TRAFFIC IMPACT STUDY

For

Owl Place Commercial
El Paso County, Colorado
PCD File No. CR221

June 2022
Revised:
March 2023

Prepared for:

Doubletree Ventures, LLC
1776 N Scottsdale Rd.
Scottsdale, AZ 85257

Prepared by:

SM ROCHA, LLC
TRAFFIC AND TRANSPORTATION CONSULTANTS

8703 Yates Drive, Suite 210
Westminster, Colorado 80031
(303) 458-9798

6 South Tejon Street, Suite 515
Colorado Springs, Colorado 80903
(719) 203-6639

Project Engineer:
Stephen Simon, EIT

Engineer in Responsible Charge:
Fred Lantz, PE

22-051673

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

03/15/2023

Fred Lantz, P.E. #23410 Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

Brian Zurek

3.20.2023

Brian Zurek Date
Doubletree Ventures, LLC
1776 N Scottsdale Rd.
PO Box 220
Scottsdale, AZ 85257-2115

Table of Contents

List of Figures

List of Tables

Appendices

I. Introduction

Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Owl Place Commercial.

This traffic impact study has been revised to address County review comments regarding updated analysis pursuant to expected closure of Owl Place access to Meridian Road with corresponding revisions to figures and tables pursuant to the latest conceptual site plan. Revisions also include updates to background analysis pursuant to the latest planned adjacent area development.

This proposed commercial development consists of various potential uses including a gas station convenience store, coffee/donut shop with drive-through window, automated car wash, and quick-serve restaurants. The development is located at the southwest corner of the intersection of Meridian Road with Owl Place in El Paso County, Colorado.

Study Area

The study area to be examined in this analysis encompasses Meridian Road between the intersections of Bent Grass Meadows Drive and E Woodmen Road, as well as the existing and future intersections along Falcon Market Place between Eastonville Road and Bent Grass Meadows Drive.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is currently occupied by a single-family dwelling unit and is surrounded by a mix of residential, commercial, and open space land uses.

The proposed development is conceptual and no specific land uses have been determined. However, for purposes of this analysis, there is assumed to be construction for an approximate 5,300 square foot gas station convenience store supporting up to 12 vehicle fueling positions, an approximate 2,000 square foot coffee/donut shop with drive-through window, a 4,170 square foot automated car wash with one wash tunnel, and an approximate 3,420 square foot high-turnover quick-serve restaurant.

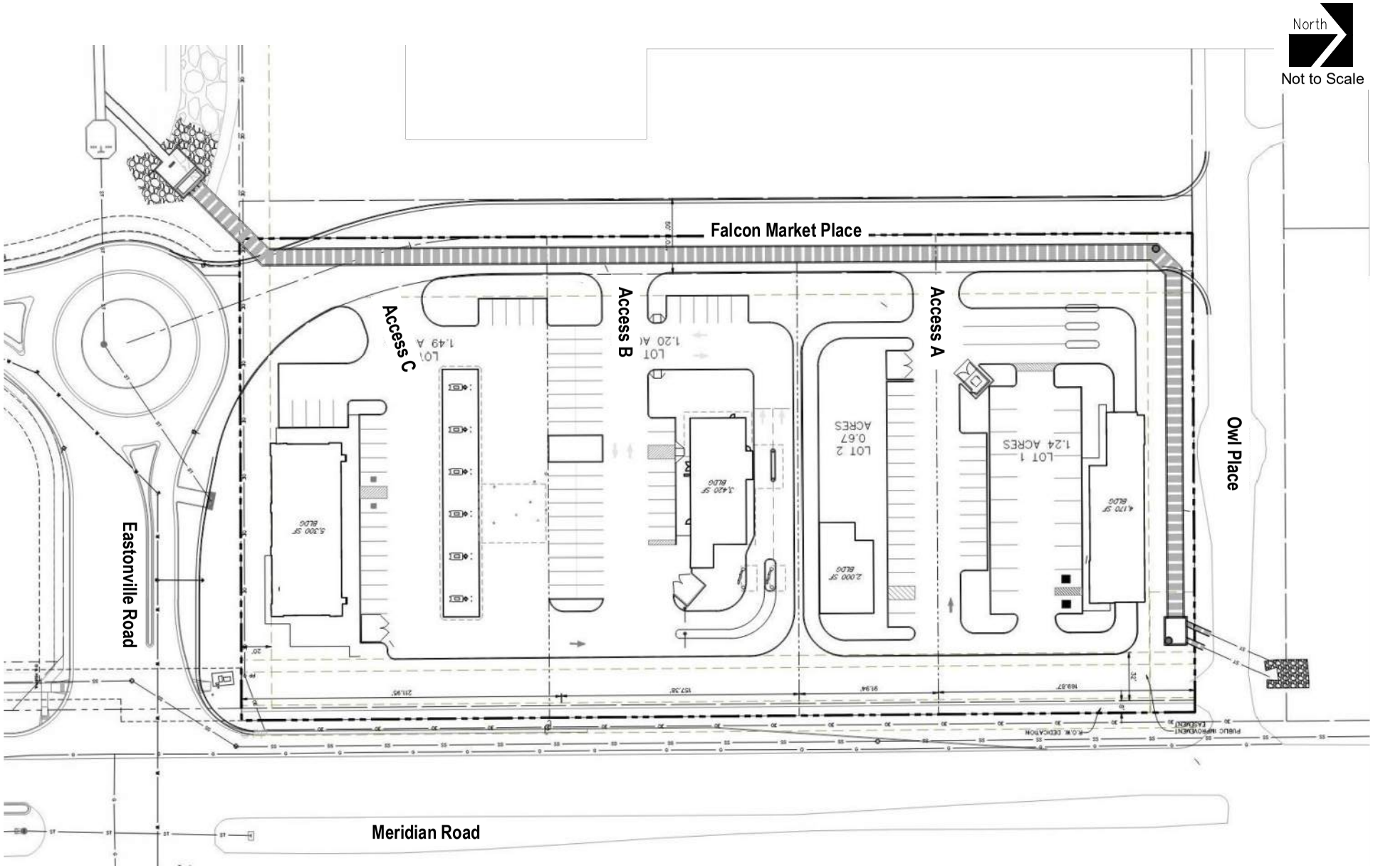
Proposed access to the development is conceptual but is anticipated to include the following locations: three full-movement accesses onto planned extension of Falcon Market Place (referred to as Accesses A, B, and C).

A conceptual sight distance exhibit, illustrating approximate intersection sight distance triangles for site accesses, is included for reference in Appendix F. This two-dimensional exhibit does not consider the potential for landscaping or utility obstructions and is provided for illustrative purposes only.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2024. General site and access locations are shown on Figure 1.

A conceptual site plan, as prepared by Baseline Engineering Corporation, is shown on Figure 2. This plan is provided for illustrative purposes only.


North
Not to Scale
Bent Grass Meadows Drive
Meridian Road
Owl Place
Development Site
Eastonville Road
Falcon Market Place
E Woodmen Road


North
Not to Scale
Falcon Market Place
Access C
Access B
Access A
Owl Place
Eastonville Road
Meridian Road
LOT 2
0.67
ACRES
LOT 1
1.24 ACRES

Existing and Committed Surface Transportation Network

Within the study area, Meridian Road is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include E Woodmen Road, Eastonville Road, Owl Place (interim), Bent Grass Meadows Drive, Falcon Market Place, and Meridian Park Drive. A brief description of each roadway, based on the County's 2040 Major Transportation Corridors Plan (MTCP)[1] and Engineering Criteria Manual (ECM)[2], is provided below:

Meridian Road is a north-south principal arterial roadway having four through lanes (two lanes in each direction) with exclusive turn lanes at the intersections within the study area. Meridian Road provides a posted speed limit of 55 MPH.

E Woodmen Road is an east-west principal arterial roadway having four through lanes (two lanes in each direction) with exclusive turn lanes at the intersection within the study area. E Woodmen Road provides a posted speed limit of 55 MPH.

Eastonville Road is an east-west 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. Eastonville Road provides a posted speed limit of 35 MPH.

Owl Place (interim) is an east-west unpaved roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Owl Place is unclassified in County's MTCP. However, per Standard Drawing 2-10 of County ECM and the roadway's estimated ROW width, Owl Place is assumed to be classified as a local roadway and provides a posted speed limit of 30 MPH.

Bent Grass Meadows Drive is an east-west collector roadway having two through lanes (one lanes in each direction) with exclusive turn lanes at the intersections within the study area. Bent Grass Meadows Drive provides a posted speed limit of 35 MPH.

Falcon Market Place is a recently constructed north-south roadway have two through lanes (one lane in each direction) with shared turn lanes within the study area. Falcon Market Place is unclassified in County's MTCP. However, pursuant to County Staff review comments, Falcon Market Place is considered to be classified as a non-residential collector roadway and provides a posted speed limit of 25 MPH.

[1] El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt & Ullevig, December 2016.
[2] El Paso County Engineering Criteria Manual, El Paso County, December 2016.

Meridian Park Drive is a north-south roadway have two through lanes (one lane in each direction) with shared turn lanes within the study area. Meridian Park Drive is unclassified in County's MTCP. However, per Standard Drawing 2-10 of County ECM and the roadway's estimated ROW width, Meridian Park Drive is assumed to be classified as a local roadway and provides a posted speed limit of 25 MPH. This assumption is also consistent with previously performed analyses for adjacent development areas. It is however noted that as future connection to Falcon Market Place occurs, Meridian Park Drive may also be classified as a non-residential collector depending on actual future daily volumes and ongoing area development.

The study intersections of Meridian Road with E Woodmen Road, Eastonville Road, and Bent Grass Meadows Drive are signalized. 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.

It is noted that signal installation at Eastonville Road and Meridian Road is a recent occurrence with associated extension of Eastonville Road west of Meridian Road. Due to the ongoing development within the area, the newly constructed west leg of the study intersection was observed to experience low volumes associated with construction traffic only. Therefore, for analysis purposes, the study intersection is assumed to not currently operate at its anticipated capacity and was considered to operate as a three-leg stop-controlled intersection for existing conditions only.

Pursuant to adjacent ongoing development plans, it is anticipated that Falcon Market Place will be extended north of Eastonville Road with connection to Meridian Park Drive north of Owl Place. Specific timing details of when this extension may occur are subject to change, however pursuant to County review comments, it is assumed that this extension may occur as early as Year 2024 background traffic conditions. Additionally, it is understood that pursuant to the extension of Falcon Market Place north of Owl Place, the Owl Place intersection with Meridian Road will be restricted to a right-in/right-out only access at minimum, with probable closure in future. For analysis purposes, it is assumed that the access will be closed will occur by Year 2024. This assumption is to provide for a conservative analysis. Discussion on potential interim right-in/right-out impacts for the Owl Place and Meridian Road access intersection is provided as an Additional Analysis in Section VII.

In reference to the County's MTCP, E Woodmen Road is planned to become an expressway by Year 2040 with widening to six through lanes west of Golden Sage Road. Additionally, pursuant to the Briargate Parkway-Stapleton Road Corridor Preservation Plan[3] (CPP) and Access Control Plan[4] (ACP), Meridian Road is anticipated to be widened to a six-lane principal arterial roadway by Year 2060. The remaining study area roadways appear to be built to their ultimate cross-sections excluding potential improvements required due to the proposed development.

[3] Corridor Preservation Plan Briargate Parkway/Stapleton Road Corridor Study, Wilson & Company, January 2022.

[4] Briargate Parkway-Stapleton Road Corridor Study Appendix D: Access Control Plan Draft, El Paso County Department of Public Works, December 2021.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of Meridian Road with E Woodmen Road, Eastonville Road, and Owl Place. Counts were collected on June 1, 2022, 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.

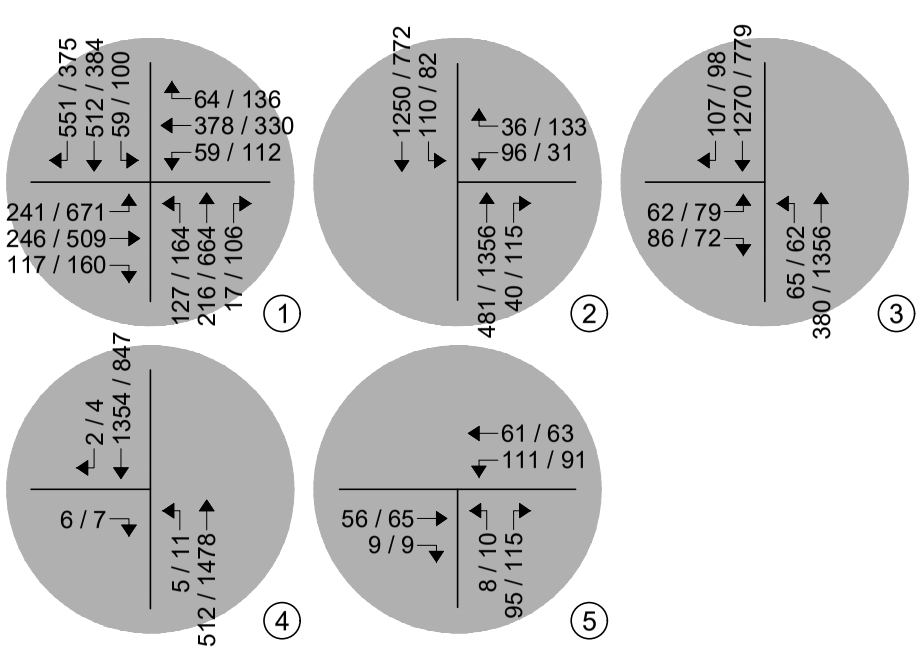
Peak hour traffic counts and 24-hour traffic volumes shown for Meridian Road and the intersections of Bent Grass Meadows Drive with Meridian Road and Meridian Park Drive were obtained from a previous traffic study[5]. Referenced counts were collected on March 29, 2022.

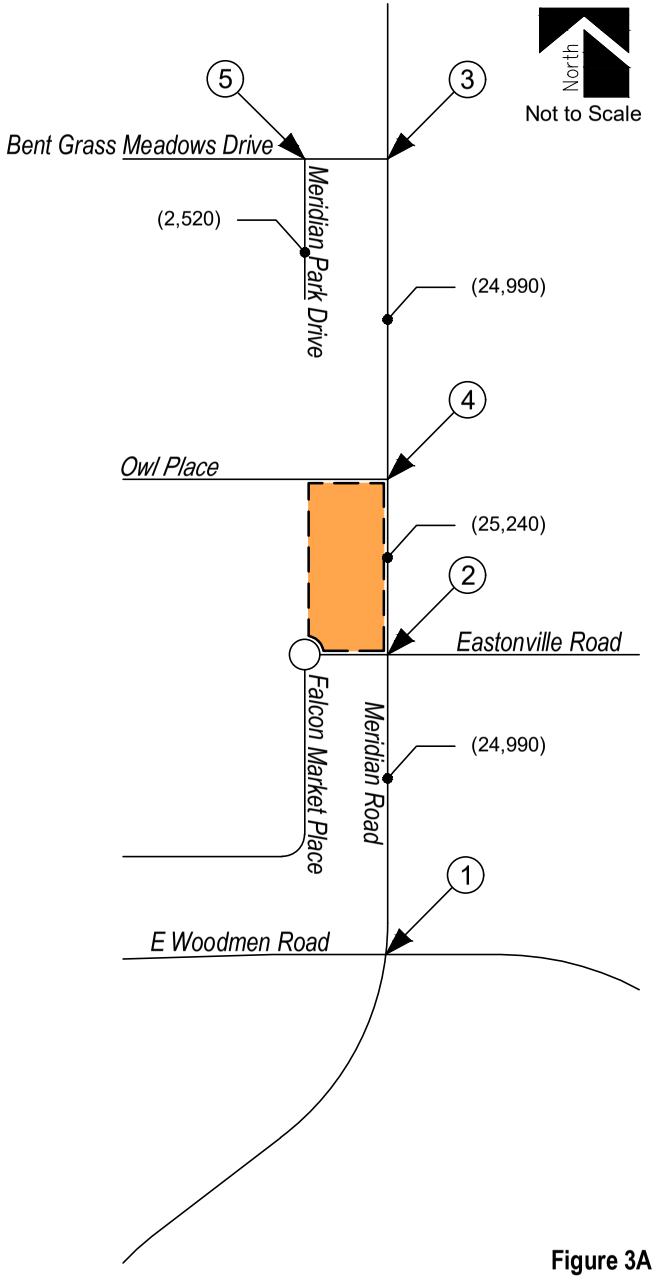
Additional 24-hour traffic volumes shown along Meridian Road and Meridian Park Drive were estimated based on adjacent peak hour intersection volumes and the percent difference in cumulative traffic volumes along each roadway section between intersections. It is noted that a typical ratio between peak hour volumes and 24-hour volumes may be applied which assumes that morning peak hour traffic represents approximately eight percent of daily traffic volumes, and afternoon peak hour traffic represents approximately ten percent of daily traffic volumes. Estimated 24-hour volumes were then rounded to the nearest ten vehicles due to the variability of daily traffic.

Newly collected and referenced counts representing existing traffic volumes, are shown on Figure 3A. Existing intersection geometries are shown on Figure 3B.

Existing signal timing parameters for the intersections of Meridian Road with E Woodmen Road and Bent Grass Meadows Drive were obtained from County Staff and used throughout this study to the best extent possible in order to remain consistent with existing signal coordination plans. County signal timing information received is included for reference in Appendix A.

[5] Bent Grass Dunkin' Donuts, SM ROCHA, LLC, April 2022.



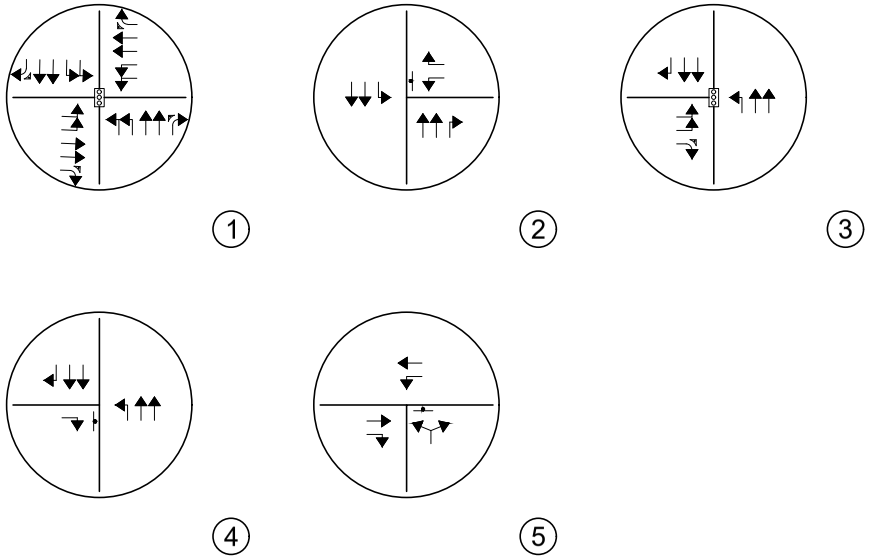


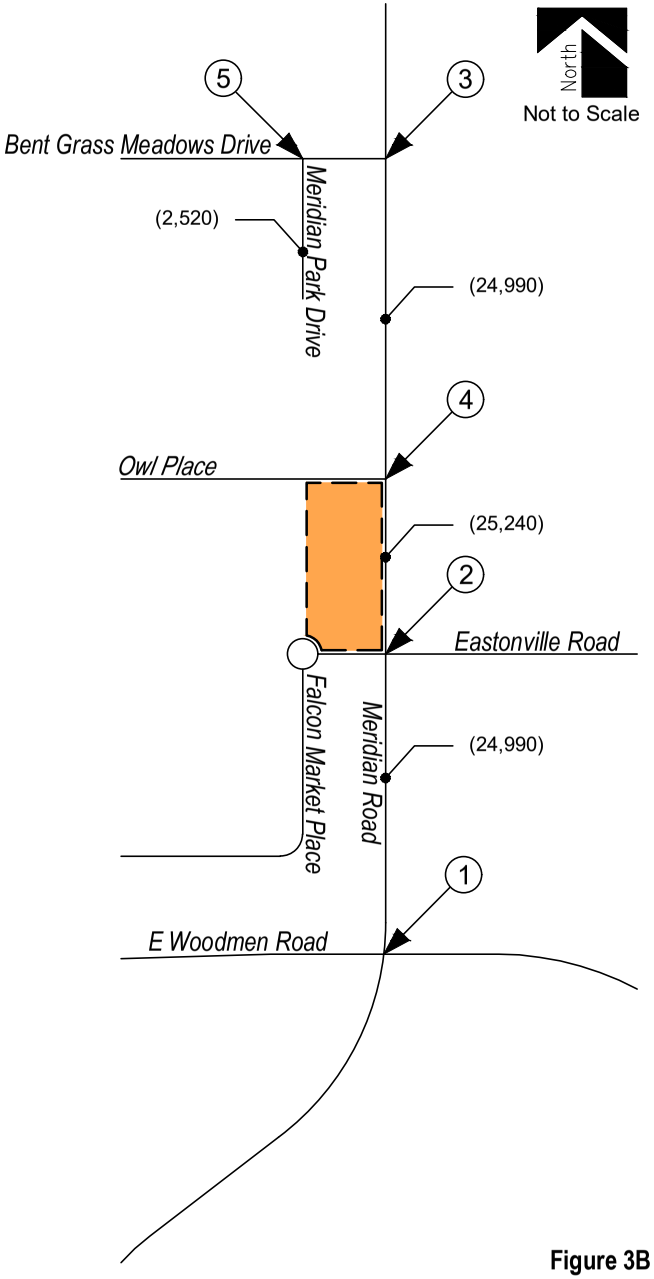
LEGEND

Study Intersection Volumes

Development Site

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





LEGEND

Study Intersection
Lane Geometry

Development Site

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

Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM), 6th Edition, by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing and future traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

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
Meridian Road / E Woodmen Road (Signalized)	C (29.1)	D (37.8)
Meridian Road / Bent Grass Meadows Drive (Signalized)	A (9.9)	A (7.4)
Meridian Road / Eastonville Road (Stop-Controlled)		
Westbound Left	F	F
Westbound Right	A	B
Southbound Left	A	B
Meridian Road / Owl Place (Stop-Controlled)		
Eastbound Right	B	A
Northbound Left	A	A
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

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

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Meridian Road with E Woodmen Road has overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour.

The signalized intersection of Meridian Road with Bent Grass Meadows Drive has overall operations at LOS A during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Meridian Road with Eastonville Road has turning movement operations at or better than LOS B during either peak traffic hour. Exceptions would include the westbound left turning movement which operates at LOS F during both peak traffic hours. The LOS F operation is attributed to the high through traffic volumes along Meridian Road and the stop-controlled nature of the intersection. However, as previously discussed, given the recent signalization of the study intersection, actual operations are expected to be better than shown.

The unsignalized intersection of Meridian Road with Owl Place 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 Bent Grass Meadows Drive with Meridian Park Drive has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

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.

This will need to be updated with preliminary plan/final plat TIS

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 2024 and 2040, a compounded annual growth rate was determined using population growth estimates provided by the Pikes Peak Area Council of Governments' (PPACG) 2045 Long Range Transportation Plan[6] which anticipates a 20-year growth rate of less than two percent. Therefore, in order to provide for a conservative analysis, a growth rate of two percent was applied to existing traffic volumes.

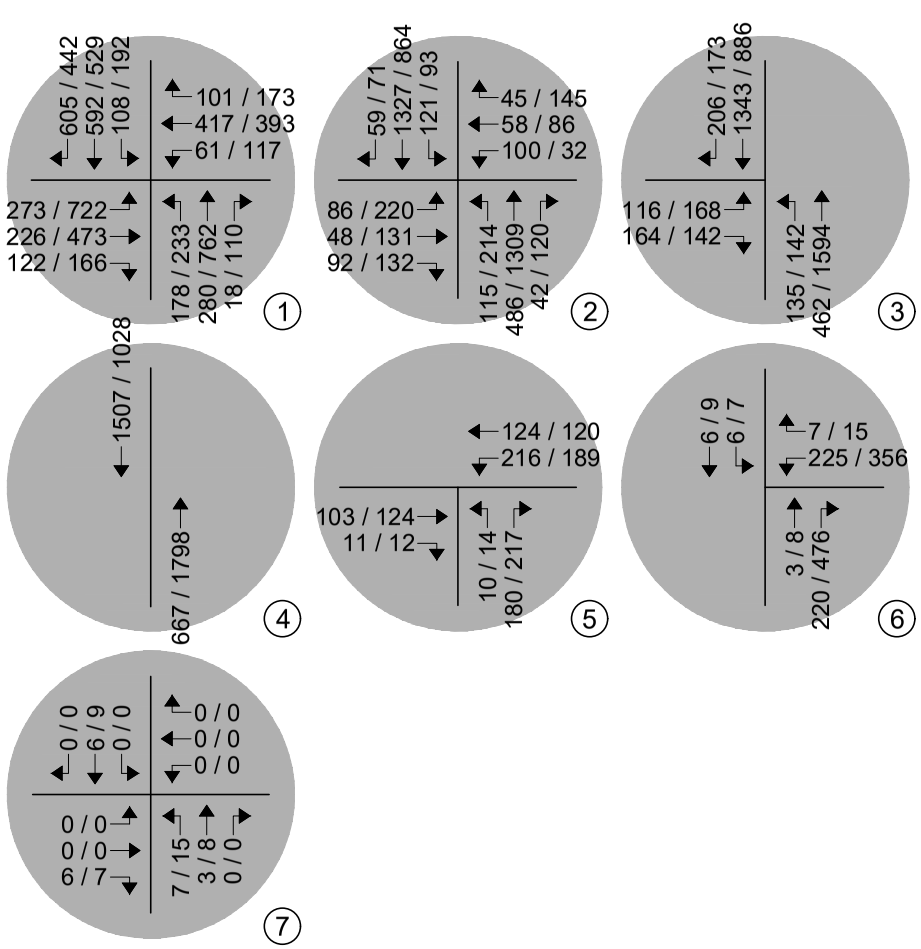
To account for projected traffic from adjacent developments not yet built, trip generations from the previously prepared Falcon Marketplace Traffic Impact Analysis[7] and the Bent Grass East Commercial Filing No. 3 Traffic Impact Analysis[8], provided by the County's Electronic Development Application Review Program (EDARP), were added to background traffic volumes. It is noted that additional ongoing development within the area is considered to be previously accounted for within the indicated reference studies or are otherwise accounted for within the applied two percent annual growth rate. This includes, but may not be limited to, an anticipated self-storage facility located directly to the north of the proposed development, as well as ongoing plans for residential development to the northwest.

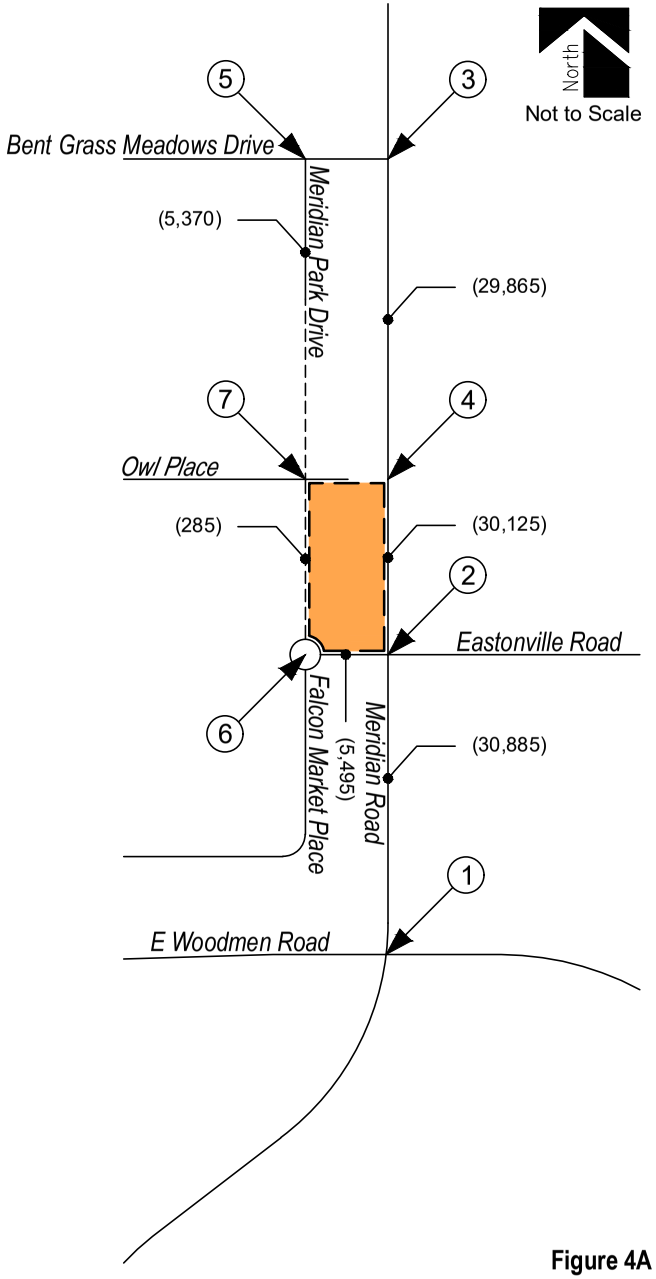
Pursuant to the proposed and committed area roadway improvements discussed in Section I, Year 2024 and Year 2040 background traffic conditions assume the completion of the Falcon Market Place extension north to Meridian Park Drive as well as the closure of the Owl Place intersection with Meridian Road. Year 2040 also assumes signal timing parameters for the Meridian Road intersections with optimized intersection splits in effort to better long-term intersection performance. It is noted that actual future timings are expected to require an updated corridor timing study in order to precisely determine what may be needed. Timings assumed within this report are for general planning and analysis purposes only.

