Ratio	0.136	0.171	0.207	0.143	0.092
Control Delay, s/veh	4.4	4.5	4.8	4.2	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Background Traffic Volumes

PM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh 3.8						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	390		333		21	9
Demand Flow Rate, veh/h	398		339		21	9
Vehicles Circulating, veh/h	18		21		371	337
Vehicles Exiting, veh/h	328		371		45	23
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	3.9		3.7		3.6	3.4
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	187	211	159	180	21	9
Cap Entry Lane, veh/h	1328	1399	1324	1395	1036	1066
Entry HV Adj Factor	0.980	0.980	0.984	0.980	1.000	1.000
Flow Entry, veh/h	183	207	156	176	21	9
Cap Entry, veh/h	1302	1370	1303	1367	1036	1066
V/C Ratio	0.141	0.151	0.120	0.129	0.020	0.008
Control Delay, s/veh	3.9	3.8	3.7	3.7	3.6	3.4
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	0	0	0	0

HCM 7th TWSC

3: Valley Drive & Plum Creek Parkway

Background Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	55	361	16	2	300	0	9	0	0	1	0	35
Future Vol, veh/h	55	361	16	2	300	0	9	0	0	1	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	60	392	17	2	326	0	10	0	0	1	0	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	326	0	0	410	0	0	688	851	205	646	860	163
Stage 1	-	-	-	-	-	-	521	521	-	330	330	-
Stage 2	-	-	-	-	-	-	167	330	-	316	529	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1230	-	-	1146	-	-	333	296	802	356	292	853
Stage 1	-	-	-	-	-	-	507	530	-	657	644	-
Stage 2	-	-	-	-	-	-	818	644	-	670	525	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1230	-	-	1146	-	-	302	281	802	338	277	853
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	281	-	338	277	-
Stage 1	-	-	-	-	-	-	482	504	-	655	643	-
Stage 2	-	-	-	-	-	-	780	643	-	637	500	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.03			0.05			17.33			9.59		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	302	1230	-	-	1146	-	-	338	853
HCM Lane V/C Ratio	0.032	0.049	-	-	0.002	-	-	0.003	0.045
HCM Control Delay (s/veh)	17.3	8.1	-	-	8.1	-	-	15.7	9.4
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0	0.1

HCM 7th Roundabout

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes

PM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh	7.7					
Intersection LOS	A					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	712		375		369	361
Demand Flow Rate, veh/h	726		382		376	369
Vehicles Circulating, veh/h	404		378		484	533
Vehicles Exiting, veh/h	498		482		646	227
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	7.9		5.5		8.5	8.9
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	341	385	180	202	376	369
Cap Entry Lane, veh/h	931	1007	953	1030	941	903
Entry HV Adj Factor	0.982	0.981	0.978	0.983	0.980	0.978
Flow Entry, veh/h	335	377	176	199	369	361
Cap Entry, veh/h	914	988	933	1012	923	883
V/C Ratio	0.366	0.382	0.189	0.196	0.400	0.409
Control Delay, s/veh	8.0	7.8	5.7	5.4	8.5	8.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	2	1	1	2	2

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Background Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	7	0	4	2	169	22	17	333	0
Future Vol, veh/h	0	0	0	7	0	4	2	169	22	17	333	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	8	0	4	2	184	24	18	362	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	587	611	362	599	599	196	362	0	0	208	0	0
Stage 1	399	399	-	200	200	-	-	-	-	-	-	-
Stage 2	188	212	-	399	399	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	421	409	683	414	415	846	1197	-	-	1363	-	-
Stage 1	627	602	-	802	736	-	-	-	-	-	-	-
Stage 2	814	727	-	627	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	413	402	683	407	409	846	1197	-	-	1363	-	-
Mov Cap-2 Maneuver	413	402	-	407	409	-	-	-	-	-	-	-
Stage 1	619	594	-	800	734	-	-	-	-	-	-	-
Stage 2	808	726	-	619	594	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	12.35	0.08	0.37
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1197	-	-	- 502	1363	-	-
HCM Lane V/C Ratio	0.002	-	-	- 0.024	0.014	-	-
HCM Control Delay (s/veh)	8	-	-	0 12.3	7.7	-	-
HCM Lane LOS	A	-	-	A B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	- 0.1	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Background Traffic Volumes
PM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	14	161	6	31	341
Future Vol, veh/h	5	14	161	6	31	341
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	-	-	-	75	-
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	5	15	175	7	34	371

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	616	178	0	0	182
Stage 1	178	-	-	-	-
Stage 2	438	-	-	-	-
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	454	865	-	-	1394
Stage 1	853	-	-	-	-
Stage 2	650	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	443	865	-	-	1394
Mov Cap-2 Maneuver	443	-	-	-	-
Stage 1	853	-	-	-	-
Stage 2	635	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v10.37		0	0.64
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1394
HCM Lane V/C Ratio	-	-	0.03	0.024
HCM Control Delay (s/veh)	-	-	10.4	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Background Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	6	14	0	5	1	5	20	2	8	30	26
Future Vol, veh/h	32	6	14	0	5	1	5	20	2	8	30	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	7	15	0	5	1	5	22	2	9	33	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	99	99	47	87	112	23	61	0	0	24	0	0
Stage 1	64	64	-	34	34	-	-	-	-	-	-	-
Stage 2	35	35	-	53	78	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	882	791	1023	899	778	1054	1542	-	-	1591	-	-
Stage 1	947	841	-	982	867	-	-	-	-	-	-	-
Stage 2	980	866	-	959	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	867	784	1023	870	771	1054	1542	-	-	1591	-	-
Mov Cap-2 Maneuver	867	784	-	870	771	-	-	-	-	-	-	-
Stage 1	941	837	-	979	864	-	-	-	-	-	-	-
Stage 2	970	863	-	932	825	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.31		9.5		1.36		0.91	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	327	-	-	893	807	206	-	-
HCM Lane V/C Ratio	0.004	-	-	0.063	0.008	0.005	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.3	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
PM Peak Hour - Year 2027

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Volume (vph)	867	69	48	481	32	42
Future Volume (vph)	867	69	48	481	32	42
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.222		0.950	
Satd. Flow (perm)	1863	1583	414	1863	1770	1583
Satd. Flow (RTOR)		26				46
Lane Group Flow (vph)	942	75	52	523	35	46
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	86.0	86.0	10.0	96.0	24.0	24.0
Total Split (%)	71.7%	71.7%	8.3%	80.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	95.5	95.5	104.2	104.4	7.9	7.9
Actuated g/C Ratio	0.80	0.80	0.87	0.87	0.07	0.07
v/c Ratio	0.63	0.05	0.12	0.32	0.30	0.31
Control Delay (s/veh)	9.6	3.0	2.1	2.5	59.4	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.6	3.0	2.1	2.5	59.4	20.7
LOS	A	A	A	A	E	C
Approach Delay (s/veh)	9.2			2.5	37.5	
Approach LOS	A			A	D	
Queue Length 50th (ft)	315	8	4	65	26	0
Queue Length 95th (ft)	505	23	11	109	59	37
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	1482	1265	427	1621	280	289
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	0.64	0.06	0.12	0.32	0.13	0.16
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
PM Peak Hour - Year 2027

Maximum v/c Ratio: 0.64

Intersection Signal Delay (s/veh): 8.3

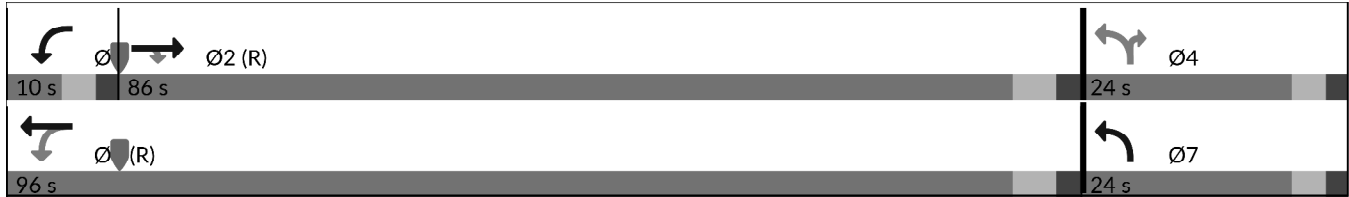
Intersection LOS: A

Intersection Capacity Utilization 59.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	9.5				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	447		802		319
Demand Flow Rate, veh/h	456		818		325
Vehicles Circulating, veh/h	110		285		428
Vehicles Exiting, veh/h	428		281		675
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.5		15.4		1.6
Approach LOS	A		C		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.531	0.469	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	242	214	818	110	215
Cap Entry Lane, veh/h	1220	1293	1115	987	1938
Entry HV Adj Factor	0.979	0.982	0.981	0.980	0.980
Flow Entry, veh/h	237	210	802	108	211
Cap Entry, veh/h	1194	1270	1093	968	1900
V/C Ratio	0.198	0.165	0.734	0.111	0.111
Control Delay, s/veh	4.8	4.2	15.4	4.7	0.0
LOS	A	A	C	A	A
95th %tile Queue, veh	1	1	7	0	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.6						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	450		636		55	31
Demand Flow Rate, veh/h	459		648		56	31
Vehicles Circulating, veh/h	25		56		462	689
Vehicles Exiting, veh/h	695		462		22	15
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.1		4.9		4.4	4.9
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.471	0.529	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	216	243	305	343	56	31
Cap Entry Lane, veh/h	1319	1390	1282	1354	959	791
Entry HV Adj Factor	0.980	0.982	0.979	0.982	0.982	1.000
Flow Entry, veh/h	212	239	299	337	55	31
Cap Entry, veh/h	1293	1366	1256	1330	942	791
V/C Ratio	0.164	0.175	0.238	0.253	0.058	0.039
Control Delay, s/veh	4.1	4.1	4.9	4.9	4.4	4.9
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC

3: Valley Drive & Plum Creek Parkway

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	23	392	6	0	645	3	27	0	3	3	0	68
Future Vol, veh/h	23	392	6	0	645	3	27	0	3	3	0	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	426	7	0	701	3	29	0	3	3	0	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	704	0	0	433	0	0	830	1184	216	964	1184	351
Stage 1	-	-	-	-	-	-	479	479	-	701	701	-
Stage 2	-	-	-	-	-	-	351	704	-	263	483	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	889	-	-	1123	-	-	263	188	788	210	188	646
Stage 1	-	-	-	-	-	-	536	553	-	395	439	-
Stage 2	-	-	-	-	-	-	639	438	-	719	551	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	889	-	-	1123	-	-	226	183	788	203	183	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	183	-	203	183	-
Stage 1	-	-	-	-	-	-	521	538	-	395	439	-
Stage 2	-	-	-	-	-	-	566	438	-	696	536	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.5	0	22.07	11.79
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	243	889	-	-	1123	-	-	203	646
HCM Lane V/C Ratio	0.134	0.028	-	-	-	-	-	0.016	0.114
HCM Control Delay (s/veh)	22.1	9.2	-	-	0	-	-	23	11.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0	0.4

HCM 7th Roundabout

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes

AM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh	40.7					
Intersection LOS	E					
Approach	EB		WB		NB	
Entry Lanes	2		2		1	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	603		732		1033	
Demand Flow Rate, veh/h	615		747		1053	
Vehicles Circulating, veh/h	343		1025		468	
Vehicles Exiting, veh/h	994		496		490	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	6.6		22.0		81.8	
Approach LOS	A		C		F	
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	289	326	351	396	1053	334
Cap Entry Lane, veh/h	985	1061	526	594	954	605
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.981	0.981
Flow Entry, veh/h	283	320	344	388	1033	328
Cap Entry, veh/h	966	1040	516	582	936	594
V/C Ratio	0.294	0.307	0.668	0.667	1.104	0.552
Control Delay, s/veh	6.7	6.5	23.2	21.0	81.8	16.0
LOS	A	A	C	C	F	C
95th %tile Queue, veh	1	1	5	5	27	3

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	2	24	0	21	0	683	20	3	275	2
Future Vol, veh/h	0	0	2	24	0	21	0	683	20	3	275	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	26	0	23	0	742	22	3	299	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1049	1071	300	1059	1061	753	301	0	0	764	0	0
Stage 1	307	307	-	753	753	-	-	-	-	-	-	-
Stage 2	742	764	-	305	308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	221	740	202	224	410	1260	-	-	849	-	-
Stage 1	703	661	-	402	417	-	-	-	-	-	-	-
Stage 2	407	413	-	704	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	220	740	201	223	410	1260	-	-	849	-	-
Mov Cap-2 Maneuver	193	220	-	201	223	-	-	-	-	-	-	-
Stage 1	701	659	-	402	417	-	-	-	-	-	-	-
Stage 2	385	413	-	699	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.88	21.74	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1260	-	-	740	264	849	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.186	0.004	-	-
HCM Control Delay (s/veh)	0	-	-	9.9	21.7	9.3	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	11	42	708	6	15	281
Future Vol, veh/h	11	42	708	6	15	281
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	-	-	-	75	-
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	12	46	770	7	16	305

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1111	773	0	0	776
Stage 1	773	-	-	-	-
Stage 2	338	-	-	-	-
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	231	399	-	-	840
Stage 1	455	-	-	-	-
Stage 2	722	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	227	399	-	-	840
Mov Cap-2 Maneuver	227	-	-	-	-
Stage 1	455	-	-	-	-
Stage 2	708	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	17.53	0	0.47
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	345	840
HCM Lane V/C Ratio	-	-	0.167	0.019
HCM Control Delay (s/veh)	-	-	17.5	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Background Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	30	0	17	0	6	6	18	24	3	2	17	62
Future Vol, veh/h	30	0	17	0	6	6	18	24	3	2	17	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	18	0	7	7	20	26	3	2	18	67

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	125	125	52	90	157	28	86	0	0	29	0	0
Stage 1	57	57	-	67	67	-	-	-	-	-	-	-
Stage 2	68	68	-	23	90	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	849	765	1015	895	735	1048	1510	-	-	1584	-	-
Stage 1	955	848	-	944	839	-	-	-	-	-	-	-
Stage 2	942	838	-	995	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	824	754	1015	866	724	1048	1510	-	-	1584	-	-
Mov Cap-2 Maneuver	824	754	-	866	724	-	-	-	-	-	-	-
Stage 1	954	847	-	931	828	-	-	-	-	-	-	-
Stage 2	916	827	-	976	819	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.32		9.27		2.97		0.18	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	704	-	-	884	856	38	-	-
HCM Lane V/C Ratio	0.013	-	-	0.058	0.015	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.3	9.3	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
AM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1365	50	57	825	68	42
Future Volume (vph)	1365	50	57	825	68	42
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.135		0.950	
Satd. Flow (perm)	3539	1583	251	3539	1770	1583
Satd. Flow (RTOR)		20				46
Lane Group Flow (vph)	1484	54	62	897	74	46
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	82.0	82.0	13.0	95.0	25.0	25.0
Total Split (%)	68.3%	68.3%	10.8%	79.2%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	92.9	92.9	101.9	102.1	10.4	10.2
Actuated g/C Ratio	0.77	0.77	0.85	0.85	0.09	0.09
v/c Ratio	0.54	0.04	0.21	0.29	0.48	0.26
Control Delay (s/veh)	8.1	3.8	3.7	2.7	62.0	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.1	3.8	3.7	2.7	62.0	17.7
LOS	A	A	A	A	E	B
Approach Delay (s/veh)	8.0			2.8	45.1	
Approach LOS	A			A	D	
Queue Length 50th (ft)	248	6	6	67	56	0
Queue Length 95th (ft)	356	20	16	106	103	36
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2740	1230	314	3011	295	302
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	0.54	0.04	0.20	0.30	0.25	0.15
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 70						
Control Type: Actuated-Coordinated						

Timings

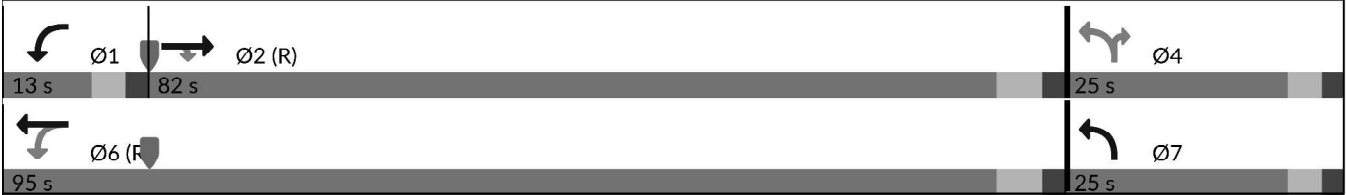
8: Valley Drive & 5th Street

Background Traffic Volumes

AM Peak Hour - Year 2045

Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 7.8	Intersection LOS: A
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	4.6				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	519		364		504
Demand Flow Rate, veh/h	529		371		514
Vehicles Circulating, veh/h	256		226		228
Vehicles Exiting, veh/h	228		559		369
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	5.6		6.2		2.5
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.427	0.573	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	226	303	371	256	258
Cap Entry Lane, veh/h	1067	1142	1172	1170	1938
Entry HV Adj Factor	0.982	0.980	0.982	0.980	0.980
Flow Entry, veh/h	222	297	364	251	253
Cap Entry, veh/h	1048	1120	1150	1147	1900
V/C Ratio	0.212	0.265	0.317	0.219	0.133
Control Delay, s/veh	5.4	5.7	6.2	5.1	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.4						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	563		479		31	13
Demand Flow Rate, veh/h	574		488		31	13
Vehicles Circulating, veh/h	26		31		535	486
Vehicles Exiting, veh/h	473		535		65	33
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.5		4.2		4.3	4.0
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	270	304	229	259	31	13
Cap Entry Lane, veh/h	1318	1389	1312	1383	901	939
Entry HV Adj Factor	0.980	0.981	0.983	0.980	1.000	1.000
Flow Entry, veh/h	265	298	225	254	31	13
Cap Entry, veh/h	1292	1363	1290	1356	901	939
V/C Ratio	0.205	0.219	0.175	0.187	0.034	0.014
Control Delay, s/veh	4.5	4.5	4.3	4.2	4.3	4.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC

3: Valley Drive & Plum Creek Parkway

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	521	23	3	432	0	14	0	0	2	0	51
Future Vol, veh/h	80	521	23	3	432	0	14	0	0	2	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	566	25	3	470	0	15	0	0	2	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	591	0	0	994	1229	296	933	1241	235
Stage 1	-	-	-	-	-	-	753	753	-	476	476	-
Stage 2	-	-	-	-	-	-	241	476	-	457	765	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1088	-	-	980	-	-	199	177	701	221	174	767
Stage 1	-	-	-	-	-	-	368	416	-	539	555	-
Stage 2	-	-	-	-	-	-	741	555	-	553	410	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1088	-	-	980	-	-	170	162	701	203	159	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	170	162	-	203	159	-
Stage 1	-	-	-	-	-	-	339	383	-	537	553	-
Stage 2	-	-	-	-	-	-	685	553	-	509	377	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.1			0.06			28.3			10.55		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	170	1088	-	-	980	-	-	203	767
HCM Lane V/C Ratio	0.09	0.08	-	-	0.003	-	-	0.011	0.072
HCM Control Delay (s/veh)	28.3	8.6	-	-	8.7	-	-	23	10.1
HCM Lane LOS	D	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	0	0.2

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes

PM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh	15.2					
Intersection LOS	C					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	1028		542		533	520
Demand Flow Rate, veh/h	1049		552		544	530
Vehicles Circulating, veh/h	584		547		698	771
Vehicles Exiting, veh/h	717		695		935	328
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	15.0		7.9		18.0	20.2
Approach LOS	B		A		C	C
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	493	556	259	293	544	530
Cap Entry Lane, veh/h	789	864	816	892	785	737
Entry HV Adj Factor	0.980	0.980	0.983	0.980	0.979	0.981
Flow Entry, veh/h	483	545	255	287	533	520
Cap Entry, veh/h	773	847	802	874	768	724
V/C Ratio	0.625	0.643	0.317	0.328	0.693	0.719
Control Delay, s/veh	15.2	14.8	8.1	7.8	18.0	20.2
LOS	C	B	A	A	C	C
95th %tile Queue, veh	4	5	1	1	6	6

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	11	0	6	3	243	32	24	480	0
Future Vol, veh/h	0	0	0	11	0	6	3	243	32	24	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	0	7	3	264	35	26	522	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	845	879	522	862	862	282	522	0	0	299	0	0
Stage 1	574	574	-	288	288	-	-	-	-	-	-	-
Stage 2	271	305	-	574	574	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	283	286	555	275	293	757	1045	-	-	1262	-	-
Stage 1	504	503	-	720	674	-	-	-	-	-	-	-
Stage 2	735	662	-	504	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	274	279	555	269	286	757	1045	-	-	1262	-	-
Mov Cap-2 Maneuver	274	279	-	269	286	-	-	-	-	-	-	-
Stage 1	494	493	-	717	672	-	-	-	-	-	-	-
Stage 2	727	660	-	494	493	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	15.92	0.09	0.38
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1045	-	-	-	348	1262	-
HCM Lane V/C Ratio	0.003	-	-	-	0.053	0.021	-
HCM Control Delay (s/veh)	8.5	-	-	0	15.9	7.9	-
HCM Lane LOS	A	-	-	A	C	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	233	9	45	492
Future Vol, veh/h	8	20	233	9	45	492
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	-	-	-	75	-
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	9	22	253	10	49	535

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	891	258	0	0	263
Stage 1	258	-	-	-	-
Stage 2	633	-	-	-	-
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	313	780	-	-	1301
Stage 1	785	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	301	780	-	-	1301
Mov Cap-2 Maneuver	301	-	-	-	-
Stage 1	785	-	-	-	-
Stage 2	509	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v12.11		0	0.66
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	537	1301
HCM Lane V/C Ratio	-	-	0.057	0.038
HCM Control Delay (s/veh)	-	-	12.1	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Background Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	9	20	0	8	2	8	29	3	12	44	38
Future Vol, veh/h	47	9	20	0	8	2	8	29	3	12	44	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	10	22	0	9	2	9	32	3	13	48	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	148	147	68	129	166	33	89	0	0	35	0	0
Stage 1	95	95	-	51	51	-	-	-	-	-	-	-
Stage 2	53	52	-	79	115	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	820	745	995	843	727	1040	1506	-	-	1577	-	-
Stage 1	912	817	-	962	853	-	-	-	-	-	-	-
Stage 2	959	851	-	930	800	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	797	734	995	802	716	1040	1506	-	-	1577	-	-
Mov Cap-2 Maneuver	797	734	-	802	716	-	-	-	-	-	-	-
Stage 1	904	810	-	957	848	-	-	-	-	-	-	-
Stage 2	942	846	-	891	793	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.8	9.78	1.48	0.93
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	353	-	-	832	764	210	-	-
HCM Lane V/C Ratio	0.006	-	-	0.099	0.014	0.008	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.8	9.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
PM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1251	99	69	693	47	60
Future Volume (vph)	1251	99	69	693	47	60
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.162		0.950	
Satd. Flow (perm)	3539	1583	302	3539	1770	1583
Satd. Flow (RTOR)		43				65
Lane Group Flow (vph)	1360	108	75	753	51	65
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	81.0	81.0	13.0	94.0	26.0	26.0
Total Split (%)	67.5%	67.5%	10.8%	78.3%	21.7%	21.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	94.2	94.2	103.3	103.5	8.8	8.8
Actuated g/C Ratio	0.79	0.79	0.86	0.86	0.07	0.07
v/c Ratio	0.48	0.08	0.22	0.24	0.39	0.36
Control Delay (s/veh)	6.9	3.1	3.2	2.2	61.0	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	6.9	3.1	3.2	2.2	61.0	18.3
LOS	A	A	A	A	E	B
Approach Delay (s/veh)	6.6			2.3	37.1	
Approach LOS	A			A	D	
Queue Length 50th (ft)	203	12	7	48	38	0
Queue Length 95th (ft)	287	31	17	75	78	43
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2779	1252	358	3052	309	330
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	0.49	0.09	0.21	0.25	0.17	0.20
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 65						
Control Type: Actuated-Coordinated						

Timings
8: Valley Drive & 5th Street

Background Traffic Volumes
PM Peak Hour - Year 2045

Maximum v/c Ratio: 0.49

Intersection Signal Delay (s/veh): 6.6

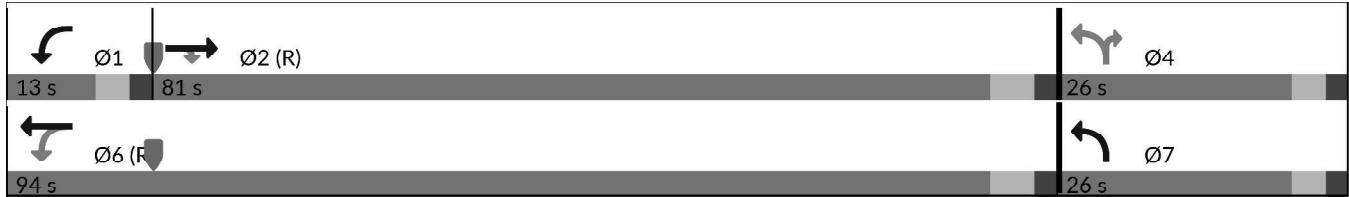
Intersection LOS: A

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection					
Intersection Delay, s/veh	5.5				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	320		554		224
Demand Flow Rate, veh/h	326		565		229
Vehicles Circulating, veh/h	76		208		296
Vehicles Exiting, veh/h	296		195		477
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	3.9		8.2		1.3
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.531	0.469	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	173	153	565	77	152
Cap Entry Lane, veh/h	1259	1331	1190	1104	1938
Entry HV Adj Factor	0.980	0.983	0.980	0.980	0.980
Flow Entry, veh/h	170	150	554	75	149
Cap Entry, veh/h	1234	1309	1166	1083	1900
V/C Ratio	0.137	0.115	0.475	0.070	0.078
Control Delay, s/veh	4.1	3.7	8.2	3.9	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	3	0	0

HCM 7th Roundabout 2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh 4.0						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	324		442		37	45
Demand Flow Rate, veh/h	330		451		38	46
Vehicles Circulating, veh/h	21		44		337	477
Vehicles Exiting, veh/h	502		331		14	18
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	3.7		4.2		3.8	4.3
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	155	175	212	239	38	46
Cap Entry Lane, veh/h	1324	1395	1296	1368	1066	947
Entry HV Adj Factor	0.982	0.981	0.981	0.981	0.974	0.978
Flow Entry, veh/h	152	172	208	234	37	45
Cap Entry, veh/h	1301	1369	1271	1342	1038	926
V/C Ratio	0.117	0.125	0.164	0.175	0.036	0.049
Control Delay, s/veh	3.7	3.6	4.2	4.1	3.8	4.3
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	0	1	1	0	0

HCM 7th TWSC

3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	277	4	0	465	3	19	0	2	7	0	65
Future Vol, veh/h	25	277	4	0	465	3	19	0	2	7	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	301	4	0	505	3	21	0	2	8	0	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	509	0	0	305	0	0	610	866	153	710	865	253
Stage 1	-	-	-	-	-	-	358	358	-	505	505	-
Stage 2	-	-	-	-	-	-	253	509	-	205	360	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1053	-	-	1252	-	-	378	290	866	320	290	747
Stage 1	-	-	-	-	-	-	633	626	-	517	538	-
Stage 2	-	-	-	-	-	-	729	537	-	778	625	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1053	-	-	1252	-	-	334	282	866	311	283	747
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	282	-	311	283	-
Stage 1	-	-	-	-	-	-	617	610	-	517	538	-
Stage 2	-	-	-	-	-	-	660	537	-	756	609	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.7	0	15.86	10.96
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	354	1053	-	-	1252	-	-	311	747
HCM Lane V/C Ratio	0.064	0.026	-	-	-	-	-	0.024	0.095
HCM Control Delay (s/veh)	15.9	8.5	-	-	0	-	-	16.9	10.3
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.1	0.3

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh	10.3					
Intersection LOS	B					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	438		545		719	256
Demand Flow Rate, veh/h	447		556		733	261
Vehicles Circulating, veh/h	247		717		345	734
Vehicles Exiting, veh/h	748		361		349	539
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	5.1		9.9		14.3	9.0
Approach LOS	A		A		B	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	210	237	261	295	733	261
Cap Entry Lane, veh/h	1075	1151	698	772	1059	761
Entry HV Adj Factor	0.981	0.980	0.981	0.979	0.980	0.980
Flow Entry, veh/h	206	232	256	289	719	256
Cap Entry, veh/h	1055	1128	685	755	1038	745
V/C Ratio	0.195	0.206	0.374	0.382	0.692	0.343
Control Delay, s/veh	5.2	5.0	10.2	9.6	14.3	9.0
LOS	A	A	B	A	B	A
95th %tile Queue, veh	1	1	2	2	6	2

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	1	35	0	24	0	476	17	5	199	1
Future Vol, veh/h	0	0	1	35	0	24	0	476	17	5	199	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	38	0	26	0	517	18	5	216	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	745	764	217	754	755	527	217	0	0	536	0	0
Stage 1	228	228	-	527	527	-	-	-	-	-	-	-
Stage 2	517	536	-	227	228	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	330	334	823	326	338	551	1352	-	-	1032	-	-
Stage 1	775	716	-	535	528	-	-	-	-	-	-	-
Stage 2	541	523	-	776	715	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	313	332	823	323	336	551	1352	-	-	1032	-	-
Mov Cap-2 Maneuver	313	332	-	323	336	-	-	-	-	-	-	-
Stage 1	771	712	-	535	528	-	-	-	-	-	-	-
Stage 2	515	523	-	770	711	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.38		16.08		0		0.21	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1352	-	-	823	389	1032	-	-
HCM Lane V/C Ratio	-	-	-	0.001	0.165	0.005	-	-
HCM Control Delay (s/veh)	0	-	-	9.4	16.1	8.5	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	47	500	7	16	198
Future Vol, veh/h	16	47	500	7	16	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	-	-	-	75	-
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	17	51	543	8	17	215

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	797	547	0	0	551
Stage 1	547	-	-	-	-
Stage 2	250	-	-	-	-
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	355	537	-	-	1019
Stage 1	580	-	-	-	-
Stage 2	792	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	349	537	-	-	1019
Mov Cap-2 Maneuver	349	-	-	-	-
Stage 1	580	-	-	-	-
Stage 2	778	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v13.91		0	0.64
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	472	1019
HCM Lane V/C Ratio	-	-	0.145	0.017
HCM Control Delay (s/veh)	-	-	13.9	8.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	0	23	0	4	4	50	17	48	1	26	43
Future Vol, veh/h	21	0	23	0	4	4	50	17	48	1	26	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	0	25	0	4	4	54	18	52	1	28	47

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	183	233	52	184	230	45	75	0	0	71	0	0
Stage 1	54	54	-	153	153	-	-	-	-	-	-	-
Stage 2	129	179	-	30	77	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	778	667	1016	777	669	1025	1524	-	-	1530	-	-
Stage 1	959	850	-	849	771	-	-	-	-	-	-	-
Stage 2	874	751	-	986	831	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	740	642	1016	729	644	1025	1524	-	-	1530	-	-
Mov Cap-2 Maneuver	740	642	-	729	644	-	-	-	-	-	-	-
Stage 1	958	849	-	817	742	-	-	-	-	-	-	-
Stage 2	833	723	-	961	830	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.42		9.6		3.24		0.11	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	682	-	-	863	791	23	-	-
HCM Lane V/C Ratio	0.036	-	-	0.055	0.011	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.4	9.6	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
AM Peak Hour - Year 2027

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Volume (vph)	946	43	46	572	75	47
Future Volume (vph)	946	43	46	572	75	47
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.169		0.950	
Satd. Flow (perm)	1863	1583	315	1863	1770	1583
Satd. Flow (RTOR)		15				51
Lane Group Flow (vph)	1028	47	50	622	82	51
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	86.0	86.0	10.0	96.0	24.0	24.0
Total Split (%)	71.7%	71.7%	8.3%	80.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	92.6	92.6	101.4	101.6	10.9	10.7
Actuated g/C Ratio	0.77	0.77	0.85	0.85	0.09	0.09
v/c Ratio	0.71	0.03	0.14	0.39	0.51	0.27
Control Delay (s/veh)	13.8	4.2	3.2	3.8	62.4	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	13.8	4.2	3.2	3.8	62.4	16.8
LOS	B	A	A	A	E	B
Approach Delay (s/veh)	13.5			3.8	45.0	
Approach LOS	B			A	D	
Queue Length 50th (ft)	431	6	5	103	62	0
Queue Length 95th (ft)	729	20	15	181	111	38
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	1436	1224	340	1577	280	293
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	0.72	0.04	0.15	0.39	0.29	0.17

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
AM Peak Hour - Year 2027

Maximum v/c Ratio: 0.72

Intersection Signal Delay (s/veh): 12.2

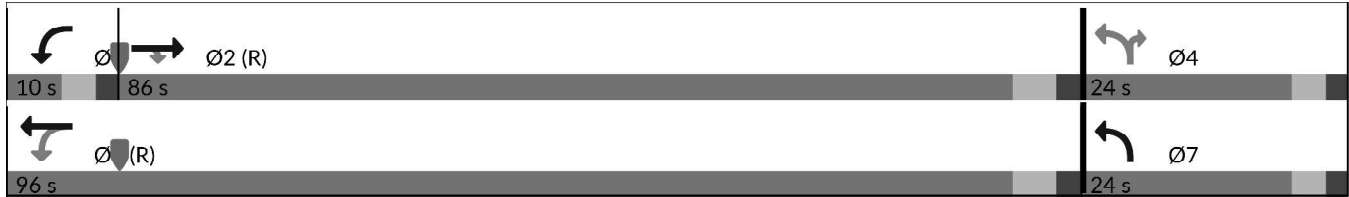
Intersection LOS: B

Intersection Capacity Utilization 63.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	18	6	4	6	14
Future Vol, veh/h	9	18	6	4	6	14
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	20	7	4	7	15

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	37	9	0	0	11
Stage 1	9	-	-	-	-
Stage 2	28	-	-	-	-
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	975	1073	-	-	1608
Stage 1	1014	-	-	-	-
Stage 2	994	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	971	1073	-	-	1608
Mov Cap-2 Maneuver	971	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	990	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.57	0	2.17
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1037	540
HCM Lane V/C Ratio	-	-	0.028	0.004
HCM Control Delay (s/veh)	-	-	8.6	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
10: Eaton Street & Internal Drive/Santana Drive

Total Traffic Volumes
AM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	4	4	2	4	10	2	2	4	2	4	15	15
Future Vol, veh/h	4	4	2	4	10	2	2	4	2	4	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	2	4	11	2	2	4	2	4	16	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	47	44	24	37	51	5	33	0	0	7	0	0
Stage 1	33	33	-	10	10	-	-	-	-	-	-	-
Stage 2	14	11	-	27	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	954	848	1052	968	840	1078	1579	-	-	1614	-	-
Stage 1	983	867	-	1011	887	-	-	-	-	-	-	-
Stage 2	1006	887	-	990	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	936	844	1052	958	837	1078	1579	-	-	1614	-	-
Mov Cap-2 Maneuver	936	844	-	958	837	-	-	-	-	-	-	-
Stage 1	980	865	-	1010	886	-	-	-	-	-	-	-
Stage 2	990	885	-	980	858	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	8.98		9.13		1.82		0.85	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	422	-	-	916	890	193	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.02	0.003	-	-
HCM Control Delay (s/veh)	7.3	0	-	9	9.1	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection					
Intersection Delay, s/veh	3.6				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	365		252		360
Demand Flow Rate, veh/h	372		257		367
Vehicles Circulating, veh/h	177		163		158
Vehicles Exiting, veh/h	158		386		262
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.5		4.8		2.0
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.438	0.562	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	163	209	257	177	190
Cap Entry Lane, veh/h	1147	1222	1236	1242	1938
Entry HV Adj Factor	0.982	0.981	0.981	0.980	0.980
Flow Entry, veh/h	160	205	252	174	186
Cap Entry, veh/h	1126	1198	1213	1217	1900
V/C Ratio	0.142	0.171	0.208	0.143	0.098
Control Delay, s/veh	4.4	4.5	4.8	4.2	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

HCM 7th Roundabout

2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh 3.9						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	414		344		21	25
Demand Flow Rate, veh/h	423		350		21	25
Vehicles Circulating, veh/h	21		43		399	342
Vehicles Exiting, veh/h	346		377		45	51
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.0		3.8		3.7	3.6
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	199	224	165	185	21	25
Cap Entry Lane, veh/h	1324	1395	1297	1369	1012	1062
Entry HV Adj Factor	0.978	0.980	0.979	0.985	1.000	1.000
Flow Entry, veh/h	195	219	162	182	21	25
Cap Entry, veh/h	1295	1366	1270	1348	1012	1062
V/C Ratio	0.150	0.161	0.127	0.135	0.021	0.024
Control Delay, s/veh	4.0	3.9	3.9	3.8	3.7	3.6
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	0	0	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	86	381	16	2	312	5	9	0	0	4	0	47
Future Vol, veh/h	86	381	16	2	312	5	9	0	0	4	0	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	93	414	17	2	339	5	10	0	0	4	0	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	345	0	0	432	0	0	784	959	216	738	962	170
Stage 1	-	-	-	-	-	-	610	610	-	343	343	-
Stage 2	-	-	-	-	-	-	174	349	-	394	618	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1211	-	-	1124	-	-	284	256	789	306	255	845
Stage 1	-	-	-	-	-	-	448	483	-	645	636	-
Stage 2	-	-	-	-	-	-	811	632	-	602	479	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1211	-	-	1124	-	-	245	235	789	282	234	845
Mov Cap-2 Maneuver	-	-	-	-	-	-	245	235	-	282	234	-
Stage 1	-	-	-	-	-	-	414	446	-	644	634	-
Stage 2	-	-	-	-	-	-	760	631	-	556	442	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.46			0.05			20.28			10.2		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	245	1211	-	-	1124	-	-	282	845
HCM Lane V/C Ratio	0.04	0.077	-	-	0.002	-	-	0.015	0.06
HCM Control Delay (s/veh)	20.3	8.2	-	-	8.2	-	-	18	9.5
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0	0.2

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection						
Intersection Delay, s/veh	8.4					
Intersection LOS	A					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	779		402		379	381
Demand Flow Rate, veh/h	795		410		386	389
Vehicles Circulating, veh/h	411		401		553	561
Vehicles Exiting, veh/h	539		538		653	250
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	8.5		5.8		9.5	9.6
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	374	421	193	217	386	389
Cap Entry Lane, veh/h	925	1001	933	1010	887	881
Entry HV Adj Factor	0.979	0.981	0.980	0.983	0.981	0.979
Flow Entry, veh/h	366	413	189	213	379	381
Cap Entry, veh/h	906	982	914	992	870	863
V/C Ratio	0.404	0.420	0.207	0.215	0.435	0.441
Control Delay, s/veh	8.7	8.4	6.0	5.7	9.5	9.6
LOS	A	A	A	A	A	A
95th %tile Queue, veh	2	2	1	1	2	2

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	19	0	10	2	179	32	27	340	0
Future Vol, veh/h	0	0	0	19	0	10	2	179	32	27	340	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	21	0	11	2	195	35	29	370	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	627	662	370	645	645	212	370	0	0	229	0	0
Stage 1	428	428	-	216	216	-	-	-	-	-	-	-
Stage 2	199	234	-	428	428	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	396	382	676	385	391	828	1189	-	-	1339	-	-
Stage 1	605	584	-	786	724	-	-	-	-	-	-	-
Stage 2	803	711	-	605	584	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	381	373	676	376	382	828	1189	-	-	1339	-	-
Mov Cap-2 Maneuver	381	373	-	376	382	-	-	-	-	-	-	-
Stage 1	591	572	-	785	722	-	-	-	-	-	-	-
Stage 2	791	710	-	591	572	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	13.33	0.08	0.57
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1189	-	-	-	464	1339	-
HCM Lane V/C Ratio	0.002	-	-	-	0.068	0.022	-
HCM Control Delay (s/veh)	8	-	-	0	13.3	7.7	-
HCM Lane LOS	A	-	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	26	167	16	51	351
Future Vol, veh/h	12	26	167	16	51	351
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	-	-	-	75	-
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	13	28	182	17	55	382

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	683	190	0	0	199
Stage 1	190	-	-	-	-
Stage 2	492	-	-	-	-
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	415	852	-	-	1373
Stage 1	842	-	-	-	-
Stage 2	614	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	398	852	-	-	1373
Mov Cap-2 Maneuver	398	-	-	-	-
Stage 1	842	-	-	-	-
Stage 2	589	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.15	0	0.98
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	626	1373
HCM Lane V/C Ratio	-	-	0.066	0.04
HCM Control Delay (s/veh)	-	-	11.2	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	32	6	55	0	5	1	29	20	32	8	81	26
Future Vol, veh/h	32	6	55	0	5	1	29	20	32	8	81	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	7	60	0	5	1	32	22	35	9	88	28