Projected background traffic volumes for Years 2024 and 2040 are shown on Figures 4A and Figure 5A, respectively. Intersection geometries for study intersections under background traffic conditions are shown on Figures 4B and 5B.

This is okay if the other project is only storage. Coordination with that traffic study to ensure that the background traffic and total traffic reflects that traffic will be required with the final plats.

[6] Moving Forward 2045: Pikes Peak Area Regional Transportation Plan, PPACG, January 2020.
[7] Falcon Marketplace Traffic Impact Analysis, LSC Transportation Consultants Inc., September 2018.
[8] Bent Grass East Commercial Filing No. 3 Updated Traffic Impact Analysis, LSC Transportation Consultants Inc., October 2021.



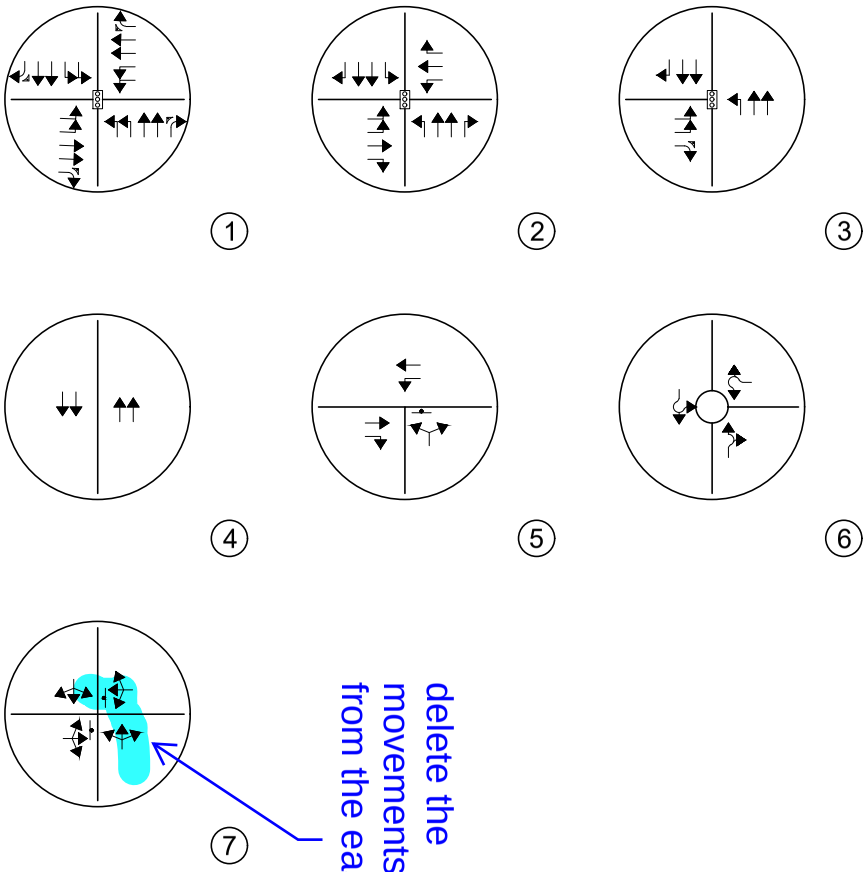


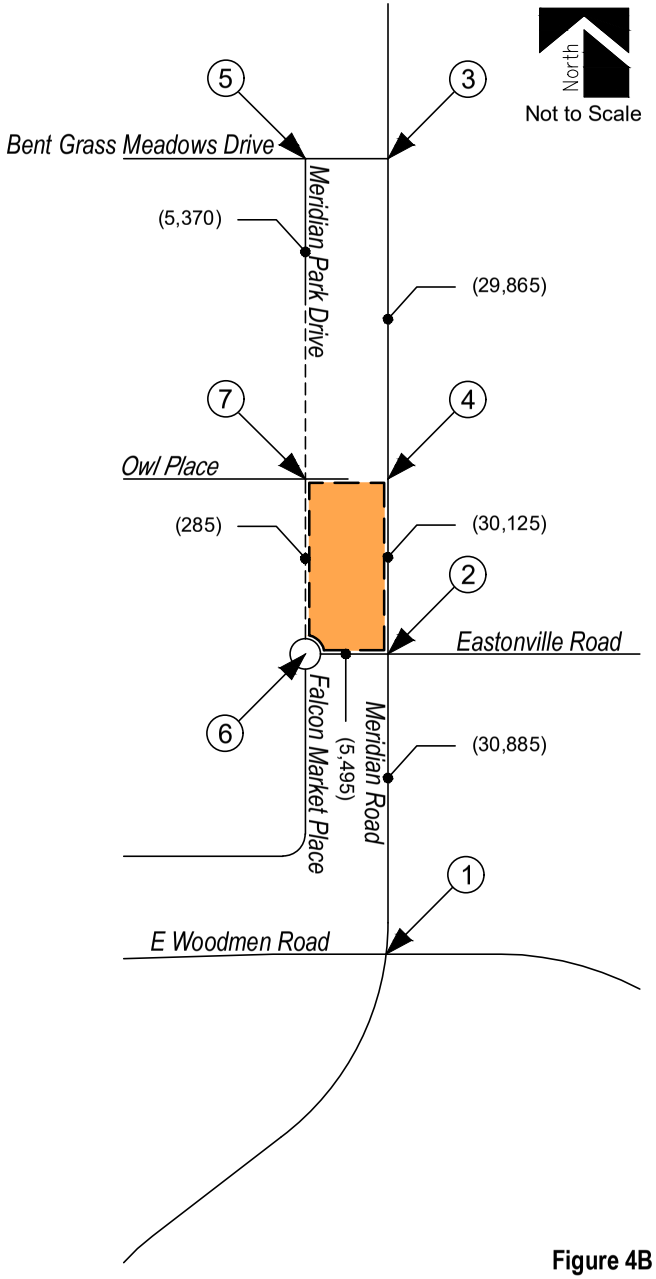
LEGEND

Study Intersection Volumes

Development Site

Figure 4A
BACKGROUND TRAFFIC - YEAR 2024
Volumes
AM / PM Peak Hour
(ADT) : Average Daily Traffic

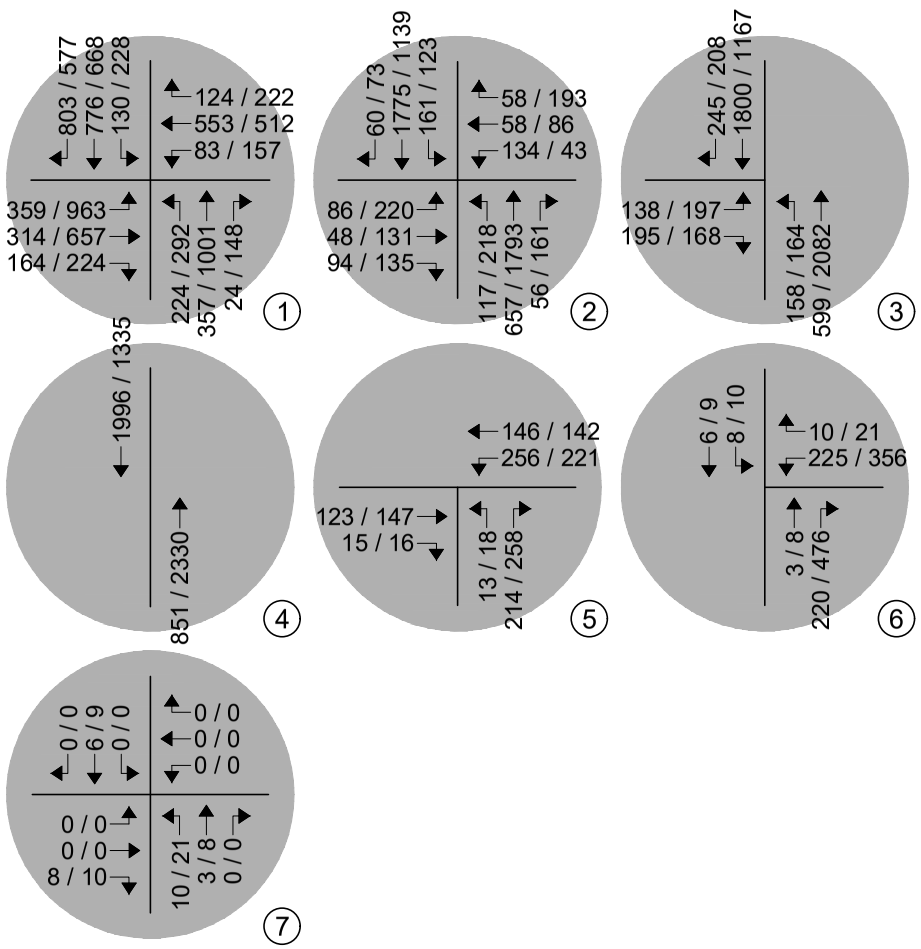


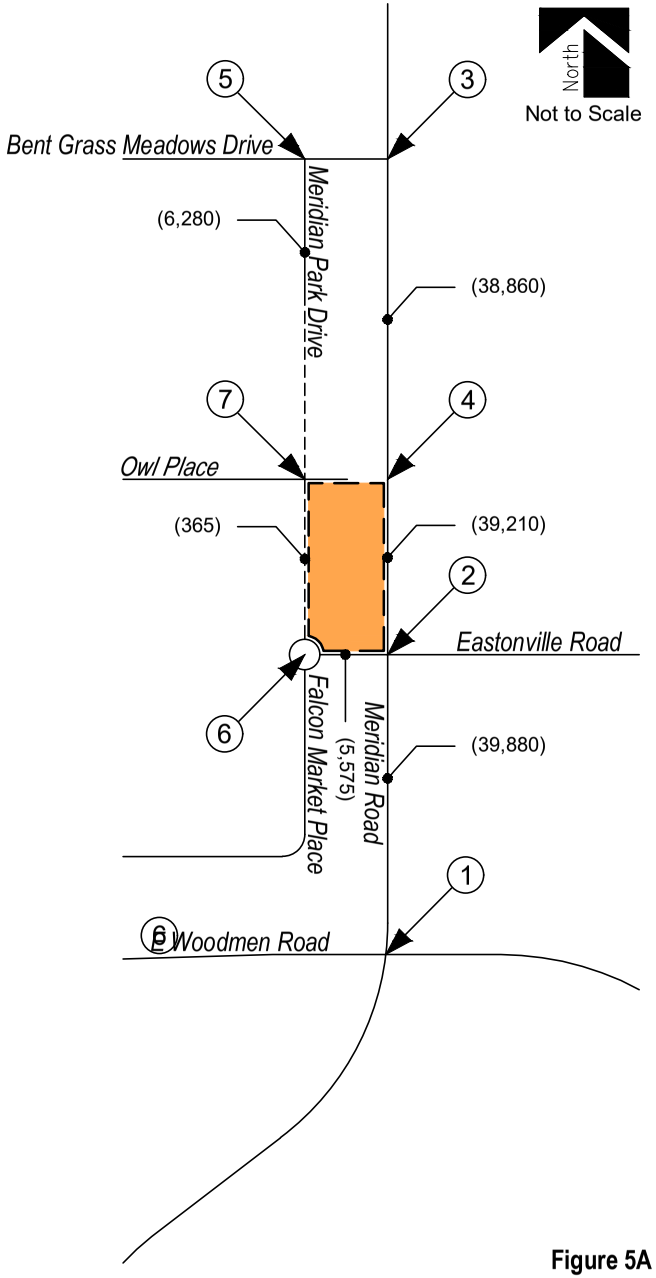


LEGEND

- Study Intersection Lane Geometry
- Development Site

Figure 4B
BACKGROUND TRAFFIC - YEAR 2024
Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



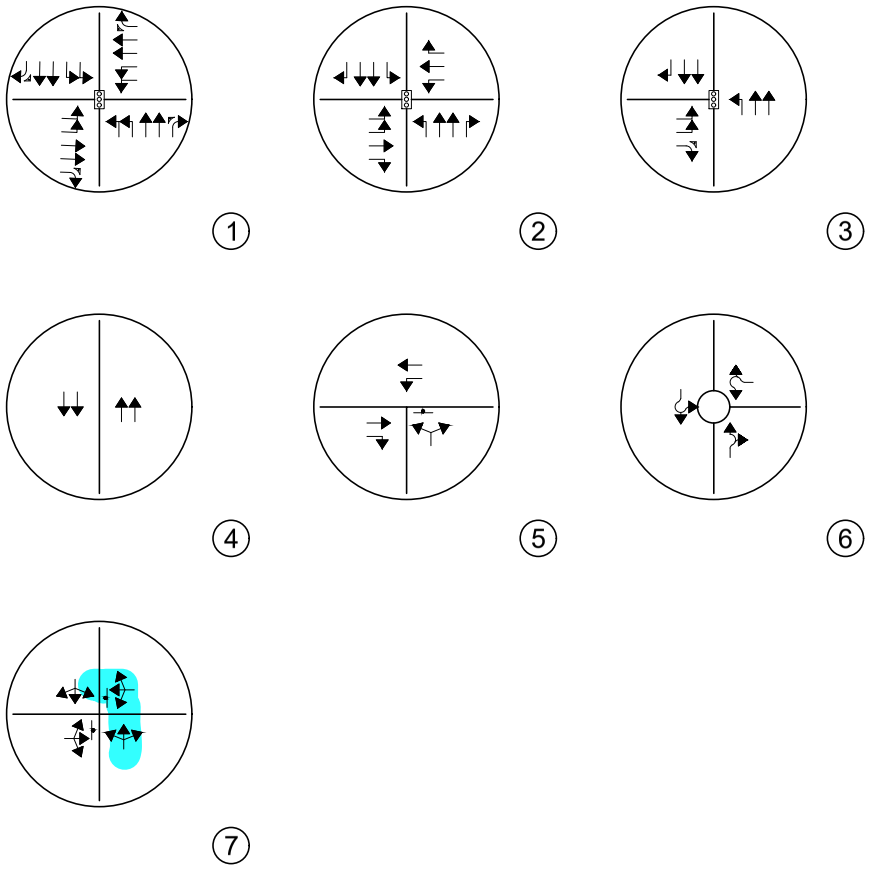


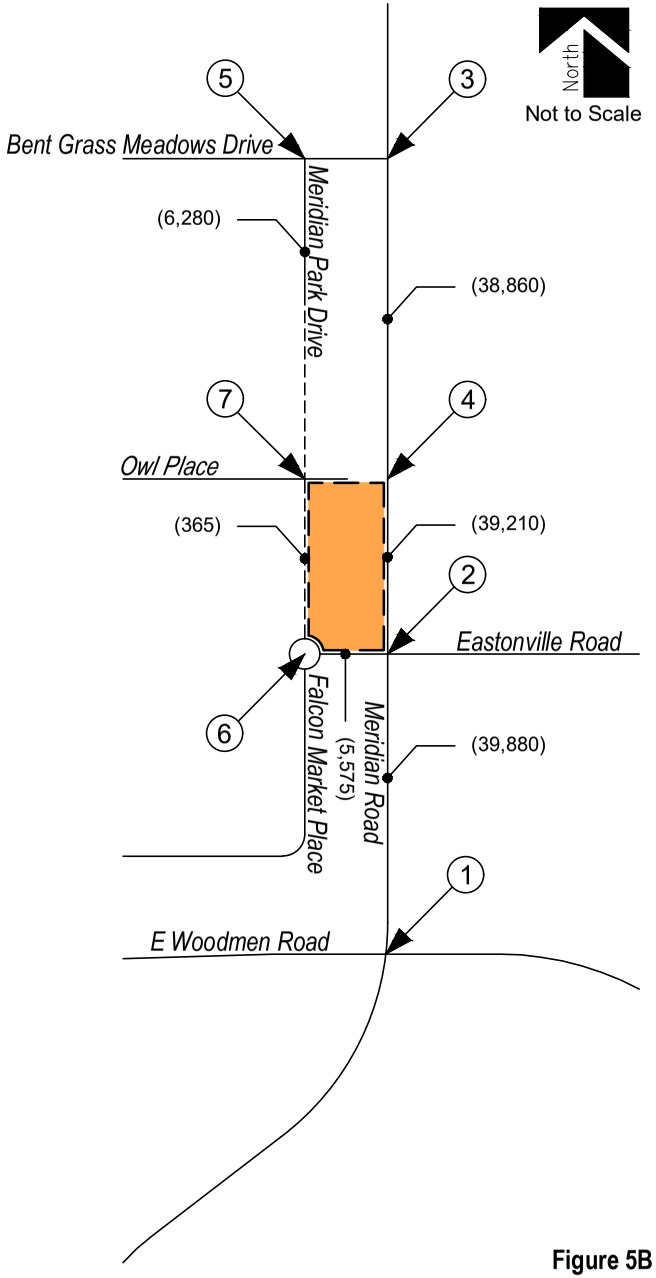
LEGEND

Study Intersection Volumes

Development Site

Figure 5A
BACKGROUND TRAFFIC - YEAR 2040
Volumes
AM / PM Peak Hour
(ADT) : Average Daily Traffic





LEGEND

Study Intersection
Lane Geometry

Development Site

Figure 5B
BACKGROUND TRAFFIC - YEAR 2040
Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

Peak Hour Intersection Levels of Service – Background Traffic

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 2024 are listed in Table 2. Year 2040 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 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Meridian Road / E Woodmen Road (Signalized)	C (31.6)	D (45.8)
Meridian Road / Eastonville Road (Signalized)	C (25.1)	C (24.1)
Meridian Road / Bent Grass Meadows Drive (Signalized)	B (15.5)	A (8.2)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	B
Eastonville Road / Falcon Market Place (Roundabout)		
Eastbound Left and Right	A	A
Northbound Through and Right	A	A
Southbound Left and Through	A	A
Owl Place / Falcon Market Place (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A

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

Background Traffic Analysis Results – Year 2024

Year 2024 background traffic analysis indicates that the signalized intersection of Meridian Road with E Woodmen Road has overall operations at LOS C during the AM peak traffic hour and LOS D during the PM peak traffic hour.

The signalized intersection of Meridian Road with Eastonville Road has overall operations at LOS C during both the AM and PM peak traffic hours.

The signalized intersection of Meridian Road with Bent Grass Meadows Drive has overall operations at LOS B during the AM peak traffic hour and LOS A during the PM peak traffic hour.

The unsignalized intersection of Bent Grass Meadows Drive with Meridian Park Drive operates at or better than LOS B during both AM and PM peak traffic periods.

The roundabout intersection of Eastonville Road with Falcon Market Place operates at LOS A during both AM and PM peak traffic periods.

The unsignalized intersection of Owl Place with Falcon Market Place operates at LOS A during both AM and PM peak traffic periods.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Meridian Road / E Woodmen Road (Signalized)	D (35.1)	E (75.5)
Meridian Road / Eastonville Road (Signalized)	C (25.8)	C (25.8)
Meridian Road / Bent Grass Meadows Drive (Signalized)	C (24.1)	B (13.2)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	B
Eastonville Road / Falcon Market Place (Roundabout)		
Eastbound Left and Right	A	A
Northbound Through and Right	A	A
Southbound Left and Through	A	A
Owl Place / Falcon Market Place (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A

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

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the study intersection of Meridian Road with E Woodmen Road experiences LOS D operations during the AM peak traffic hour and LOS E during the PM peak traffic hour. The LOS E operation is primarily attributed to the high eastbound, northbound and southbound left turning volumes. In order to provide mitigation to the poor overall operation and increase available intersection capacity, potential improvements may include the widening of E Woodmen Road to six-lanes, pursuant to its future classification as an expressway, as well as further optimization of traffic signal timings to accommodate future regional demand. Widening of Meridian Road as anticipated in the Briargate Parkway/Stapleton Road CPP may also provide additional mitigation to intersection operations. Additional analysis considering operational results upon roadway widening is provided in Section VII.

It is also noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along E Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along E Woodmen Road will provide an additional major north-south arterial roadway which may reduce some of the volumes projected to utilize Meridian Road for north-south travel. It is recommended that County Staff continues to monitor the study intersection in order to determine what mitigation may be most applicable and when implementation of said improvements becomes necessary.

The study intersection of Meridian Road with Eastonville Road experiences LOS C operations during both the AM and PM peak traffic hours.

The study intersection of Meridian Road with Bent Grass Meadows Drive experiences LOS C operations during the AM peak traffic hour and LOS B operations during the PM peak traffic hour.

The study intersection of bent Grass Meadows Drive with Meridian Park Drive experiences LOS B or better operations during both the AM and PM peak traffic hours.

The study intersection of Eastonville Road with Falcon Market Place experiences LOS A operations during both the AM and PM peak traffic hours.

The study intersection of Owl Place with Falcon Market Place experiences LOS A operations during both the AM and PM 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 934 (Fast-Food Restaurant with Drive-Through Window), 937 (Coffee/Donut Shop with Drive-Through Window), 945 (Convenience Store/Gas Station), and 948 (Automated Car Wash) were used for estimating trip generation because of their conservative rates and best fit to the anticipated land use descriptions.

As actual land uses, densities or site plans within the Owl Place Commercial development area become defined over time, it is expected that traffic generation characteristics considered within this study will need to be updated by more specific traffic analyses or studies to help assess if transportation improvements are needed to mitigate potential traffic impacts.

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

Table 4 – Trip Generation Rates

ITE			TRIP GENERATION RATES						
			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	UNIT	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
934	Fast-Food Restaurant w/DTW	KSF	467.48	22.75	21.86	44.61	17.18	15.85	33.03
937	Coffee/Donut Shop w/DTW	KSF	533.57	43.80	42.08	85.88	19.50	19.50	38.99
945	Convenience Store/Gas Station	KSF	700.43	28.26	28.26	56.52	27.26	27.26	54.52
948	Automated Car Wash	CWT	775.00	*	*	*	38.75	38.75	77.50

Key: KSF = Thousand Square Feet Gross Floor Area. CWT = Car Wash Tunnels.
* = ITE does not report significant AM peak hour generation due to the nature of the business (ie, operating hours typically open after AM peak).
Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected 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 CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
934	Fast-Food Restaurant w/DTW	3.4 KSF	1,599	78	75	153	59	54	113
937	Coffee/Donut Shop w/DTW	2.0 KSF	1,067	88	84	172	39	39	78
945	Convenience Store/Gas Station	5.3 KSF	3,712	150	150	300	144	144	289
948	Automated Car Wash	1 CWT	775	*	*	*	39	39	78
	Proposed Total:		*7,153*	*315*	*309*	*624*	*281*	*276*	*557*

Key: KSF = Thousand Square Feet Gross Floor Area. CWT = Car Wash Tunnels.
* = ITE does not report significant AM peak hour generation due to the nature of the business (ie, operating hours typically open after AM peak).
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 7,153 daily vehicle trips with 624 of those occurring during the morning peak hour and 557 during the afternoon peak hour.

Adjustments to Trip Generation Rates

A development of this type is likely to attract pass-by trips from the adjacent roadway system. ITE defines a pass-by trip as an intermediate stop on the way from an origin to a primary trip destination without a route diversion. Due to this behavior, pass-by trips are not considered as "new" traffic generated by the development since the trips are already present on the roadway network enroute to their primary destination.

Pass-by trips are especially common to fast-food restaurant, coffee/donut shop, and gas station land uses given the convenience provided by these businesses on the way to another primary destination such as a place of work or home. As example, published ITE pass-by and diverted link trip data indicates an average trip generation reduction rate of 49 percent during the AM peak traffic hour and 50 percent during the PM peak traffic hour as typical to fast-food restaurants with drive-through window.

It is also considered likely that a mixed-use development of this type will attract trips from within area land uses as well as from the adjacent Falcon Marketplace development. However, due to the conceptual nature of proposed land uses, specific internal capture rates can only be assumed. Therefore, no trip reduction was taken in this analysis This assumption provides for a conservative analysis.

Upon consideration of the proposed land use, reductions were applied pursuant to ITE average data to the proposed land use in order to account for the high probability of pass-by trip generation. ITE average pass-by trip percentages used are presented in Table 6.

Table 6 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out with reductions applied due to pass-by trips. Average daily (24-Hour) pass-by trip percentages were estimated as the average between the AM and PM peak hour rates indicated by ITE.

Table 6 – Trip Generation Summary with Pass-By Trip Reductions

ITE CODE	LAND USE	SIZE	TOTAL NEW TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
	Pass-By Trip Reduction:		*50%*	*49%*	*49%*	*49%*	*50%*	*50%*	*50%*
934	Fast-Food Restaurant w/DTW	3.4 KSF	807	40	38	78	29	27	56
	Pass-By Trip Reduction:		*60%*	*60%*	*60%*	*60%*	*60%*	*60%*	*60%*
937	Coffee/Donut Shop w/DTW	2.0 KSF	427	35	34	69	16	16	31
	Pass-By Trip Reduction:		*59%*	*62%*	*62%*	*62%*	*56%*	*56%*	*56%*
945	Convenience Store/Gas Station	5.3 KSF	1,522	57	57	114	64	64	127
	Pass-By Trip Reduction:		*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
948	Automated Car Wash	1.0 CWT	775	*	*	*	39	39	78
	Proposed Total:		*3,531*	*132*	*129*	*260*	*147*	*145*	*292*

Key: KSF = Thousand Square Feet Gross Floor Area. CWT = Car Wash Tunnels.
* = ITE does not report significant AM peak hour generation due to the nature of the business (ie, operating hours typically open after AM peak).
Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out and with consideration for pass-by trip reductions, Table 6 illustrates that the proposed development has the potential to generate approximately 3,531 new daily trips with 260 of those occurring during the morning peak hour and 292 during the afternoon peak hour.

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, assumptions made for previous studies within the area, and in reference to distribution patterns of existing traffic count data.

Additional pass-by trip distribution is assumed to include vehicle routes heading north-south along Meridian Road. Distribution percentages utilized for pass-by trips are anticipated to be 50 percent from the north and south.

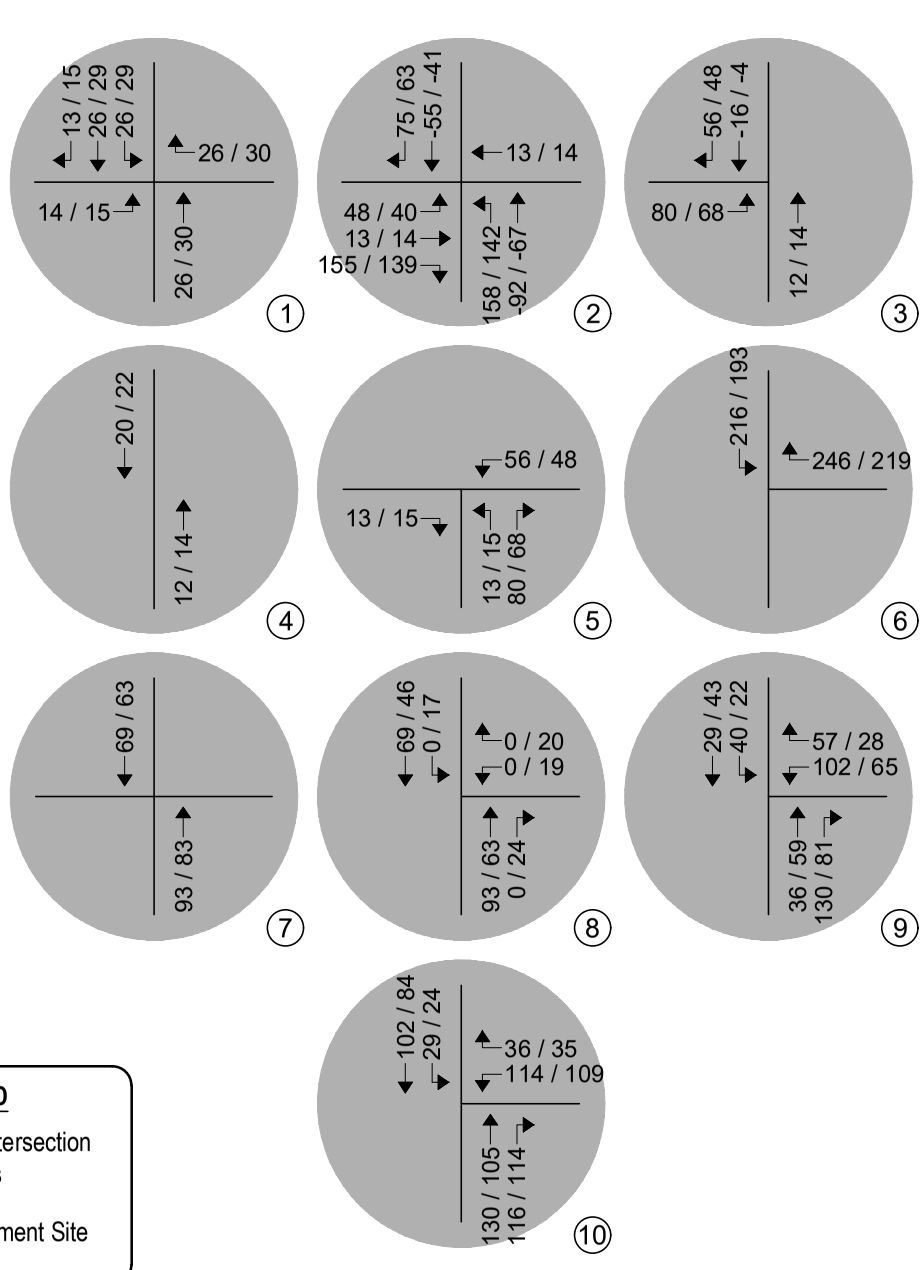
Overall trip distribution patterns for the development are shown on Figure 6.