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	207	239	102	211	236	39	116	0	0	57	0	0
Stage 1	120	120	-	102	102	-	-	-	-	-	-	-
Stage 2	88	120	-	109	134	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	750	662	953	746	665	1032	1472	-	-	1548	-	-
Stage 1	885	797	-	904	811	-	-	-	-	-	-	-
Stage 2	920	797	-	897	786	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	723	643	953	673	646	1032	1472	-	-	1548	-	-
Mov Cap-2 Maneuver	723	643	-	673	646	-	-	-	-	-	-	-
Stage 1	879	792	-	884	793	-	-	-	-	-	-	-
Stage 2	893	779	-	828	781	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.9		10.27		2.68		0.51	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	574	-	-	835	689	119	-	-
HCM Lane V/C Ratio	0.021	-	-	0.121	0.009	0.006	-	-
HCM Control Delay (s/veh)	7.5	0	-	9.9	10.3	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
PM Peak Hour - Year 2027

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Volume (vph)	867	100	68	481	50	54
Future Volume (vph)	867	100	68	481	50	54
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.215		0.950	
Satd. Flow (perm)	1863	1583	400	1863	1770	1583
Satd. Flow (RTOR)		37				59
Lane Group Flow (vph)	942	109	74	523	54	59
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	86.0	86.0	10.0	96.0	24.0	24.0
Total Split (%)	71.7%	71.7%	8.3%	80.0%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	94.0	94.0	103.1	103.3	9.0	9.0
Actuated g/C Ratio	0.78	0.78	0.86	0.86	0.08	0.08
v/c Ratio	0.64	0.08	0.17	0.32	0.40	0.34
Control Delay (s/veh)	10.7	3.4	2.7	2.9	61.1	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.7	3.4	2.7	2.9	61.1	18.2
LOS	B	A	A	A	E	B
Approach Delay (s/veh)	10.0			2.9	38.8	
Approach LOS	B			A	D	
Queue Length 50th (ft)	335	13	7	71	41	0
Queue Length 95th (ft)	553	33	17	123	81	41
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	1460	1248	416	1603	280	300
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	0.65	0.09	0.18	0.33	0.19	0.20
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 90						
Control Type: Actuated-Coordinated						

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
PM Peak Hour - Year 2027

Maximum v/c Ratio: 0.65

Intersection Signal Delay (s/veh): 9.5

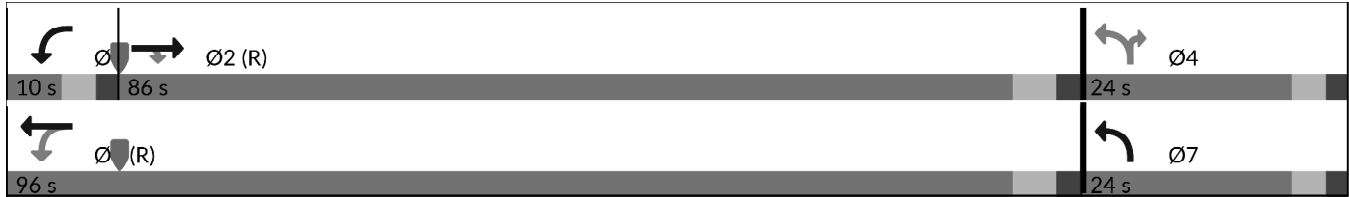
Intersection LOS: A

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	12	20	16	20	9
Future Vol, veh/h	6	12	20	16	20	9
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	13	22	17	22	10

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	84	30	0	0	39
Stage 1	30	-	-	-	-
Stage 2	53	-	-	-	-
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	918	1044	-	-	1571
Stage 1	992	-	-	-	-
Stage 2	969	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	905	1044	-	-	1571
Mov Cap-2 Maneuver	905	-	-	-	-
Stage 1	992	-	-	-	-
Stage 2	956	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.7	0	5.05
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1241
HCM Lane V/C Ratio	-	-	0.02	0.014
HCM Control Delay (s/veh)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
10: Eaton Street & Internal Drive/Santana Drive

Total Traffic Volumes
PM Peak Hour - Year 2027

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	15	7	2	5	4	5	15	5	2	6	8
Future Vol, veh/h	14	15	7	2	5	4	5	15	5	2	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	16	8	2	5	4	5	16	5	2	7	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	45	48	11	49	49	19	15	0	0	22	0	0
Stage 1	15	15	-	30	30	-	-	-	-	-	-	-
Stage 2	30	33	-	19	20	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	957	844	1070	951	842	1059	1603	-	-	1594	-	-
Stage 1	1005	883	-	987	870	-	-	-	-	-	-	-
Stage 2	987	868	-	1000	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	942	840	1070	922	838	1059	1603	-	-	1594	-	-
Mov Cap-2 Maneuver	942	840	-	922	838	-	-	-	-	-	-	-
Stage 1	1003	882	-	983	867	-	-	-	-	-	-	-
Stage 2	973	865	-	973	878	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.1		8.95		1.45		0.91	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	343	-	-	917	923	202	-	-
HCM Lane V/C Ratio	0.003	-	-	0.043	0.013	0.001	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.1	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	9.7				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	458		802		322
Demand Flow Rate, veh/h	467		818		328
Vehicles Circulating, veh/h	110		296		428
Vehicles Exiting, veh/h	428		281		686
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.5		15.9		1.6
Approach LOS	A		C		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.531	0.469	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	248	219	818	110	218
Cap Entry Lane, veh/h	1220	1293	1104	987	1938
Entry HV Adj Factor	0.979	0.983	0.981	0.980	0.980
Flow Entry, veh/h	243	215	802	108	214
Cap Entry, veh/h	1194	1271	1083	968	1900
V/C Ratio	0.203	0.169	0.741	0.111	0.113
Control Delay, s/veh	4.8	4.3	15.9	4.7	0.0
LOS	A	A	C	A	A
95th %tile Queue, veh	1	1	7	0	0

HCM 7th Roundabout 2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.7						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	462		640		55	57
Demand Flow Rate, veh/h	471		652		56	58
Vehicles Circulating, veh/h	31		62		480	690
Vehicles Exiting, veh/h	717		474		22	24
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.2		5.0		4.4	5.4
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.469	0.531	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	221	250	306	346	56	58
Cap Entry Lane, veh/h	1312	1383	1275	1347	944	790
Entry HV Adj Factor	0.983	0.980	0.982	0.980	0.982	0.983
Flow Entry, veh/h	217	245	301	339	55	57
Cap Entry, veh/h	1290	1356	1252	1320	927	776
V/C Ratio	0.168	0.181	0.240	0.257	0.059	0.073
Control Delay, s/veh	4.2	4.1	5.0	5.0	4.4	5.4
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	32	398	6	0	663	4	27	0	3	8	0	86
Future Vol, veh/h	32	398	6	0	663	4	27	0	3	8	0	86
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	433	7	0	721	4	29	0	3	9	0	93

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	725	0	0	439	0	0	866	1230	220	1007	1229	360
Stage 1	-	-	-	-	-	-	505	505	-	721	721	-
Stage 2	-	-	-	-	-	-	360	725	-	286	509	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	874	-	-	1117	-	-	247	176	784	195	176	636
Stage 1	-	-	-	-	-	-	517	538	-	385	430	-
Stage 2	-	-	-	-	-	-	631	428	-	697	537	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	874	-	-	1117	-	-	203	169	784	187	169	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	169	-	187	169	-
Stage 1	-	-	-	-	-	-	497	517	-	385	430	-
Stage 2	-	-	-	-	-	-	538	428	-	667	515	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.68		0	24.32	12.79
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	219	874	-	-	1117	-	-	187	636
HCM Lane V/C Ratio	0.149	0.04	-	-	-	-	-	0.047	0.147
HCM Control Delay (s/veh)	24.3	9.3	-	-	0	-	-	25.2	11.6
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.1	0.5

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection							
Intersection Delay, s/veh	44.3						
Intersection LOS	E						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	624		771		1036		357
Demand Flow Rate, veh/h	636		786		1056		363
Vehicles Circulating, veh/h	353		1032		489		1042
Vehicles Exiting, veh/h	1052		513		500		776
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	6.8		24.4		90.4		19.0
Approach LOS	A		C		F		C
Lane	Left	Right	Left	Right	Left	Left	
Designated Moves	LT	TR	LT	TR	LTR	LTR	
Assumed Moves	LT	TR	LT	TR	LTR	LTR	
RT Channelized							
Lane Util	0.470	0.530	0.469	0.531	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	299	337	369	417	1056	363	
Cap Entry Lane, veh/h	976	1052	522	591	937	586	
Entry HV Adj Factor	0.981	0.981	0.982	0.980	0.981	0.983	
Flow Entry, veh/h	293	331	362	408	1036	357	
Cap Entry, veh/h	957	1032	513	579	919	575	
V/C Ratio	0.306	0.320	0.706	0.706	1.127	0.620	
Control Delay, s/veh	6.9	6.7	25.7	23.3	90.4	19.0	
LOS	A	A	D	C	F	C	
95th %tile Queue, veh	1	1	6	6	28	4	

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	2	42	0	30	0	686	23	6	284	2
Future Vol, veh/h	0	0	2	42	0	30	0	686	23	6	284	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	46	0	33	0	746	25	7	309	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1068	1093	310	1080	1082	758	311	0	0	771	0	0
Stage 1	323	323	-	758	758	-	-	-	-	-	-	-
Stage 2	746	771	-	322	324	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	199	214	730	196	217	407	1250	-	-	844	-	-
Stage 1	689	650	-	399	415	-	-	-	-	-	-	-
Stage 2	406	410	-	690	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	182	212	730	194	216	407	1250	-	-	844	-	-
Mov Cap-2 Maneuver	182	212	-	194	216	-	-	-	-	-	-	-
Stage 1	684	645	-	399	415	-	-	-	-	-	-	-
Stage 2	373	410	-	683	645	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.94	26.1	0	0.19
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1250	-	-	730	248	844	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.316	0.008	-	-
HCM Control Delay (s/veh)	0	-	-	9.9	26.1	9.3	-	-
HCM Lane LOS	A	-	-	A	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.3	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	60	717	9	21	284
Future Vol, veh/h	20	60	717	9	21	284
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	-	-	-	75	-
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	22	65	779	10	23	309

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1139	784	0	0	789	0
Stage 1	784	-	-	-	-	-
Stage 2	354	-	-	-	-	-
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	223	393	-	-	831	-
Stage 1	450	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	217	393	-	-	831	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v19.98		0	0.65
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	327	831
HCM Lane V/C Ratio	-	-	0.266	0.027
HCM Control Delay (s/veh)	-	-	20	9.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	0	29	0	6	6	55	70	3	2	32	62
Future Vol, veh/h	30	0	29	0	6	6	55	70	3	2	32	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	32	0	7	7	60	76	3	2	35	67

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	272	272	68	236	304	78	102	0	0	79	0	0
Stage 1	73	73	-	197	197	-	-	-	-	-	-	-
Stage 2	199	199	-	39	107	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	681	635	995	718	609	983	1490	-	-	1519	-	-
Stage 1	937	834	-	805	738	-	-	-	-	-	-	-
Stage 2	803	736	-	976	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	640	607	995	665	583	983	1490	-	-	1519	-	-
Mov Cap-2 Maneuver	640	607	-	665	583	-	-	-	-	-	-	-
Stage 1	935	833	-	771	707	-	-	-	-	-	-	-
Stage 2	757	706	-	944	806	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.06		10.01	3.23	0.15
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	767	-	-	776 732	33	-	-
HCM Lane V/C Ratio	0.04	-	-	0.083 0.018	0.001	-	-
HCM Control Delay (s/veh)	7.5	0	-	10.1 10	7.4	0	-
HCM Lane LOS	A	A	-	B B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3 0.1	0	-	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
AM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1365	59	63	825	96	60
Future Volume (vph)	1365	59	63	825	96	60
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.128		0.950	
Satd. Flow (perm)	3539	1583	238	3539	1770	1583
Satd. Flow (RTOR)		24				65
Lane Group Flow (vph)	1484	64	68	897	104	65
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	82.0	82.0	13.0	95.0	25.0	25.0
Total Split (%)	68.3%	68.3%	10.8%	79.2%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	87.3	87.3	97.6	96.6	12.4	12.4
Actuated g/C Ratio	0.73	0.73	0.81	0.81	0.10	0.10
v/c Ratio	0.57	0.05	0.24	0.31	0.57	0.29
Control Delay (s/veh)	9.8	4.3	4.7	3.6	62.8	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.8	4.3	4.7	3.6	62.8	14.7
LOS	A	A	A	A	E	B
Approach Delay (s/veh)	9.6			3.7	44.4	
Approach LOS	A			A	D	
Queue Length 50th (ft)	268	8	8	76	78	0
Queue Length 95th (ft)	391	25	20	121	131	41
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2574	1158	295	2849	295	318
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	0.58	0.06	0.23	0.31	0.35	0.20
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 70						
Control Type: Actuated-Coordinated						

Timings

8: Valley Drive & 5th Street

Total Traffic Volumes

AM Peak Hour - Year 2045

Maximum v/c Ratio: 0.58	
Intersection Signal Delay (s/veh): 9.7	Intersection LOS: A
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	4.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	18	6	4	6	14
Future Vol, veh/h	9	18	6	4	6	14
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	20	7	4	7	15

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	37	9	0	0	11
Stage 1	9	-	-	-	-
Stage 2	28	-	-	-	-
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	975	1073	-	-	1608
Stage 1	1014	-	-	-	-
Stage 2	994	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	971	1073	-	-	1608
Mov Cap-2 Maneuver	971	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	990	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.57	0	2.17
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1037	540
HCM Lane V/C Ratio	-	-	0.028	0.004
HCM Control Delay (s/veh)	-	-	8.6	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
10: Eaton Street & Internal Drive/Santana Drive

Total Traffic Volumes
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	4	2	4	10	2	2	4	2	4	15	15
Future Vol, veh/h	4	4	2	4	10	2	2	4	2	4	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	2	4	11	2	2	4	2	4	16	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	47	44	24	37	51	5	33	0	0	7	0	0
Stage 1	33	33	-	10	10	-	-	-	-	-	-	-
Stage 2	14	11	-	27	41	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	954	848	1052	968	840	1078	1579	-	-	1614	-	-
Stage 1	983	867	-	1011	887	-	-	-	-	-	-	-
Stage 2	1006	887	-	990	861	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	936	844	1052	958	837	1078	1579	-	-	1614	-	-
Mov Cap-2 Maneuver	936	844	-	958	837	-	-	-	-	-	-	-
Stage 1	980	865	-	1010	886	-	-	-	-	-	-	-
Stage 2	990	885	-	980	858	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	8.98		9.13		1.82		0.85	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	422	-	-	916	890	193	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.02	0.003	-	-
HCM Control Delay (s/veh)	7.3	0	-	9	9.1	7.2	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	4.6				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	525		364		515
Demand Flow Rate, veh/h	536		371		525
Vehicles Circulating, veh/h	256		233		228
Vehicles Exiting, veh/h	228		559		376
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	5.6		6.2		2.5
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.435	0.565	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	233	303	371	256	269
Cap Entry Lane, veh/h	1067	1142	1165	1170	1938
Entry HV Adj Factor	0.979	0.980	0.982	0.980	0.980
Flow Entry, veh/h	228	297	364	251	264
Cap Entry, veh/h	1044	1120	1144	1147	1900
V/C Ratio	0.218	0.265	0.318	0.219	0.139
Control Delay, s/veh	5.5	5.7	6.2	5.1	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0

HCM 7th Roundabout
2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.5						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	588		490		31	29
Demand Flow Rate, veh/h	600		500		31	29
Vehicles Circulating, veh/h	29		54		564	492
Vehicles Exiting, veh/h	492		541		65	62
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.6		4.4		4.4	4.1
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	282	318	235	265	31	29
Cap Entry Lane, veh/h	1314	1386	1284	1356	879	935
Entry HV Adj Factor	0.980	0.980	0.980	0.980	1.000	1.000
Flow Entry, veh/h	276	312	230	260	31	29
Cap Entry, veh/h	1288	1358	1259	1329	879	935
V/C Ratio	0.215	0.230	0.183	0.195	0.035	0.031
Control Delay, s/veh	4.6	4.6	4.4	4.3	4.4	4.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	111	541	23	3	444	5	14	0	0	5	0	63
Future Vol, veh/h	111	541	23	3	444	5	14	0	0	5	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	588	25	3	483	5	15	0	0	5	0	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	488	0	0	613	0	0	1090	1336	307	1024	1343	241
Stage 1	-	-	-	-	-	-	842	842	-	489	489	-
Stage 2	-	-	-	-	-	-	248	495	-	535	854	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1071	-	-	962	-	-	170	152	689	189	151	760
Stage 1	-	-	-	-	-	-	325	378	-	529	548	-
Stage 2	-	-	-	-	-	-	734	544	-	497	373	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1071	-	-	962	-	-	137	135	689	168	133	760
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	135	-	168	133	-
Stage 1	-	-	-	-	-	-	289	336	-	527	546	-
Stage 2	-	-	-	-	-	-	666	543	-	441	331	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.44			0.06			34.65			11.46		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	137	1071	-	-	962	-	-	168	760
HCM Lane V/C Ratio	0.111	0.113	-	-	0.003	-	-	0.032	0.09
HCM Control Delay (s/veh)	34.7	8.8	-	-	8.8	-	-	27.2	10.2
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.4	0.4	-	-	0	-	-	0.1	0.3

HCM 7th Roundabout
4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh	17.4					
Intersection LOS	C					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	1094		567		544	541
Demand Flow Rate, veh/h	1116		579		555	552
Vehicles Circulating, veh/h	591		569		765	798
Vehicles Exiting, veh/h	759		751		942	350
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	16.8		8.4		21.9	23.6
Approach LOS	C		A		C	C
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	525	591	272	307	555	552
Cap Entry Lane, veh/h	784	859	800	875	741	721
Entry HV Adj Factor	0.980	0.981	0.980	0.980	0.979	0.980
Flow Entry, veh/h	514	580	267	301	544	541
Cap Entry, veh/h	768	843	784	858	726	706
V/C Ratio	0.670	0.688	0.340	0.351	0.749	0.766
Control Delay, s/veh	17.0	16.6	8.6	8.2	21.9	23.6
LOS	C	C	A	A	C	C
95th %tile Queue, veh	5	6	2	2	7	7

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	23	0	12	3	253	42	34	487	0
Future Vol, veh/h	0	0	0	23	0	12	3	253	42	34	487	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	25	0	13	3	275	46	37	529	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	885	930	529	908	908	298	529	0	0	321	0	0
Stage 1	603	603	-	304	304	-	-	-	-	-	-	-
Stage 2	282	327	-	603	603	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	267	549	256	275	742	1038	-	-	1239	-	-
Stage 1	486	488	-	705	663	-	-	-	-	-	-	-
Stage 2	725	648	-	486	488	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	252	258	549	248	266	742	1038	-	-	1239	-	-
Mov Cap-2 Maneuver	252	258	-	248	266	-	-	-	-	-	-	-
Stage 1	471	474	-	703	661	-	-	-	-	-	-	-
Stage 2	710	646	-	471	474	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	17.7	0.09	0.52
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	-	321	1239	-
HCM Lane V/C Ratio	0.003	-	-	-	0.118	0.03	-
HCM Control Delay (s/veh)	8.5	-	-	0	17.7	8	-
HCM Lane LOS	A	-	-	A	C	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0.1	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	32	239	19	65	502
Future Vol, veh/h	15	32	239	19	65	502
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	-	-	-	75	-
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	16	35	260	21	71	546

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	957	270	0	0	280
Stage 1	270	-	-	-	-
Stage 2	687	-	-	-	-
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	286	769	-	-	1282
Stage 1	775	-	-	-	-
Stage 2	499	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	270	769	-	-	1282
Mov Cap-2 Maneuver	270	-	-	-	-
Stage 1	775	-	-	-	-
Stage 2	472	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v13.32		0	0.91
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	1282
HCM Lane V/C Ratio	-	-	0.106	0.055
HCM Control Delay (s/veh)	-	-	13.3	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	9	61	0	8	2	32	59	3	12	95	38
Future Vol, veh/h	47	9	61	0	8	2	32	59	3	12	95	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	10	66	0	9	2	35	64	3	13	103	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	288	287	124	270	306	66	145	0	0	67	0	0
Stage 1	150	150	-	135	135	-	-	-	-	-	-	-
Stage 2	138	137	-	134	171	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	664	623	927	683	608	998	1438	-	-	1534	-	-
Stage 1	853	773	-	868	784	-	-	-	-	-	-	-
Stage 2	865	783	-	869	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	631	601	927	603	587	998	1438	-	-	1534	-	-
Mov Cap-2 Maneuver	631	601	-	603	587	-	-	-	-	-	-	-
Stage 1	845	766	-	846	765	-	-	-	-	-	-	-
Stage 2	832	763	-	789	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.75		10.73	2.58	0.61
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	607	-	-	753	640	141	-
HCM Lane V/C Ratio	0.024	-	-	0.169	0.017	0.009	-
HCM Control Delay (s/veh)	7.6	0	-	10.7	10.7	7.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes
PM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1251	130	89	693	65	72
Future Volume (vph)	1251	130	89	693	65	72
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.157		0.950	
Satd. Flow (perm)	3539	1583	292	3539	1770	1583
Satd. Flow (RTOR)		54				78
Lane Group Flow (vph)	1360	141	97	753	71	78
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	79.0	79.0	16.0	95.0	25.0	25.0
Total Split (%)	65.8%	65.8%	13.3%	79.2%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	89.4	89.4	102.1	102.3	10.2	10.0
Actuated g/C Ratio	0.75	0.75	0.85	0.85	0.09	0.08
v/c Ratio	0.51	0.11	0.29	0.24	0.47	0.38
Control Delay (s/veh)	8.0	3.6	4.2	2.5	61.9	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.0	3.6	4.2	2.5	61.9	16.3
LOS	A	A	A	A	E	B
Approach Delay (s/veh)	7.7			2.7	38.1	
Approach LOS	A			A	D	
Queue Length 50th (ft)	216	17	10	53	53	0
Queue Length 95th (ft)	313	42	23	84	99	46
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2636	1193	383	3015	295	328
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	0.52	0.12	0.25	0.25	0.24	0.24
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 65						
Control Type: Actuated-Coordinated						

Timings

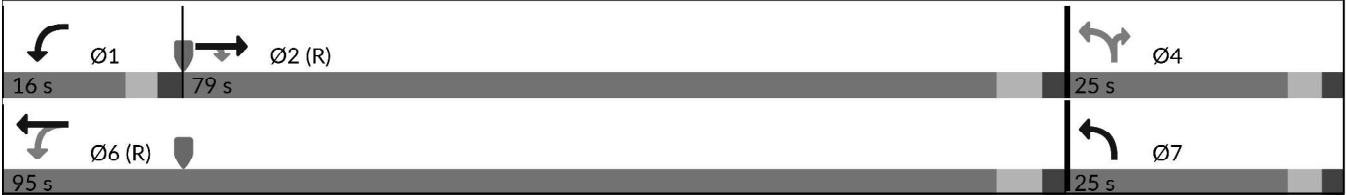
8: Valley Drive & 5th Street

Total Traffic Volumes

PM Peak Hour - Year 2045

Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 7.8	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	12	20	16	20	9
Future Vol, veh/h	6	12	20	16	20	9
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	13	22	17	22	10

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	84	30	0	0	39
Stage 1	30	-	-	-	-
Stage 2	53	-	-	-	-
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	918	1044	-	-	1571
Stage 1	992	-	-	-	-
Stage 2	969	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	905	1044	-	-	1571
Mov Cap-2 Maneuver	905	-	-	-	-
Stage 1	992	-	-	-	-
Stage 2	956	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.7	0	5.05
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1241
HCM Lane V/C Ratio	-	-	0.02	0.014
HCM Control Delay (s/veh)	-	-	8.7	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
10: Eaton Street & Internal Drive/Santana Drive

Total Traffic Volumes
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	14	15	7	2	5	4	5	15	5	2	6	8
Future Vol, veh/h	14	15	7	2	5	4	5	15	5	2	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	16	8	2	5	4	5	16	5	2	7	9

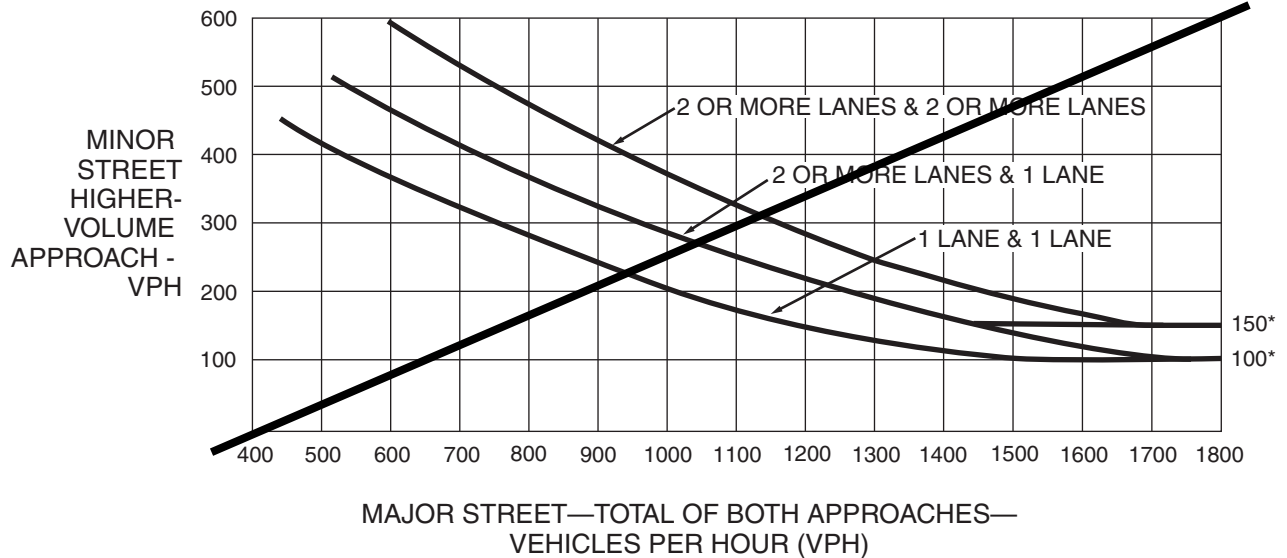
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	45	48	11	49	49	19	15	0	0	22	0	0
Stage 1	15	15	-	30	30	-	-	-	-	-	-	-
Stage 2	30	33	-	19	20	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	957	844	1070	951	842	1059	1603	-	-	1594	-	-
Stage 1	1005	883	-	987	870	-	-	-	-	-	-	-
Stage 2	987	868	-	1000	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	942	840	1070	922	838	1059	1603	-	-	1594	-	-
Mov Cap-2 Maneuver	942	840	-	922	838	-	-	-	-	-	-	-
Stage 1	1003	882	-	983	867	-	-	-	-	-	-	-
Stage 2	973	865	-	973	878	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	9.1		8.95		1.45		0.91	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	343	-	-	917	923	202	-	-
HCM Lane V/C Ratio	0.003	-	-	0.043	0.013	0.001	-	-
HCM Control Delay (s/veh)	7.3	0	-	9.1	8.9	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX D

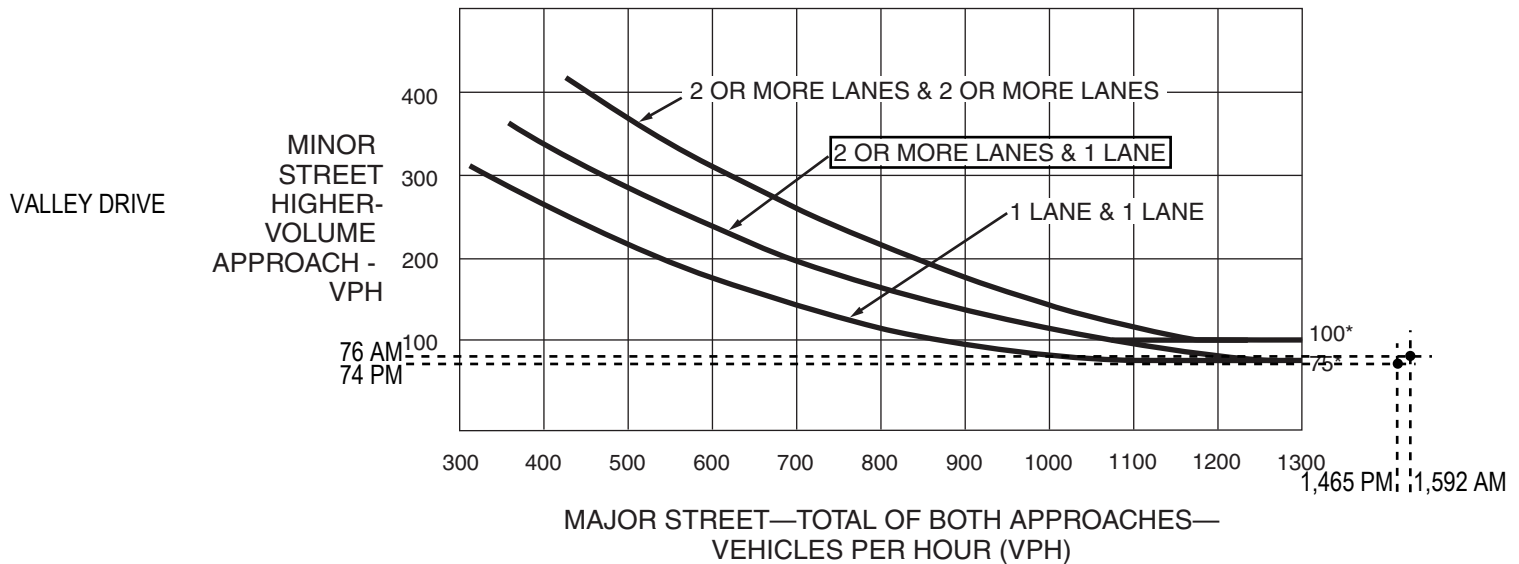
Warrant Analysis Forms

Figure 4C-3. Warrant 3, Peak Hour

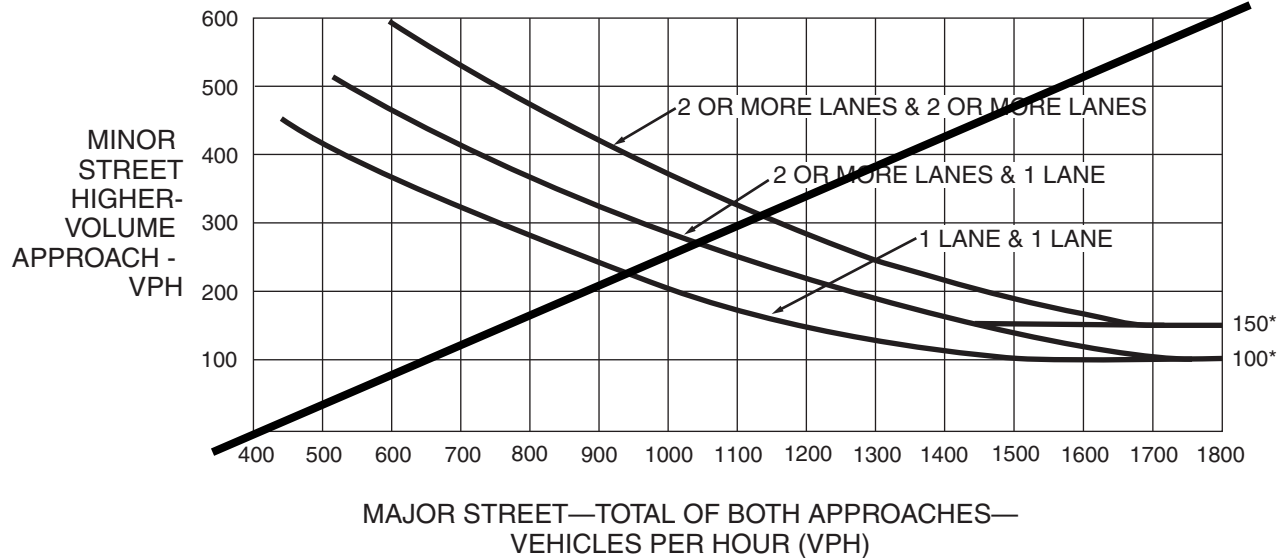
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



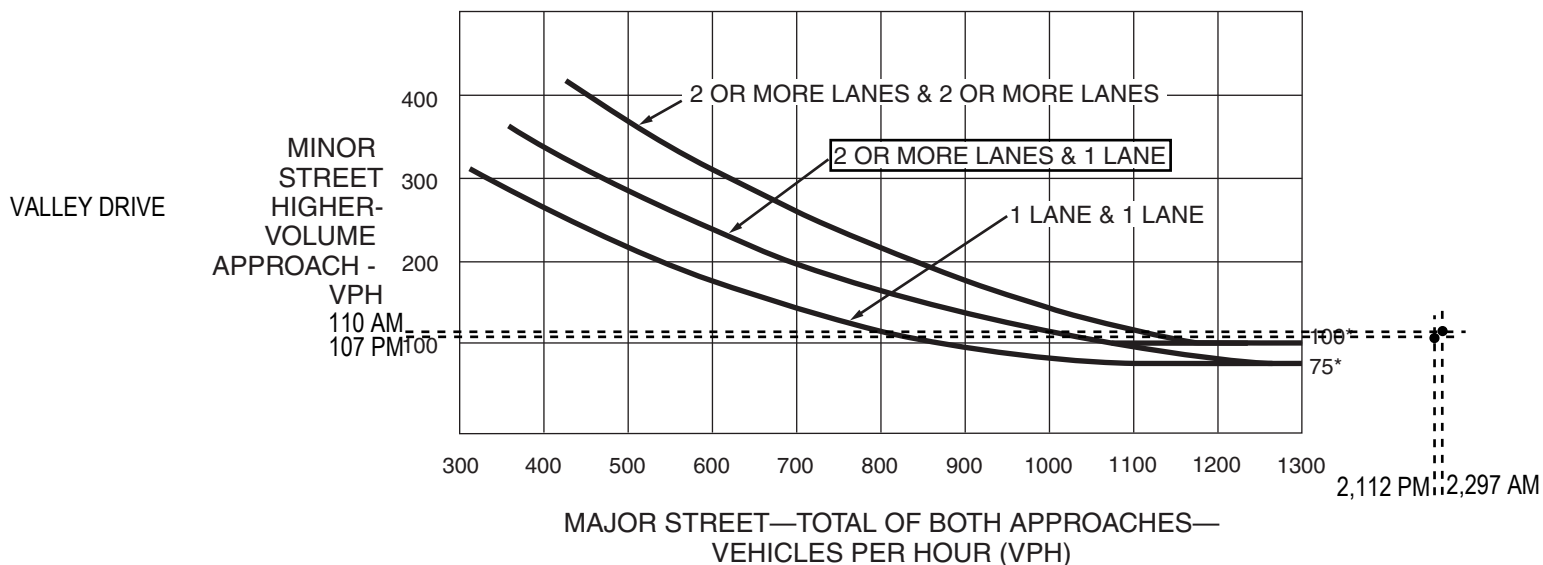
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

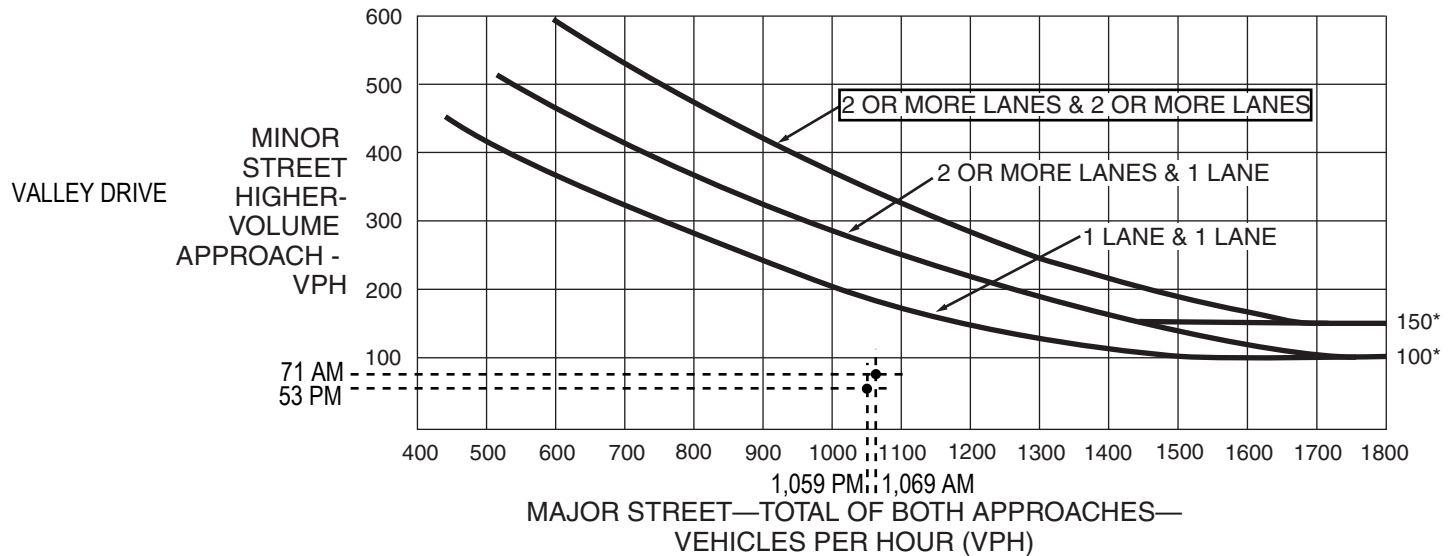
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

5TH STREET (45 MPH)

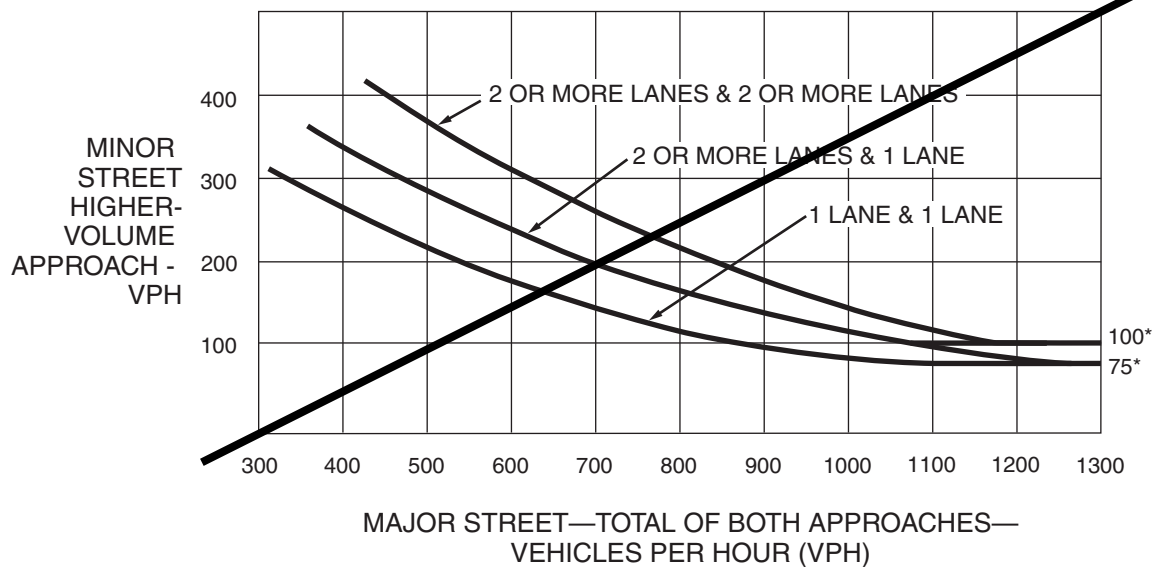
Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