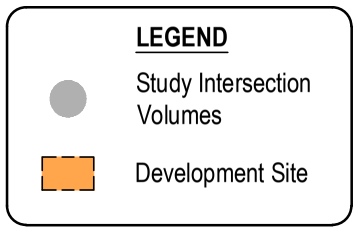
Trip Assignment

Traffic 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.

It is to be noted that the overall site-generated trip assignments shown on Figure 6 represent the combination of both primary trip generation and pass-by trips. Due to the application of pass-by trips, some negative site-generated trips are shown at the study intersections. These negative trips are the result of redistributing existing through volumes along Meridian Road to site-generated ingress volumes.





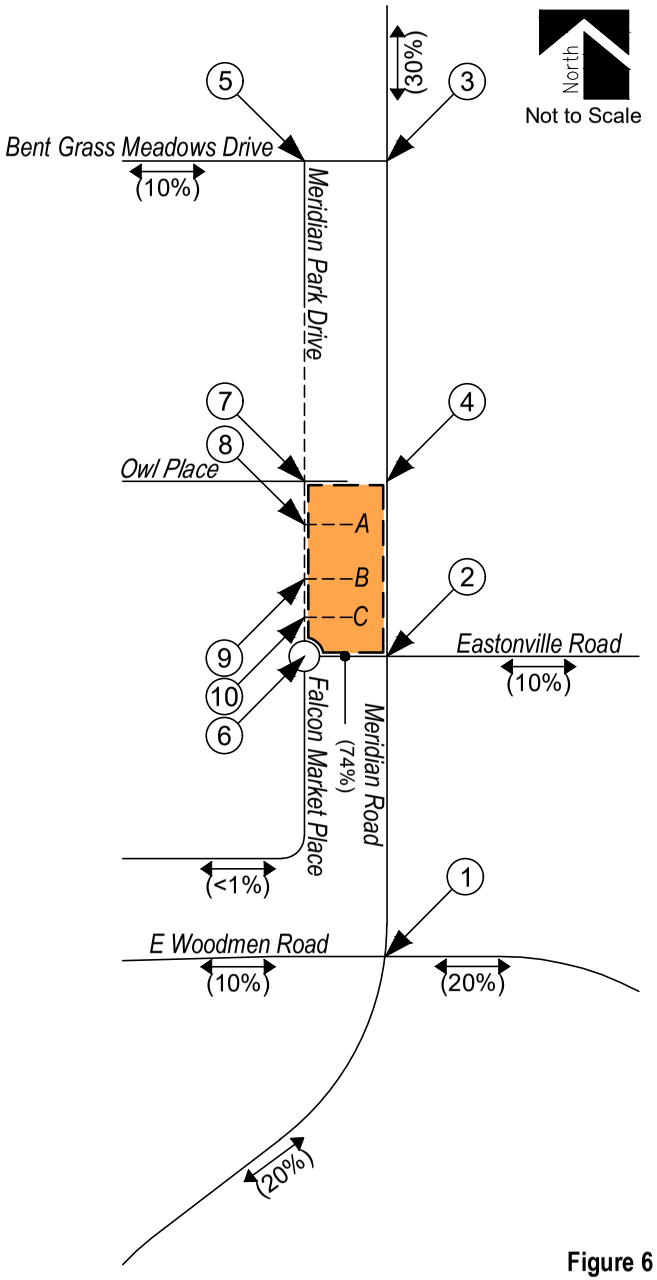


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Developments

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Years 2024 and 2040 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2024.

Pursuant to area roadway improvement discussions provided in Section III, Year 2024 and Year 2040 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. This is anticipated to include the extension of Falcon market Place north to Owl Place and associated auxiliary lanes as needed for site accesses. Additional detail regarding anticipated improvements associated with site development are summarized in Section VIII.

Projected Year 2024 total traffic volumes and intersection geometry are shown in Figures 7A and 7B, respectively.

Figures 8A and 8B show projected total traffic volumes and intersection geometry for Year 2040.

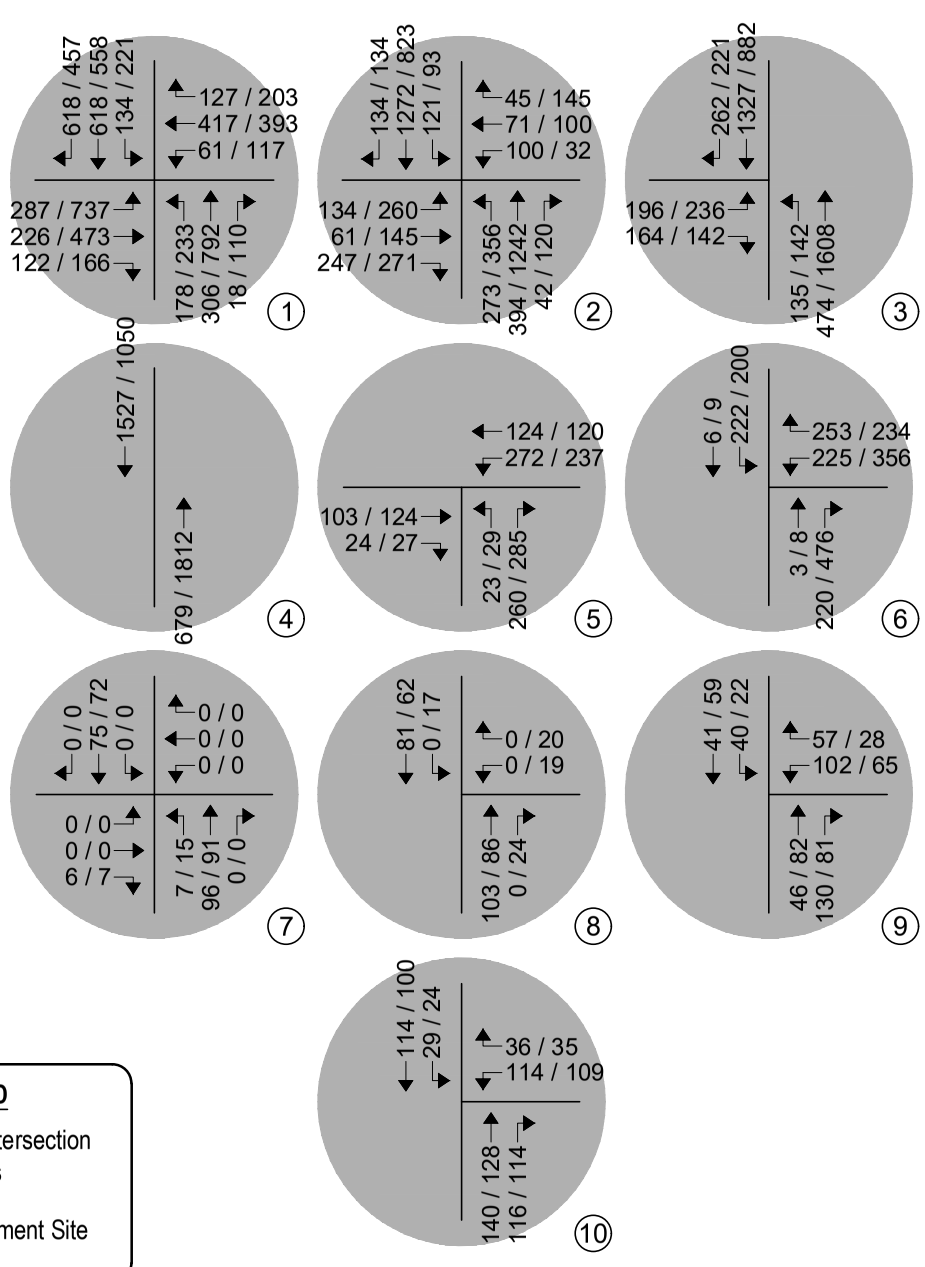
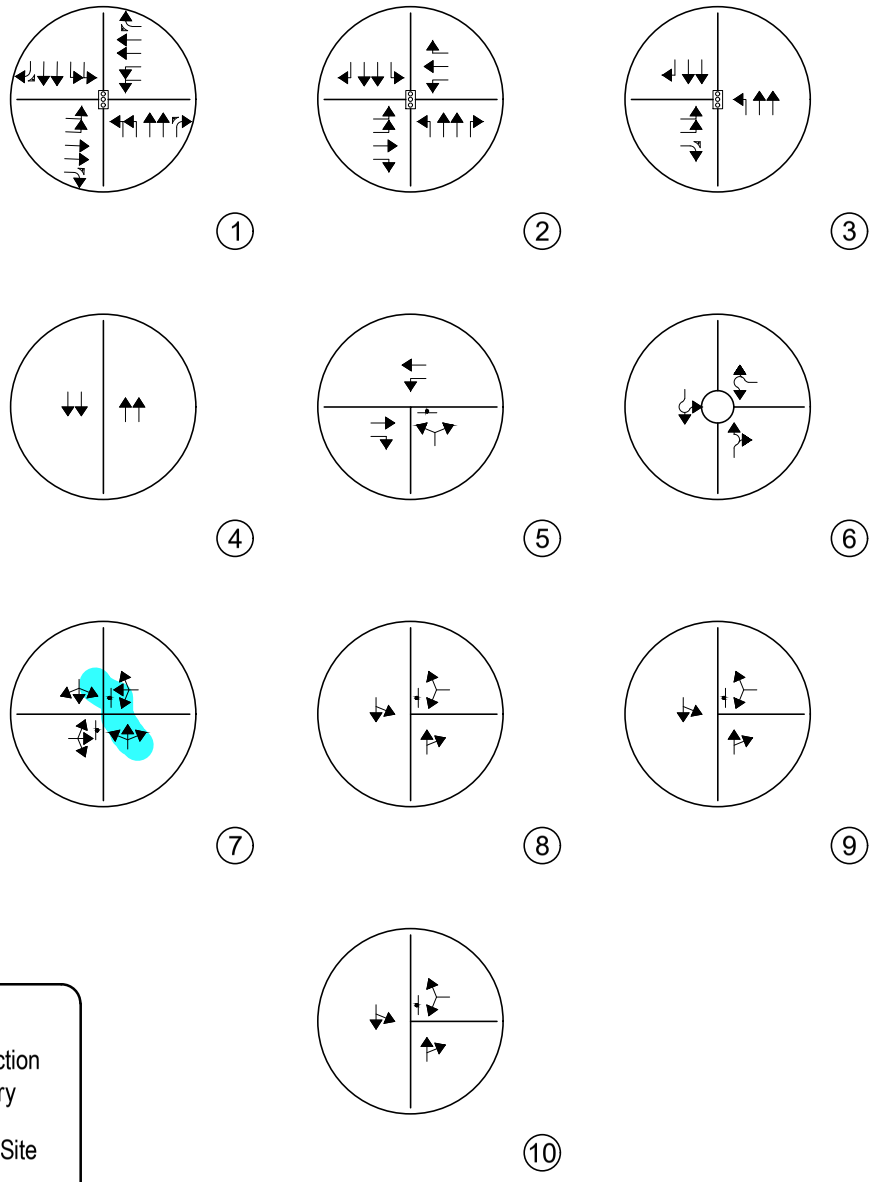
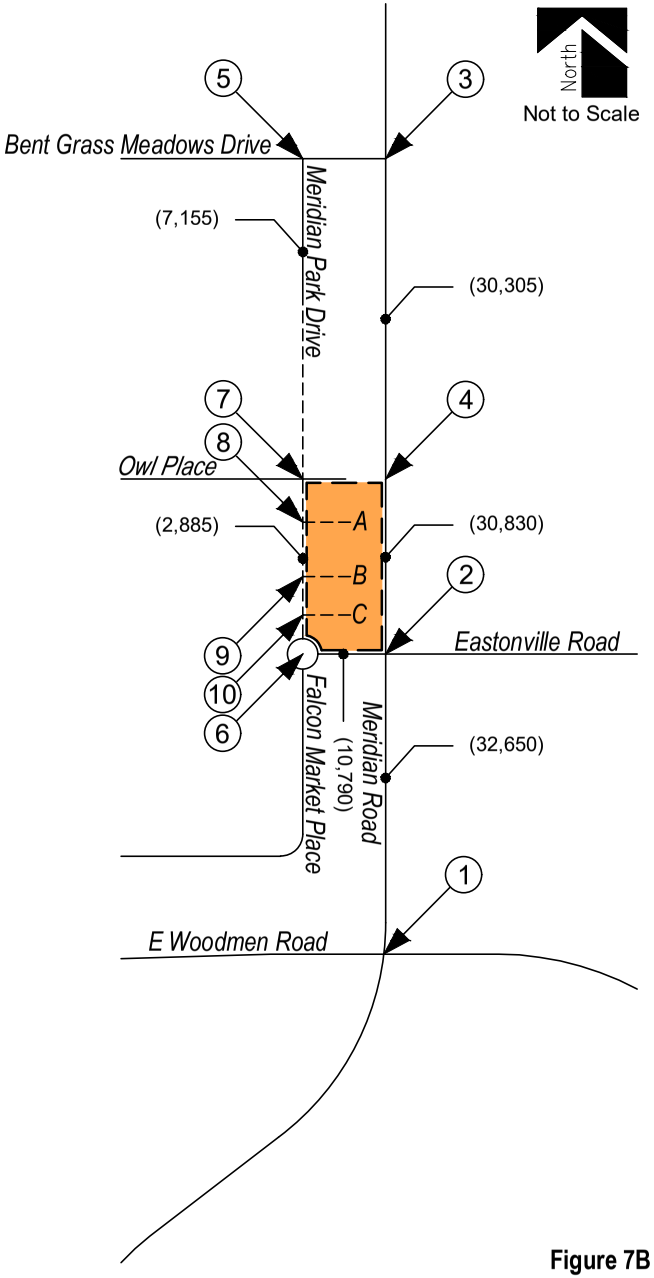


Figure 7A
TOTAL TRAFFIC - YEAR 2024
Volumes
AM / PM Peak Hour
(ADT) : Average Daily Traffic



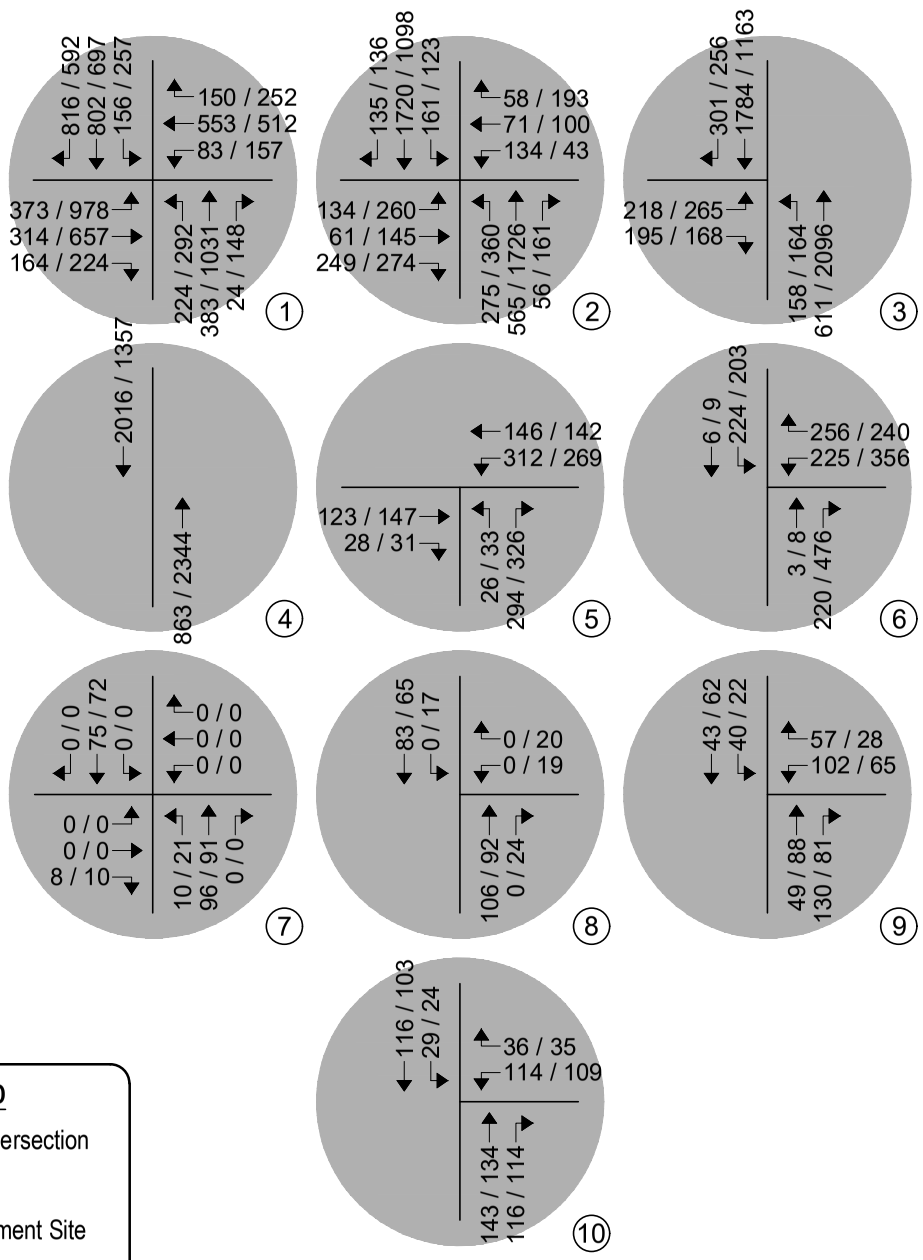


LEGEND

Study Intersection
Lane Geometry

Development Site

Figure 7B
TOTAL TRAFFIC - YEAR 2024
Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



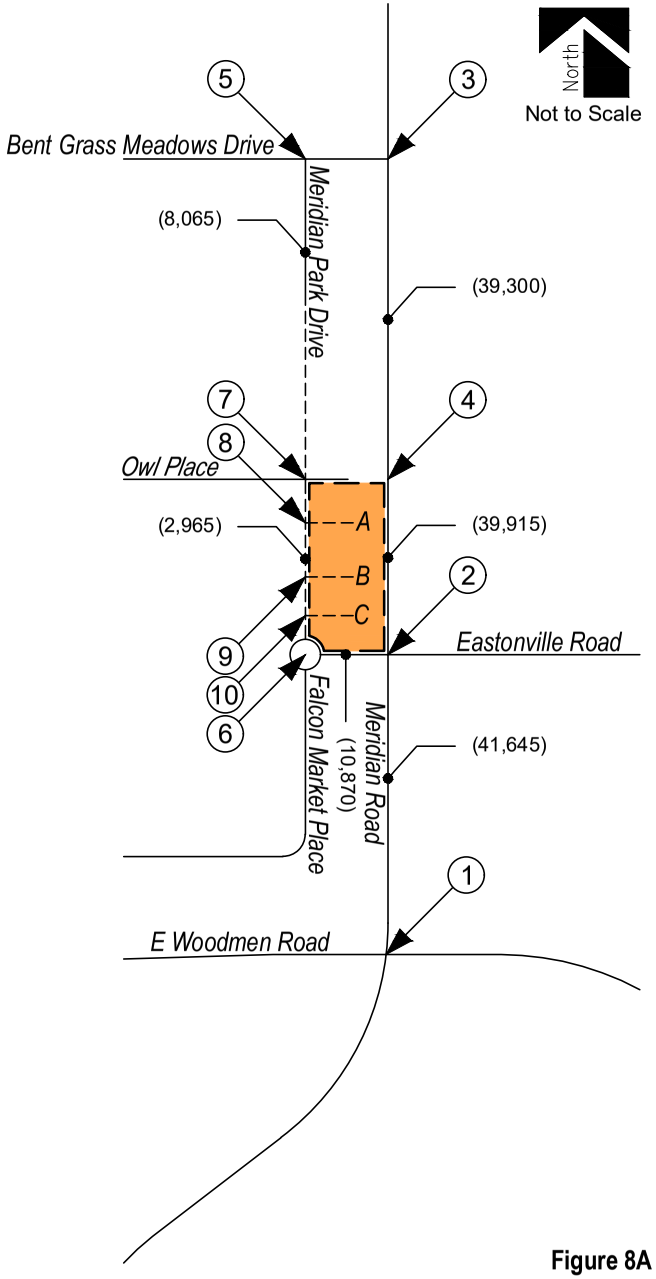
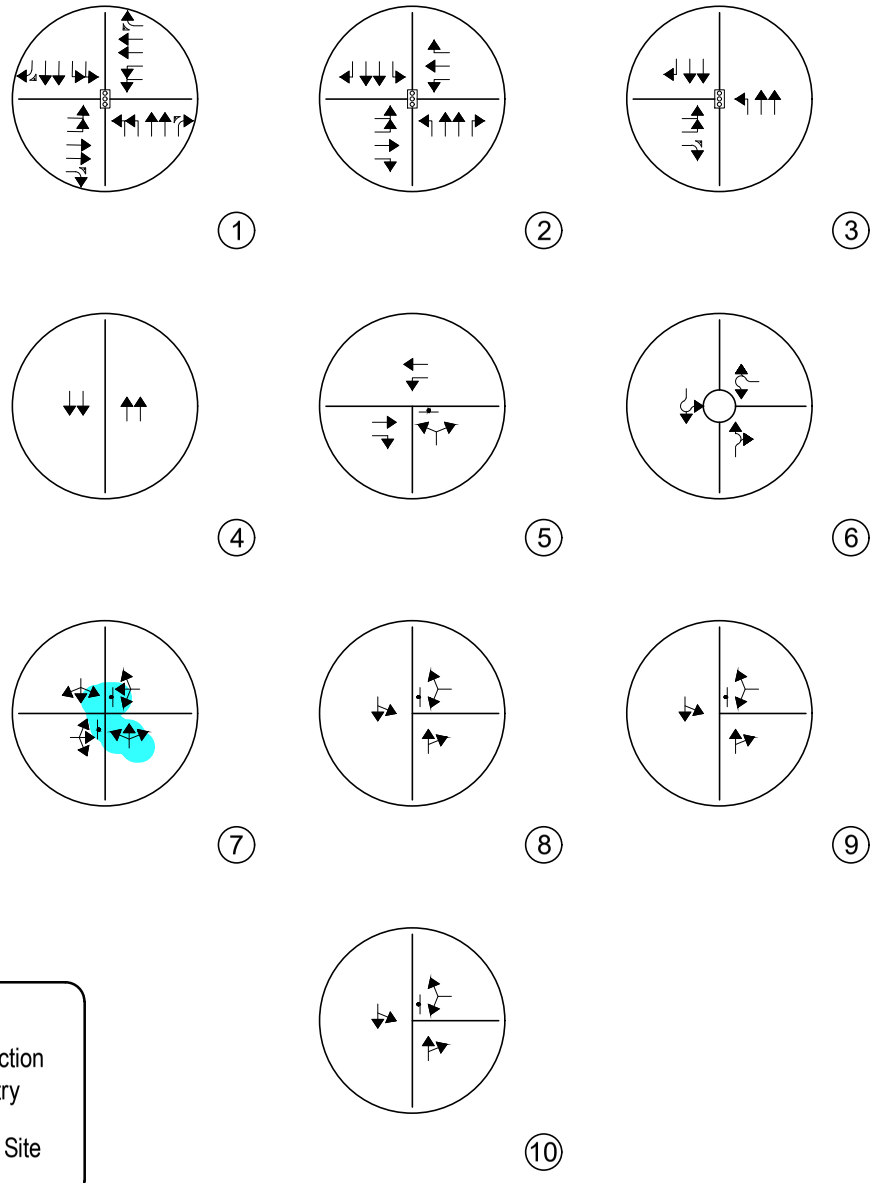
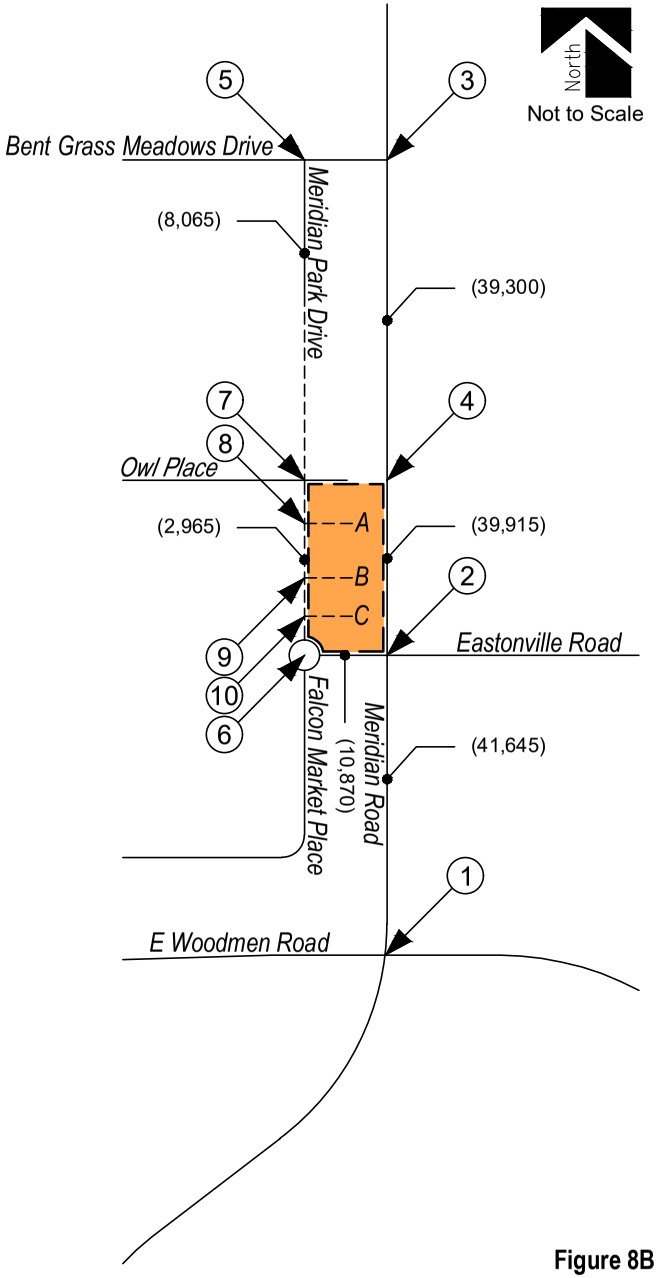


Figure 8A
TOTAL TRAFFIC - YEAR 2040
Volumes
AM / PM Peak Hour
(ADT) : Average Daily Traffic





LEGEND

Study Intersection
Lane Geometry

Development Site

Figure 8B
TOTAL TRAFFIC - YEAR 2040
Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the latest 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 – Total Traffic

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 2024 and 2040 are summarized in Table 7 and Table 8, respectively.