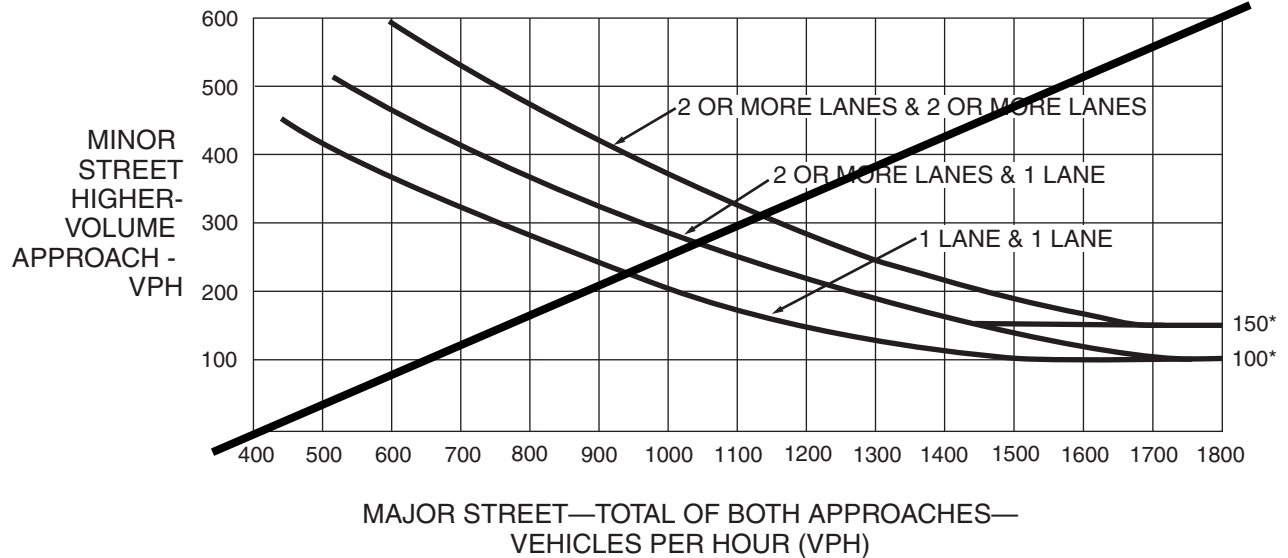
PLUM CREEK PARKWAY (35 MPH)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



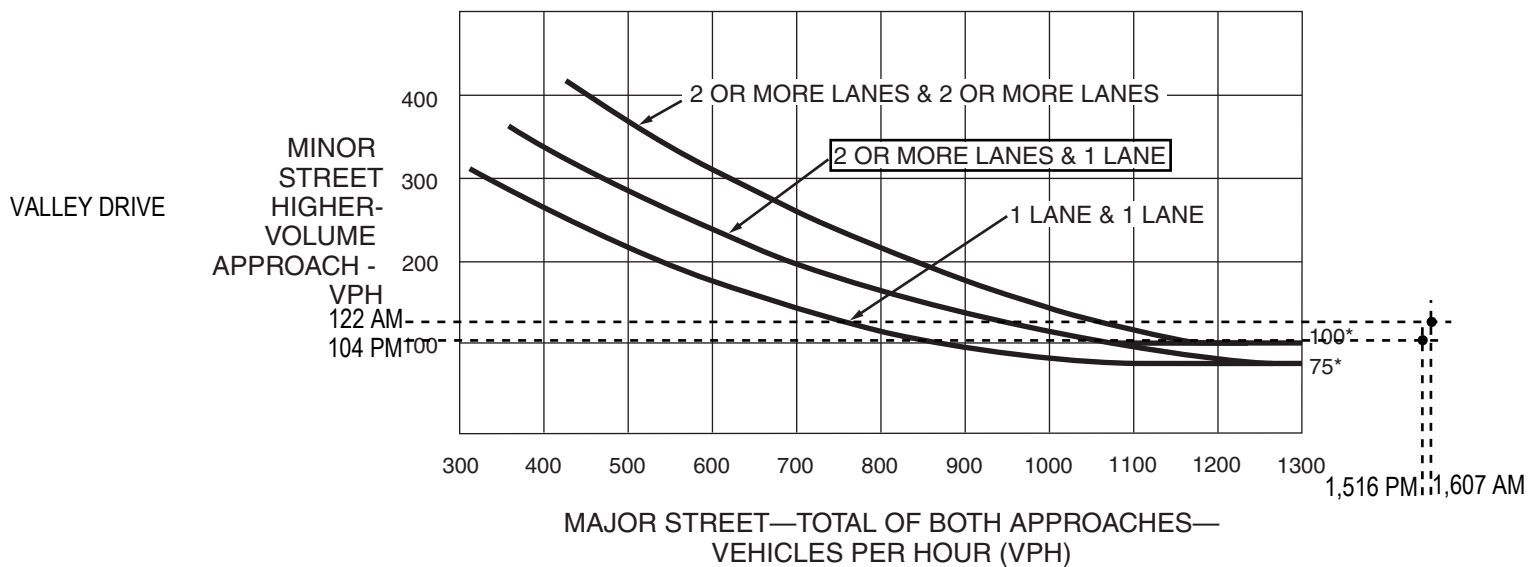
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

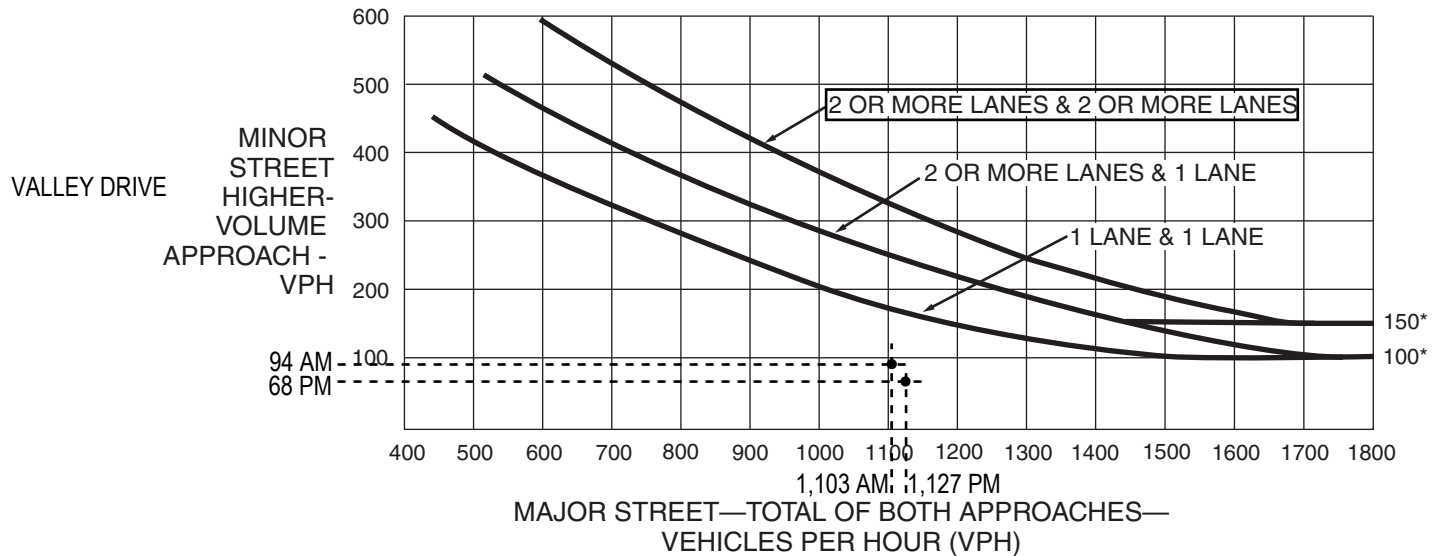
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

5TH STREET (45 MPH)

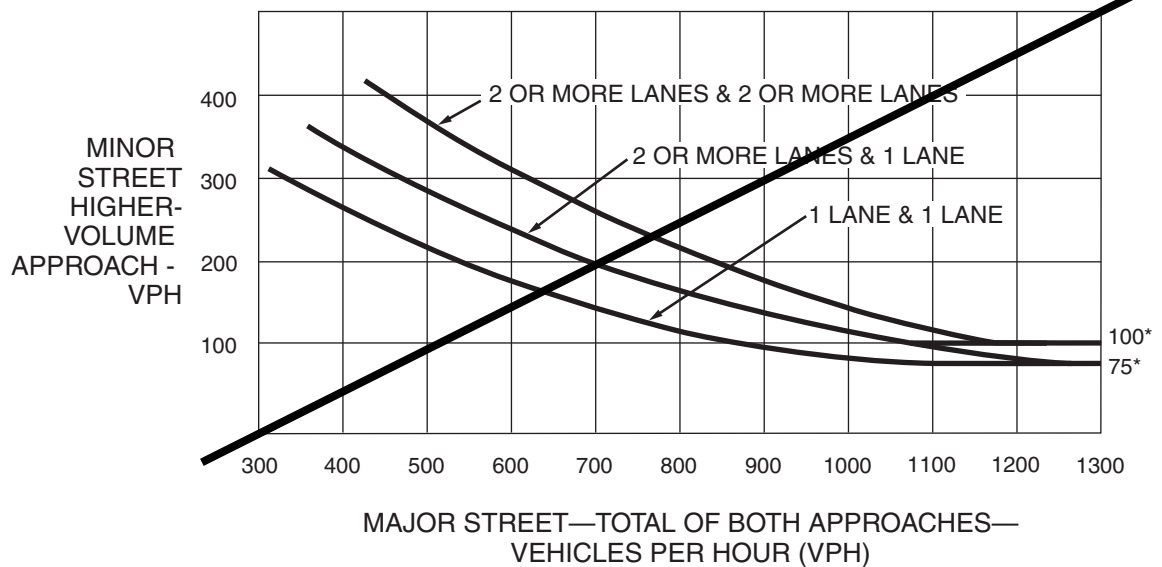
Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

PLUM CREEK PARKWAY (35 MPH)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

APPENDIX E

Capacity Worksheets – Plum Creek Parkway & S Gilbert Street with Improvements

HCM 7th Roundabout

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes - with Improvements

AM Peak Hour - Year 2045

Intersection									
Intersection Delay, s/veh	13.4								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	603		732		1033		328		
Demand Flow Rate, veh/h	615		747		1053		334		
Vehicles Circulating, veh/h	343		1025		468		1003		
Vehicles Exiting, veh/h	994		496		490		769		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	6.6		22.0		12.2		10.5		
Approach LOS	A		C		B		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR	
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	TR	
RT Channelized									
Lane Util	0.470	0.530	0.470	0.530	0.470	0.530	0.470	0.530	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
A (Intercept)	1350	1420	1350	1420	1350	1420	1350	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	
Entry Flow, veh/h	289	326	351	396	495	558	157	177	
Cap Entry Lane, veh/h	985	1061	526	594	878	954	537	605	
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.981	0.981	0.981	0.981	
Flow Entry, veh/h	283	320	344	388	485	547	154	174	
Cap Entry, veh/h	966	1040	516	582	861	936	526	594	
V/C Ratio	0.294	0.307	0.668	0.667	0.564	0.585	0.293	0.292	
Control Delay, s/veh	6.7	6.5	23.2	21.0	12.3	12.0	11.1	10.0	
LOS	A	A	C	C	B	B	B	B	
95th %tile Queue, veh	1	1	5	5	4	4	1	1	

HCM 7th Roundabout

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Background Traffic Volumes - with Improvements

PM Peak Hour - Year 2045

Intersection									
Intersection Delay, s/veh	11.5								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	1028		542		533		520		
Demand Flow Rate, veh/h	1049		552		544		530		
Vehicles Circulating, veh/h	584		547		698		771		
Vehicles Exiting, veh/h	717		695		935		328		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	15.0		7.9		9.6		10.3		
Approach LOS	B		A		A		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR	
Assumed Moves	LT	TR	LT	TR	L	TR	LT	TR	
RT Channelized									
Lane Util	0.470	0.530	0.469	0.531	0.518	0.482	0.470	0.530	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
A (Intercept)	1350	1420	1350	1420	1350	1420	1350	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	
Entry Flow, veh/h	493	556	259	293	282	262	249	281	
Cap Entry Lane, veh/h	789	864	816	892	710	785	664	737	
Entry HV Adj Factor	0.980	0.980	0.983	0.980	0.979	0.979	0.982	0.981	
Flow Entry, veh/h	483	545	255	287	276	257	244	276	
Cap Entry, veh/h	773	847	802	874	695	768	652	723	
V/C Ratio	0.625	0.643	0.317	0.328	0.397	0.334	0.375	0.381	
Control Delay, s/veh	15.2	14.8	8.1	7.8	10.5	8.7	10.7	9.9	
LOS	C	B	A	A	B	A	B	A	
95th %tile Queue, veh	4	5	1	1	2	1	2	2	

HCM 7th Roundabout

Total Traffic Volumes - with Improvements

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

AM Peak Hour - Year 2045

Intersection									
Intersection Delay, s/veh	14.5								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	624		771		1036		357		
Demand Flow Rate, veh/h	636		786		1056		363		
Vehicles Circulating, veh/h	353		1032		489		1042		
Vehicles Exiting, veh/h	1052		513		500		776		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	6.8		24.4		12.7		11.5		
Approach LOS	A		C		B		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR	
Assumed Moves	LT	TR	LT	TR	LT	TR	LT	TR	
RT Channelized									
Lane Util	0.470	0.530	0.469	0.531	0.470	0.530	0.471	0.529	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
A (Intercept)	1350	1420	1350	1420	1350	1420	1350	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	
Entry Flow, veh/h	299	337	369	417	496	560	171	192	
Cap Entry Lane, veh/h	976	1052	522	591	861	937	518	586	
Entry HV Adj Factor	0.981	0.981	0.982	0.980	0.981	0.980	0.980	0.985	
Flow Entry, veh/h	293	331	362	408	487	549	168	189	
Cap Entry, veh/h	957	1032	513	579	845	919	507	577	
V/C Ratio	0.306	0.320	0.706	0.706	0.576	0.598	0.330	0.328	
Control Delay, s/veh	6.9	6.7	25.7	23.3	12.8	12.6	12.2	10.9	
LOS	A	A	D	C	B	B	B	B	
95th %tile Queue, veh	1	1	6	6	4	4	1	1	

HCM 7th Roundabout

Total Traffic Volumes - with Improvements

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

PM Peak Hour - Year 2045

Intersection									
Intersection Delay, s/veh	12.7								
Intersection LOS	B								
Approach	EB		WB		NB		SB		
Entry Lanes	2		2		2		2		
Conflicting Circle Lanes	2		2		2		2		
Adj Approach Flow, veh/h	1094		567		544		541		
Demand Flow Rate, veh/h	1116		579		555		552		
Vehicles Circulating, veh/h	591		569		765		798		
Vehicles Exiting, veh/h	759		751		942		350		
Ped Vol Crossing Leg, #/h	0		0		0		0		
Ped Cap Adj	1.000		1.000		1.000		1.000		
Approach Delay, s/veh	16.8		8.4		10.6		11.0		
Approach LOS	C		A		B		B		
Lane	Left	Right	Left	Right	Left	Right	Left	Right	
Designated Moves	LT	TR	LT	TR	LT	TR	LT	TR	
Assumed Moves	LT	TR	LT	TR	L	TR	LT	TR	
RT Channelized									
Lane Util	0.470	0.530	0.470	0.530	0.508	0.492	0.469	0.531	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.667	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.645	4.328	
A (Intercept)	1350	1420	1350	1420	1350	1420	1350	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	9.199e-4	8.501e-4	
Entry Flow, veh/h	525	591	272	307	282	273	259	293	
Cap Entry Lane, veh/h	784	859	800	875	668	741	648	721	
Entry HV Adj Factor	0.980	0.981	0.980	0.980	0.979	0.980	0.982	0.979	
Flow Entry, veh/h	514	580	267	301	276	268	254	287	
Cap Entry, veh/h	768	843	784	858	654	726	636	705	
V/C Ratio	0.670	0.688	0.340	0.351	0.422	0.368	0.400	0.407	
Control Delay, s/veh	17.0	16.6	8.6	8.2	11.6	9.7	11.4	10.6	
LOS	C	C	A	A	B	A	B	B	
95th %tile Queue, veh	5	6	2	2	2	2	2	2	

APPENDIX F

SimTraffic Analysis Reports

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5434	5345	5331	5397	5350	5363	5279
Vehs Exited	5416	5321	5291	5332	5290	5350	5240
Starting Vehs	120	129	127	106	117	139	125
Ending Vehs	138	153	167	171	177	152	164
Travel Distance (mi)	4151	4124	4150	4129	4132	4139	4165
Travel Time (hr)	267.5	278.3	268.6	243.4	273.0	264.2	249.6
Total Delay (hr)	154.8	166.5	155.9	131.0	161.4	152.0	136.5
Total Stops	1695	1798	1742	1846	1926	1664	1698
Fuel Used (gal)	166.2	169.0	166.1	160.7	166.6	165.8	162.6

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5349	5396	5393	5359
Vehs Exited	5307	5350	5356	5327
Starting Vehs	128	115	125	119
Ending Vehs	170	161	162	155
Travel Distance (mi)	4140	4165	4226	4152
Travel Time (hr)	254.0	269.1	240.2	260.8
Total Delay (hr)	141.9	156.3	126.1	148.2
Total Stops	1612	1717	1802	1748
Fuel Used (gal)	163.3	166.9	162.6	165.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5434	5345	5331	5397	5350	5363	5279
Vehs Exited	5416	5321	5291	5332	5290	5350	5240
Starting Vehs	120	129	127	106	117	139	125
Ending Vehs	138	153	167	171	177	152	164
Travel Distance (mi)	4151	4124	4150	4129	4132	4139	4165
Travel Time (hr)	267.5	278.3	268.6	243.4	273.0	264.2	249.6
Total Delay (hr)	154.8	166.5	155.9	131.0	161.4	152.0	136.5
Total Stops	1695	1798	1742	1846	1926	1664	1698
Fuel Used (gal)	166.2	169.0	166.1	160.7	166.6	165.8	162.6

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5349	5396	5393	5359
Vehs Exited	5307	5350	5356	5327
Starting Vehs	128	115	125	119
Ending Vehs	170	161	162	155
Travel Distance (mi)	4140	4165	4226	4152
Travel Time (hr)	254.0	269.1	240.2	260.8
Total Delay (hr)	141.9	156.3	126.1	148.2
Total Stops	1612	1717	1802	1748
Fuel Used (gal)	163.3	166.9	162.6	165.0

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.7	0.6	0.2	0.1	0.4
Total Del/Veh (s)	5.8	0.8	6.0	25.2	27.1	6.1	4.2	16.1

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0
Total Del/Veh (s)	3.3	4.5	3.1	7.1	8.0	6.1	3.1	2.2	3.7	2.5	6.3

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	5.2	0.1	0.0
Total Del/Veh (s)	7.4	2.6	1.1	1.3	1.3	10.8	3.6	15.8	4.7	2.3

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	419.4	407.6	420.5	0.0	0.0	0.0
Total Del/Veh (s)	7.2	6.5	4.4	7.8	5.2	4.9	107.0	107.6	106.2	8.9	9.8	7.5

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	153.6
Total Del/Veh (s)	37.6

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	EBR	WBL	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.3	9.9	5.8	4.1	3.8	4.6	0.7	0.8	3.2

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.6	0.3	0.2
Total Del/Veh (s)	9.7	5.5	1.7	1.3	3.9	0.4	1.6

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.5	2.8	5.1	3.2	2.1	0.1	0.0	2.5	0.8	0.8	1.8

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.2	2.2	2.8	0.2	1.9	0.1	0.4
Total Del/Veh (s)	4.4	2.0	15.6	2.7	51.6	7.8	5.4

Total Network Performance

Denied Del/Veh (s)	69.4
Total Del/Veh (s)	26.6

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	50	58	479	44
Average Queue (ft)	13	10	180	12
95th Queue (ft)	38	38	415	36
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	WB	WB	NB	SB
Directions Served	LT	LT	TR	LTR	LTR
Maximum Queue (ft)	37	56	24	49	35
Average Queue (ft)	2	11	1	13	9
95th Queue (ft)	17	40	13	40	32
Link Distance (ft)	2163	4772	4772	155	341
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	EB	WB	NB	SB	SB
Directions Served	L	TR	T	LTR	L	TR
Maximum Queue (ft)	31	2	2	47	20	47
Average Queue (ft)	9	0	0	21	2	23
95th Queue (ft)	31	2	2	48	13	41
Link Distance (ft)		636	2163	216		377
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	140				60	
Storage Blk Time (%)						0
Queuing Penalty (veh)						0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	107	55	87	62	631	152
Average Queue (ft)	42	7	43	13	590	56
95th Queue (ft)	84	36	76	47	696	110
Link Distance (ft)	749	749	636	636	578	1506
Upstream Blk Time (%)					94	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	22	67	24
Average Queue (ft)	2	26	1
95th Queue (ft)	15	54	11
Link Distance (ft)	303	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		85	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	61	31
Average Queue (ft)	28	6
95th Queue (ft)	53	26
Link Distance (ft)	527	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	59	34	22
Average Queue (ft)	26	11	2
95th Queue (ft)	52	35	14
Link Distance (ft)	1076	493	452
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	204	169	64	74	120	107	120	53
Average Queue (ft)	89	61	6	28	51	31	48	19
95th Queue (ft)	162	132	31	60	101	80	102	44
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		3			0		0	
Queuing Penalty (veh)		2			0		0	