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

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Meridian Road / E Woodmen Road (Signalized)	C (32.5)	D (46.4)
Meridian Road / Eastonville Road (Signalized)	D (39.4)	C (27.5)
Meridian Road / Bent Grass Meadows Drive (Signalized)	B (17.2)	B (10.1)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	B
Eastonville Road / Falcon Market Place (Roundabout)		
Eastbound Left and Right	A	A
Northbound Through and Right	A	A
Southbound Left and Through	A	A
Owl Place / Falcon Market Place (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
Access A / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A
Access B / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A
Access C / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A

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

Table 8 – Intersection Capacity Analysis Summary – Total Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Meridian Road / E Woodmen Road (Signalized)	D (35.8)	E (79.6)
Meridian Road / Eastonville Road (Signalized)	D (45.6)	C (30.0)
Meridian Road / Bent Grass Meadows Drive (Signalized)	C (24.6)	B (14.7)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	C
Eastonville Road / Falcon Market Place (Roundabout)		
Eastbound Left and Right	A	A
Northbound Through and Right	A	A
Southbound Left and Through	A	A
Owl Place / Falcon Market Place (Stop-Controlled)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
Access A / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A
Access B / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A
Access C / Falcon Market Place (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A

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

Total Traffic Analysis Results Upon Development Build-Out

Table 8 illustrates how, by Year 2040 and upon development build-out, the signalized intersection of Meridian Road with E Woodmen Road shows an overall LOS D operation during both the morning peak traffic hour and LOS E during the afternoon peak traffic hour. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection and is noted to increase overall intersection delay by approximately four seconds which is considered minor. The LOS E operation anticipated during the afternoon peak traffic period continues to be primarily attributed to the eastbound, northbound and southbound turning movements. As with background traffic conditions, in order to provide mitigation to the poor overall operation and increase available intersection capacity, potential improvements may include the widening of E Woodmen Road to six-lanes, pursuant to its future classification as an expressway, as well as further optimization of traffic signal timings to accommodate future regional demand.

It is noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along E Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along E Woodmen Road will provide an additional major north-south arterial roadway which may reduce some of the volumes projected to utilize Meridian Road for north-south travel. It is recommended that County Staff continues to monitor the study intersection in order to determine what mitigation may be most applicable and when implementation of said improvements becomes necessary.

The signalized intersection of Meridian Road with Eastonville Road is projected to have morning peak traffic hour operations at LOS D and LOS C during the afternoon peak traffic hour.

The signalized intersection of Meridian Road with Bent Grass Meadows Drive is projected to have morning and afternoon peak traffic hour operations at LOS C and B, respectively.

The stop-controlled intersection of bent Grass Meadows Drive with Meridian Park Drive is projected to have turning movement operations at LOS B or better for the morning peak traffic hour and LOS C or better for the afternoon peak traffic hour.

The roundabout intersection of Eatonville Road with Falcon Market Place is projected to have turning movement operations at LOS A for both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Owl Place with Falcon Market Place is projected to have turning movement operations at LOS A for both the morning and afternoon peak traffic hours.

The stop-controlled intersections of site Accesses A, B and C with Falcon Market Place are projected to have turning movement operations at LOS B or better for both the morning and afternoon peak traffic hours.

VII. Additional Analysis

Additional analysis was conducted to assess auxiliary lane requirements, vehicle queueing, pedestrian connectivity, alternate modes of transportation, and alternative analysis scenarios including potential interim use of the Owl Place intersection with Meridian Road as a right-in/right-out access, and the widening of Meridian Road by Year 2040 scenarios.

Auxiliary Lane Analysis

Auxiliary lanes for site development intersections are to be based on County's ECM.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 2.3.7(D), of the County's ECM, reveals that exclusive left-turn and right-turn deceleration lanes are required at all study intersections along Meridian Road due to its roadway classification and corresponding CDOT State Highway Access Code (SHAC) designation. It is anticipated that auxiliary lanes at internal site accesses will include left-turn deceleration lanes along Falcon Market Place at site accesses due to the high left-turn ingress volumes. This may be accomplished through the use of a center two-way-left-turn-lane (TWLTL) and is consistent with the existing Falcon Market Place cross section south of Eastonville Road. As actual site plans and land uses become defined, it is anticipated that updated analyses will be performed in order to determine when the thresholds are met to require implementation of specific auxiliary lanes. Additionally, right-turn deceleration lanes may also be necessary at site accesses along Falcon Market Place pursuant to expected volumes and the future roadway classification. However, it is noted that provision of right-turn deceleration lanes is not consistent with the existing southern portion of Falcon Market Place and may not be feasible dependent on final access spacing and distance from the roundabout intersection at Falcon Market Place and Eastonville Road.

Pursuant to the posted speed limit along study area roadways and corresponding design speeds as identified in the County's ECM, turn lane lengths along Meridian Road are expected to consist of a total length of 530 feet include a transition taper of 240 feet. Turn lanes along Falcon Market Place are expected to provide a total length of 235 feet including a transition taper of 120 feet. In locations where intersection spacing may inhibit provision of the recommended lengths, it is anticipated that a deviation request would be required and is to be coordinated with County Staff. Additionally, as site design is further developed, it is anticipated that applicable ROW dedication will be needed to accommodate auxiliary lanes along Meridian Road upon future planned widening to six through lanes.

Queue Length Analysis

Queue lengths for study intersections were analyzed using Year 2040 total traffic conditions. The 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.

Table 9 summarizes the 95th percentile queue results in comparison to the projected storage requirements for turn movements within study area for Year 2040.

Table 9 – Turn Lane Queues and Storage Requirements – Total Traffic – Year 2040

Intersection	Turn Movement		Existing Turn Lane Length (feet)	AM Peak Hour 95th Percentile Queue Length (feet)	PM Peak Hour 95th Percentile Queue Length (feet)	Recommended Turn Lane Length (feet)
Signalized Intersections						
Meridian Road / E Woodmen Road	EB	L	720' x2	229'	652'	720' x2
		T	-	152'	326'	-
		R	635'	0'	0'	635'
	WB	L	440' x2	63'	103'	440' x2
		T	-	327'	387'	-
		R	210'	0'	104'	210'
	NB	L	420' x2	150'	212'	420' x2
		T	-	177'	648'	-
		R	330'	0'	0'	330'
	SB	L	460' x2	72'	205'	460' x2
		T	-	259'	392'	-
		R	575'	0'	0'	575'
Meridian Road / Eastonville Road	EB	L	100' x2	82'	166'	100' x2
		T	-	98'	249'	-
		R	100'	232'	90'	100'
	WB	L	100'	229'	66'	100'
		T	-	110'	157'	-
		R	100'	0'	39'	100'
	NB	L	100'	367'	179'	100'
		T	-	164'	212'	-
		R	400'	11'	1'	400'
	SB	L	375'	19'	165'	375'
		T	-	967'	589'	-
		R	400'	12'	63'	400'
Meridian Road / Bent Grass Meadows Drive	EB	L	160' X2	136'	159'	160' X2
		R	-	120'	68'	-
	NB	L	700'	179'	11'	700'
		T	-	178'	895'	-
	SB	T	-	788'	387'	-
		R	330'	36'	35'	330'
Stop-Controlled Intersections						
Bent Grass Meadows Drive / Meridian Park Drive	EB	T	-	0'	0'	-
		R	-	0'	0'	-
	WB	L	-	23'	20'	-
		T	-	0'	0'	-
	NB	L,R	-	65'	83'	-
Falcon Market Place / Owl Place	EB	L,T,R	-	0'	0'	-
	WB	L,T,R	-	0'	0'	-
	NB	L,T,R	-	0'	0'	-
	SB	L,T,R	-	0'	0'	-
Meridian Park Drive / Access A	WB	L,R	-	0'	5'	-
	NB	T,R	-	0'	0'	-
	SB	L,T	-	0'	0'	-
Meridian Park Drive / Access B	WB	L,R	-	23'	13'	-
	NB	T,R	-	0'	0'	-
	SB	L,T	-	3'	3'	-
Meridian Park Drive / Access C	WB	L,R	-	25'	23'	-
	NB	T,R	-	0'	0'	-
	SB	L,T	-	3'	3'	-
Roundabout Intersections						
Meridian Park Drive / Eastonville Road / Falcon Market Place	WB	L,R	-	50'	75'	-
	NB	T,R	-	25'	75'	-
	SB	L,T	-	25'	25'	-

Note: Turn Lane Length does not include taper length.
Key: x2 = Dual Turn Lanes.

(values were updated - see comments on next page)

Also address NB left and EB right and clarify if the 166' for EB left is split into 2 lanes or backs up behind the 2 lanes. Will the through and/or right turn queue block traffic trying to enter the left turn lanes?

most?

As Table 9 shows, all turn lane lengths at study intersections are anticipated to provide sufficient storage to accommodate future traffic volumes. However, at the Meridian Road and Eastonville Road intersection, some notable vehicle queuing was indicated for the eastbound movements. The greatest on-site queue length anticipated occurs during the afternoon peak hour at the Eastonville Road intersection. The queue length is approximately 249 feet or between nine and ten vehicles for the eastbound approach, assuming a typical vehicle length of 25 feet.

It is however noted that comparable queueing is anticipated to occur under Year 2040 background conditions without the proposed development. With the addition of site generated traffic, queue lengths are shown to increase by no more than approximately one to two vehicles. This queue length can generally be accommodated within the available roadway length, however some blocking of the northbound movement at the adjacent roundabout intersection may occur during peak periods. However, this is not expected to interfere with vehicles entering the development area from Meridian Road. Additionally, the upstream signal control on Meridian Road will tend to create additional gaps in the traffic stream for turning movements at the Falcon Market Place roundabout and will most likely provide mitigation to vehicle queues projected during the afternoon peak traffic hour. Additionally, it is anticipated that as wait times for specific movements increase, there is potential for self-regulation as drivers will become more likely to choose an alternative route rather then join a long queue.

It is also noted that provision for dual northbound left turn lanes along Meridian Road at the Eastonville Road intersection may allow for additional signal timing for the eastbound movement reducing vehicle queues and improving overall intersection operations. Provision of dual-northbound lefts would also assist in accommodating queues which are shown to have the potential to extend beyond the currently available storage length. To prevent vehicle stacking within the intersection Eastonville Road and Falcon Market Place roundabout intersection, additional mitigation measures may include conversion of the existing roundabout to a two-way stop-controlled intersection.

Pedestrian Circulation & Safety Analysis

In accordance with Section B.2.4.B of the County's ECM, an assessment to pedestrian connectivity and safety was considered. However, it is emphasized that the sketch plan analyzed throughout this study is conceptual and details of pedestrian circulation and connectivity have not been determined. As actual site plans within the overall development become defined over time, it is assumed that an evaluation of pedestrian circulation and connectivity may be necessary. However, it should be noted that site plans are expected to accommodate pedestrian and bicycle connectivity pursuant to the MTCP including planned bicycle routes along Meridian Road.

With the assumption that future site plans are designed per the County's ECM, and pursuant to the Federal Highway Administration's (FHWA) Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations[9], pedestrian safety is not expected to be of concern. Moreover, traffic calming, and pedestrian crossing treatments, are not applicable, and traffic calming is not recommended for the proposed conditions.

[9] Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, Federal Highway Administration, July 2018.

Transportation Demand Management Plan

Pursuant to Section B.2.4.B of the County's ECM, a Transportation Demand Management (TDM) Plan for the proposed development was prepared in order to identify features, measures, and strategies designed to reduce single-occupant vehicle (SOV) trips and maximize the use of alternate modes of transportation. As it relates to this development site and the overall area, these alternate modes of transportation include, but may not be limited to, public bus routes, shuttles, car-pooling, bicycling, scooters, and walking. This is consistent with transportation facilities and services described within the County's MTCP and the Pikes Peak Area Council of Governments (PPACG) 2045 Regional Transportation Plan – Transit[10].

One method includes the availability of public bus routes. The City of Colorado Springs provides the Mountain Metropolitan Transit (MMT). While MMT currently does not provide service in unincorporated areas of El Paso County. Additional transit services for unincorporated areas of El Paso County, as described within the MTCP, include Community Intersections, ComCor, Amblicab, El Paso Fountain Valley Senior Citizens Program, Goodwill Industries, Metro Mobility, Mountain Community Senior Services, Rocky Mountain Health Care Services, and Silver Key Senior Services. These public modes of transportation are expected to be affordable and easy to access.

Residents, tenants, visitors, or employees of the overall development area may also be encouraged to travel by bicycle or by walking. Within the immediate area, public sidewalks and pedestrian trails will be available to allow for connectivity within the greater area. Urban and regional trails exist within the overall area, as shown in the MTCP, and are planned to be improved in the future. Other forms of transportation may also be available that encourage the use of these pedestrian routes, including electric scooters and electric bicycles.

As site plans within the Owl Place Commercial area develop, they may consider promoting alternate modes of pedestrian travel and accommodations as needed. In reference to the City and County of Denver's TDM Guide, general strategies and tools for implementing a successful TDM Plan may include subsidized transit passes, investments in future transit stops, transit connection services, and passenger pick-up / drop-off areas used in conjunction with transit connection services. Bicycle and pedestrian strategies may include shared bicycle amenities, bike, e-bike, or scooter share/loan programs, subsidized shared mobility programs, or pedestrian wayfinding. Parking and car-share strategies may include parking fees, parking cash-out programs, or incentivized carpooling programs. Supportive strategies may include membership in a Transportation Management Association (TMA), transportation incentive fundings, transit screens and information kiosks, new resident kits, or teleworking policies. Event-related TDM strategies may include one-time transit passes, valet bicycle parking, or special event transit services.

[10] 2045 Regional Transportation Plan – Transit, Mountain Metropolitan Transit, January 8, 2020.

Right-In/Right-Out Access Assessment – Owl Place & Meridian Road

As previously noted, pursuant to anticipated widening of Meridian Road to six through lanes, it is anticipated that the Owl Place and Meridian Road intersection will be closed. However, until widening occurs, an interim condition may allow for continued use of the intersection as a restricted right-in / right-out only access. Based on site-generated traffic distribution detailed in Figure 6, as well as projected long-term traffic volumes, allowance for the Owl Place access to remain in the interim is expected to provide an additional route for vehicles entering or exiting the site that would draw some volumes away from the Meridian Road intersections with Eastonville Road and Bent Grass Meadows Drive. This would result in an expected improvement to the operations of said study intersections and allow the site to more evenly distribute traffic along Meridian Road. Additionally, access via Owl Place may also provide benefit for emergency vehicle access and improve response times to proposed and existing developments along Owl Place.

It is however noted that pursuant to auxiliary lane analyses performed, allowance for a right-in/right-out condition at the Owl Place intersection would likely require installation of a southbound right-turn acceleration lane along Meridian Road. It is observed that a southbound right-turn deceleration lane already exists for the Owl Place intersection. Additionally, pursuant to projected turning volumes at the Falcon Market Place intersection with Owl Place, a northbound right-turn lane along Falcon market Place and a westbound left-turn lane along Owl Place may also be required.

Due to the anticipated benefits in assisting site distribution, it is concluded that allowance for an interim right-in/right-out access at the Owl Place intersection may be a suitable alternative to immediate closure, until such time that updated analyses indicate otherwise, or until widening of Meridian Road occurs.

Note: the egress from Owl Place is currently being blocked by traffic stopping at the Eastonville signal. Any mitigation for this if the intersection remains partially open in an interim condition will need to be addressed with the final plat TIS. EPC is determining if signage is warranted.

Additional Operational Analysis – Meridian Road Widening

As noted in Section I, it is anticipated that Meridian Road will be widened to six through lanes by Year 2060. For analysis purposes, and to assist with planning for this improvement, an assessment was made regarding the impact of this widening upon Year 2040 traffic conditions.

Based on the assessment made, implementation of six through lanes along Meridian Road is expected to improve operations for study intersections to LOS D results or better during peak traffic hours. Exceptions continue to include the E Woodmen Road intersection with Meridian Road which anticipated LOS E operations during the afternoon peak hour. It is however noted that delay is shown to decrease upon widening of Meridian Road. Further improvements to operations may be achieved by implementation of additional roadway improvements to the E Woodmen Road corridor, such as widening of E Woodmen Road as previously discussed, and completion of the Banning Lewis Parkway connection. Intersection capacity worksheets for the analysis performed are included in Appendix D.

VIII. Conclusion

This traffic impact study is provided as a planning document and addressed the capacity, geometric, and control requirements associated with the development entitled Owl Place Commercial. This proposed commercial development consists of various potential uses including a gas station convenience store, coffee/donut shop with drive-through window, automated car wash, and quick-serve restaurants. The development is located at the southwest corner of the intersection of Meridian Road with Owl Place in El Paso County, Colorado.

The study area examined in this analysis encompassed Meridian Road between the intersections of Bent Grass Meadows Drive and E Woodmen Road, as well as the existing and future intersections along Falcon Market Place between Eastonville Road and Bent Grass Meadows Drive.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2024 and Year 2040 background traffic conditions, and Year 2024 and Year 2040 total traffic conditions.

Under existing conditions, operational analysis shows that the signalized intersection of Meridian Road with E Woodmen Road has overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour. The signalized intersection of Meridian Road with Bent Grass Meadows Drive has overall operations at LOS A during both the morning and afternoon peak traffic hours. The unsignalized intersections within the study area are shown to operate at LOS B or better during both the morning and afternoon peak traffic hours. Exceptions would include the westbound left turning movement at the intersection of Eastonville Road with Meridian Road which operates at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the high through traffic volumes along Meridian Road and the stop-controlled nature of the intersection. However, given the recent signalization of the study intersection, actual operations are expected to be better than shown.

Year 2024 background traffic analysis indicates that the signalized intersections along Meridian Road have overall operations at LOS C or better during the AM peak traffic hour and LOS D or better during the PM peak traffic hour. Unsignalized study intersections operate at or better than LOS B during both AM and PM peak traffic periods.

By Year 2040 and without the proposed development, the study intersection of Meridian Road with E Woodmen Road experiences LOS D operations during the AM peak traffic hour and LOS E during the PM peak traffic hour. The LOS E operation is primarily attributed to the high eastbound, northbound and southbound left turning volumes. The study intersection of Meridian Road with Eastonville Road experiences LOS C operations during both the AM and PM peak traffic hours. The study intersection of Meridian Road with Bent Grass Meadows Drive experiences LOS C operations during the AM and peak traffic hour and LOS B operations during the PM peak traffic hour. Unsignalized study intersections are projected to operate at LOS B or better during the AM peak traffic hour and LOS B or better during the PM peak traffic hour.

In order to provide mitigation to the poor operations at the E Woodmen Road intersection and increase available intersection capacity, potential improvements may include the widening of E Woodmen Road to six-lanes, pursuant to its future classification as an expressway, as well as further optimization of traffic signal timings to accommodate future regional demand. Widening of Meridian Road as anticipated in the Briargate Parkway/Stapleton Road CPP may also provide additional mitigation to intersection operations. Additional analysis considering operational results upon roadway widening is provided in Section VII.

It is also noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along E Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along E Woodmen Road will provide an additional major north-south arterial roadway which may reduce some of the volumes projected to utilize Meridian Road for north-south travel. It is recommended that County Staff continues to monitor the study intersection in order to determine what mitigation may be most applicable and when implementation of said improvements becomes necessary.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create some 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. However, these impacts may be mitigated with long-term County planned Meridian Road corridor improvement projects. As specific site plans and land uses are further defined it is anticipated that updated analyses will be performed in order to determine the extent of contribution to specific mitigation measures by the proposed development as applicable. A summary of all recommended and planned improvements is provided below. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2040 background traffic conditions. Proposed site access intersections have long-term operations at LOS B or better during peak traffic periods and upon build-out.

This site is subject to the El Paso County Road Impact Fee Program (Resolution 19-471), as amended. An option for payment will be selected at the final land use approval stage.

Recommended Improvements

Table 10 illustrates the recommended roadway and intersection control improvements associated with the proposed Owl Place Commercial development and adjacent area.

Table 10 – Recommended Improvements Summary

IMPROVEMENT	TYPE	TIMING	RESPONSIBILITY
Conversion of Owl Place access intersection to Right-In/Right-Out or Closure	Access	Upon completion of Falcon Market Place Extension	Applicant and/or Adjacent Development
Extension of Falcon Market Place north to Owl Place	Roadway Segment	With Final Plat Application(s) / Site Development	Applicant
Extension of Meridian Park Drive south to Owl Place	Roadway Segment	With Final Plat Application(s) / Site Development	Adjacent Development
Restriping of northbound left turn lane to support dual left turn at Eastonville Road	Auxiliary Lane	When Warranted	Whoever warrants the need; i.e. County, City, or Developer
Construct southbound left turn lanes for site accesses along Falcon Market Place	Auxiliary Lane	With Final Plat Application(s) / Site Development	Applicant
Construct northbound right turn lanes for site accesses along Falcon Market Place	Auxiliary Lane	With Final Plat Application(s) / Site Development	Applicant
Widen Meridian Road to six-lane cross-section	Roadway Segment	By 2060 based on Briargate Parkway CPP	Master planned
Widen E Woodmen Road to six-lane cross-section	Roadway Segment	Based on Expressway Classification per 2040 MTCP	Whoever warrants the need; i.e. County, City, or Developer

Recommended improvements, as shown in Table 10 above, which may be reimbursable under the County's MTCP include roadway widening and realignment improvements.

Provide note stating that initial adjacent development will address the Owl Place/Falcon Market Place intersection and Owl Place/Meridian Rd interim RIRO conditions.

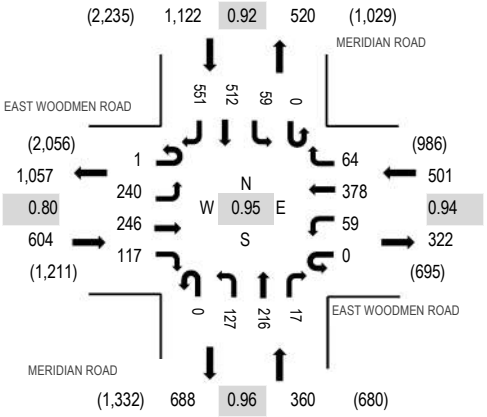
APPENDIX A

Traffic Count Data
Signal Timing Information

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

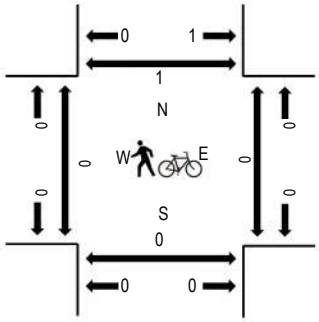
Location: 1 MERIDIAN ROAD & EAST WOODMEN ROAD AM
Date: Wednesday, June 1, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



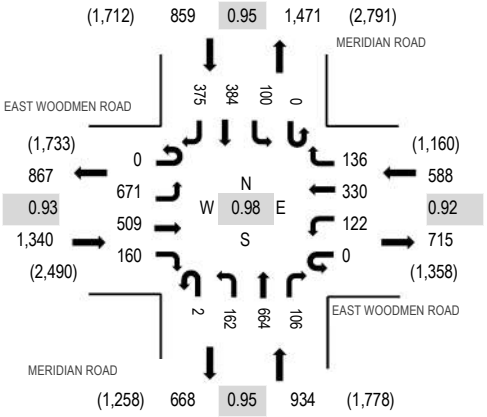
Traffic Counts

Interval Start Time	EAST WOODMEN ROAD Eastbound				EAST WOODMEN ROAD Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	41	45	41	0	9	112	15	0	26	47	7	0	9	165	127	644	2,584	0	0	0	0
7:15 AM	0	45	61	32	0	16	104	19	0	40	52	1	0	8	144	156	678	2,587	0	0	0	0
7:30 AM	0	55	64	26	0	8	113	17	0	32	52	6	0	13	150	142	678	2,550	0	0	0	0
7:45 AM	0	72	72	30	0	20	78	10	0	28	51	4	0	19	105	95	584	2,509	0	0	0	1
8:00 AM	1	68	49	29	0	15	83	18	0	27	61	6	0	19	113	158	647	2,528	0	0	0	0
8:15 AM	0	60	60	13	0	9	101	17	2	20	56	6	0	25	120	152	641		0	0	0	0
8:30 AM	0	71	67	14	0	15	73	19	0	27	47	7	0	17	123	157	637		0	0	0	0
8:45 AM	0	78	94	23	0	25	69	21	2	27	36	10	1	26	83	108	603		0	0	0	0
Count Total	1	490	512	208	0	117	733	136	4	227	402	47	1	136	1,003	1,095	5,112		0	0	0	1
Peak Hour	1	240	246	117	0	59	378	64	0	127	216	17	0	59	512	551	2,587		0	0	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

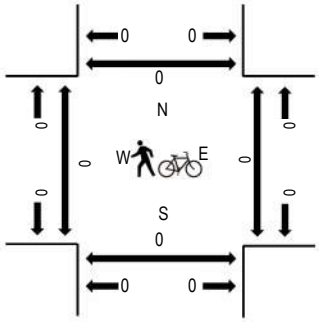
Location: 1 MERIDIAN ROAD & EAST WOODMEN ROAD PM
Date: Wednesday, June 1, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



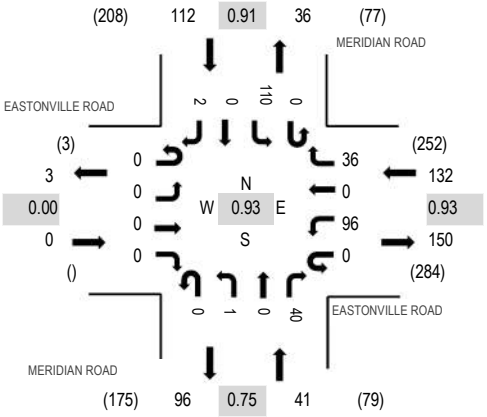
Traffic Counts

Interval Start Time	EAST WOODMEN ROAD Eastbound				EAST WOODMEN ROAD Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	108	100	28	0	21	80	36	0	40	132	23	0	22	100	107	797	3,490	0	0	0	0
4:15 PM	0	142	136	41	1	31	75	33	2	31	141	22	0	24	85	104	868	3,609	0	0	0	0
4:30 PM	0	160	129	25	0	25	82	32	3	32	190	21	0	17	91	100	907	3,678	0	0	0	0
4:45 PM	0	166	113	48	0	26	75	35	1	45	158	32	0	23	100	96	918	3,721	0	0	0	0
5:00 PM	0	147	137	43	0	35	82	29	0	44	171	21	0	31	90	86	916	3,650	0	0	0	0
5:15 PM	0	180	119	27	0	31	89	45	0	30	164	27	0	21	110	94	937		0	0	0	0
5:30 PM	0	178	140	42	0	30	84	27	1	43	171	26	0	25	84	99	950		0	0	0	0
5:45 PM	0	154	101	26	1	24	94	37	0	30	155	22	0	24	88	91	847		0	0	0	0
Count Total	0	1,235	975	280	2	223	661	274	7	295	1,282	194	0	187	748	777	7,140		0	0	0	0
Peak Hour	0	671	509	160	0	122	330	136	2	162	664	106	0	100	384	375	3,721		0	0	0	0

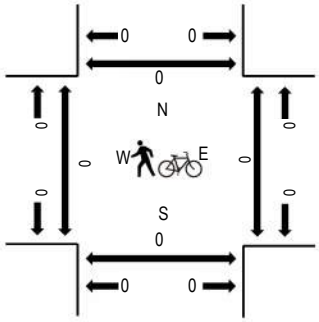
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 MERIDIAN ROAD & EASTONVILLE ROAD AM
Date: Wednesday, June 1, 2022
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

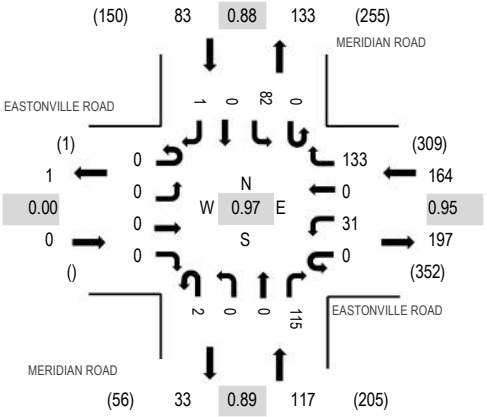
Traffic Counts

Interval Start Time	EASTONVILLE ROAD Eastbound				EASTONVILLE ROAD Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	14	0	12	0	0	0	8	0	21	0	0	55	254	0	0	0	0
7:15 AM	0	0	0	0	0	17	0	11	0	0	0	9	0	24	0	0	61	276	0	0	0	0
7:30 AM	0	0	0	0	0	19	0	9	0	0	0	12	0	29	0	0	69	283	0	0	0	0
7:45 AM	0	0	0	0	0	21	0	7	0	0	0	9	0	31	0	1	69	285	0	0	0	0
8:00 AM	0	0	0	0	0	23	0	10	0	1	0	14	0	29	0	0	77	285	0	0	0	0
8:15 AM	0	0	0	0	0	27	0	8	0	0	0	7	0	26	0	0	68		0	0	0	0
8:30 AM	0	0	0	0	0	25	0	11	0	0	0	10	0	24	0	1	71		0	0	0	0
8:45 AM	0	0	0	0	0	29	0	9	0	0	0	9	0	22	0	0	69		0	0	0	0
Count Total	0	0	0	0	0	175	0	77	0	1	0	78	0	206	0	2	539		0	0	0	0
Peak Hour	0	0	0	0	0	96	0	36	0	1	0	40	0	110	0	2	285		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