Network Summary

Network wide Queuing Penalty: 2

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5153	5113	5162	5124	5152	5264	5221
Vehs Exited	5133	5109	5130	5082	5140	5241	5207
Starting Vehs	98	117	102	83	93	120	106
Ending Vehs	118	121	134	125	105	143	120
Travel Distance (mi)	3919	3860	3938	3785	3987	3976	3873
Travel Time (hr)	130.3	125.1	125.8	121.3	130.4	130.1	128.9
Total Delay (hr)	23.4	19.7	18.4	18.2	21.1	21.2	22.7
Total Stops	1991	1895	1817	1804	2083	2093	2321
Fuel Used (gal)	132.1	129.1	130.6	126.5	133.2	133.1	130.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5198	5187	5158	5174
Vehs Exited	5189	5186	5184	5162
Starting Vehs	124	124	117	106
Ending Vehs	133	125	91	115
Travel Distance (mi)	3973	3956	4026	3929
Travel Time (hr)	129.5	127.7	132.8	128.2
Total Delay (hr)	21.0	19.4	22.9	20.8
Total Stops	2053	1932	2086	2009
Fuel Used (gal)	133.3	131.6	135.1	131.5

Interval #0 Information Seeding

Start Time	4:57
End Time	5:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5153	5113	5162	5124	5152	5264	5221
Vehs Exited	5133	5109	5130	5082	5140	5241	5207
Starting Vehs	98	117	102	83	93	120	106
Ending Vehs	118	121	134	125	105	143	120
Travel Distance (mi)	3919	3860	3938	3785	3987	3976	3873
Travel Time (hr)	130.3	125.1	125.8	121.3	130.4	130.1	128.9
Total Delay (hr)	23.4	19.7	18.4	18.2	21.1	21.2	22.7
Total Stops	1991	1895	1817	1804	2083	2093	2321
Fuel Used (gal)	132.1	129.1	130.6	126.5	133.2	133.1	130.7

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5198	5187	5158	5174
Vehs Exited	5189	5186	5184	5162
Starting Vehs	124	124	117	106
Ending Vehs	133	125	91	115
Travel Distance (mi)	3973	3956	4026	3929
Travel Time (hr)	129.5	127.7	132.8	128.2
Total Delay (hr)	21.0	19.4	22.9	20.8
Total Stops	2053	1932	2086	2009
Fuel Used (gal)	133.3	131.6	135.1	131.5

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	0.2	0.2	0.1
Total Del/Veh (s)	6.2	0.6	6.8	6.1	7.6	7.3	4.6	6.3

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0
Total Del/Veh (s)	3.2	4.8	3.6	4.8	7.0	5.0	3.0	2.1	3.0	2.6	5.5

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	3.4	0.1	0.0
Total Del/Veh (s)	7.2	3.0	1.7	4.6	1.1	13.8	11.0	3.6	2.7

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.2	0.3	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0
Total Del/Veh (s)	16.2	13.0	6.0	7.2	5.1	4.4	17.7	19.3	16.0	25.6	23.6	20.5

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	13.5

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.4	4.1	6.1	3.4	3.1	3.4	1.2	2.2

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.3	0.5	0.5
Total Del/Veh (s)	7.3	3.7	0.8	0.5	2.4	0.8	1.0

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.7	5.3	3.3	5.2	2.9	1.8	0.1	0.0	2.4	0.7	0.7	1.8

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.3	2.8	0.2	1.1	0.1	0.4
Total Del/Veh (s)	4.2	2.2	14.0	2.1	54.1	7.8	5.0

Total Network Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	13.8

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	48	46	74	69
Average Queue (ft)	12	7	24	22
95th Queue (ft)	38	29	60	55
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LTR
Maximum Queue (ft)	46	2	44	38	33
Average Queue (ft)	5	0	5	7	4
95th Queue (ft)	25	2	25	28	20
Link Distance (ft)	2163	2163	4772	155	341
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	L	TR
Maximum Queue (ft)	57	21	38	15	52
Average Queue (ft)	21	1	11	1	20
95th Queue (ft)	49	11	36	10	42
Link Distance (ft)			216		377
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140	120		60	
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	206	163	89	40	268	337
Average Queue (ft)	90	45	41	3	111	139
95th Queue (ft)	162	114	75	21	222	291
Link Distance (ft)	749	749	636	636	578	1506
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	WB	NB	SB
Directions Served	LTR	L	L
Maximum Queue (ft)	40	15	31
Average Queue (ft)	14	1	7
95th Queue (ft)	40	7	28
Link Distance (ft)	558		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	85
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	44	33
Average Queue (ft)	19	8
95th Queue (ft)	46	30
Link Distance (ft)	527	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		75
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	33	12	9
Average Queue (ft)	32	8	1	0
95th Queue (ft)	54	31	8	6
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	177	152	79	97	89	73	105	70
Average Queue (ft)	82	52	13	33	36	18	36	23
95th Queue (ft)	155	120	46	69	80	54	79	50
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		2	0	0	0		0	
Queuing Penalty (veh)		2	0	1	0		0	

Network Summary

Network wide Queuing Penalty: 3

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5574	5562	5576	5489	5471	5720	5584
Vehs Exited	5577	5542	5571	5455	5440	5689	5572
Starting Vehs	121	102	118	110	120	120	137
Ending Vehs	118	122	123	144	151	151	149
Travel Distance (mi)	4357	4348	4402	4202	4207	4417	4358
Travel Time (hr)	141.3	144.3	145.2	137.8	136.9	145.6	143.1
Total Delay (hr)	22.9	26.3	25.5	23.5	22.8	25.4	25.0
Total Stops	2233	2377	2328	2185	2168	2413	2220
Fuel Used (gal)	143.5	144.6	146.0	139.2	138.5	146.9	144.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5570	5593	5542	5566
Vehs Exited	5535	5583	5539	5550
Starting Vehs	127	126	133	119
Ending Vehs	162	136	136	131
Travel Distance (mi)	4299	4295	4265	4315
Travel Time (hr)	141.1	140.5	138.2	141.4
Total Delay (hr)	24.3	23.9	22.8	24.2
Total Stops	2372	2240	2175	2269
Fuel Used (gal)	142.0	142.1	140.9	142.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5574	5562	5576	5489	5471	5720	5584
Vehs Exited	5577	5542	5571	5455	5440	5689	5572
Starting Vehs	121	102	118	110	120	120	137
Ending Vehs	118	122	123	144	151	151	149
Travel Distance (mi)	4357	4348	4402	4202	4207	4417	4358
Travel Time (hr)	141.3	144.3	145.2	137.8	136.9	145.6	143.1
Total Delay (hr)	22.9	26.3	25.5	23.5	22.8	25.4	25.0
Total Stops	2233	2377	2328	2185	2168	2413	2220
Fuel Used (gal)	143.5	144.6	146.0	139.2	138.5	146.9	144.3

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5570	5593	5542	5566
Vehs Exited	5535	5583	5539	5550
Starting Vehs	127	126	133	119
Ending Vehs	162	136	136	131
Travel Distance (mi)	4299	4295	4265	4315
Travel Time (hr)	141.1	140.5	138.2	141.4
Total Delay (hr)	24.3	23.9	22.8	24.2
Total Stops	2372	2240	2175	2269
Fuel Used (gal)	142.0	142.1	140.9	142.8

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.6	0.7	0.1	0.1	0.4
Total Del/Veh (s)	6.1	0.6	6.1	22.3	24.3	6.3	4.3	14.5

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	3.4	4.6	3.2	5.1	8.1	6.6	3.2	2.1	3.6	2.4	6.4

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	4.0	0.1	0.0
Total Del/Veh (s)	6.4	2.0	1.1	1.4	0.9	11.2	5.8	11.1	5.0	2.1

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.0	0.0	0.4	0.2	0.3	0.0	0.0	0.0
Total Del/Veh (s)	7.2	6.2	4.5	9.1	5.8	5.8	27.5	18.3	5.8	7.4	5.9	4.9

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	11.1

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	EBR	WBL	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	3.7	10.4	3.8	2.7	2.0	5.3	0.4	0.3	2.3

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.5	0.3	0.1
Total Del/Veh (s)	11.0	6.2	1.6	0.3	4.1	0.4	1.6

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.4	2.9	5.6	2.7	2.2	0.2	0.1	2.3	0.8	1.0	1.8

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.2	2.2	2.8	0.2	1.9	0.1	0.4
Total Del/Veh (s)	4.5	2.1	16.1	2.6	52.7	8.9	5.5

Total Network Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	15.0

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	51	57	437	40
Average Queue (ft)	12	10	159	13
95th Queue (ft)	38	38	354	36
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	WB	WB	NB	SB
Directions Served	LT	LT	TR	LTR	LTR
Maximum Queue (ft)	33	49	17	45	40
Average Queue (ft)	2	10	1	11	8
95th Queue (ft)	16	36	11	37	31
Link Distance (ft)	2163	4772	4772	155	341
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	WB	NB	SB	SB
Directions Served	L	T	LTR	L	TR
Maximum Queue (ft)	35	7	52	22	55
Average Queue (ft)	9	0	21	2	24
95th Queue (ft)	32	4	49	12	45
Link Distance (ft)		2163	216		377
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	140			60	
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				0	0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	101	49	94	93	328	289	68	60
Average Queue (ft)	43	10	46	38	171	89	32	23
95th Queue (ft)	79	37	79	80	295	248	59	56
Link Distance (ft)	749	749	636	636	581	581	1510	1510
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	57	18
Average Queue (ft)	3	27	1
95th Queue (ft)	16	52	11
Link Distance (ft)	291	546	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		85	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	NB	SB
Directions Served	LR	T	L
Maximum Queue (ft)	54	2	33
Average Queue (ft)	22	0	7
95th Queue (ft)	44	2	28
Link Distance (ft)	513	1231	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		75	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	63	34	30	2
Average Queue (ft)	27	9	2	0
95th Queue (ft)	52	32	15	2
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	204	186	76	72	103	88	118	62
Average Queue (ft)	89	61	8	30	50	28	48	19
95th Queue (ft)	164	136	37	61	96	72	98	47
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		3	0		0		0	
Queuing Penalty (veh)		2	0		0		0	

Network Summary

Network wide Queuing Penalty: 2

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5041	5258	5044	5153	5139	5355	5157
Vehs Exited	5018	5252	5033	5135	5141	5335	5150
Starting Vehs	101	118	108	103	124	114	103
Ending Vehs	124	124	119	121	122	134	110
Travel Distance (mi)	3832	3979	3831	3880	3852	4102	3794
Travel Time (hr)	120.2	125.7	120.1	121.5	121.3	129.6	118.8
Total Delay (hr)	15.5	17.2	15.5	15.8	15.9	17.3	15.3
Total Stops	1535	1779	1482	1608	1586	1788	1559
Fuel Used (gal)	126.8	132.7	127.4	129.4	127.8	136.5	126.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5214	5083	5194	5162
Vehs Exited	5201	5064	5215	5151
Starting Vehs	125	118	114	111
Ending Vehs	138	137	93	118
Travel Distance (mi)	3940	3866	3935	3901
Travel Time (hr)	124.8	122.0	123.7	122.8
Total Delay (hr)	17.1	16.0	16.2	16.2
Total Stops	1722	1654	1647	1636
Fuel Used (gal)	132.5	128.2	130.4	129.8

Interval #0 Information Seeding

Start Time	4:57
End Time	5:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5041	5258	5044	5153	5139	5355	5157
Vehs Exited	5018	5252	5033	5135	5141	5335	5150
Starting Vehs	101	118	108	103	124	114	103
Ending Vehs	124	124	119	121	122	134	110
Travel Distance (mi)	3832	3979	3831	3880	3852	4102	3794
Travel Time (hr)	120.2	125.7	120.1	121.5	121.3	129.6	118.8
Total Delay (hr)	15.5	17.2	15.5	15.8	15.9	17.3	15.3
Total Stops	1535	1779	1482	1608	1586	1788	1559
Fuel Used (gal)	126.8	132.7	127.4	129.4	127.8	136.5	126.8

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5214	5083	5194	5162
Vehs Exited	5201	5064	5215	5151
Starting Vehs	125	118	114	111
Ending Vehs	138	137	93	118
Travel Distance (mi)	3940	3866	3935	3901
Travel Time (hr)	124.8	122.0	123.7	122.8
Total Delay (hr)	17.1	16.0	16.2	16.2
Total Stops	1722	1654	1647	1636
Fuel Used (gal)	132.5	128.2	130.4	129.8

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.1
Total Del/Veh (s)	6.2	0.5	6.7	6.0	7.5	7.2	4.5	6.2

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0
Total Del/Veh (s)	3.3	4.8	3.5	4.6	6.8	4.8	2.9	2.3	3.1	2.1	5.5

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	4.2	0.1	0.0
Total Del/Veh (s)	6.4	2.5	1.4	4.6	1.1	13.7	8.7	3.5	2.4

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.3	0.0	0.0	0.0	0.3	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	10.8	9.7	6.9	6.9	5.1	4.5	12.5	10.5	4.0	8.6	6.0	5.1

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	7.9

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.0	3.1	4.9	2.2	1.8	3.0	0.7	1.4

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.3	0.5	0.5
Total Del/Veh (s)	7.8	3.2	0.5	0.1	2.5	0.8	1.0

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	4.7	5.5	3.1	5.3	2.5	1.8	0.1	0.0	2.3	0.7	0.8	1.8

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.3	2.8	0.2	1.2	0.0	0.4
Total Del/Veh (s)	4.3	2.3	15.1	2.1	55.7	8.0	5.1

Total Network Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	10.7

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB	SB
Directions Served	L	LR	LT	T	R
Maximum Queue (ft)	43	62	69	60	3
Average Queue (ft)	12	7	24	20	0
95th Queue (ft)	37	33	58	50	3
Link Distance (ft)	4772	4772	1075	2384	2384
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	WB	NB	SB
Directions Served	LT	LT	LTR	LTR
Maximum Queue (ft)	40	43	40	29
Average Queue (ft)	4	5	8	3
95th Queue (ft)	22	25	32	19
Link Distance (ft)	2163	4772	155	341
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	T	LTR	L	TR
Maximum Queue (ft)	56	2	18	2	40	20	44
Average Queue (ft)	21	0	1	0	13	1	18
95th Queue (ft)	49	2	12	2	39	8	38
Link Distance (ft)		636		2163	216		377
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	140		120			60	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	154	148	80	48	179	93	78	71
Average Queue (ft)	69	49	40	8	70	10	42	27
95th Queue (ft)	125	111	71	35	127	47	70	64
Link Distance (ft)	749	749	636	636	581	581	1510	1510
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	WB	NB	NB	SB
Directions Served	LTR	L	TR	L
Maximum Queue (ft)	38	21	2	33
Average Queue (ft)	13	1	0	5
95th Queue (ft)	39	9	2	24
Link Distance (ft)	546		1510	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		85
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	34	37
Average Queue (ft)	14	9
95th Queue (ft)	33	32
Link Distance (ft)	513	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		75
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	31	16	12
Average Queue (ft)	33	8	1	1
95th Queue (ft)	56	30	9	8
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	202	165	88	79	84	66	106	60
Average Queue (ft)	82	52	14	35	35	18	37	23
95th Queue (ft)	164	124	51	66	78	53	84	49
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		3	0	0				
Queuing Penalty (veh)		3	0	0				

Network Summary

Network wide Queuing Penalty: 3

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5681	5590	5619	5515	5599	5664	5806
Vehs Exited	5623	5585	5568	5476	5586	5624	5750
Starting Vehs	110	139	110	139	142	119	137
Ending Vehs	168	144	161	178	155	159	193
Travel Distance (mi)	4373	4297	4316	4260	4340	4357	4425
Travel Time (hr)	264.6	282.6	272.2	254.4	291.7	272.7	328.0
Total Delay (hr)	144.5	165.1	153.9	136.9	172.8	153.2	206.4
Total Stops	2292	1956	1912	2092	2141	2184	2369
Fuel Used (gal)	172.5	173.1	172.8	167.0	177.2	173.4	188.1

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5614	5600	5717	5639
Vehs Exited	5600	5609	5720	5613
Starting Vehs	129	154	153	127
Ending Vehs	143	145	150	154
Travel Distance (mi)	4264	4277	4373	4328
Travel Time (hr)	277.3	273.8	298.8	281.6
Total Delay (hr)	160.0	156.1	178.6	162.8
Total Stops	1926	1981	1991	2084
Fuel Used (gal)	172.3	172.2	180.4	174.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5681	5590	5619	5515	5599	5664	5806
Vehs Exited	5623	5585	5568	5476	5586	5624	5750
Starting Vehs	110	139	110	139	142	119	137
Ending Vehs	168	144	161	178	155	159	193
Travel Distance (mi)	4373	4297	4316	4260	4340	4357	4425
Travel Time (hr)	264.6	282.6	272.2	254.4	291.7	272.7	328.0
Total Delay (hr)	144.5	165.1	153.9	136.9	172.8	153.2	206.4
Total Stops	2292	1956	1912	2092	2141	2184	2369
Fuel Used (gal)	172.5	173.1	172.8	167.0	177.2	173.4	188.1

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5614	5600	5717	5639
Vehs Exited	5600	5609	5720	5613
Starting Vehs	129	154	153	127
Ending Vehs	143	145	150	154
Travel Distance (mi)	4264	4277	4373	4328
Travel Time (hr)	277.3	273.8	298.8	281.6
Total Delay (hr)	160.0	156.1	178.6	162.8
Total Stops	1926	1981	1991	2084
Fuel Used (gal)	172.3	172.2	180.4	174.9

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.6	0.7	0.1	0.1	0.4
Total Del/Veh (s)	5.9	0.4	6.0	25.5	27.1	6.2	4.4	16.2

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	3.1	4.5	3.3	6.8	8.3	5.8	3.2	2.4	3.8	2.7	6.4

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	3.2	0.1	0.0
Total Del/Veh (s)	7.7	2.7	2.0	1.5	1.9	12.6	5.0	11.9	5.4	2.6

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.1	0.2	0.0	0.0	0.0	451.7	448.8	454.9	0.0	0.0	0.0
Total Del/Veh (s)	8.0	7.0	4.4	8.6	5.2	5.0	109.6	110.1	107.9	10.1	10.8	8.7

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	163.3
Total Del/Veh (s)	37.0

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	EBR	WBL	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	4.0	10.0	5.7	4.2	3.8	3.8	0.8	0.5	3.4

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.5	0.3	0.2
Total Del/Veh (s)	8.4	6.0	1.8	1.0	3.8	0.4	1.8

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.2	3.2	6.1	3.0	2.2	0.4	0.4	3.8	1.0	0.9	1.8

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.3	2.8	0.2	1.3	0.1	0.4
Total Del/Veh (s)	5.3	2.4	17.8	3.1	52.3	9.1	6.6

9: Valley Drive & Internal Drive Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.8	3.4	0.4	0.5	1.3	0.0	1.8

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	3.8	4.3	3.5	3.5	4.8	3.1	2.5	0.1	0.5	1.5	0.1	0.0

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	1.5

Total Network Performance

Movement	All
Denied Del/Veh (s)	73.1
Total Del/Veh (s)	26.8

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	46	52	450	44
Average Queue (ft)	13	10	187	13
95th Queue (ft)	39	36	414	36
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	30	7	46	3	53	48
Average Queue (ft)	2	0	9	0	13	13
95th Queue (ft)	14	7	33	3	42	41
Link Distance (ft)	2163	2163	4772	4772	155	704
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	NB	SB	SB
Directions Served	L	LTR	L	TR
Maximum Queue (ft)	38	55	32	70
Average Queue (ft)	12	23	7	28
95th Queue (ft)	37	51	26	52
Link Distance (ft)		216		717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	140		60	
Storage Blk Time (%)			0	1
Queuing Penalty (veh)			0	0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	109	59	92	62	632	150
Average Queue (ft)	48	9	46	12	598	62
95th Queue (ft)	94	39	77	46	669	117
Link Distance (ft)	749	749	636	636	578	1506
Upstream Blk Time (%)					95	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	24	76	24
Average Queue (ft)	2	36	2
95th Queue (ft)	14	63	14
Link Distance (ft)	303	558	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		85	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	77	39
Average Queue (ft)	35	8
95th Queue (ft)	63	31
Link Distance (ft)	527	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	31	52	5
Average Queue (ft)	29	10	9	0
95th Queue (ft)	55	34	35	4
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	235	208	74	88	122	88	154	93
Average Queue (ft)	99	71	11	34	56	31	61	25
95th Queue (ft)	182	153	45	67	103	71	125	61
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		4	0	0	0		1	
Queuing Penalty (veh)		2	0	0	0		0	