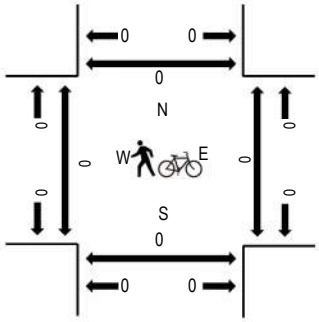
Location: 2 MERIDIAN ROAD & EASTONVILLE ROAD PM
Date: Wednesday, June 1, 2022
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



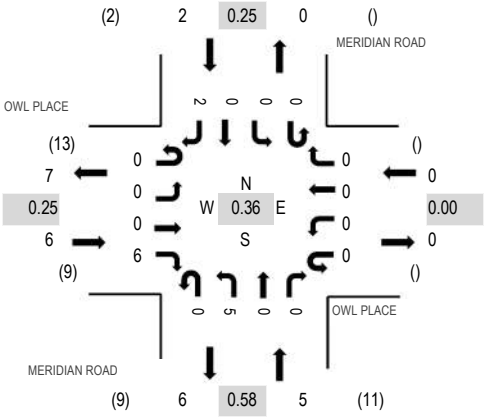
Traffic Counts

Interval Start Time	EASTONVILLE ROAD Eastbound				EASTONVILLE ROAD Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	4	0	23	0	0	0	12	0	14	0	0	53	300	0	0	0	0
4:15 PM	0	0	0	0	0	7	0	27	0	0	0	23	0	13	0	0	70	336	0	0	0	0
4:30 PM	0	0	0	0	0	9	0	39	0	0	0	25	0	16	0	0	89	360	0	0	0	0
4:45 PM	0	0	0	0	0	3	0	33	0	0	0	28	0	24	0	0	88	359	0	0	0	0
5:00 PM	0	0	0	0	0	7	0	36	0	0	0	23	0	23	0	0	89	364	0	0	0	0
5:15 PM	0	0	0	0	0	5	0	31	2	0	0	31	0	24	0	1	94		0	0	0	0
5:30 PM	0	0	0	0	0	9	0	34	0	0	0	30	0	15	0	0	88		0	0	0	0
5:45 PM	0	0	0	0	0	10	0	32	0	0	0	31	0	20	0	0	93		0	0	0	0
Count Total	0	0	0	0	0	54	0	255	2	0	0	203	0	149	0	1	664		0	0	0	0
Peak Hour	0	0	0	0	0	31	0	133	2	0	0	115	0	82	0	1	364		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

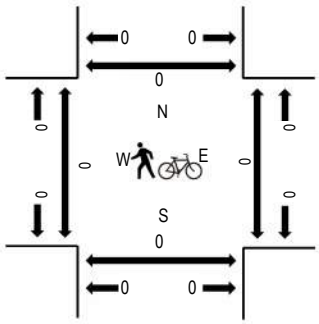
Location: 3 MERIDIAN ROAD & OWL PLACE AM
Date: Wednesday, June 1, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



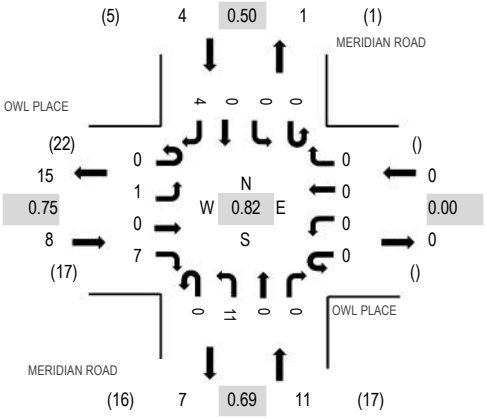
Traffic Counts

Interval Start Time	OWL PLACE Eastbound				OWL PLACE Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	2	9	13	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	7	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	8	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	8	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	9	0	0	0	0
8:15 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2		0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1		0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3		0	0	0	0
Count Total	0	0	0	9	0	0	0	0	0	11	0	0	0	0	0	2	22		0	0	0	0
Peak Hour	0	0	0	6	0	0	0	0	0	5	0	0	0	0	0	2	13		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

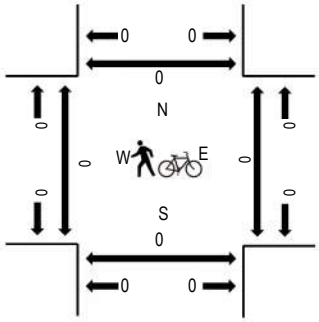
Location: 3 MERIDIAN ROAD & OWL PLACE PM
Date: Wednesday, June 1, 2022
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



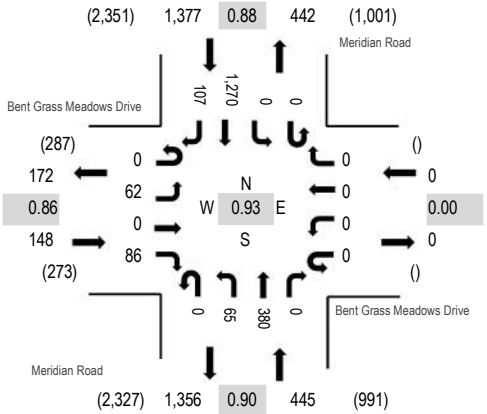
Traffic Counts

Interval Start Time	OWL PLACE Eastbound				OWL PLACE Westbound				MERIDIAN ROAD Northbound				MERIDIAN ROAD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	2	0	0	0	0	0	3	0	0	0	0	0	2	7	23	0	0	0	0
4:15 PM	0	1	0	2	0	0	0	0	0	2	0	0	0	0	0	1	6	21	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	0	4	0	0	0	0	0	0	6	18	0	0	0	0
4:45 PM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	1	4	15	0	0	0	0
5:00 PM	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	5	16	0	0	0	0
5:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3		0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	3		0	0	0	0
5:45 PM	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	1	5		0	0	0	0
Count Total	0	1	0	16	0	0	0	0	0	17	0	0	0	0	0	5	39		0	0	0	0
Peak Hour	0	1	0	7	0	0	0	0	0	11	0	0	0	0	0	4	23		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

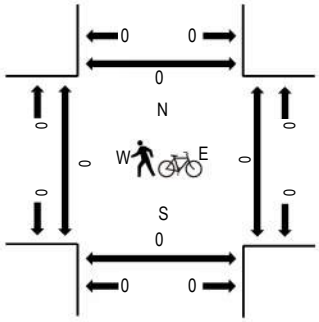
Location: 1 Meridian Road & Bent Grass Meadows Drive AM
Date: Tuesday, March 29, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



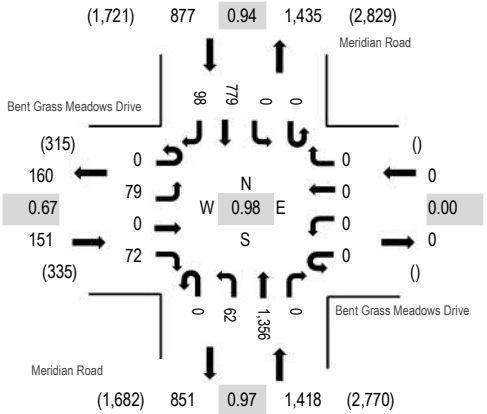
Traffic Counts

Interval Start Time	Bent Grass Meadows Drive Eastbound				Bent Grass Meadows Drive Westbound				Meridian Road Northbound				Meridian Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	17	0	18	0	0	0	0	0	19	63	0	0	0	341	36	494	1,970	0	0	0	0
7:15 AM	0	14	0	29	0	0	0	0	0	17	79	0	0	0	366	26	531	1,912	0	0	0	0
7:30 AM	0	13	0	24	0	0	0	0	0	16	97	0	0	0	307	21	478	1,794	0	0	0	0
7:45 AM	0	18	0	15	0	0	0	0	0	13	141	0	0	0	256	24	467	1,718	0	0	0	0
8:00 AM	0	12	0	15	0	0	0	0	0	12	111	0	0	0	259	27	436	1,645	0	0	0	0
8:15 AM	0	16	0	15	0	0	0	0	0	16	138	0	0	0	210	18	413		0	0	0	0
8:30 AM	0	18	0	21	0	0	0	0	1	9	115	0	0	0	229	9	402		0	0	0	0
8:45 AM	0	13	0	15	0	0	0	0	1	7	136	0	0	0	205	17	394		0	0	0	0
Count Total	0	121	0	152	0	0	0	0	2	109	880	0	0	0	2,173	178	3,615		0	0	0	0
Peak Hour	0	62	0	86	0	0	0	0	0	65	380	0	0	0	1,270	107	1,970		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

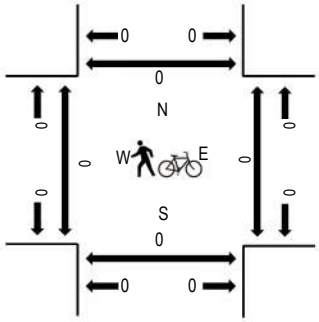
Location: 1 Meridian Road & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



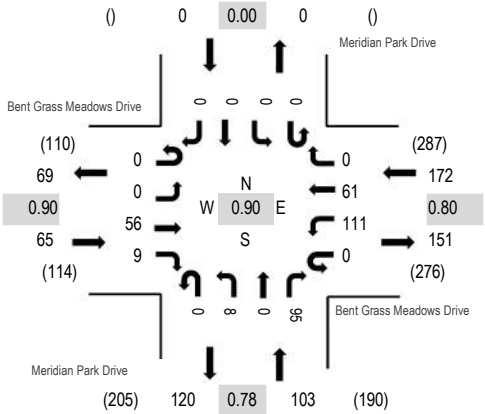
Traffic Counts

Interval Start Time	Bent Grass Meadows Drive Eastbound				Bent Grass Meadows Drive Westbound				Meridian Road Northbound				Meridian Road Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	19	0	21	0	0	0	0	0	17	324	0	0	0	196	22	599	2,398	0	0	0	0
4:15 PM	0	21	0	23	0	0	0	0	0	13	308	0	0	0	171	31	567	2,417	0	0	0	0
4:30 PM	0	20	0	19	0	0	0	0	0	15	336	0	0	0	208	25	623	2,446	0	0	0	0
4:45 PM	0	19	0	17	0	0	0	0	0	17	348	0	0	0	182	26	609	2,446	0	0	0	0
5:00 PM	0	20	0	23	0	0	0	0	0	13	342	0	0	0	198	22	618	2,428	0	0	0	0
5:15 PM	0	20	0	13	0	0	0	0	0	17	330	0	0	0	191	25	596		0	0	0	0
5:30 PM	0	47	0	19	0	0	0	0	0	12	317	0	0	0	203	25	623		0	0	0	0
5:45 PM	0	17	0	17	0	0	0	0	0	20	341	0	0	0	181	15	591		0	0	0	0
Count Total	0	183	0	152	0	0	0	0	0	124	2,646	0	0	0	1,530	191	4,826		0	0	0	0
Peak Hour	0	79	0	72	0	0	0	0	0	62	1,356	0	0	0	779	98	2,446		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

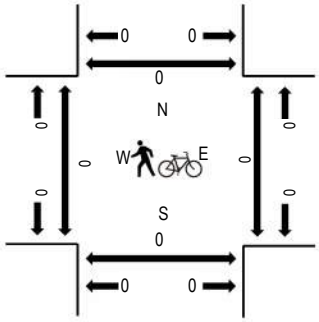
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive AM
Date: Tuesday, March 29, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



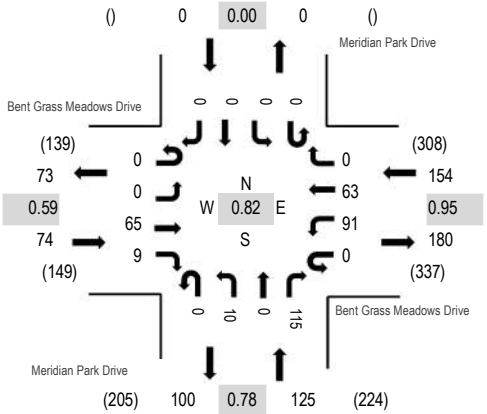
Traffic Counts

Interval Start Time	Bent Grass Meadows Drive Eastbound				Bent Grass Meadows Drive Westbound				Meridian Park Drive Northbound				Meridian Park Drive Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	10	4	0	37	17	0	0	2	0	24	0	0	0	0	94	340	0	0	0	0
7:15 AM	0	0	16	2	0	29	13	0	0	4	0	29	0	0	0	0	93	311	0	0	0	0
7:30 AM	0	0	15	2	0	16	19	0	0	1	0	23	0	0	0	0	76	288	0	0	0	0
7:45 AM	0	0	15	1	0	29	12	0	0	1	0	19	0	0	0	0	77	271	0	0	0	0
8:00 AM	0	0	5	1	0	22	14	0	0	0	0	23	0	0	0	0	65	251	0	0	0	0
8:15 AM	0	0	8	3	1	26	10	0	0	0	0	22	0	0	0	0	70		0	0	0	0
8:30 AM	0	0	19	1	0	12	5	0	0	2	0	20	0	0	0	0	59		0	0	0	0
8:45 AM	0	0	10	2	0	18	7	0	0	3	0	17	0	0	0	0	57		0	0	0	0
Count Total	0	0	98	16	1	189	97	0	0	13	0	177	0	0	0	0	591		0	0	0	0
Peak Hour	0	0	56	9	0	111	61	0	0	8	0	95	0	0	0	0	340		0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

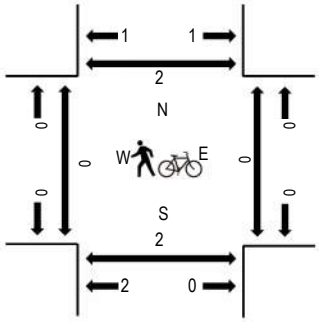
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Bent Grass Meadows Drive Eastbound				Bent Grass Meadows Drive Westbound				Meridian Park Drive Northbound				Meridian Park Drive 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	19	1	0	23	15	0	0	3	0	22	0	0	0	0	83	340	0	0	0	0
4:15 PM	0	0	18	2	0	28	11	0	0	2	0	28	0	0	0	0	89	337	0	0	0	0
4:30 PM	0	0	13	3	0	26	17	0	0	1	0	23	0	0	0	0	83	328	0	0	0	0
4:45 PM	0	0	11	2	0	29	13	0	0	2	0	28	0	0	0	0	85	353	0	0	2	2
5:00 PM	0	0	11	2	0	22	13	0	0	2	0	30	0	0	0	0	80	341	0	0	0	0
5:15 PM	0	0	12	2	0	22	21	0	0	2	0	21	0	0	0	0	80		0	0	0	0
5:30 PM	0	0	31	3	0	18	16	0	0	4	0	36	0	0	0	0	108		0	0	0	0
5:45 PM	0	0	16	3	0	19	15	0	0	2	0	18	0	0	0	0	73		0	0	0	0
Count Total	0	0	131	18	0	187	121	0	0	18	0	206	0	0	0	0	681		0	0	2	2
Peak Hour	0	0	65	9	0	91	63	0	0	10	0	115	0	0	0	0	353		0	0	2	2

All Traffic Data Services

www.alltrafficdata.net

Date Start: 29-Mar-22
Site Code: 3
Station ID: 3
MERIDIAN RD S.O. BENT GRASS MEADOWS DR

Start Time	29-Mar-22 Tue	NB	SB							Total
12:00 AM		50	15							65
01:00		19	11							30
02:00		12	18							30
03:00		11	45							56
04:00		24	138							162
05:00		58	358							416
06:00		211	1018							1229
07:00		447	**1364**							**1811**
08:00		547	967							1514
09:00		512	805							1317
10:00		562	757							1319
11:00		**656**	745							1401
12:00 PM		774	756							1530
01:00		798	723							1521
02:00		836	808							1644
03:00		1115	796							1911
04:00		1379	**846**							2225
05:00		**1400**	836							**2236**
06:00		1001	670							1671
07:00		782	438							1220
08:00		521	287							808
09:00		332	164							496
10:00		184	75							259
11:00		77	41							118
Total		12308	12681							24989
Percent		49.3%	50.7%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	656	1364	-	-	-	-	-	-	1811
PM Peak	-	17:00	16:00	-	-	-	-	-	-	17:00
Vol.	-	1400	846	-	-	-	-	-	-	2236
Grand Total		12308	12681							24989
Percent		49.3%	50.7%							

ADT ADT 24,989 AADT 24,989

Omni eX v1.4 - Unit & Phase Configuration

McCain

Agency:
Location: Meridian Road & Bent Grass Meadows
System ID:

DATE PREPARED: 5/4/2022 By: DLM
DATE IMPLEMENTED: By:

1.2 Unit Setup	
Auto PED Clr	
Red Revert	
Min Yellow	
TX Diamond	
Diamond Type	

1.4 Channel Setup (1-16)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

B.3 System Information	
System Id	
Name	
Location	

1.3 Startup	
Start-Up Phases	
Next Phase	
Flash	
All Red	
Start Veh Call	
Start Ped Call	

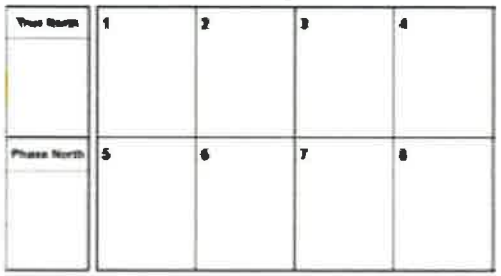
1.4 Channel Setup (17-32)	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

5.1 Coordination Constants	
Correction Mode	Shortway
Max Cycles Trans	3
Coord Max Mode	Max Inhibit
Coord Force Mode	Fixed
Perm Strategy	Maximum
Omit Strategy	Minimum
Sync Point	Begin Yellow
No Early Return	Disable
Sync Ref Time	0
Operational Mode	

2.4 Phase Concurrrency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1																
Phase 2																
Phase 3																
Phase 4																
Phase 5																
Phase 6																
Phase 7																
Phase 8																
Phase 9																
Phase 10																
Phase 11																
Phase 12																
Phase 13																
Phase 14																
Phase 15																
Phase 16																

2.4 Phase Enable and Rings	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enabled		x			x	x	x									
Ring1		x														
Ring2					x	x	x									
Ring3																
Ring3																

Phase Diagram



Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID:

1.5.1.1 Nema ABCD Input Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-f	Vehicle Detector	1	B-m	Phase Ped Omit	7	A-k	Man Control Enable	1	D-V	Unused Input	1
A-K	Vehicle Detector	2	B-n	Phase Ped Omit	B	A-q	Mode Select Bit	1	D-W	Unused Input	1
B-N	Vehicle Detector	3	B-U	Phase Omit	1	A-y	Mode Select Bit	2	D-X	Unused Input	1
B-L	Vehicle Detector	4	B-S	Phase Omit	2	A-HH	Mode Select Bit	3	D-Y	Free (no Coord)	1
C-P	Vehicle Detector	5	B-R	Phase Omit	3	A-n	Test	1	D-Z	Unused Input	1
C-S	Vehicle Detector	6	B-g	Phase Omit	4	A-AA	Test	2	D-a	Unused Input	1
C-V	Vehicle Detector	7	C-n	Phase Omit	5	C-b	Test	3	D-b	Alarm	1
C-t	Vehicle Detector	8	C-q	Phase Omit	6	A-BB	Walk Rest Modifier	1	D-c	Alarm	2
A-g	Pedestrian Detector	1	C-r	Phase Omit	7	B-B	Unused Input	1	D-d	Alarm	3
A-L	Pedestrian Detector	2	C-s	Phase Omit	B	B-W	Unused Input	1	D-e	Alarm	4
B-P	Pedestrian Detector	3	A-i	Force Off Ring	1	B-X	Unused Input	1	D-f	Alarm	5
B-M	Pedestrian Detector	4	A-N	Stop Time Ring	1	B-v	Unused Input	1	D-g	Local Flash Sense	1
C-R	Pedestrian Detector	5	A-P	Inhibit Max Ring	1	D-A	Vehicle Detector	9	D-h	Mmu Flash	1
C-T	Pedestrian Detector	6	A-x	Red Rest Ring	1	D-B	Vehicle Detector	10	D-i	Door Ajar	1
C-U	Pedestrian Detector	7	A-FF	Ped Recycle Ring	1	D-C	Vehicle Detector	11	D-j	Special Func Input	1
C-W	Pedestrian Detector	8	A-GG	Max Ii Ring	1	D-D	Vehicle Detector	12	D-k	Special Func Input	2
A-h	Phase Hold	1	A-w	Omit Red Clear Ring	1	D-E	Vehicle Detector	13	D-m	Special Func Input	3
A-M	Phase Hold	2	A-m	Call To Na	1	D-F	Vehicle Detector	14	D-n	Special Func Input	4
B-i	Phase Hold	3	C-Y	Force Off Ring	2	D-G	Vehicle Detector	15	D-p	Special Func Input	5
B-h	Phase Hold	4	C-Z	Stop Time Ring	2	D-H	Vehicle Detector	16	D-q	Special Func Input	6
C-m	Phase Hold	5	C-a	Inhibit Max Ring	2	D-J	Vehicle Detector	17	D-r	Special Func Input	7
C-p	Phase Hold	6	C-u	Red Rest Ring	2	D-K	Vehicle Detector	18	D-s	Special Func Input	B
C-EE	Phase Hold	7	B-V	Ped Recycle Ring	2	D-L	Vehicle Detector	19	D-t	Preempt Detector	1
C-X	Phase Hold	8	B-z	Max Ii Ring	2	D-M	Vehicle Detector	20	D-u	Preempt Detector	2
A-EE	Phase Ped Omit	1	C-v	Omit Red Clear Ring	2	D-N	Vehicle Detector	21	D-v	Preempt Detector	3
A-v	Phase Ped Omit	2	A-z	Call To Na	2	D-P	Vehicle Detector	22	D-w	Preempt Detector	4
B-j	Phase Ped Omit	3	A-R	External Start	1	D-R	Vehicle Detector	23	D-x	Preempt Detector	5
B-x	Phase Ped Omit	4	A-S	Interval Advance	1	D-S	Vehicle Detector	24	D-y	Preempt Detector	6
B-T	Phase Ped Omit	5	A-T	Unused Input	1	D-T	Clock Update	1	D-KK	Unused Input	1
B-k	Phase Ped Omit	6	A-j	Min Recall	1	D-U	Unused Input	1	D-MM	Unused Input	1

1.5.1.2 Nema ABCD Output Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-D	Channel Red	1	B-a	Unused Output	1	C-k	Phase Check	5	A-A	Fault Monitor	1
A-F	Channel Red	2	B-J	Channel Red	10	C-BB	Phase Check	6	A-C	Voltage Monitor	1
B-F	Channel Red	3	C-L	Unused Output	1	C-MM	Phase Check	7	B-FF	Channel Green	15
B-G	Channel Red	4	C-z	Channel Red	11	C-FF	Phase Check	B	B-HH	Channel Yellow	15
C-H	Channel Red	5	C-y	Unused Output	1	B-A	Phase Next	1	B-DD	Channel Red	15
C-G	Channel Red	6	C-C	Channel Red	12	B-C	Phase Next	2	B-w	Channel Green	16
C-F	Channel Red	7	A-a	Unused Output	1	B-t	Phase Next	3	B-EE	Channel Yellow	16
C-D	Channel Red	B	A-H	Channel Yellow	9	B-f	Phase Next	4	B-u	Channel Red	16
A-Z	Channel Yellow	1	B-Z	Unused Output	1	C-M	Phase Next	5	A-X	Flash Logic Output	1
A-h	Channel Yellow	2	B-H	Channel Yellow	10	C-DD	Phase Next	6	D-LL	Detector Reset	1
B-E	Channel Yellow	3	C-K	Unused Output	1	C-PP	Phase Next	7	A-CC	Status A	1
B-c	Channel Yellow	4	C-AA	Channel Yellow	11	C-HH	Phase Next	B	A-r	Status B	1
C-J	Channel Yellow	5	C-KK	Unused Output	1	A-DD	Phase On	1	A-Y	Status C	1
C-h	Channel Yellow	6	C-w	Channel Yellow	12	A-e	Phase On	2	C-A	Status A	2
C-E	Channel Yellow	7	A-t	Unused Output	1	B-s	Phase On	3	C-B	Status B	2
C-e	Channel Yellow	8	A-J	Channel Green	9	B-e	Phase On	4	C-c	Status C	2
A-s	Channel Green	1	B-Y	Unused Output	1	C-N	Phase On	5	D-z	Alarm Output	1
A-c	Channel Green	2	B-d	Channel Green	10	C-CC	Phase On	6	D-AA	Alarm Output	2
B-D	Channel Green	3	C-j	Unused Output	1	C-NN	Phase On	7	D-BB	Special Func Output	1
B-b	Channel Green	4	C-LL	Channel Green	11	C-GG	Phase On	8	D-CC	Special Func Output	2
C-i	Channel Green	5	C-JJ	Unused Output	1	B-AA	Channel Green	13	D-DD	Special Func Output	3
C-g	Channel Green	6	C-d	Channel Green	12	B-p	Channel Yellow	13	D-EE	Special Func Output	4
C-f	Channel Green	7	A-u	Phase Check	1	B-q	Channel Red	13	D-FF	Special Func Output	5
C-x	Channel Green	8	A-d	Phase Check	2	B-GG	Channel Green	14	D-GG	Special Func Output	6
A-E	Unused Output	1	B-r	Phase Check	3	B-BB	Channel Yellow	14	D-HH	Special Func Output	7
A-G	Channel Red	9	B-K	Phase Check	4	B-CC	Channel Red	14	D-JJ	Special Func Output	B

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemeted:**_____ **By:**_____

System ID: _____

1.5.3.1 2070 FIO Input Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-39	Vehicle Detector	2	C1-67	Ped Detector	1
C1-40	Vehicle Detector	16	C1-68	Ped Detector	3
C1-41	Vehicle Detector	8	C1-69	Ped Detector	2
C1-42	Vehicle Detector	22	C1-70	Ped Detector	4
C1-43	Vehicle Detector	3	C1-71	Preempt	3
C1-44	Vehicle Detector	17	C1-72	Preempt	4
C1-45	Vehicle Detector	9	C1-73	Preempt	5
C1-46	Vehicle Detector	23	C1-74	Preempt	6
C1-47	Vehicle Detector	6	C1-75	Unused Input	
C1-48	Vehicle Detector	20	C1-76	Vehicle Detector	5
C1-49	Vehicle Detector	12	C1-77	Vehicle Detector	19
C1-50	Vehicle Detector	26	C1-78	Vehicle Detector	11
C1-51	Preempt	1	C1-79	Vehicle Detector	25
C1-52	Preempt	2	C1-80	Iterval Adcance	
C1-53	Manual Ctrl		C1-81	CMU Flash	
C1-54	Unused Input		C1-82	Stop Time	
C1-55	Vehicle Detector	15	C11-15	Unused Input	
C1-56	Vehicle Detector	1	C11-16	Unused Input	
C1-57	Vehicle Detector	21	C11-17	Unused Input	
C1-58	Vehicle Detector	7	C11-18	Unused Input	
C1-59	Vehicle Detector	27	C11-19	Unused Input	
C1-60	Vehicle Detector	13	C11-20	Unused Input	
C1-61	Vehicle Detector	28	C11-21	Unused Input	
C1-62	Vehicle Detector	14	C11-22	Unused Input	
C11-10	Unused Input		C11-23	Unused Input	
C11-11	Unused Input		C11-24	Unused Input	
C11-12	Unused Input		C11-25	Unused Input	
C11-13	Unused Input		C11-26	Unused Input	
C1-63	Vehicle Detector	4	C11-27	Unused Input	
C1-64	Vehicle Detector	18	C11-28	Unused Input	
C1-65	Vehicle Detector	10	C11-29	Unused Input	
C1-66	Vehicle Detector	24	C11-30	Unused Input	