Intersection: 9: Valley Drive & Internal Drive

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	19
95th Queue (ft)	45
Link Distance (ft)	2199
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Eaton Street & Internal Drive/Santana Drive

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	31	31	5
Average Queue (ft)	9	14	0
95th Queue (ft)	32	39	4
Link Distance (ft)	2199	414	704
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 4

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5491	5602	5508	5628	5638	5596	5609
Vehs Exited	5452	5549	5472	5603	5596	5565	5598
Starting Vehs	116	106	111	127	118	110	118
Ending Vehs	155	159	147	152	160	141	129
Travel Distance (mi)	4011	4108	4055	4158	4178	4194	4141
Travel Time (hr)	133.1	143.3	134.8	145.0	141.8	141.9	144.2
Total Delay (hr)	21.1	28.8	22.4	29.2	25.8	25.6	29.1
Total Stops	2264	2638	2334	2613	2586	2479	2620
Fuel Used (gal)	135.1	140.5	136.9	142.6	141.1	143.0	142.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5474	5543	5547	5566
Vehs Exited	5456	5537	5526	5535
Starting Vehs	112	137	115	107
Ending Vehs	130	143	136	140
Travel Distance (mi)	4119	4086	4148	4119
Travel Time (hr)	138.8	142.1	141.2	140.6
Total Delay (hr)	24.2	28.6	25.7	26.1
Total Stops	2448	2533	2547	2503
Fuel Used (gal)	139.9	140.2	139.8	140.2

Interval #0 Information Seeding

Start Time	4:57
End Time	5:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5491	5602	5508	5628	5638	5596	5609
Vehs Exited	5452	5549	5472	5603	5596	5565	5598
Starting Vehs	116	106	111	127	118	110	118
Ending Vehs	155	159	147	152	160	141	129
Travel Distance (mi)	4011	4108	4055	4158	4178	4194	4141
Travel Time (hr)	133.1	143.3	134.8	145.0	141.8	141.9	144.2
Total Delay (hr)	21.1	28.8	22.4	29.2	25.8	25.6	29.1
Total Stops	2264	2638	2334	2613	2586	2479	2620
Fuel Used (gal)	135.1	140.5	136.9	142.6	141.1	143.0	142.8

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5474	5543	5547	5566
Vehs Exited	5456	5537	5526	5535
Starting Vehs	112	137	115	107
Ending Vehs	130	143	136	140
Travel Distance (mi)	4119	4086	4148	4119
Travel Time (hr)	138.8	142.1	141.2	140.6
Total Delay (hr)	24.2	28.6	25.7	26.1
Total Stops	2448	2533	2547	2503
Fuel Used (gal)	139.9	140.2	139.8	140.2

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	0.2	0.2	0.1
Total Del/Veh (s)	6.1	0.8	6.7	6.2	7.6	7.0	4.7	6.3

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0
Total Del/Veh (s)	3.5	4.9	3.4	4.6	7.1	5.0	3.1	2.2	3.5	2.1	5.5

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.2	0.1	0.0
Total Del/Veh (s)	7.7	3.2	2.0	4.2	1.1	1.1	16.2	13.8	3.7	3.0

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.3	0.0	0.0	0.0	0.5	0.5	0.4	0.0	0.0	0.0
Total Del/Veh (s)	23.3	16.9	6.2	7.8	5.1	4.3	20.8	22.5	18.6	35.2	33.9	33.6

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	17.4

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.8	3.8	5.7	3.9	3.5	3.8	1.4	2.6

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	3.3	0.5	0.6
Total Del/Veh (s)	8.8	3.6	1.0	0.8	2.6	1.0	1.3

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.9	6.9	4.0	6.2	2.7	1.9	0.3	0.0	2.5	0.8	0.9	2.1

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.3	2.8	0.2	1.0	0.0	0.5
Total Del/Veh (s)	5.5	2.9	17.5	2.5	53.5	7.5	6.3

9: Valley Drive & Internal Drive Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.4	3.6	0.4	0.4	1.6	0.1	0.9

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	4.1	5.1	3.4	3.3	5.2	2.8	1.9	0.1	0.1	1.2	0.1	0.0

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.7

Total Network Performance

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	16.1

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB	SB
Directions Served	L	LR	LT	T	R
Maximum Queue (ft)	51	51	80	65	6
Average Queue (ft)	13	7	26	19	0
95th Queue (ft)	38	30	61	50	9
Link Distance (ft)	4772	4772	1075	2384	2384
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	42	6	40	11	38	40
Average Queue (ft)	5	0	7	0	7	6
95th Queue (ft)	24	5	28	9	28	27
Link Distance (ft)	2163	2163	4772	4772	155	704
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	R	LTR	L	TR
Maximum Queue (ft)	57	21	2	7	44	25	45
Average Queue (ft)	27	1	0	0	12	3	21
95th Queue (ft)	52	11	2	4	38	17	38
Link Distance (ft)			2163		216		717
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	140	120		120		60	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	246	218	104	47	298	459
Average Queue (ft)	119	63	44	3	122	184
95th Queue (ft)	214	165	80	21	246	402
Link Distance (ft)	749	749	636	636	578	1506
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	WB	NB	SB
Directions Served	LTR	L	L
Maximum Queue (ft)	51	20	38
Average Queue (ft)	22	1	9
95th Queue (ft)	49	8	32
Link Distance (ft)	558		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	85
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	54	37
Average Queue (ft)	26	11
95th Queue (ft)	50	36
Link Distance (ft)	527	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		75
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	77	31	34	23
Average Queue (ft)	40	9	5	1
95th Queue (ft)	63	32	23	12
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	219	202	88	112	112	82	124	57
Average Queue (ft)	101	70	21	41	41	23	45	26
95th Queue (ft)	182	154	64	82	88	63	97	50
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		4	0	0	0		0	
Queuing Penalty (veh)		5	1	1	0		0	

Intersection: 9: Valley Drive & Internal Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	40	16
Average Queue (ft)	14	1
95th Queue (ft)	41	8
Link Distance (ft)	2199	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Eaton Street & Internal Drive/Santana Drive

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	48	33	3
Average Queue (ft)	22	10	0
95th Queue (ft)	48	34	3
Link Distance (ft)	2199	414	704
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 8

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5959	5816	5940	5766	5859	5896	5969
Vehs Exited	5923	5818	5946	5737	5809	5877	5961
Starting Vehs	118	141	138	134	127	117	139
Ending Vehs	154	139	132	163	177	136	147
Travel Distance (mi)	4583	4491	4530	4415	4502	4569	4637
Travel Time (hr)	154.6	149.7	153.2	153.0	171.5	156.5	164.0
Total Delay (hr)	29.1	26.3	28.8	31.1	47.8	30.8	36.3
Total Stops	2662	2561	2739	2714	2862	2876	3010
Fuel Used (gal)	153.0	150.3	151.4	149.1	155.2	153.3	157.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:00	8:00	8:00	8:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5887	5750	5894	5873
Vehs Exited	5852	5761	5867	5856
Starting Vehs	118	138	128	121
Ending Vehs	153	127	155	140
Travel Distance (mi)	4536	4337	4440	4504
Travel Time (hr)	156.2	144.0	149.3	155.2
Total Delay (hr)	31.7	24.5	27.6	31.4
Total Stops	2876	2514	2601	2743
Fuel Used (gal)	152.7	145.8	148.2	151.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5959	5816	5940	5766	5859	5896	5969
Vehs Exited	5923	5818	5946	5737	5809	5877	5961
Starting Vehs	118	141	138	134	127	117	139
Ending Vehs	154	139	132	163	177	136	147
Travel Distance (mi)	4583	4491	4530	4415	4502	4569	4637
Travel Time (hr)	154.6	149.7	153.2	153.0	171.5	156.5	164.0
Total Delay (hr)	29.1	26.3	28.8	31.1	47.8	30.8	36.3
Total Stops	2662	2561	2739	2714	2862	2876	3010
Fuel Used (gal)	153.0	150.3	151.4	149.1	155.2	153.3	157.3

Interval #1 Information Recording

Start Time	7:00
End Time	8:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5887	5750	5894	5873
Vehs Exited	5852	5761	5867	5856
Starting Vehs	118	138	128	121
Ending Vehs	153	127	155	140
Travel Distance (mi)	4536	4337	4440	4504
Travel Time (hr)	156.2	144.0	149.3	155.2
Total Delay (hr)	31.7	24.5	27.6	31.4
Total Stops	2876	2514	2601	2743
Fuel Used (gal)	152.7	145.8	148.2	151.6

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.8	0.8	0.2	0.1	0.4
Total Del/Veh (s)	6.0	0.9	6.3	38.6	41.9	6.4	4.3	22.8

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
Total Del/Veh (s)	3.3	4.6	3.3	6.2	8.1	5.3	3.2	2.1	4.3	2.6	6.3

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	3.3	0.1	0.0
Total Del/Veh (s)	7.9	2.2	1.6	1.4	2.3	11.2	5.2	10.3	5.1	2.4

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.1	0.2	0.0	0.0	0.0	0.4	0.2	0.3	0.0	0.0	0.0
Total Del/Veh (s)	7.4	6.4	4.5	9.7	6.2	6.2	34.7	21.4	6.2	8.0	6.0	5.0

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	12.8

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	EBR	WBL	WBR	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	2.5	11.8	5.0	3.0	2.1	4.4	0.5	0.5	2.7

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.0	3.7	0.3	0.2
Total Del/Veh (s)	11.6	6.7	1.8	0.3	4.6	0.4	1.9

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.2	3.2	5.4	2.9	2.1	0.4	0.2	2.5	1.0	0.8	1.7

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.2	2.7	0.2	1.3	0.1	0.4
Total Del/Veh (s)	5.6	2.8	17.5	3.2	51.4	8.7	6.9

9: Valley Drive & Internal Drive Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.5	3.5	0.5	0.6	1.6	0.0	1.6

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	3.7	4.8	2.9	4.6	4.6	2.6	1.5	0.1	0.2	1.8	0.1	0.0

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	1.4

Total Network Performance

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	18.5

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	45	52	615	46
Average Queue (ft)	13	11	266	12
95th Queue (ft)	38	37	674	36
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)			1	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	WB	WB	NB	SB
Directions Served	LT	LT	TR	LTR	LTR
Maximum Queue (ft)	30	48	7	50	48
Average Queue (ft)	3	10	0	14	14
95th Queue (ft)	18	37	7	41	42
Link Distance (ft)	2163	4772	4772	155	704
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	NB	SB	SB
Directions Served	L	LTR	L	TR
Maximum Queue (ft)	49	68	27	54
Average Queue (ft)	14	23	7	26
95th Queue (ft)	41	55	24	48
Link Distance (ft)		216		717
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	140		60	
Storage Blk Time (%)				0
Queuing Penalty (veh)				0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	107	62	97	105	410	350	79	67
Average Queue (ft)	46	13	50	42	203	123	33	25
95th Queue (ft)	85	44	82	85	348	299	63	58
Link Distance (ft)	749	749	636	636	581	581	1510	1510
Upstream Blk Time (%)					0	0		
Queuing Penalty (veh)					0	0		
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	25	79	30
Average Queue (ft)	2	36	3
95th Queue (ft)	14	64	16
Link Distance (ft)	291	546	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		85	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	78	37
Average Queue (ft)	29	10
95th Queue (ft)	55	33
Link Distance (ft)	513	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	75	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	34	45	2
Average Queue (ft)	30	10	7	0
95th Queue (ft)	56	34	31	2
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	225	199	86	81	125	104	145	84
Average Queue (ft)	107	77	11	32	57	35	67	23
95th Queue (ft)	187	160	48	64	104	79	129	58
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		5	0		0		1	
Queuing Penalty (veh)		3	0		0		1	

Intersection: 9: Valley Drive & Internal Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	40	3
Average Queue (ft)	20	0
95th Queue (ft)	45	3
Link Distance (ft)	2199	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Eaton Street & Internal Drive/Santana Drive

Movement	EB	WB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	34
Average Queue (ft)	7	13
95th Queue (ft)	27	39
Link Distance (ft)	2199	414
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 3

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	4:57	4:57	4:57	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63	63	63	63
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	5453	5493	5623	5561	5445	5540	5668
Vehs Exited	5451	5463	5621	5551	5443	5524	5653
Starting Vehs	131	94	117	129	122	110	110
Ending Vehs	133	124	119	139	124	126	125
Travel Distance (mi)	4097	4105	4182	4152	4063	4082	4203
Travel Time (hr)	133.4	131.4	136.4	133.6	130.6	131.5	135.3
Total Delay (hr)	18.8	17.3	20.1	18.3	17.5	18.1	18.8
Total Stops	2022	1930	2185	1956	1901	1937	2049
Fuel Used (gal)	137.9	137.5	140.5	139.3	135.2	136.9	141.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	4:57	4:57	4:57	4:57
End Time	6:00	6:00	6:00	6:00
Total Time (min)	63	63	63	63
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5598	5647	5657	5568
Vehs Exited	5572	5652	5638	5559
Starting Vehs	110	123	114	114
Ending Vehs	136	118	133	121
Travel Distance (mi)	4237	4217	4235	4157
Travel Time (hr)	138.0	137.7	138.5	134.7
Total Delay (hr)	19.7	20.2	20.4	18.9
Total Stops	2157	2213	2172	2051
Fuel Used (gal)	142.7	142.8	143.0	139.7

Interval #0 Information Seeding

Start Time	4:57
End Time	5:00
Total Time (min)	3
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	5453	5493	5623	5561	5445	5540	5668
Vehs Exited	5451	5463	5621	5551	5443	5524	5653
Starting Vehs	131	94	117	129	122	110	110
Ending Vehs	133	124	119	139	124	126	125
Travel Distance (mi)	4097	4105	4182	4152	4063	4082	4203
Travel Time (hr)	133.4	131.4	136.4	133.6	130.6	131.5	135.3
Total Delay (hr)	18.8	17.3	20.1	18.3	17.5	18.1	18.8
Total Stops	2022	1930	2185	1956	1901	1937	2049
Fuel Used (gal)	137.9	137.5	140.5	139.3	135.2	136.9	141.4

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	5598	5647	5657	5568
Vehs Exited	5572	5652	5638	5559
Starting Vehs	110	123	114	114
Ending Vehs	136	118	133	121
Travel Distance (mi)	4237	4217	4235	4157
Travel Time (hr)	138.0	137.7	138.5	134.7
Total Delay (hr)	19.7	20.2	20.4	18.9
Total Stops	2157	2213	2172	2051
Fuel Used (gal)	142.7	142.8	143.0	139.7

1: Ridge Road & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	0.2	0.2	0.1
Total Del/Veh (s)	6.2	1.0	6.9	6.2	7.6	7.1	4.8	6.3

2: Eaton Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Total Del/Veh (s)	3.6	4.9	3.5	4.7	7.0	5.1	3.2	1.9	3.3	2.4	5.6

3: Valley Drive & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.9	0.1	0.0
Total Del/Veh (s)	6.9	2.7	1.7	3.6	1.1	1.0	14.1	14.3	3.7	2.7

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.2	0.4	0.0	0.0	0.0	0.3	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	12.6	11.0	7.1	7.3	5.1	4.3	13.9	11.8	4.2	8.7	6.1	5.4

4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	8.5

5: S Gilbert Street & Elm Avenue Performance by movement

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.0	2.9	4.8	2.4	2.1	3.1	0.7	1.7

6: S Gilbert Street & Ash Avenue Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	3.3	0.5	0.6
Total Del/Veh (s)	8.1	3.6	0.7	0.2	2.7	1.0	1.2

7: Valley Drive & South Street/Gordon Drive Performance by movement

Movement	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.0	0.0	0.0	0.1
Total Del/Veh (s)	5.5	6.2	3.9	5.5	2.8	2.0	0.2	0.2	2.6	0.9	0.9	2.0

8: Valley Drive & 5th Street Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.3	2.3	2.8	0.2	0.9	0.0	0.5
Total Del/Veh (s)	5.5	2.9	17.6	2.5	54.2	8.2	6.4

9: Valley Drive & Internal Drive Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	5.4	3.3	0.4	0.5	1.7	0.1	1.0

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1
Total Del/Veh (s)	4.2	5.3	2.9	3.9	5.0	2.6	1.8	0.1	0.1	1.2	0.0	0.0

10: Eaton Street & Internal Drive/Santana Drive Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.8

Total Network Performance

Movement	All
Denied Del/Veh (s)	0.4
Total Del/Veh (s)	11.6

Intersection: 1: Ridge Road & Plum Creek Parkway

Movement	EB	EB	NB	SB
Directions Served	L	LR	LT	T
Maximum Queue (ft)	49	44	84	60
Average Queue (ft)	11	6	28	20
95th Queue (ft)	37	28	63	48
Link Distance (ft)	4772	4772	1075	2384
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Eaton Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	43	6	52	13	35	36
Average Queue (ft)	5	0	7	0	8	7
95th Queue (ft)	26	4	32	8	29	28
Link Distance (ft)	2163	2163	4772	4772	155	704
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Valley Drive & Plum Creek Parkway

Movement	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	64	21	2	6	2	46	25	56
Average Queue (ft)	27	1	0	0	0	11	4	21
95th Queue (ft)	57	10	2	4	2	37	19	41
Link Distance (ft)			2163	2163		216		717
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	140	120			120		60	
Storage Blk Time (%)								0
Queuing Penalty (veh)								0

Intersection: 4: Lake Gulch Road/S Gilbert Street & Plum Creek Parkway

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LT	TR	LT	TR
Maximum Queue (ft)	186	171	88	59	170	101	84	73
Average Queue (ft)	82	53	42	10	76	15	43	32
95th Queue (ft)	148	123	78	39	136	63	72	65
Link Distance (ft)	749	749	636	636	581	581	1510	1510
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: S Gilbert Street & Elm Avenue

Movement	WB	NB	SB
Directions Served	LTR	L	L
Maximum Queue (ft)	53	18	45
Average Queue (ft)	23	1	9
95th Queue (ft)	49	9	33
Link Distance (ft)	546		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	85
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Intersection: 6: S Gilbert Street & Ash Avenue

Movement	WB	NB	SB
Directions Served	LR	R	L
Maximum Queue (ft)	54	2	50
Average Queue (ft)	22	0	12
95th Queue (ft)	42	2	38
Link Distance (ft)	513	1231	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			75
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Intersection: 7: Valley Drive & South Street/Gordon Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	71	34	38	24
Average Queue (ft)	38	10	5	1
95th Queue (ft)	61	33	24	10
Link Distance (ft)	1076	493	452	1301
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Valley Drive & 5th Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	R	L	T	T	L	R
Maximum Queue (ft)	227	207	90	112	123	88	124	68
Average Queue (ft)	100	67	23	44	40	23	46	27
95th Queue (ft)	184	154	66	84	90	65	95	52
Link Distance (ft)	990	990			1079	1079		1301
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			65	120			150	
Storage Blk Time (%)		4	0	0	0			
Queuing Penalty (veh)		5	1	2	0			

Intersection: 9: Valley Drive & Internal Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	43	25
Average Queue (ft)	15	2
95th Queue (ft)	42	13
Link Distance (ft)	2199	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Eaton Street & Internal Drive/Santana Drive

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	50	34	6
Average Queue (ft)	23	9	0
95th Queue (ft)	48	33	4
Link Distance (ft)	2199	414	704
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 7

APPENDIX G

Capacity Worksheets – Alternative Connectivity Analysis

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	9.7				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	457		802		322
Demand Flow Rate, veh/h	466		818		328
Vehicles Circulating, veh/h	110		295		428
Vehicles Exiting, veh/h	428		281		685
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.5		15.8		1.6
Approach LOS	A		C		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	LTR	LT	T	
RT Channelized					Free
Lane Util	0.530	0.470	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	247	219	818	110	218
Cap Entry Lane, veh/h	1220	1293	1105	987	1938
Entry HV Adj Factor	0.981	0.981	0.981	0.980	0.980
Flow Entry, veh/h	242	215	802	108	214
Cap Entry, veh/h	1196	1268	1084	968	1900
V/C Ratio	0.202	0.169	0.740	0.111	0.113
Control Delay, s/veh	4.8	4.3	15.8	4.7	0.0
LOS	A	A	C	A	A
95th %tile Queue, veh	1	1	7	0	0