1.5.3.2 2070 FIO Output Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-02	Channel Red	6	C1-35	Unused Output	
C1-03	Channel Green	6	C1-36	Unused Output	
C1-04	Channel Red	5	C1-37	Unused Output	
C1-05	Channel Yellow	5	C1-38	Unused Output	
C1-06	Channel Green	5	C1-100	Unused Output	
C1-07	Channel Red	4	C1-101	Flash Status	
C1-08	Channel Yellow	4	C1-102	Detector Reset	
C1-09	Channel Green	4	C1-103	Watchdog	
C1-10	Channel Red	3	C1-83	Unused Output	
C1-11	Channel Green	3	C1-84	Unused Output	
C1-12	Channel Red	2	C1-85	Channel Red	16
C1-13	Channel Yellow	2	C1-86	Channel Yellow	16
C1-15	Channel Green	2	C1-87	Channel Green	16
C1-16	Channel Red	1	C1-88	Channel Red	15
C1-17	Channel Yellow	1	C1-89	Channel Yellow	15
C1-18	Channel Green	1	C1-90	Channel Green	15
C1-19	Channel Red	12	C1-91	Unused Output	
C1-20	Channel Green	12	C1-93	Unused Output	
C1-21	Channel Red	11	C1-94	Channel Red	14
C1-22	Channel Yellow	11	C1-95	Channel Yellow	14
C1-23	Channel Green	11	C1-96	Channel Green	14
C1-24	Channel Red	10	C1-97	Channel Red	13
C1-25	Channel Yellow	10	C1-98	Channel Yellow	13
C1-26	Channel Green	10	C1-99	Channel Green	13
C1-27	Channel Red	9	C11-1	Unused Output	
C1-28	Channel Green	9	C11-2	Unused Output	
C1-29	Channel Red	8	C11-3	Unused Output	
C1-30	Channel Yellow	8	C11-4	Unused Output	
C1-31	Channel Green	8	C11-5	Unused Output	
C1-32	Channel Red	7	C11-6	Unused Output	
C1-33	Channel Yellow	7	C11-7	Unused Output	
C1-34	Channel Green	7	C11-8	Unused Output	

McCain

Omni eX v1.4 - Logic Gates

Date Prepared: _____ By: _____

Date Implemented: _____ By: _____

Agency: _____

Location: _____

System ID: _____

1.6 Logic Gate	1				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	2				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	3				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	4				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	5				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	6				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	7				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	8				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	9				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

McCain

Omni eX v1.4 - Phase Timing & Options

Agency: _____ **Date Prepared:** ____ **By:** ____

Location: Meridian Rd & Bent Grass Meadows **Date Implemented:** ____ **By:** ____

System ID: _____

2.1 Phase Parameters	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min. Green			15			5	15	8									
Pass/10			25			25	25	25									
Max. 1			60			15	60	30									
Max. 2																	
Yel/10			55			50	55	40									
Red/10			20			35	20	35									
Walk																	
Pedestrian Clear																	
Add In/10																	
Max. Initial																	
TBR																	
CBR																	
TTR																	
Reduce/10																	
Min Gp/10																	
DM Limit																	
DM Stp/10																	
Red Rv/10																	
Cond Svc Min																	
Alt Min Green																	
Alt Ps/10																	
Alternate Walk																	
Alt Ped Clear																	
Advanced Walk																	
Delay Walk																	
St Dly/10																	
Green Clear / 10																	

2.2 Phase Options	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Omit																	
Ped Omit																	
Min Recall																	
Max Recall																	
Soft Recall																	
Ped Recall																	
Pedestrian Recycle																	
Cond Srv																	
Detector Lock																	
Dual Entry																	
Simul Gap																	
Guar Pass																	
Add Init Calc																	
Walk Rest																	
Red Rest																	
Flash Entry																	
Automatic Flash Exit Phase																	
CNA-1																	
CNA-2																	
No Backup																	
Max Walk																	
Max Extension																	

Agency: _____ **Date Prepared:** ____ **By:** _____

Location: _____ **Date Implemented:** ____ **By:** _____

System ID: _____

2.3 Phase Sequence 1	
Ring 1	2
Ring 2	5,6,7
Ring 3	
Ring 4	

2.3 Phase Sequence 2	
Ring 1	2
Ring 2	5,6,7
Ring 3	
Ring 4	

2.3 Phase Sequence 3	
Ring 1	2
Ring 2	5,6,7
Ring 3	
Ring 4	

2.3 Phase Sequence 4	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 5	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 6	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 7	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 8	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 9	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 10	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 11	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 12	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 13	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 14	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 15	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 16	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

Note: Phases 10 through 16 are entered as 0,A,B,C,D,E,F

Detector Lock	
No Min Yellow	

Detector Lock	
No Min Yellow	

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID: _____

3.1 Veh Overlap 1	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh. Overlap 2	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 3	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 4	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 5	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

3.1 Veh Overlap 6	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

Sequential Timing																
No Min Yellow																

Agency: _____ Date Prepared:_____ By:_____

Location: _____ Date Implemented:_____ By:_____

System ID: _____

3.2 Ped Overlap 1	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 2	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 3	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 4	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 5	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 6	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 7	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 8	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 9	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 10	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 11	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 12	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 13	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 14	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 15	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 16	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

McCain

Omni eX v1.4 - Vehicle Detectors

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

4.1 Vehicle Detector																														
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

4.1 Vehicle Detector																														
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.2 Ped Detector																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.3 Vehicle Detector Diag																															
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.4 Ped Detector Diag																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.5 Extra VEH Detector Calls		
DET	Call Phases	Call VEH Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

4.6 Extra PED Detector Calls		
DET	Call Phases	Call PED Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

Agency: _____ **DATE PREPARED:** _____ By:_____

Location: Meridian Road & Bent Grass Meadows **DATE IMPLEMENTED:** _____ By:_____

System ID: _____

5.2 Pattern Parameters	1
Cycle Time	120
Offset Time	5
Split	1
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	2
Cycle Time	100
Offset Time	46
Split	2
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	3
Cycle Time	120
Offset Time	27
Split	3
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	4
Cycle Time	
Offset Time	
Split	
Sequence	
Correction Mode	
Maximum Mode	
Force Mode	
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

Agency: _____ **DATE PREPARED:** _____ **By:** _____

Location: Meridian Road & Bent Grass Meadows **DATE IMPLEMENTED:** _____ **By:** _____

System ID: _____

5.3 Split Table 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)		92			20	72	28									
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)		78			20	58	22									
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)		93			20	73	27									
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

6.4 Sched	Month												Days Of Week							Date																															Day Plan
	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1
2	x	x	x	x	x	x	x	x	x	x	x	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
3																																																			0
4																																																				0
5																																																			0
6																																																			0
7																																																			0
8																																																			0

6.4 Sched	Month												Days Of Week							Date																															Day Plan
	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
9																																																			0
10																																																				0
11																																																			0
12																																																			0
13																																																			0
14																																																			0
15																																																			0
16																																																			0

Agency:
Location: Meridian Road & Bent Grass Meadows
System ID:

DATE PREPARED: By:
DATE IMPLEMENTED: By:

6.5 DayPlan 1								
Event#	1	2	3	4	5	6	7	8
Hour	6	9	13	19				
Minute	0	0	30	0				
Action	1	2	3	20				

6.5 DayPlan 1								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	1	2	3	4	5	6	7	8
Hour	10	19						
Minute	0	0						
Action	2	20						

6.5 DayPlan 2								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID: _____

6.6 Action Parameters 1	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 2	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 3	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 4	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 5	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 6	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 7	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 8	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 9	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 10	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 11	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 12	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 13	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 14	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 15	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

7 Preempts	1	2	3	4	5	6	7	8
Track Phases								
Track Overlaps								
Track Ped								
Track Ped Overlap								
Dwell Phases								
Dwell Overlaps								
Dwell Peds								
Dwell Ped Overlap								
Cycling Phases								
Cycling Overlaps								
Cycling Ped								
Cycling Ped Overlap								
Exit Phase								
Locking								
Override Flash								
Override Preempt+1								
Flash Dwell								
Enter All Red								
Track Green								
Delay								
Maximum Presence								
Minimum Duration								
Minimum Dwell								
Linked Preempt								
Enter Min Green								
Enter Min Walk								
Enter Min Ped Clear								
Enter Min Yellow								
Enter Min Red Clear								
Track Min Yellow								
Track Min Red Clear								

McCain

Omni eX v1.4 - Transit Priority

Agency: _____ Date Prepared: _____ By: _____

Location: _____ Date Implemetned: _____ By: _____

System ID: _____

8.1 TSP Global Options	
	Enable
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Headway	
Lockout	
Node	
Name	

8.2 TSP Strategy Options	Strategy 1 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 2 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 3 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 4 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 5 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 6 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

8.3 TSP Phase Adjustment Times																Strategy 1	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 2	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 3	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 4	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 5	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 6	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 7	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 8	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 9	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 10	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 11	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 12	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 13	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 14	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 15	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 16	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

9.3.3.2 Speed Trap																
Speed Trap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Detector 1																
Detector 2																
Distance																

9.3.3.3 Speed Trap Bin Ranges																
Bin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Range																

Omni eX v1.4 - Log Configuration

McCain

Agency: _____
Location: _____
System ID: _____

Date Prepared: _____ **By:** _____
Date Implemented: _____ **By:** _____

9.3-4 Log Configuration	
Volume Occupancy Period	
VOS Log Combined Periods	
Speed Trap Log Period	
Display Metric	
Speed Trap Log Mode	
VOS Log Mode	
Cycle MOE Log Mode	
Power On/Off	
Low Battery	
Cycle Fault	
Coord Fault	
Coord Fail	
Cycle Fail	
MMU Flash	
Local Flash	
Local Free	
Preempt Status Change	
Response Fault	
Alarm Status Change	
Door Status Change	
Pattern Change	
Detector Status Change	
Comm Status Change	
Command Change	
Data Change Keyboard	
Controller Download	
Access Code	
Priority	

6.2 Time Zone	
Global DST	
Standard Time Zone (+/- hr)	

A.3 Unit Comms	
Unit Backup Time	

1.7 Port 1																		
Device	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Device Present																			
Frame40 Enable																			

1.5.5 Aux Switch	
Function	
Index	

A.5-6 Time Sync	
NTP Server Address	
NTP Start Hour	
NTP Start Minute	
NTP Interval Hour	
NTP Interval Minute	
GPS Start Hour	
GPS Start Minute	
GPS Interval Hour	
GPS Interval Minute	
Enable NTP Svr	

Avency: _____ **Date Prepared:** _____ **By:** ____

Location: _____ **Date Implemented:** _____ **By:** ____

System ID: _____

A.1 Serial Comms						
Port	1	2	3	4	5	8
Protocol						
Speed						
Parity						
Flow Control						
Address						
Group Address						
Data Bits						
Stop Bits						
CTS Delay						
RTS Extend						

A.2 Ethernet Comms		
Port	1	2
IP Address		
Net Mask		
Gateway		
NTCIP Port		
NTCIP Mode		
AB3418 Port		
AB3418 Mode		
AB3418 Address		
AB3418 Group Address		

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

B.1.1 Menu Security Options					
Enable:		Allow Read-Only:		Timeout (min):	

B.1.2 Menu Security Users

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
User Id																
Pin																
Operation																
Unit																
I/O Map																
Phase																
Overlap																
Detector																
Coord																
Time Base																
Preempt																
Transit																
Logs																
Comm																
Security																
Database																
SW Update																

Omni eX v1.4 - Unit & Phase Configuration

McCain

Agency:
Location: Meridian Road & Eastonville Road
System ID:

DATE PREPARED: 5/4/2022 By: DLM
DATE IMPLEMENTED: By:

1.2 Unit Setup	
Auto PED Clr	
Red Revert	
Min Yellow	
TX Diamond	
Diamond Type	

1.3 Startup	
Start-Up Phases	
Next Phase	
Flash	
All Red	
Start Veh Call	
Start Ped Call	

1.4 Channel Setup (1-16)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

1.4 Channel Setup (17-32)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

B.3 System Information	
System Id	
Name	
Location	

5.1 Coordination Constants	
Correction Mode	Shortway
Max Cycles Trans	3
Coord Max Mode	Max Inhibit
Coord Force Mode	Fixed
Perm Strategy	Maximum
Omit Strategy	Minimum
Sync Point	Begin Yellow
No Early Return	Disable
Sync Ref Time	0
Operational Mode	

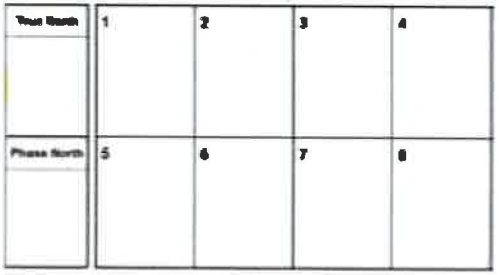
2.4 Phase Concurrrency

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1																
Phase 2																
Phase 3																
Phase 4																
Phase 5																
Phase 6																
Phase 7																
Phase 8																
Phase 9																
Phase 10																
Phase 11																
Phase 12																
Phase 13																
Phase 14																
Phase 15																
Phase 16																

2.4 Phase Enable and Rings

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enabled	x	x	x	x	x	x	x	x								
Ring1	x	x	x	x												
Ring2					x	x	x	x								
Ring3																
Ring4																

Phase Diagram



Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID:

1.5.1.1 Nema ABCD Input Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-f	Vehicle Detector	1	8-m	Phase Ped Omit	7	A-k	Man Control Enable	1	D-V	Unused Input	1
A-K	Vehicle Detector	2	B-n	Phase Ped Omit	8	A-q	Mode Select Bit	1	D-W	Unused Input	1
B-N	Vehicle Detector	3	B-U	Phase Omit	1	A-y	Mode Select Bit	2	D-X	Unused Input	1
B-L	Vehicle Detector	4	B-S	Phase Omit	2	A-HH	Mode Select Bit	3	D-Y	Free (no Coord)	1
C-P	Vehicle Detector	5	B-R	Phase Omit	3	A-n	Test	1	D-Z	Unused Input	1
C-S	Vehicle Detector	6	B-g	Phase Omit	4	A-AA	Test	2	D-a	Unused Input	1
C-V	Vehicle Detector	7	C-n	Phase Omit	5	C-b	Test	3	D-b	Alarm	1
C-t	Vehicle Detector	8	C-q	Phase Omit	6	A-BB	Walk Rest Modifier	1	D-c	Alarm	2
A-g	Pedestrian Detector	1	C-r	Phase Omit	7	B-B	Unused Input	1	D-d	Alarm	3
A-L	Pedestrian Detector	2	C-s	Phase Omit	8	B-W	Unused Input	1	D-e	Alarm	4
B-P	Pedestrian Detector	3	A-i	Force Off Ring	1	B-X	Unused Input	1	D-f	Alarm	5
B-M	Pedestrian Detector	4	A-N	Stop Time Ring	1	B-v	Unused Input	1	D-g	Local Flash Sense	1
C-R	Pedestrian Detector	5	A-P	Inhibit Max Ring	1	D-A	Vehicle Detector	9	D-h	Mmu Flash	1
C-T	Pedestrian Detector	6	A-x	Red Rest Ring	1	D-B	Vehicle Detector	10	D-i	Door Ajar	1
C-U	Pedestrian Detector	7	A-FF	Ped Recycle Ring	1	D-C	Vehicle Detector	11	D-j	Special Func Input	1
C-W	Pedestrian Detector	8	A-GG	Max Ii Ring	1	D-D	Vehicle Detector	12	D-k	Special Func Input	2
A-h	Phase Hold	1	A-w	Omit Red Clear Ring	1	D-E	Vehicle Detector	13	D-m	Special Func Input	3
A-M	Phase Hold	2	A-m	Call To Na	1	D-F	Vehicle Detector	14	D-n	Special Func Input	4
B-i	Phase Hold	3	C-Y	Force Off Ring	2	D-G	Vehicle Detector	15	D-p	Special Func Input	5
B-h	Phase Hold	4	C-Z	Stop Time Ring	2	D-H	Vehicle Detector	16	D-q	Special Func Input	6
C-m	Phase Hold	5	C-a	Inhibit Max Ring	2	D-J	Vehicle Detector	17	D-r	Special Func Input	7
C-p	Phase Hold	6	C-u	Red Rest Ring	2	D-K	Vehicle Detector	18	D-s	Special Func Input	8
C-EE	Phase Hold	7	B-V	Ped Recycle Ring	2	D-L	Vehicle Detector	19	D-t	Preempt Detector	1
C-X	Phase Hold	8	8-z	Max Ii Ring	2	D-M	Vehicle Detector	20	D-u	Preempt Detector	2
A-EE	Phase Ped Omit	1	C-v	Omit Red Clear Ring	2	D-N	Vehicle Detector	21	D-v	Preempt Detector	3
A-v	Phase Ped Omit	2	A-z	Call To Na	2	D-P	Vehicle Detector	22	D-w	Preempt Detector	4
B-j	Phase Ped Omit	3	A-R	External Start	1	D-R	Vehicle Detector	23	D-x	Preempt Detector	5
B-x	Phase Ped Omit	4	A-S	Interval Advance	1	D-S	Vehicle Detector	24	D-y	Preempt Detector	6
B-T	Phase Ped Omit	5	A-T	Unused Input	1	D-T	Clock Update	1	D-KK	Unused Input	1
B-k	Phase Ped Omit	6	A-j	Min Recall	1	D-U	Unused Input	1	D-MM	Unused Input	1

1.5.1.2 Nema ABCD Output Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-D	Channel Red	1	8-a	Unused Output	1	C-k	Phase Check	5	A-A	Fault Monitor	1
A-F	Channel Red	2	B-J	Channel Red	10	C-BB	Phase Check	6	A-C	Voltage Monitor	1
B-F	Channel Red	3	C-L	Unused Output	1	C-MM	Phase Check	7	B-FF	Channel Green	15
B-G	Channel Red	4	C-z	Channel Red	11	C-FF	Phase Check	8	B-HH	Channel Yellow	15
C-H	Channel Red	5	C-y	Unused Output	1	B-A	Phase Next	1	B-DD	Channel Red	15
C-G	Channel Red	6	C-C	Channel Red	12	B-C	Phase Next	2	B-w	Channel Green	16
C-F	Channel Red	7	A-a	Unused Output	1	B-t	Phase Next	3	B-EE	Channel Yellow	16
C-D	Channel Red	8	A-H	Channel Yellow	9	B-f	Phase Next	4	B-u	Channel Red	16
A-Z	Channel Yellow	1	B-Z	Unused Output	1	C-M	Phase Next	5	A-X	Flash Logic Output	1
A-b	Channel Yellow	2	B-H	Channel Yellow	10	C-DD	Phase Next	6	D-LL	Detector Reset	1
8-E	Channel Yellow	3	C-K	Unused Output	1	C-PP	Phase Next	7	A-CC	Status A	1
B-c	Channel Yellow	4	C-AA	Channel Yellow	11	C-HH	Phase Next	8	A-r	Status B	1
C-J	Channel Yellow	5	C-KK	Unused Output	1	A-DD	Phase On	1	A-Y	Status C	1
C-h	Channel Yellow	6	C-w	Channel Yellow	12	A-e	Phase On	2	C-A	Status A	2
C-E	Channel Yellow	7	A-t	Unused Output	1	B-s	Phase On	3	C-B	Status B	2
C-e	Channel Yellow	8	A-J	Channel Green	9	B-e	Phase On	4	C-c	Status C	2
A-s	Channel Green	1	B-Y	Unused Output	1	C-N	Phase On	5	D-z	Alarm Output	1
A-c	Channel Green	2	B-d	Channel Green	10	C-CC	Phase On	6	D-AA	Alarm Output	2
B-D	Channel Green	3	C-j	Unused Output	1	C-NN	Phase On	7	D-BB	Special Func Output	1
B-b	Channel Green	4	C-LL	Channel Green	11	C-GG	Phase On	8	D-CC	Special Func Output	2
C-i	Channel Green	5	C-JJ	Unused Output	1	B-AA	Channel Green	13	D-DD	Special Func Output	3
C-g	Channel Green	6	C-d	Channel Green	12	B-p	Channel Yellow	13	D-EE	Special Func Output	4
C-f	Channel Green	7	A-u	Phase Check	1	B-q	Channel Red	13	D-FF	Special Func Output	5
C-x	Channel Green	8	A-d	Phase Check	2	B-GG	Channel Green	14	D-GG	Special Func Output	6
A-E	Unused Output	1	B-r	Phase Check	3	B-BB	Channel Yellow	14	D-HH	Special Func Output	7
A-G	Channel Red	9	B-K	Phase Check	4	B-CC	Channel Red	14	D-JJ	Special Func Output	8

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemeted:**_____ **By:**_____

System ID: _____

1.5.3.1 2070 FIO Input Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-39	Vehicle Detector	2	C1-67	Ped Detector	1
C1-40	Vehicle Detector	16	C1-68	Ped Detector	3
C1-41	Vehicle Detector	8	C1-69	Ped Detector	2
C1-42	Vehicle Detector	22	C1-70	Ped Detector	4
C1-43	Vehicle Detector	3	C1-71	Preempt	3
C1-44	Vehicle Detector	17	C1-72	Preempt	4
C1-45	Vehicle Detector	9	C1-73	Preempt	5
C1-46	Vehicle Detector	23	C1-74	Preempt	6
C1-47	Vehicle Detector	6	C1-75	Unused Input	
C1-48	Vehicle Detector	20	C1-76	Vehicle Detector	5
C1-49	Vehicle Detector	12	C1-77	Vehicle Detector	19
C1-50	Vehicle Detector	26	C1-78	Vehicle Detector	11
C1-51	Preempt	1	C1-79	Vehicle Detector	25
C1-52	Preempt	2	C1-80	Iterval Adcance	
C1-53	Manual Ctrl		C1-81	CMU Flash	
C1-54	Unused Input		C1-82	Stop Time	
C1-55	Vehicle Detector	15	C11-15	Unused Input	
C1-56	Vehicle Detector	1	C11-16	Unused Input	
C1-57	Vehicle Detector	21	C11-17	Unused Input	
C1-58	Vehicle Detector	7	C11-18	Unused Input	
C1-59	Vehicle Detector	27	C11-19	Unused Input	
C1-60	Vehicle Detector	13	C11-20	Unused Input	
C1-61	Vehicle Detector	28	C11-21	Unused Input	
C1-62	Vehicle Detector	14	C11-22	Unused Input	
C11-10	Unused Input		C11-23	Unused Input	
C11-11	Unused Input		C11-24	Unused Input	
C11-12	Unused Input		C11-25	Unused Input	
C11-13	Unused Input		C11-26	Unused Input	
C1-63	Vehicle Detector	4	C11-27	Unused Input	
C1-64	Vehicle Detector	18	C11-28	Unused Input	
C1-65	Vehicle Detector	10	C11-29	Unused Input	
C1-66	Vehicle Detector	24	C11-30	Unused Input	

1.5.3.2 2070 FIO Output Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-02	Channel Red	6	C1-35	Unused Output	
C1-03	Channel Green	6	C1-36	Unused Output	
C1-04	Channel Red	5	C1-37	Unused Output	
C1-05	Channel Yellow	5	C1-38	Unused Output	
C1-06	Channel Green	5	C1-100	Unused Output	
C1-07	Channel Red	4	C1-101	Flash Status	
C1-08	Channel Yellow	4	C1-102	Detector Reset	
C1-09	Channel Green	4	C1-103	Watchdog	
C1-10	Channel Red	3	C1-83	Unused Output	
C1-11	Channel Green	3	C1-84	Unused Output	
C1-12	Channel Red	2	C1-85	Channel Red	16
C1-13	Channel Yellow	2	C1-86	Channel Yellow	16
C1-15	Channel Green	2	C1-87	Channel Green	16
C1-16	Channel Red	1	C1-88	Channel Red	15
C1-17	Channel Yellow	1	C1-89	Channel Yellow	15
C1-18	Channel Green	1	C1-90	Channel Green	15
C1-19	Channel Red	12	C1-91	Unused Output	
C1-20	Channel Green	12	C1-93	Unused Output	
C1-21	Channel Red	11	C1-94	Channel Red	14
C1-22	Channel Yellow	11	C1-95	Channel Yellow	14
C1-23	Channel Green	11	C1-96	Channel Green	14
C1-24	Channel Red	10	C1-97	Channel Red	13
C1-25	Channel Yellow	10	C1-98	Channel Yellow	13
C1-26	Channel Green	10	C1-99	Channel Green	13
C1-27	Channel Red	9	C11-1	Unused Output	
C1-28	Channel Green	9	C11-2	Unused Output	
C1-29	Channel Red	8	C11-3	Unused Output	
C1-30	Channel Yellow	8	C11-4	Unused Output	
C1-31	Channel Green	8	C11-5	Unused Output	
C1-32	Channel Red	7	C11-6	Unused Output	
C1-33	Channel Yellow	7	C11-7	Unused Output	
C1-34	Channel Green	7	C11-8	Unused Output	

Date Prepared: _____ By: _____

Date Implemented: _____ By: _____

Agency: _____

Location: _____

System ID: _____

1.6 Logic Gate	1				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	2				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	3				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	4				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	5				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	6				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	7				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	8				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	9				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

Agency: _____ **Date Prepared:** ____ **By:** ____

Location: Meridian Rd & Eastonville **Date Implemented:** ____ **By:** ____

System ID: _____

2.1 Phase Parameters	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min. Green		5	15	5	8	5	15	5	8								
Pass/10		25	25.0	25	25	25	25	25	25								
Max. 1		15	60	15	30	15	60	15	30								
Max. 2																	
Yel/10		50.0	55.0	40.0	40.0	40.0	55.0	40.0	40.0								
Red/10		35	20	35	25	35	20	35	25								
Walk			7		7		7		7								
Pedestrian Clear			29		32		29		32								
Add In/10																	
Max. Initial																	
TBR																	
CBR																	
TTR																	
Reduce/10																	
Min Gp/10																	
DM Limit																	
DM Stp/10																	
Red Rv/10																	
Cond Svc Min																	
Alt Min Green																	
Alt Ps/10																	
Alternate Walk																	
Alt Ped Clear																	
Advanced Walk																	
Delay Walk																	
St Dly/10																	
Green Clear / 10																	

2.2 Phase Options	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Omit																	
Ped Omit																	
Min Recall																	
Max Recall																	
Soft Recall																	
Ped Recall																	
Pedestrian Recycle																	
Cond Srv																	
Detector Lock																	
Dual Entry																	
Simul Gap																	
Guar Pass																	
Add Init Calc																	
Walk Rest																	
Red Rest																	
Flash Entry																	
Automatic Flash Exit Phase																	
CNA-1																	
CNA-2																	
No Backup																	
Max Walk																	
Max Extension																	

Agency: _____ **Date Prepared:** ____ **By:** _____

Location: _____ **Date Implemented:** ____ **By:** _____

System ID: _____

2.3 Phase Sequence 1	
Ring 1	1,2,3,4
Ring 2	5,6,7,8
Ring 3	
Ring 4	

2.3 Phase Sequence 2	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 3	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 4	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 5	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 6	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 7	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 8	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 9	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 10	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 11	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 12	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 13	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 14	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 15	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence 16	
Ring 1	
Ring 2	
Ring 3	
Ring 4	

Note: Phases 10 through 16 are entered as 0,A,B,C,D,E,F

Detector Lock	
No Min Yellow	

Detector Lock	
No Min Yellow	

Agency: _____ Date Prepared:_____ By:_____

Location: _____ Date Implemented:_____ By:_____

System ID: _____

3.1 Veh Overlap 1	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh. Overlap 2	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 3	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 4	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 5	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

3.1 Veh Overlap 6	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

Sequential Timing																
No Min Yellow																

Agency: _____ Date Prepared:_____ By:_____

Location: _____ Date Implemented:_____ By:_____

System ID: _____

3.2 Ped Overlap 1	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 2	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 3	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 4	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 5	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 6	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 7	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 8	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 9	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 10	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 11	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 12	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 13	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 14	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 15	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 16	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.1 Vehicle Detector																															
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

4.1 Vehicle Detector																															
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

Omni eX v1.4 - Pedestrian Detectors

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.2 Ped Detector																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.3 Vehicle Detector Diag																															
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

McCain

Omni eX v1.4 - Pedestrian Detector Diagnostics

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.4 Ped Detector Diag																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.5 Extra VEH Detector Calls		
DET	Call Phases	Call VEH Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

4.6 Extra PED Detector Calls		
DET	Call Phases	Call PED Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

Agency: _____ **DATE PREPARED:** _____ **By:** _____

Location: Meridian Road & Eastonville Road **DATE IMPLEMENTED:** _____ **By:** _____

System ID: _____

5.2 Pattern Parameters	1
Cycle Time	120
Offset Time	45
Split	1
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	2
Cycle Time	100
Offset Time	89
Split	2
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	3
Cycle Time	120
Offset Time	89
Split	3
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	4
Cycle Time	
Offset Time	
Split	
Sequence	
Correction Mode	
Maximum Mode	
Force Mode	
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

McCain

Omni eX v1.4 - Splits

Agency: _____ **DATE PREPARED:** _____ **By:** _____

Location: Meridian Road & Eastonville Road **DATE IMPLEMENTED:** _____ **By:** _____