HCM 7th Roundabout
2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.6						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	460		639		55	31
Demand Flow Rate, veh/h	469		652		56	31
Vehicles Circulating, veh/h	25		56		472	693
Vehicles Exiting, veh/h	699		472		22	15
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.1		4.9		4.4	5.0
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.469	0.531	0.469	0.531	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	220	249	306	346	56	31
Cap Entry Lane, veh/h	1319	1390	1282	1354	951	788
Entry HV Adj Factor	0.983	0.980	0.982	0.980	0.982	1.000
Flow Entry, veh/h	216	244	301	339	55	31
Cap Entry, veh/h	1297	1362	1259	1326	934	788
V/C Ratio	0.167	0.179	0.239	0.256	0.059	0.039
Control Delay, s/veh	4.2	4.1	4.9	4.9	4.4	5.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	44	392	6	0	645	6	27	0	3	12	0	132
Future Vol, veh/h	44	392	6	0	645	6	27	0	3	12	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	426	7	0	701	7	29	0	3	13	0	143

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	708	0	0	433	0	0	876	1233	216	1010	1229	351
Stage 1	-	-	-	-	-	-	525	525	-	701	701	-
Stage 2	-	-	-	-	-	-	351	708	-	309	528	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	887	-	-	1123	-	-	243	176	788	194	176	646
Stage 1	-	-	-	-	-	-	504	528	-	395	439	-
Stage 2	-	-	-	-	-	-	639	436	-	676	526	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	887	-	-	1123	-	-	179	166	788	183	167	646
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	166	-	183	167	-
Stage 1	-	-	-	-	-	-	477	499	-	395	439	-
Stage 2	-	-	-	-	-	-	497	436	-	637	497	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.92	0	27.27	13.33
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	194	887	-	-	1123	-	-	183	646
HCM Lane V/C Ratio	0.168	0.054	-	-	-	-	-	0.071	0.222
HCM Control Delay (s/veh)	27.3	9.3	-	-	0	-	-	26.2	12.2
HCM Lane LOS	D	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0	-	-	0.2	0.8

Intersection							
Intersection Delay, s/veh	44.6						
Intersection LOS	E						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	623		802		1036		328
Demand Flow Rate, veh/h	635		818		1056		334
Vehicles Circulating, veh/h	353		1025		488		1074
Vehicles Exiting, veh/h	1055		519		500		769
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	6.8		25.9		90.0		18.1
Approach LOS	A		D		F		C
Lane	Left	Right	Left	Right	Left	Left	
Designated Moves	LT	TR	LT	TR	LTR	LTR	
Assumed Moves	LT	TR	LT	TR	LTR	LTR	
RT Channelized							
Lane Util	0.469	0.531	0.469	0.531	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	298	337	384	434	1056	334	
Cap Entry Lane, veh/h	976	1052	526	594	938	570	
Entry HV Adj Factor	0.982	0.979	0.982	0.979	0.981	0.981	
Flow Entry, veh/h	293	330	377	425	1036	328	
Cap Entry, veh/h	958	1030	516	582	920	559	
V/C Ratio	0.305	0.320	0.730	0.730	1.126	0.586	
Control Delay, s/veh	6.9	6.7	27.2	24.8	90.0	18.1	
LOS	A	A	D	C	F	C	
95th %tile Queue, veh	1	1	6	6	28	4	

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	2	24	0	21	0	683	20	3	275	2
Future Vol, veh/h	0	0	2	24	0	21	0	683	20	3	275	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	26	0	23	0	742	22	3	299	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1049	1071	300	1059	1061	753	301	0	0	764	0	0
Stage 1	307	307	-	753	753	-	-	-	-	-	-	-
Stage 2	742	764	-	305	308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	221	740	202	224	410	1260	-	-	849	-	-
Stage 1	703	661	-	402	417	-	-	-	-	-	-	-
Stage 2	407	413	-	704	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	220	740	201	223	410	1260	-	-	849	-	-
Mov Cap-2 Maneuver	193	220	-	201	223	-	-	-	-	-	-	-
Stage 1	701	659	-	402	417	-	-	-	-	-	-	-
Stage 2	385	413	-	699	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.88	21.74	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1260	-	-	740	264	849	-	-
HCM Lane V/C Ratio	-	-	-	0.003	0.186	0.004	-	-
HCM Control Delay (s/veh)	0	-	-	9.9	21.7	9.3	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	11	42	708	6	15	281
Future Vol, veh/h	11	42	708	6	15	281
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	-	-	-	75	-
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	12	46	770	7	16	305

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1111	773	0	0	776
Stage 1	773	-	-	-	-
Stage 2	338	-	-	-	-
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	231	399	-	-	840
Stage 1	455	-	-	-	-
Stage 2	722	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	227	399	-	-	840
Mov Cap-2 Maneuver	227	-	-	-	-
Stage 1	455	-	-	-	-
Stage 2	708	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	17.53	0	0.47
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	345	840
HCM Lane V/C Ratio	-	-	0.167	0.019
HCM Control Delay (s/veh)	-	-	17.5	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	30	0	35	0	6	6	73	79	3	2	35	62
Future Vol, veh/h	30	0	35	0	6	6	73	79	3	2	35	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	38	0	7	7	79	86	3	2	38	67

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	324	324	72	289	356	88	105	0	0	89	0	0
Stage 1	76	76	-	246	246	-	-	-	-	-	-	-
Stage 2	248	248	-	42	110	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	629	594	991	664	570	971	1486	-	-	1506	-	-
Stage 1	933	832	-	758	703	-	-	-	-	-	-	-
Stage 2	756	701	-	972	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	582	560	991	601	537	971	1486	-	-	1506	-	-
Mov Cap-2 Maneuver	582	560	-	601	537	-	-	-	-	-	-	-
Stage 1	932	830	-	715	663	-	-	-	-	-	-	-
Stage 2	702	662	-	933	803	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v10.31		10.31	3.56	0.15
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	842	-	-	748	691	32	-	-
HCM Lane V/C Ratio	0.053	-	-	0.094	0.019	0.001	-	-
HCM Control Delay (s/veh)	7.6	0	-	10.3	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.1	0	-	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1365	62	63	825	105	60
Future Volume (vph)	1365	62	63	825	105	60
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.127		0.950	
Satd. Flow (perm)	3539	1583	237	3539	1770	1583
Satd. Flow (RTOR)		25				65
Lane Group Flow (vph)	1484	67	68	897	114	65
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	82.0	82.0	13.0	95.0	25.0	25.0
Total Split (%)	68.3%	68.3%	10.8%	79.2%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	86.6	86.6	97.0	96.0	13.0	13.0
Actuated g/C Ratio	0.72	0.72	0.81	0.80	0.11	0.11
v/c Ratio	0.58	0.05	0.24	0.31	0.59	0.28
Control Delay (s/veh)	10.2	4.5	4.9	3.8	63.0	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.2	4.5	4.9	3.8	63.0	14.2
LOS	B	A	A	A	E	B
Approach Delay (s/veh)	10.0			3.9	45.4	
Approach LOS	A			A	D	
Queue Length 50th (ft)	274	9	8	78	85	0
Queue Length 95th (ft)	401	27	21	125	141	41
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2554	1149	293	2830	295	318
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	0.58	0.06	0.23	0.32	0.39	0.20

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 10.2	Intersection LOS: B
Intersection Capacity Utilization 61.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	28	18	6	6	55
Future Vol, veh/h	18	28	18	6	6	55
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	30	20	7	7	60

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	96	23	0
Stage 1	23	-	-
Stage 2	73	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	904	1054	-
Stage 1	1000	-	-
Stage 2	950	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	900	1054	-
Mov Cap-2 Maneuver	900	-	-
Stage 1	1000	-	-
Stage 2	946	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	8.84	0	0.72
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	988	177
HCM Lane V/C Ratio	-	-	0.051	0.004
HCM Control Delay (s/veh)	-	-	8.8	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 7th TWSC
10: Internal Drive/Santana Drive & Eaton Street

Total Traffic Volumes - Alternative Connectivity
AM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	6	14	2	4	30
Future Vol, veh/h	4	6	14	2	4	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	4	7	15	2	4	33

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	17	0	0 32 16
Stage 1	-	-	- 16 -
Stage 2	-	-	- 15 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1600	-	- 982 1063
Stage 1	-	-	- 1006 -
Stage 2	-	-	- 1008 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1600	-	- 980 1063
Mov Cap-2 Maneuver	-	-	- 980 -
Stage 1	-	-	- 1004 -
Stage 2	-	-	- 1008 -

Approach	EB	WB	SB
HCM Control Delay, s/v	2.9	0	8.55
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	720	-	-	-	1052
HCM Lane V/C Ratio	0.003	-	-	-	0.035
HCM Control Delay (s/veh)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 7th Roundabout
1: Ridge Road & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection					
Intersection Delay, s/veh	4.6				
Intersection LOS	A				
Approach	EB		NB		SB
Entry Lanes	2		1		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	524		364		515
Demand Flow Rate, veh/h	535		371		525
Vehicles Circulating, veh/h	256		232		228
Vehicles Exiting, veh/h	228		559		375
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	5.6		6.2		2.5
Approach LOS	A		A		A
Lane	Left	Right	Left	Left	Bypass
Designated Moves	L	LTR	LT	T	R
Assumed Moves	L	TR	LT	T	
RT Channelized					Free
Lane Util	0.434	0.566	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.328	4.328	
A (Intercept)	1350	1420	1420	1420	
B (Slope)	9.199e-4	8.501e-4	8.501e-4	8.501e-4	
Entry Flow, veh/h	232	303	371	256	269
Cap Entry Lane, veh/h	1067	1142	1166	1170	1938
Entry HV Adj Factor	0.978	0.980	0.982	0.980	0.980
Flow Entry, veh/h	227	297	364	251	264
Cap Entry, veh/h	1044	1120	1145	1147	1900
V/C Ratio	0.218	0.265	0.318	0.219	0.139
Control Delay, s/veh	5.5	5.7	6.2	5.1	0.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0

HCM 7th Roundabout
2: Eaton Street & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection						
Intersection Delay, s/veh 4.4						
Intersection LOS A						
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	569		490		31	13
Demand Flow Rate, veh/h	580		499		31	13
Vehicles Circulating, veh/h	26		31		541	497
Vehicles Exiting, veh/h	484		541		65	33
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	4.5		4.3		4.3	4.0
Approach LOS	A		A		A	A
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.471	0.529	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	273	307	235	264	31	13
Cap Entry Lane, veh/h	1318	1389	1312	1383	897	931
Entry HV Adj Factor	0.979	0.982	0.980	0.984	1.000	1.000
Flow Entry, veh/h	267	301	230	260	31	13
Cap Entry, veh/h	1291	1364	1285	1360	897	931
V/C Ratio	0.207	0.221	0.179	0.191	0.035	0.014
Control Delay, s/veh	4.6	4.5	4.3	4.2	4.3	4.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0	0

HCM 7th TWSC
3: Valley Drive & Plum Creek Parkway

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱	↰		↰↱		↰	↰	
Traffic Vol, veh/h	151	521	23	3	432	10	14	0	0	7	0	93
Future Vol, veh/h	151	521	23	3	432	10	14	0	0	7	0	93
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	140	-	-	120	-	120	-	-	-	60	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	164	566	25	3	470	11	15	0	0	8	0	101

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	480	0	0	591	0	0	1148	1394	296	1088	1396	235
Stage 1	-	-	-	-	-	-	907	907	-	476	476	-
Stage 2	-	-	-	-	-	-	241	487	-	611	920	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1078	-	-	980	-	-	154	140	701	170	140	767
Stage 1	-	-	-	-	-	-	297	353	-	539	555	-
Stage 2	-	-	-	-	-	-	741	549	-	447	348	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1078	-	-	980	-	-	113	119	701	144	118	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	119	-	144	118	-
Stage 1	-	-	-	-	-	-	252	299	-	537	553	-
Stage 2	-	-	-	-	-	-	641	547	-	379	295	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	1.94			0.06			41.87			11.88		
HCM LOS							E			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	113	1078	-	-	980	-	-	144	767
HCM Lane V/C Ratio	0.135	0.152	-	-	0.003	-	-	0.053	0.132
HCM Control Delay (s/veh)	41.9	8.9	-	-	8.7	-	-	31.4	10.4
HCM Lane LOS	E	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.5	0.5	-	-	0	-	-	0.2	0.5

Intersection						
Intersection Delay, s/veh	17.1					
Intersection LOS	C					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	1094		587		544	520
Demand Flow Rate, veh/h	1116		599		555	530
Vehicles Circulating, veh/h	591		547		765	818
Vehicles Exiting, veh/h	757		773		942	328
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	16.8		8.4		21.9	22.6
Approach LOS	C		A		C	C
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.471	0.529	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
A (Intercept)	1350	1420	1350	1420	1420	1420
B (Slope)	9.199e-4	8.501e-4	9.199e-4	8.501e-4	8.501e-4	8.501e-4
Entry Flow, veh/h	525	591	282	317	555	530
Cap Entry Lane, veh/h	784	859	816	892	741	708
Entry HV Adj Factor	0.979	0.981	0.978	0.981	0.979	0.981
Flow Entry, veh/h	514	580	276	311	544	520
Cap Entry, veh/h	768	843	798	875	726	695
V/C Ratio	0.670	0.688	0.346	0.355	0.749	0.748
Control Delay, s/veh	17.0	16.6	8.6	8.1	21.9	22.6
LOS	C	C	A	A	C	C
95th %tile Queue, veh	5	6	2	2	7	7

HCM 7th TWSC
5: S Gilbert Street & Elm Avenue

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	0	11	0	6	3	243	32	24	480	0
Future Vol, veh/h	0	0	0	11	0	6	3	243	32	24	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	85	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	12	0	7	3	264	35	26	522	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	845	879	522	862	862	282	522	0	0	299	0	0
Stage 1	574	574	-	288	288	-	-	-	-	-	-	-
Stage 2	271	305	-	574	574	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	283	286	555	275	293	757	1045	-	-	1262	-	-
Stage 1	504	503	-	720	674	-	-	-	-	-	-	-
Stage 2	735	662	-	504	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	274	279	555	269	286	757	1045	-	-	1262	-	-
Mov Cap-2 Maneuver	274	279	-	269	286	-	-	-	-	-	-	-
Stage 1	494	493	-	717	672	-	-	-	-	-	-	-
Stage 2	727	660	-	494	493	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s/v	0		15.92		0.09		0.38	
HCM LOS	A		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1045	-	-	-	348	1262	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.053	0.021	-	-
HCM Control Delay (s/veh)	8.5	-	-	0	15.9	7.9	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.1	-	-

HCM 7th TWSC
6: S Gilbert Street & Ash Avenue

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	20	233	9	45	492
Future Vol, veh/h	8	20	233	9	45	492
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	-	-	-	75	-
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	9	22	253	10	49	535

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	891	258	0	0	263
Stage 1	258	-	-	-	-
Stage 2	633	-	-	-	-
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	313	780	-	-	1301
Stage 1	785	-	-	-	-
Stage 2	529	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	301	780	-	-	1301
Mov Cap-2 Maneuver	301	-	-	-	-
Stage 1	785	-	-	-	-
Stage 2	509	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v12.11		0	0.66
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	537	1301
HCM Lane V/C Ratio	-	-	0.057	0.038
HCM Control Delay (s/veh)	-	-	12.1	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 7th TWSC
7: Valley Drive & South Street/Gordon Drive

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	47	9	81	0	8	2	44	65	3	12	105	38
Future Vol, veh/h	47	9	81	0	8	2	44	65	3	12	105	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	10	88	0	9	2	48	71	3	13	114	41

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	332	330	135	313	349	72	155	0	0	74	0	0
Stage 1	161	161	-	168	168	-	-	-	-	-	-	-
Stage 2	171	170	-	145	182	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	622	589	914	640	575	990	1425	-	-	1526	-	-
Stage 1	841	765	-	834	759	-	-	-	-	-	-	-
Stage 2	831	758	-	858	749	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	584	563	914	543	549	990	1425	-	-	1526	-	-
Mov Cap-2 Maneuver	584	563	-	543	549	-	-	-	-	-	-	-
Stage 1	833	758	-	805	733	-	-	-	-	-	-	-
Stage 2	791	732	-	758	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v11.08		11.08	2.99	0.57
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	701	-	-	740	603	132	-	-
HCM Lane V/C Ratio	0.034	-	-	0.201	0.018	0.009	-	-
HCM Control Delay (s/veh)	7.6	0	-	11.1	11.1	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	0	-	-

Timings
8: Valley Drive & 5th Street

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1251	140	89	693	71	72
Future Volume (vph)	1251	140	89	693	71	72
Satd. Flow (prot)	3539	1583	1770	3539	1770	1583
Flt Permitted			0.157		0.950	
Satd. Flow (perm)	3539	1583	292	3539	1770	1583
Satd. Flow (RTOR)		59				78
Lane Group Flow (vph)	1360	152	97	753	77	78
Turn Type	NA	Perm	pm+pt	NA	pm+pt	Perm
Protected Phases	2		1	6	7	
Permitted Phases		2	6		4	4
Detector Phase	2	2	1	6	7	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	79.0	79.0	16.0	95.0	25.0	25.0
Total Split (%)	65.8%	65.8%	13.3%	79.2%	20.8%	20.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Act Effect Green (s)	89.0	89.0	101.7	101.9	10.6	10.4
Actuated g/C Ratio	0.74	0.74	0.85	0.85	0.09	0.09
v/c Ratio	0.51	0.12	0.29	0.25	0.49	0.37
Control Delay (s/veh)	8.2	3.7	4.3	2.6	62.2	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.2	3.7	4.3	2.6	62.2	15.9
LOS	A	A	A	A	E	B
Approach Delay (s/veh)	7.8			2.8	39.0	
Approach LOS	A			A	D	
Queue Length 50th (ft)	220	19	10	54	58	0
Queue Length 95th (ft)	320	46	24	86	105	46
Internal Link Dist (ft)	944			1033	1308	
Turn Bay Length (ft)		65	120		150	
Base Capacity (vph)	2625	1189	383	3005	295	328
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	0.52	0.13	0.25	0.25	0.26	0.24
Intersection Summary						
Cycle Length: 120						
Actuated Cycle Length: 120						
Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBTL, Start of Green						
Natural Cycle: 65						
Control Type: Actuated-Coordinated						

Timings

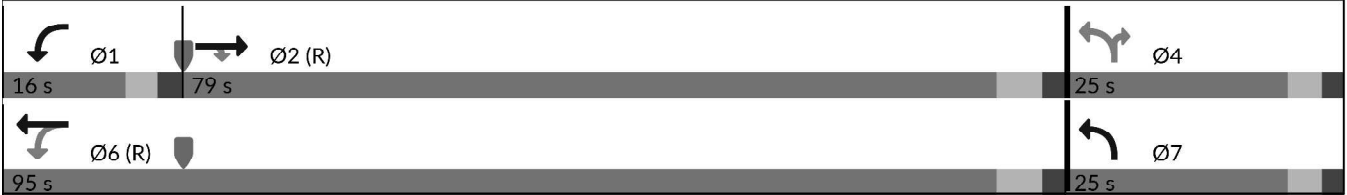
8: Valley Drive & 5th Street

Total Traffic Volumes - Alternative Connectivity

PM Peak Hour - Year 2045

Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 8.1	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: Valley Drive & 5th Street



HCM 7th TWSC
9: Valley Drive & Internal Drive

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	18	61	20	20	35
Future Vol, veh/h	12	18	61	20	20	35
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	20	66	22	22	38

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	159	77	0	0	88
Stage 1	77	-	-	-	-
Stage 2	82	-	-	-	-
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	832	984	-	-	1508
Stage 1	946	-	-	-	-
Stage 2	942	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	820	984	-	-	1508
Mov Cap-2 Maneuver	820	-	-	-	-
Stage 1	946	-	-	-	-
Stage 2	928	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.1	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	911	655
HCM Lane V/C Ratio	-	-	0.036	0.014
HCM Control Delay (s/veh)	-	-	9.1	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 7th TWSC
10: Internal Drive/Santana Drive & Eaton Street

Total Traffic Volumes - Alternative Connectivity
PM Peak Hour - Year 2045

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	22	7	4	2	14
Future Vol, veh/h	14	22	7	4	2	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
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	15	24	8	4	2	15

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	12	0	-	0	64	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1607	-	-	-	942	1072
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	968	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1607	-	-	-	933	1072
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	968	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.82	0	8.48
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	700	-	-	-	1052
HCM Lane V/C Ratio	0.009	-	-	-	0.017
HCM Control Delay (s/veh)	7.3	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1