System ID: _____

5.3 Split Table 1																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	15	67	18	20	18	64	18	20								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 2																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	19	45	13	23	23	41	17	19								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 3																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	18	62	18	22	25	55	18	22								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

McCain

Omni eX v1.4 - Schedule

Agency: ______
Location: ______
System ID: ______

DATE PREPARED: ______ By: ______
DATE IMPLEMENTED: ______ By: ______

6.4	Month												Days Of Week							Date																															Day
Sched	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Plan
1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1
2	x	x	x	x	x	x	x	x	x	x	x	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
3																																																			0
4																																																			0
5																																																			0
6																																																			0
7																																																			0
8																																																			0

6.4	Month												Days Of Week							Date																															Day
Sched	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Plan
9																																																			0
10																																																			0
11																																																			0
12																																																			0
13																																																			0
14																																																			0
15																																																			0
16																																																			0

Agency:

Location: **Meridian Road & Eastonville Road**

System ID:

DATE PREPARED: By:

DATE IMPLEMENTED: By:

6.5 DayPlan 1								
Event#	1	2	3	4	5	6	7	8
Hour	6	9	13	19				
Minute	0	0	30	0				
Action	1	2	3	20				

6.5 DayPlan 1								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	1	2	3	4	5	6	7	8
Hour	10	19						
Minute	0	0						
Action	2	20						

6.5 DayPlan 2								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID: _____

6.6 Action Parameters 1	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 2	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 3	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 4	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 5	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 6	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 7	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 8	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 9	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 10	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 11	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 12	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 13	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 14	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Oetector Reset	

6.6 Action Parameters 15	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Oetector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

7 Preempts	1	2	3	4	5	6	7	8
Track Phases								
Track Overlaps								
Track Ped								
Track Ped Overlap								
Dwell Phases								
Dwell Overlaps								
Dwell Peds								
Dwell Ped Overlap								
Cycling Phases								
Cycling Overlaps								
Cycling Ped								
Cycling Ped Overlap								
Exit Phase								
Locking								
Override Flash								
Override Preempt+1								
Flash Dwell								
Enter All Red								
Track Green								
Delay								
Maximum Presence								
Minimum Duration								
Minimum Dwell								
Linked Preempt								
Enter Min Green								
Enter Min Walk								
Enter Min Ped Clear								
Enter Min Yellow								
Enter Min Red Clear								
Track Min Yellow								
Track Min Red Clear								

Agency: _____ Date Prepared: _____ By: _____

Location: _____ Date Implemetned: _____ By: _____

System ID: _____

8.1 TSP Global Options	
	Enable
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Headway	
Lockout	
Node	
Name	

8.2 TSP Strategy Options	Strategy 1 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 2 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 3 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 4 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 5 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 6 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

8.3 TSP Phase Adjustment Times																Strategy 1	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 2	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 3	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 4	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 5	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 6	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 7	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 8	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 9	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 10	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 11	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 12	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 13	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 14	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 15	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

8.3 TSP Phase Adjustment Times																Strategy 16	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Reduce																	
Extend																	
Qlump																	

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

9.3.3.2 Speed Trap																
Speed Trap	1	2	3	4	5	6	7	B	9	10	11	12	13	14	15	16
Detector 1																
Detector 2																
Distance																

9.3.3.3 Speed Trap Bin Ranges																
Bin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Range																

Agency: _____

Location: _____

System ID: _____

Date Prepared: _____ **By:** _____

Date Implemented: _____ **By:** _____

9.3-4 Log Configuration	
Volume Occupancy Period	
VOS Log Combined Periods	
Speed Trap Log Period	
Display Metric	
Speed Trap Log Mode	
VOS Log Mode	
Cycle MOE Log Mode	
Power On/Off	
Low Battery	
Cycle Fault	
Coord Fault	
Coord Fail	
Cycle Fail	
MMU Flash	
Local Flash	
Local Free	
Preempt Status Change	
Response Fault	
Alarm Status Change	
Door Status Change	
Pattern Change	
Detector Status Change	
Comm Status Change	
Command Change	
Data Change Keyboard	
Controller Download	
Access Code	
Priority	

6.2 Time Zone	
Global DST	
Standard Time Zone (+/- hr)	

A.3 Unit Comms	
Unit Backup Time	

1.7 Port 1																			
Device	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Device Present																			
Frame40 Enable																			

1.5.5 Aux Switch	
Function	
Index	

A.5-6 Time Sync	
NTP Server Address	
NTP Start Hour	
NTP Start Minute	
NTP Interval Hour	
NTP Interval Minute	
GPS Start Hour	
GPS Start Minute	
GPS Interval Hour	
GPS Interval Minute	
Enable NTP Svr	

Avency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

A.1 Serial Comms						
Port	1	2	3	4	5	8
Protocol						
Speed						
Parity						
Flow Control						
Address						
Group Address						
Data Bits						
Stop Bits						
CTS Delay						
RTS Extend						

A.2 Ethernet Comms		
Port	1	2
IP Address		
Net Mask		
Gateway		
NTCIP Port		
NTCIP Mode		
AB3418 Port		
AB3418 Mode		
AB3418 Address		
AB3418 Group Address		

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

B.1.1 Menu Security Options					
Enable:		Allow Read-Only:		Timeout (min):	

B.1.2 Menu Security Users																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
User Id																
Pin																
Operation																
Unit																
I/O Map																
Phase																
Overlap																
Detector																
Coord																
Time Base																
Preempt																
Transit																
Logs																
Comm																
Security																
Database																
SW Update																

Omni eX v1.4 - Unit & Phase Configuration

McCain

Agency:
Location: Meridian Road & Woodmen Road
System ID:

DATE PREPARED: 5/4/2022 By: DLM
DATE IMPLEMENTED: By:

1.2 Unit Setup	
Auto PED Clr	
Red Revert	
Min Yellow	
TX Diamond	
Diamond Type	

1.3 Startup	
Start-Up Phases	
Next Phase	
Flash	
All Red	
Start Veh Call	
Start Ped Call	

1.4 Channel Setup (1-16)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

1.4 Channel Setup (17-32)

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Type																
Source																
Alt 1/2 Hz																
Flsh Red																
Flsh Yel																

B.3 System Information	
System Id	
Name	
Location	

5.1 Coordination Constants	
Correction Mode	Shortway
Max Cycles Trans	3
Coord Max Mode	Max Inhibit
Coord Force Mode	Fixed
Perm Strategy	Maximum
Omit Strategy	Minimum
Sync Point	Begin Yellow
No Early Return	Disable
Sync Ref Time	0
Operational Mode	

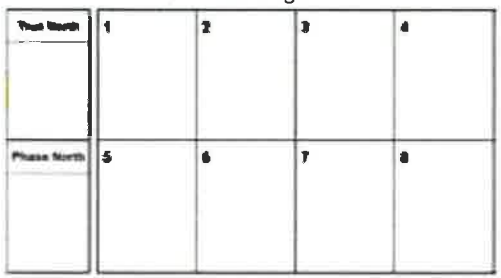
2.4 Phase Concurrrency

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase 1																
Phase 2																
Phase 3																
Phase 4																
Phase 5																
Phase 6																
Phase 7																
Phase 8																
Phase 9																
Phase 10																
Phase 11																
Phase 12																
Phase 13																
Phase 14																
Phase 15																
Phase 16																

2.4 Phase Enable and Rings

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enabled	x	x	x	x	x	x	x	x								
Ring1	x	x	x	x												
Ring2					x	x	x	x								
Ring3																
Ring4																

Phase Diagram



Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID:

1.5.1.1 Nema ABCD Input Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-f	Vehicle Detector	1	B-m	Phase Ped Omit	7	A-k	Man Control Enable	1	D-V	Unused Input	1
A-K	Vehicle Detector	2	B-n	Phase Ped Omit	8	A-q	Mode Select Bit	1	D-W	Unused Input	1
B-N	Vehicle Detector	3	B-U	Phase Omit	1	A-y	Mode Select Bit	2	D-X	Unused Input	1
B-L	Vehicle Detector	4	B-S	Phase Omit	2	A-HH	Mode Select Bit	3	D-Y	Free (no Coord)	1
C-P	Vehicle Detector	5	B-R	Phase Omit	3	A-n	Test	1	D-Z	Unused Input	1
C-S	Vehicle Detector	6	B-g	Phase Omit	4	A-AA	Test	2	D-a	Unused Input	1
C-V	Vehicle Detector	7	C-n	Phase Omit	5	C-b	Test	3	D-b	Alarm	1
C-t	Vehicle Detector	8	C-q	Phase Omit	6	A-BB	Walk Rest Modifier	1	D-c	Alarm	2
A-g	Pedestrian Detector	1	C-r	Phase Omit	7	B-B	Unused Input	1	D-d	Alarm	3
A-L	Pedestrian Detector	2	C-s	Phase Omit	B	B-W	Unused Input	1	D-e	Alarm	4
B-P	Pedestrian Detector	3	A-i	Force Off Ring	1	B-X	Unused Input	1	D-f	Alarm	5
B-M	Pedestrian Detector	4	A-N	Stop Time Ring	1	B-v	Unused Input	1	D-g	Local Flash Sense	1
C-R	Pedestrian Detector	5	A-P	Inhibit Max Ring	1	D-A	Vehicle Detector	9	D-h	Mmu Flash	1
C-T	Pedestrian Detector	6	A-x	Red Rest Ring	1	D-B	Vehicle Detector	10	D-i	Door Ajar	1
C-U	Pedestrian Detector	7	A-FF	Ped Recycle Ring	1	D-C	Vehicle Detector	11	D-j	Special Func Input	1
C-W	Pedestrian Detector	8	A-GG	Max Ii Ring	1	D-D	Vehicle Detector	12	D-k	Special Func Input	2
A-h	Phase Hold	1	A-w	Omit Red Clear Ring	1	D-E	Vehicle Detector	13	D-m	Special Func Input	3
A-M	Phase Hold	2	A-m	Call To Na	1	D-F	Vehicle Detector	14	D-n	Special Func Input	4
B-i	Phase Hold	3	C-Y	Force Off Ring	2	D-G	Vehicle Detector	15	D-p	Special Func Input	5
B-h	Phase Hold	4	C-Z	Stop Time Ring	2	D-H	Vehicle Detector	16	D-q	Special Func Input	6
C-m	Phase Hold	5	C-a	Inhibit Max Ring	2	D-J	Vehicle Detector	17	D-r	Special Func Input	7
C-p	Phase Hold	6	C-u	Red Rest Ring	2	D-K	Vehicle Detector	18	D-s	Special Func Input	8
C-EE	Phase Hold	7	B-V	Ped Recycle Ring	2	D-L	Vehicle Detector	19	D-t	Preempt Detector	1
C-X	Phase Hold	B	B-z	Max Ii Ring	2	D-M	Vehicle Detector	20	D-u	Preempt Detector	2
A-EE	Phase Ped Omit	1	C-v	Omit Red Clear Ring	2	D-N	Vehicle Detector	21	D-v	Preempt Detector	3
A-v	Phase Ped Omit	2	A-z	Call To Na	2	D-P	Vehicle Detector	22	D-w	Preempt Detector	4
B-j	Phase Ped Omit	3	A-R	External Start	1	D-R	Vehicle Detector	23	D-x	Preempt Detector	5
B-x	Phase Ped Omit	4	A-S	Interval Advance	1	D-S	Vehicle Detector	24	D-y	Preempt Detector	6
B-T	Phase Ped Omit	5	A-T	Unused Input	1	D-T	Clock Update	1	D-KK	Unused Input	1
B-k	Phase Ped Omit	6	A-j	Min Recall	1	D-U	Unused Input	1	D-MM	Unused Input	1

1.5.1.2 Nema ABCD Output Mapping

Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX	Pins	Function	IDX
A-D	Channel Red	1	B-a	Unused Output	1	C-k	Phase Check	5	A-A	Fault Monitor	1
A-F	Channel Red	2	B-J	Channel Red	10	C-BB	Phase Check	6	A-C	Voltage Monitor	1
B-F	Channel Red	3	C-L	Unused Output	1	C-MM	Phase Check	7	B-FF	Channel Green	15
B-G	Channel Red	4	C-z	Channel Red	11	C-FF	Phase Check	B	B-HH	Channel Yellow	15
C-H	Channel Red	5	C-y	Unused Output	1	B-A	Phase Next	1	B-DD	Channel Red	15
C-G	Channel Red	6	C-C	Channel Red	12	B-C	Phase Next	2	B-w	Channel Green	16
C-F	Channel Red	7	A-a	Unused Output	1	B-t	Phase Next	3	B-EE	Channel Yellow	16
C-D	Channel Red	B	A-H	Channel Yellow	9	B-f	Phase Next	4	B-u	Channel Red	16
A-Z	Channel Yellow	1	B-Z	Unused Output	1	C-M	Phase Next	5	A-X	Flash Logic Output	1
A-b	Channel Yellow	2	B-H	Channel Yellow	10	C-DD	Phase Next	6	D-LL	Detector Reset	1
B-E	Channel Yellow	3	C-K	Unused Output	1	C-PP	Phase Next	7	A-CC	Status A	1
B-c	Channel Yellow	4	C-AA	Channel Yellow	11	C-HH	Phase Next	8	A-r	Status B	1
C-J	Channel Yellow	5	C-KK	Unused Output	1	A-DD	Phase On	1	A-Y	Status C	1
C-h	Channel Yellow	6	C-w	Channel Yellow	12	A-e	Phase On	2	C-A	Status A	2
C-E	Channel Yellow	7	A-t	Unused Output	1	B-s	Phase On	3	C-B	Status B	2
C-e	Channel Yellow	B	A-J	Channel Green	9	B-e	Phase On	4	C-c	Status C	2
A-s	Channel Green	1	B-Y	Unused Output	1	C-N	Phase On	5	D-z	Alarm Output	1
A-c	Channel Green	2	B-d	Channel Green	10	C-CC	Phase On	6	D-AA	Alarm Output	2
B-D	Channel Green	3	C-j	Unused Output	1	C-NN	Phase On	7	D-BB	Special Func Output	1
B-b	Channel Green	4	C-LL	Channel Green	11	C-GG	Phase On	B	D-CC	Special Func Output	2
C-i	Channel Green	5	C-JJ	Unused Output	1	B-AA	Channel Green	13	D-DD	Special Func Output	3
C-g	Channel Green	6	C-d	Channel Green	12	B-p	Channel Yellow	13	D-EE	Special Func Output	4
C-f	Channel Green	7	A-u	Phase Check	1	B-q	Channel Red	13	D-FF	Special Func Output	5
C-x	Channel Green	B	A-d	Phase Check	2	B-GG	Channel Green	14	D-GG	Special Func Output	6
A-E	Unused Output	1	B-r	Phase Check	3	B-BB	Channel Yellow	14	D-HH	Special Func Output	7
A-G	Channel Red	9	B-K	Phase Check	4	B-CC	Channel Red	14	D-JJ	Special Func Output	8

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemeted:**_____ **By:**_____

System ID: _____

1.5.3.1 2070 FIO Input Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-39	Vehicle Detector	2	C1-67	Ped Detector	1
C1-40	Vehicle Detector	16	C1-68	Ped Detector	3
C1-41	Vehicle Detector	8	C1-69	Ped Detector	2
C1-42	Vehicle Detector	22	C1-70	Ped Detector	4
C1-43	Vehicle Detector	3	C1-71	Preempt	3
C1-44	Vehicle Detector	17	C1-72	Preempt	4
C1-45	Vehicle Detector	9	C1-73	Preempt	5
C1-46	Vehicle Detector	23	C1-74	Preempt	6
C1-47	Vehicle Detector	6	C1-75	Unused Input	
C1-48	Vehicle Detector	20	C1-76	Vehicle Detector	5
C1-49	Vehicle Detector	12	C1-77	Vehicle Detector	19
C1-50	Vehicle Detector	26	C1-78	Vehicle Detector	11
C1-51	Preempt	1	C1-79	Vehicle Detector	25
C1-52	Preempt	2	C1-80	Iterval Adcance	
C1-53	Manual Ctrl		C1-81	CMU Flash	
C1-54	Unused Input		C1-82	Stop Time	
C1-55	Vehicle Detector	15	C11-15	Unused Input	
C1-56	Vehicle Detector	1	C11-16	Unused Input	
C1-57	Vehicle Detector	21	C11-17	Unused Input	
C1-58	Vehicle Detector	7	C11-18	Unused Input	
C1-59	Vehicle Detector	27	C11-19	Unused Input	
C1-60	Vehicle Detector	13	C11-20	Unused Input	
C1-61	Vehicle Detector	28	C11-21	Unused Input	
C1-62	Vehicle Detector	14	C11-22	Unused Input	
C11-10	Unused Input		C11-23	Unused Input	
C11-11	Unused Input		C11-24	Unused Input	
C11-12	Unused Input		C11-25	Unused Input	
C11-13	Unused Input		C11-26	Unused Input	
C1-63	Vehicle Detector	4	C11-27	Unused Input	
C1-64	Vehicle Detector	18	C11-28	Unused Input	
C1-65	Vehicle Detector	10	C11-29	Unused Input	
C1-66	Vehicle Detector	24	C11-30	Unused Input	

1.5.3.2 2070 FIO Output Mapping

Pins	Function	IDX	Pins	Function	IDX
C1-02	Channel Red	6	C1-35	Unused Output	
C1-03	Channel Green	6	C1-36	Unused Output	
C1-04	Channel Red	5	C1-37	Unused Output	
C1-05	Channel Yellow	5	C1-38	Unused Output	
C1-06	Channel Green	5	C1-100	Unused Output	
C1-07	Channel Red	4	C1-101	Flash Status	
C1-08	Channel Yellow	4	C1-102	Detector Reset	
C1-09	Channel Green	4	C1-103	Watchdog	
C1-10	Channel Red	3	C1-83	Unused Output	
C1-11	Channel Green	3	C1-84	Unused Output	
C1-12	Channel Red	2	C1-85	Channel Red	16
C1-13	Channel Yellow	2	C1-86	Channel Yellow	16
C1-15	Channel Green	2	C1-87	Channel Green	16
C1-16	Channel Red	1	C1-88	Channel Red	15
C1-17	Channel Yellow	1	C1-89	Channel Yellow	15
C1-18	Channel Green	1	C1-90	Channel Green	15
C1-19	Channel Red	12	C1-91	Unused Output	
C1-20	Channel Green	12	C1-93	Unused Output	
C1-21	Channel Red	11	C1-94	Channel Red	14
C1-22	Channel Yellow	11	C1-95	Channel Yellow	14
C1-23	Channel Green	11	C1-96	Channel Green	14
C1-24	Channel Red	10	C1-97	Channel Red	13
C1-25	Channel Yellow	10	C1-98	Channel Yellow	13
C1-26	Channel Green	10	C1-99	Channel Green	13
C1-27	Channel Red	9	C11-1	Unused Output	
C1-28	Channel Green	9	C11-2	Unused Output	
C1-29	Channel Red	8	C11-3	Unused Output	
C1-30	Channel Yellow	8	C11-4	Unused Output	
C1-31	Channel Green	8	C11-5	Unused Output	
C1-32	Channel Red	7	C11-6	Unused Output	
C1-33	Channel Yellow	7	C11-7	Unused Output	
C1-34	Channel Green	7	C11-8	Unused Output	

Agency: _____

Location: _____

System ID: _____

Date Prepared: _____ By: _____

Date Implemented: _____ By: _____

1.6 Logic Gate	1				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	2				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	3				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	4				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	5				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	6				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	7				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	8				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

1.6 Logic Gate	9				
	Functions	IDX	!	DLY	EXT
Type	Unused				
Out Mode	Normal				
IN1	Unused				
IN2	Unused				
IN3	Unused				
IN4	Unused				
OUT	Unused				

McCain

Omni eX v1.4 - Phase Timing & Options

Agency: _____ **Date Prepared:** ____ **By:** ____

Location: Meridian Rd & Woodmen Road **Date Implemented:** ____ **By:** ____

System ID: _____

2.1 Phase Parameters	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min. Green		5	15	5	15	5	15	5	15								
Pass/10		25	25	25	25	25	25	25	25								
Max. 1		20	60	15	30	20	60	15	30								
Max. 2																	
Yel/10		50	50	40	50	50	50	40	50								
Red/10		35	20	35	20	35	20	35	20								
Walk			7		7		7		7								
Pedestrian Clear			29		32		29		32								
Add In/10																	
Max. Initial																	
TBR																	
CBR																	
TTR																	
Reduce/10																	
Min Gp/10																	
DM Limit																	
DM Stp/10																	
Red Rv/10																	
Cond Svc Min																	
Alt Min Green																	
Alt Ps/10																	
Alternate Walk																	
Alt Ped Clear																	
Advanced Walk																	
Delay Walk																	
St Dly/10																	
Green Clear / 10																	

2.2 Phase Options	Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase Omit																	
Ped Omit																	
Min Recall																	
Max Recall																	
Soft Recall																	
Ped Recall																	
Pedestrian Recycle																	
Cond Srv																	
Detector Lock																	
Dual Entry																	
Simul Gap																	
Guar Pass																	
Add Init Calc																	
Walk Rest																	
Red Rest																	
Flash Entry																	
Automatic Flash Exit Phase																	
CNA-1																	
CNA-2																	
No Backup																	
Max Walk																	
Max Extension																	

Agency: _____ **Date Prepared:** ____ **By:** _____

Location: _____ **Date Implemented:** ____ **By:** _____

System ID: _____

2.3 Phase Sequence	1
Ring 1	1,2,3,4
Ring 2	5,6,7,8
Ring 3	
Ring 4	

2.3 Phase Sequence	9
Ring 1	
Ring 2	
Ring 3	
Ring 4	

Note: Phases 10 through 16 are entered as 0,A,B,C,D,E,F

2.3 Phase Sequence	2
Ring 1	2,1,3,4
Ring 2	5,6,8,7
Ring 3	
Ring 4	

2.3 Phase Sequence	10
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	3
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	11
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	4
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	12
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	5
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	13
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	6
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	14
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	7
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	15
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	8
Ring 1	
Ring 2	
Ring 3	
Ring 4	

2.3 Phase Sequence	16
Ring 1	
Ring 2	
Ring 3	
Ring 4	

Detector Lock	
No Min Yellow	

Detector Lock	
No Min Yellow	

Agency: _____ **Date Prepared:**_____ **By:** _____

Location: _____ **Date Implemented:**_____ **By:** _____

System ID: _____

3.1 Veh Overlap 1	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh. Overlap 2	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 3	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 4	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	
Detector Lock	
No Min Yellow	

3.1 Veh Overlap 5	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

3.1 Veh Overlap 6	Set 1
Type	
Included Phases	
Modifier Phases	
Excluded Phases	
Excluded Peds	
Trail Grn	
Trailing Yel	
Trailing Red	
Start Delay	
No Trail Grn Phs	
Call Phases	
Actuated Only	

Sequential Timing																
No Min Yellow																

Agency: _____ Date Prepared:_____ By:_____

Location: _____ Date Implemented:_____ By:_____

System ID: _____

3.2 Ped Overlap 1	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 2	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 3	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 4	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 5	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 6	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 7	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 8	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 9	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 10	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 11	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 12	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 13	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 14	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 15	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

3.2 Ped Overlap 16	Set 1
Included Phases	
Excluded Phases	
Intervals	
Call Phases	
Actuated Only	

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.1 Vehicle Detector																															
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

4.1 Vehicle Detector																															
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																																
Switch Phase																																
Call																																
Passage																																
Add Init																																
Queue																																
Yellow Lock																																
Red Lock																																
Volume																																
Occupancy																																
Delay																																
Extend																																
Queue Limit																																
VOS Length																																
Alt Passage																																
Alt Min Green																																

Omni eX v1.4 - Pedestrian Detectors

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.2 Ped Detector																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

4.2 Ped Detector																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase																
Alt PED Time																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.3 Vehicle Detector Diag																															
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

4.3 Vehicle Detector Diag																															
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
No Act																																
Max Pr																																
Err Cnts																																
Fail Time																																

Agency: _____

Location: _____

System ID: _____

DATE PREPARED: _____ By: _____

DATE IMPLEMENTED: _____ By: _____

4.4 Ped Detector Diag																
Set 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.4 Ped Detector Diag																
Set 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Activity																
Max. Presence																
Erratic Counts																

4.5 Extra VEH Detector Calls		
DET	Call Phases	Call VEH Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		

4.6 Extra PED Detector Calls		
DET	Call Phases	Call PED Overlap
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		

Agency: _____ **DATE PREPARED:** _____ **By:**_____

Location: Meridian Road & Woodmen Road **DATE IMPLEMENTED:** _____ **By:**_____

System ID: _____

5.2 Pattern Parameters	1
Cycle Time	120
Offset Time	30
Split	1
Sequence	2
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	2
Cycle Time	100
Offset Time	52
Split	2
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	3
Cycle Time	120
Offset Time	37
Split	3
Sequence	1
Correction Mode	
Maximum Mode	
Force Mode	Fixed
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

5.2 Pattern Parameters	4
Cycle Time	
Offset Time	
Split	
Sequence	
Correction Mode	
Maximum Mode	
Force Mode	
Perm Strategy	
Omit Strategy	
Early Return	
Texas Diamond	
Max2 Phases	
Phase Timing Set	
Phase Option Set	
Overlap Set	
Veh. Det. Set	
Veh. Det. Diag Set	
Ped. Det. Diag Set	
Priority Set	
Ped Ovlp Set	
Det. Reset	

Agency: _____ DATE PREPARED: _____ By: _____

Location: Meridian Road & Woodmen Road DATE IMPLEMENTED: _____ By: _____

System ID: _____

5.3 Split Table 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	18	42	24	36	18	42	27	33								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	20	32	16	32	20	32	25	23								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

5.3 Split Table 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time (sec)	18	39	26	37	18	39	38	25								
Mode																
Coord. Phase		x				x										
Manual Permit																
Manual Omit																

McCain

Omni eX v1.4 - Schedule

Agency: ______
Location: ______
System ID: ______

DATE PREPARED: ______ By: ______
DATE IMPLEMENTED: ______ By: ______

6.4 Sched	Month												Days Of Week							Date																															Day Plan
	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1
2	x	x	x	x	x	x	x	x	x	x	x	x	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
3																																																			0
4																																																			0
5																																																			0
6																																																			0
7																																																			0
8																																																			0

6.4 Sched	Month												Days Of Week							Date																															Day Plan
	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
9																																																			0
10																																																			0
11																																																			0
12																																																			0
13																																																			0
14																																																			0
15																																																			0
16																																																			0

Agency:

Location: **Meridian Road & Eastonville Road**

System ID:

DATE PREPARED: By:

DATE IMPLEMENTED: By:

6.5 DayPlan 1								
Event#	1	2	3	4	5	6	7	8
Hour	6	9	13	19				
Minute	0	0	30	0				
Action	1	2	3	20				

6.5 DayPlan 1								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 1								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	1	2	3	4	5	6	7	8
Hour	10	19						
Minute	0	0						
Action	2	20						

6.5 DayPlan 2								
Event#	9	10	11	12	13	14	15	16
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	17	18	19	20	21	22	23	24
Hour								
Minute								
Action								

6.5 DayPlan 2								
Event#	25	26	27	28	29	30	31	32
Hour								
Minute								
Action								

Agency: _____ **Date Prepared:**_____ **By:**_____

Location: _____ **Date Implemented:**_____ **By:**_____

System ID: _____

6.6 Action Parameters 1	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 2	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 3	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 4	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 5	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 6	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 7	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 8	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 9	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 10	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 11	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 12	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 13	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 14	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

6.6 Action Parameters 15	
Pattern	
Auxiliary Function	
Special Function	
Special Function	
Detector VOS Log	
Speed Trap Log	
Cycle MOE Log	
Detector Reset	

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

7 Preempts	1	2	3	4	5	6	7	8
Track Phases								
Track Overlaps								
Track Ped								
Track Ped Overlap								
Dwell Phases								
Dwell Overlaps								
Dwell Peds								
Dwell Ped Overlap								
Cycling Phases								
Cycling Overlaps								
Cycling Ped								
Cycling Ped Overlap								
Exit Phase								
Locking								
Override Flash								
Override Preempt+1								
Flash Dwell								
Enter All Red								
Track Green								
Delay								
Maximum Presence								
Minimum Duration								
Minimum Dwell								
Linked Preempt								
Enter Min Green								
Enter Min Walk								
Enter Min Ped Clear								
Enter Min Yellow								
Enter Min Red Clear								
Track Min Yellow								
Track Min Red Clear								

Agency: _____ Date Prepared: _____ By: _____

Location: _____ Date Implemetned: _____ By: _____

System ID: _____

8.1 TSP Global Options	
	Enable
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Headway	
Lockout	
Node	
Name	

8.2 TSP Strategy Options	Strategy 1 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 2 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 3 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 4 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 5 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

8.2 TSP Strategy Options	Strategy 6 Set 1
Enable	
Override + 1	
Service Phases	
Call Phases	
Omit Phases	
Omit Peds	
Queue Jump Ph	
ETA	
Input Function	
Input Index	
Input Type	
Request Mode	
Checkout Mode	
Checkout Time	
Max Presence	
Max Presence Clr	
Min ON Time	
Min OFF Time	
Delay Time	
Extend Time	
Headway Time	
Preempt Lockout	

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

8.3 TSP Phase Adjustment Times															Strategy 1	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 2	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 3	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 4	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 5	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 6	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 7	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 8	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 9	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 10	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 11	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 12	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 13	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 14	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 15	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

8.3 TSP Phase Adjustment Times															Strategy 16	Set 1
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reduce																
Extend																
Qlump																

Agency: _____ DATE PREPARED: _____ By: _____

Location: _____ DATE IMPLEMENTED: _____ By: _____

System ID: _____

9.3.3.2 Speed Trap																
Speed Trap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Detector 1																
Detector 2																
Distance																

9.3.3.3 Speed Trap Bin Ranges																
Bin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Range																

Agency: _____

Location: _____

System ID: _____

Date Prepared: _____ **By:** _____

Date Implemented: _____ **By:** _____

9.3-4 Log Configuration	
Volume Occupancy Period	
VOS Log Combined Periods	
Speed Trap Log Period	
Display Metric	
Speed Trap Log Mode	
VOS Log Mode	
Cycle MOE Log Mode	
Power On/Off	
Low Battery	
Cycle Fault	
Coord Fault	
Coord Fail	
Cycle Fail	
MMU Flash	
Local Flash	
Local Free	
Preempt Status Change	
Response Fault	
Alarm Status Change	
Door Status Change	
Pattern Change	
Detector Status Change	
Comm Status Change	
Command Change	
Data Change Keyboard	
Controller Download	
Access Code	
Priority	

6.2 Time Zone	
Global DST	
Standard Time Zone (+/- hr)	

A.3 Unit Comms	
Unit Backup Time	

1.7 Port 1																			
Device	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Device Present																			
Frame40 Enable																			

1.5.5 Aux Switch	
Function	
Index	

A.5-6 Time Sync	
NTP Server Address	
NTP Start Hour	
NTP Start Minute	
NTP Interval Hour	
NTP Interval Minute	
GPS Start Hour	
GPS Start Minute	
GPS Interval Hour	
GPS Interval Minute	
Enable NTP Svr	

Avency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

A.1 Serial Comms						
Port	1	2	3	4	5	8
Protocol						
Speed						
Parity						
Flow Control						
Address						
Group Address						
Data Bits						
Stop Bits						
CTS Delay						
RTS Extend						

A.2 Ethernet Comms		
Port	1	2
IP Address		
Net Mask		
Gateway		
NTCIP Port		
NTCIP Mode		
AB3418 Port		
AB3418 Mode		
AB3418 Address		
AB3418 Group Address		

Agency: _____ **Date Prepared:** _____ **By:** _____

Location: _____ **Date Implemented:** _____ **By:** _____

System ID: _____

B.1.1 Menu Security Options					
Enable:		Allow Read-Only:		Timeout (min):	

B.1.2 Menu Security Users

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
User Id																
Pin																
Operation																
Unit																
I/O Map																
Phase																
Overlap																
Detector																
Coord																
Time Base																
Preempt																
Transit																
Logs																
Comm																
Security																
Database																
SW Update																

APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

Automobile 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.

Level of Service (LOS) for Unsignalized TWSC Intersections

Level of Service (v/c ≤ 1.0)	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

APPENDIX C

Capacity Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	246	117	59	378	64	127	216	17	59	512	551
Future Volume (vph)	241	246	117	59	378	64	127	216	17	59	512	551
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			245			182			245			599
Lane Group Flow (vph)	262	267	127	64	411	70	138	235	18	64	557	599
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	27.0	36.0		24.0	33.0	33.0	18.0	42.0		18.0	42.0	
Total Split (%)	22.5%	30.0%		20.0%	27.5%	27.5%	15.0%	35.0%		15.0%	35.0%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	14.4	28.7	120.0	7.6	19.3	19.3	10.2	51.6	120.0	7.6	46.2	120.0
Actuated g/C Ratio	0.12	0.24	1.00	0.06	0.16	0.16	0.08	0.43	1.00	0.06	0.38	1.00
v/c Ratio	0.64	0.32	0.08	0.29	0.72	0.17	0.48	0.15	0.01	0.29	0.41	0.38
Control Delay	57.2	38.7	0.1	56.6	55.3	0.9	57.5	24.0	0.0	67.8	21.3	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	38.7	0.1	56.6	55.3	0.9	57.5	24.0	0.0	67.8	21.3	0.6
LOS	E	D	A	E	E	A	E	C	A	E	C	A
Approach Delay		38.6			48.5			34.7			13.6	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	101	92	0	24	161	0	53	60	0	22	163	0
Queue Length 95th (ft)	140	124	0	47	207	0	85	102	0	m39	250	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	557	899	1583	472	766	485	305	1521	1583	271	1361	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.30	0.08	0.14	0.54	0.14	0.45	0.15	0.01	0.24	0.41	0.38

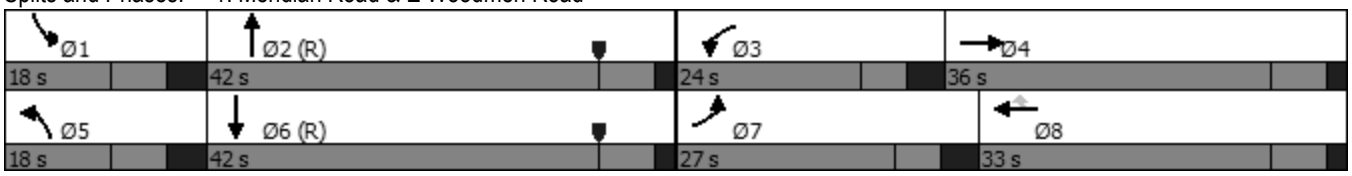
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Intersection	
Int Delay, s/veh	3.1

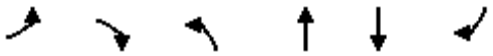
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	96	36	481	40	110	1250
Future Vol, veh/h	96	36	481	40	110	1250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	400	375	-
Veh in Median 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	104	39	523	43	120	1359

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1443	262	0	0	566	0
Stage 1	523	-	-	-	-	-
Stage 2	920	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	*194	*902	-	-	1265	-
Stage 1	*827	-	-	-	-	-
Stage 2	*541	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*175	*902	-	-	1265	-
Mov Cap-2 Maneuver	*175	-	-	-	-	-
Stage 1	*827	-	-	-	-	-
Stage 2	*490	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.4	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	175	902	1265	-
HCM Lane V/C Ratio	-	-	0.596	0.043	0.095	-
HCM Control Delay (s)	-	-	52.1	9.2	8.1	-
HCM Lane LOS	-	-	F	A	A	-
HCM 95th %tile Q(veh)	-	-	3.2	0.1	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



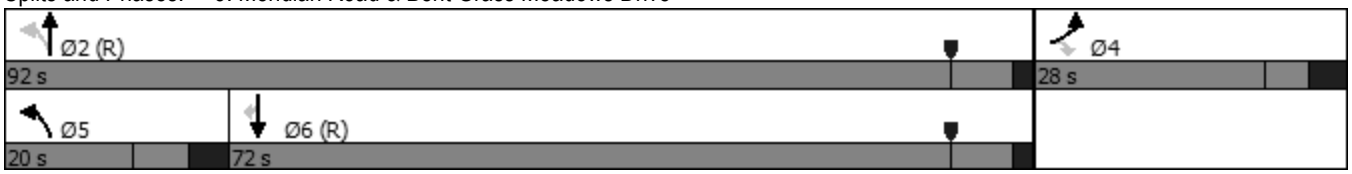
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	86	65	380	1270	107
Future Volume (vph)	62	86	65	380	1270	107
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.139			
Satd. Flow (perm)	3433	1583	259	3539	3539	1583
Satd. Flow (RTOR)		93				116
Lane Group Flow (vph)	67	93	71	413	1380	116
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	20.0	92.0	72.0	72.0
Total Split (%)	23.3%	23.3%	16.7%	76.7%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	8.7	8.7	95.3	96.3	84.1	84.1
Actuated g/C Ratio	0.07	0.07	0.79	0.80	0.70	0.70
v/c Ratio	0.27	0.47	0.25	0.15	0.56	0.10
Control Delay	55.2	18.3	5.1	1.4	10.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	18.3	5.1	1.4	10.7	1.5
LOS	E	B	A	A	B	A
Approach Delay	33.8			2.0	10.0	
Approach LOS	C			A	A	
Queue Length 50th (ft)	25	0	3	5	264	0
Queue Length 95th (ft)	48	52	16	7	360	20
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	586	347	350	2840	2480	1144
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.27	0.20	0.15	0.56	0.10

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	5	512	1354	2
Future Vol, veh/h	0	6	5	512	1354	2
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	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	5	557	1472	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	736	1474	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	*523	*782	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	1	-	-	-
Mov Cap-1 Maneuver	-	*523	*782	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 782	-	523	-	-
HCM Lane V/C Ratio	0.007	-	0.012	-	-
HCM Control Delay (s)	9.6	-	12	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	9	111	61	8	95
Future Vol, veh/h	56	9	111	61	8	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	61	10	121	66	9	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	369	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	308	-
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	-	-	1529	-	631	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1529	-	581	1004
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	950	-	-	1529	-
HCM Lane V/C Ratio	0.118	-	-	0.079	-
HCM Control Delay (s)	9.3	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	671	509	160	112	330	136	164	664	106	100	384	375
Future Volume (vph)	671	509	160	112	330	136	164	664	106	100	384	375
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			408
Lane Group Flow (vph)	729	553	174	122	359	148	178	722	115	109	417	408
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	38.0	37.0		26.0	25.0	25.0	18.0	39.0		18.0	39.0	
Total Split (%)	31.7%	30.8%		21.7%	20.8%	20.8%	15.0%	32.5%		15.0%	32.5%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	28.8	36.0	120.0	9.6	16.8	16.8	9.5	35.8	120.0	8.6	34.8	120.0
Actuated g/C Ratio	0.24	0.30	1.00	0.08	0.14	0.14	0.08	0.30	1.00	0.07	0.29	1.00
v/c Ratio	0.88	0.52	0.11	0.44	0.73	0.34	0.65	0.68	0.07	0.44	0.41	0.26
Control Delay	57.3	36.7	0.1	57.4	58.5	2.1	65.5	42.0	0.1	66.3	30.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	36.7	0.1	57.4	58.5	2.1	65.5	42.0	0.1	66.3	30.2	0.4
LOS	E	D	A	E	E	A	E	D	A	E	C	A
Approach Delay		42.6			45.0			41.4			21.4	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	276	181	0	47	141	0	69	268	0	34	141	0
Queue Length 95th (ft)	#352	243	0	77	193	0	108	344	0	65	193	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	872	1061	1583	529	530	449	279	1055	1583	271	1027	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.52	0.11	0.23	0.68	0.33	0.64	0.68	0.07	0.40	0.41	0.26

Intersection Summary

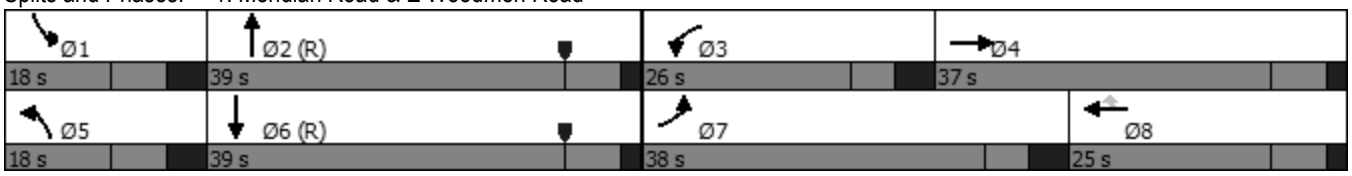
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 78.7%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	133	1356	115	82	772
Future Vol, veh/h	31	133	1356	115	82	772
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	400	375	-
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	34	145	1474	125	89	839

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2072	737	0	0	1599	0
Stage 1	1474	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	*65	*523	-	-	721	-
Stage 1	*493	-	-	-	-	-
Stage 2	*732	-	-	-	-	-
Platoon blocked, %	1	1	-	-	1	-
Mov Cap-1 Maneuver	*57	*523	-	-	721	-
Mov Cap-2 Maneuver	*57	-	-	-	-	-
Stage 1	*493	-	-	-	-	-
Stage 2	*642	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.3	0	1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	57	523	721	-
HCM Lane V/C Ratio	-	-	0.591	0.276	0.124	-
HCM Control Delay (s)	-	-	135.1	14.5	10.7	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	2.4	1.1	0.4	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	72	62	1356	779	98
Future Volume (vph)	79	72	62	1356	779	98
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.284			
Satd. Flow (perm)	3433	1583	529	3539	3539	1583
Satd. Flow (RTOR)		78				107
Lane Group Flow (vph)	86	78	67	1474	847	107
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	27.0	27.0	20.0	93.0	73.0	73.0
Total Split (%)	22.5%	22.5%	16.7%	77.5%	60.8%	60.8%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	8.9	8.9	95.1	96.1	84.0	84.0
Actuated g/C Ratio	0.07	0.07	0.79	0.80	0.70	0.70
v/c Ratio	0.34	0.41	0.14	0.52	0.34	0.09
Control Delay	56.3	18.2	1.4	4.2	8.2	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.3	18.2	1.4	4.2	8.2	1.6
LOS	E	B	A	A	A	A
Approach Delay	38.2			4.1	7.5	
Approach LOS	D			A	A	
Queue Length 50th (ft)	33	0	2	97	131	0
Queue Length 95th (ft)	59	48	m3	139	181	19
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	557	322	538	2835	2477	1140
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	0.15	0.24	0.12	0.52	0.34	0.09

Intersection Summary

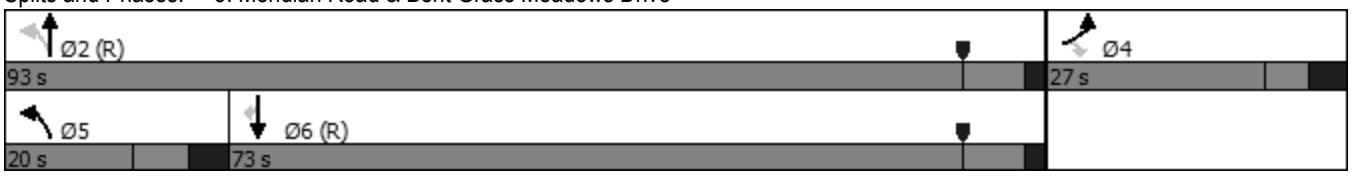
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 56.7%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	11	1478	847	4
Future Vol, veh/h	0	7	11	1478	847	4
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	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	12	1607	921	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	461	925	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	*750	1119	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %		1	1	-	-	-
Mov Cap-1 Maneuver	-	*750	1119	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1119	-	750	-	-
HCM Lane V/C Ratio	0.011	-	0.01	-	-
HCM Control Delay (s)	8.3	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	9	91	63	10	115
Future Vol, veh/h	65	9	91	63	10	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	71	10	99	68	11	125

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	337	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	266	-
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	-	-	1517	-	658	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1517	-	615	991
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	945	-	-	1517	-
HCM Lane V/C Ratio	0.144	-	-	0.065	-
HCM Control Delay (s)	9.4	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	273	226	122	61	417	101	178	280	18	108	592	605
Future Volume (vph)	273	226	122	61	417	101	178	280	18	108	592	605
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			245			182			245			658
Lane Group Flow (vph)	297	246	133	66	453	110	193	304	20	117	643	658
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	27.0	36.0		24.0	33.0	33.0	18.0	42.0		18.0	42.0	
Total Split (%)	22.5%	30.0%		20.0%	27.5%	27.5%	15.0%	35.0%		15.0%	35.0%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	15.6	31.2	120.0	7.7	20.7	20.7	11.0	44.9	120.0	8.9	42.8	120.0
Actuated g/C Ratio	0.13	0.26	1.00	0.06	0.17	0.17	0.09	0.37	1.00	0.07	0.36	1.00
v/c Ratio	0.67	0.27	0.08	0.30	0.74	0.26	0.61	0.23	0.01	0.46	0.51	0.42
Control Delay	57.1	36.1	0.1	56.6	54.8	1.6	61.4	28.1	0.0	67.6	29.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	36.1	0.1	56.6	54.8	1.6	61.4	28.1	0.0	67.6	29.9	0.6
LOS	E	D	A	E	D	A	E	C	A	E	C	A
Approach Delay		38.2			45.7			39.4			19.4	
Approach LOS		D			D			D			B	
Queue Length 50th (ft)	114	82	0	25	177	0	74	84	0	50	114	0
Queue Length 95th (ft)	156	110	0	48	223	1	#124	135	0	m65	207	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	557	942	1583	472	766	485	317	1322	1583	277	1262	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.26	0.08	0.14	0.59	0.23	0.61	0.23	0.01	0.42	0.51	0.42

Intersection Summary

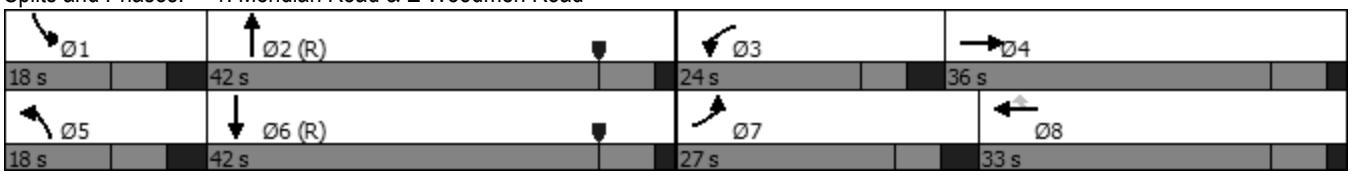
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 31.6	Intersection LOS: C
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	48	92	100	58	45	115	486	42	121	1327	59
Future Volume (vph)	86	48	92	100	58	45	115	486	42	121	1327	59
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.716			0.567			0.077			0.432		
Satd. Flow (perm)	2587	1863	1583	1056	1863	1583	143	3539	1583	805	3539	1583
Satd. Flow (RTOR)			186			186			177			177
Lane Group Flow (vph)	93	52	100	109	63	49	125	528	46	132	1442	64
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	18.0	20.0	20.0	18.0	20.0	20.0	18.0	67.0	67.0	15.0	64.0	64.0
Total Split (%)	15.0%	16.7%	16.7%	15.0%	16.7%	16.7%	15.0%	55.8%	55.8%	12.5%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.5	9.4	9.4	21.2	13.9	13.9	71.9	62.6	62.6	69.6	62.4	62.4
Actuated g/C Ratio	0.14	0.08	0.08	0.18	0.12	0.12	0.60	0.52	0.52	0.58	0.52	0.52
v/c Ratio	0.23	0.36	0.34	0.44	0.29	0.14	0.59	0.29	0.05	0.25	0.78	0.07
Control Delay	39.0	58.8	3.1	45.0	54.2	0.8	39.2	23.8	1.9	4.5	25.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.0	58.8	3.1	45.0	54.2	0.8	39.2	23.8	1.9	4.5	25.6	0.7
LOS	D	E	A	D	D	A	D	C	A	A	C	A
Approach Delay		28.5			37.8			25.1			22.9	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	30	39	0	71	47	0	56	115	2	22	571	0
Queue Length 95th (ft)	51	79	0	120	92	0	127	146	m9	m19	678	m2
Internal Link Dist (ft)		324			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	481	209	343	250	239	366	236	1846	910	532	1841	908
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.25	0.29	0.44	0.26	0.13	0.53	0.29	0.05	0.25	0.78	0.07

Intersection Summary

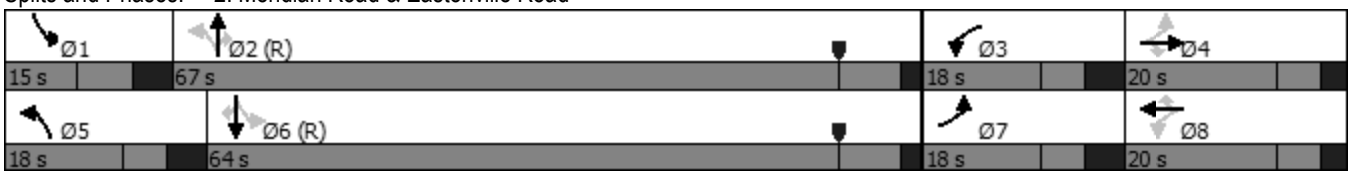
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

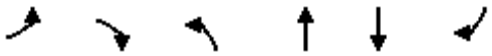
Maximum v/c Ratio: 0.78

Intersection Signal Delay: 25.1	Intersection LOS: C
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & Eastonville Road





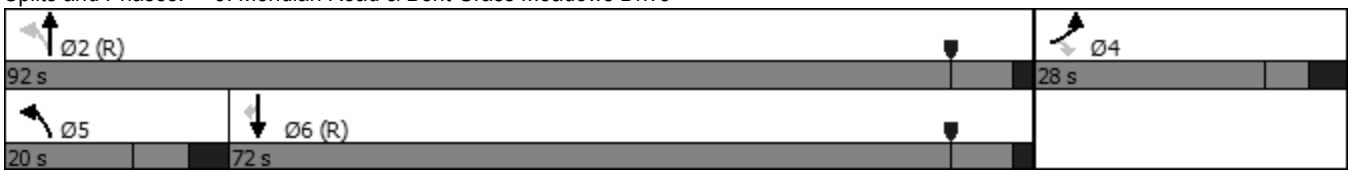
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	116	164	135	462	1343	206
Future Volume (vph)	116	164	135	462	1343	206
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.111			
Satd. Flow (perm)	3433	1583	207	3539	3539	1583
Satd. Flow (RTOR)		178				224
Lane Group Flow (vph)	126	178	147	502	1460	224
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	20.0	92.0	72.0	72.0
Total Split (%)	23.3%	23.3%	16.7%	76.7%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	93.9	94.9	77.0	77.0
Actuated g/C Ratio	0.08	0.08	0.78	0.79	0.64	0.64
v/c Ratio	0.44	0.60	0.52	0.18	0.64	0.20
Control Delay	56.5	16.3	16.0	10.4	15.6	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	16.3	16.0	10.4	15.6	1.9
LOS	E	B	B	B	B	A
Approach Delay	33.0			11.7	13.7	
Approach LOS	C			B	B	
Queue Length 50th (ft)	48	0	59	147	321	0
Queue Length 95th (ft)	78	67	83	128	497	33
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	586	418	319	2797	2271	1096
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	0.22	0.43	0.46	0.18	0.64	0.20

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	11	216	124	10	180
Future Vol, veh/h	103	11	216	124	10	180
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	112	12	235	135	11	196

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	124	0	717	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	605	-
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	-	-	1463	-	396	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	545	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1463	-	332	941
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	858	-	-	1463	-
HCM Lane V/C Ratio	0.241	-	-	0.16	-
HCM Control Delay (s)	10.5	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.6	-

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	253	242	14
Demand Flow Rate, veh/h	258	247	14
Vehicles Circulating, veh/h	3	7	250
Vehicles Exiting, veh/h	251	257	11
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.2	3.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	258	247	14
Cap Entry Lane, veh/h	1376	1370	1069
Entry HV Adj Factor	0.981	0.980	0.990
Flow Entry, veh/h	253	242	14
Cap Entry, veh/h	1349	1342	1059
V/C Ratio	0.188	0.180	0.013
Control Delay, s/veh	4.2	4.2	3.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

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	0	0	6	0	0	0	7	3	0	0	6	0
Future Vol, veh/h	0	0	6	0	0	0	7	3	0	0	6	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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	0	0	8	3	0	0	7	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	26	26	7	30	26	3	7	0	0	3	0	0
Stage 1	7	7	-	19	19	-	-	-	-	-	-	-
Stage 2	19	19	-	11	7	-	-	-	-	-	-	-
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	984	867	1075	979	867	1081	1614	-	-	1619	-	-
Stage 1	1015	890	-	1000	880	-	-	-	-	-	-	-
Stage 2	1000	880	-	1010	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	980	863	1075	969	863	1081	1614	-	-	1619	-	-
Mov Cap-2 Maneuver	980	863	-	969	863	-	-	-	-	-	-	-
Stage 1	1010	890	-	995	876	-	-	-	-	-	-	-
Stage 2	995	876	-	1004	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	5.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1614	-	-	1075	-	1619	-	-
HCM Lane V/C Ratio	0.005	-	-	0.006	-	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	722	473	166	117	393	173	233	762	110	192	529	442
Future Volume (vph)	722	473	166	117	393	173	233	762	110	192	529	442
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			480
Lane Group Flow (vph)	785	514	180	127	427	188	253	828	120	209	575	480
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	38.0	37.0		26.0	25.0	25.0	18.0	39.0		18.0	39.0	
Total Split (%)	31.7%	30.8%		21.7%	20.8%	20.8%	15.0%	32.5%		15.0%	32.5%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	29.8	37.4	120.0	9.8	17.4	17.4	10.0	33.3	120.0	9.5	32.8	120.0
Actuated g/C Ratio	0.25	0.31	1.00	0.08	0.14	0.14	0.08	0.28	1.00	0.08	0.27	1.00
v/c Ratio	0.92	0.47	0.11	0.45	0.83	0.42	0.88	0.84	0.08	0.77	0.60	0.30
Control Delay	61.0	35.0	0.1	57.4	64.6	4.6	85.3	50.4	0.1	63.6	62.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	35.0	0.1	57.4	64.6	4.6	85.3	50.4	0.1	63.6	62.6	0.4
LOS	E	C	A	E	E	A	F	D	A	E	E	A
Approach Delay		44.6			48.2			52.8			39.2	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	304	165	0	48	170	0	102	324	0	86	243	0
Queue Length 95th (ft)	#412	225	0	79	#243	21	#182	#429	0	#141	304	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	872	1102	1583	529	530	449	286	982	1583	271	966	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.47	0.11	0.24	0.81	0.42	0.88	0.84	0.08	0.77	0.60	0.30

Intersection Summary

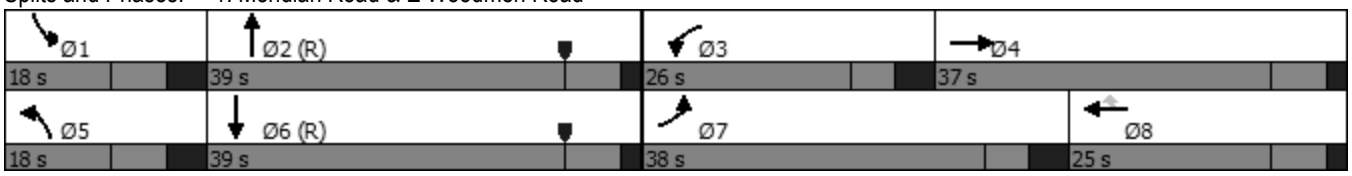
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 45.8	Intersection LOS: D
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	131	132	32	86	145	214	1309	120	93	864	71
Future Volume (vph)	220	131	132	32	86	145	214	1309	120	93	864	71
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.510			0.666			0.191			0.075		
Satd. Flow (perm)	1843	1863	1583	1241	1863	1583	356	3539	1583	140	3539	1583
Satd. Flow (RTOR)			186			186			177			177
Lane Group Flow (vph)	239	142	143	35	93	158	233	1423	130	101	939	77
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	18.0	22.0	22.0	18.0	22.0	22.0	25.0	62.0	62.0	18.0	55.0	55.0
Total Split (%)	15.0%	18.3%	18.3%	15.0%	18.3%	18.3%	20.8%	51.7%	51.7%	15.0%	45.8%	45.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	25.4	20.1	20.1	18.0	11.7	11.7	72.4	59.8	59.8	63.5	56.3	56.3
Actuated g/C Ratio	0.21	0.17	0.17	0.15	0.10	0.10	0.60	0.50	0.50	0.53	0.47	0.47
v/c Ratio	0.45	0.46	0.34	0.16	0.51	0.49	0.64	0.81	0.15	0.55	0.57	0.09
Control Delay	39.9	52.0	4.8	36.3	60.9	9.4	19.1	10.4	0.7	29.2	43.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	52.0	4.8	36.3	60.9	9.4	19.1	10.4	0.7	29.2	43.4	6.4
LOS	D	D	A	D	E	A	B	B	A	C	D	A
Approach Delay		33.6			29.4			10.8			39.6	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	78	106	0	21	70	0	30	320	2	51	396	6
Queue Length 95th (ft)	110	172	28	47	121	41	m46	m385	m6	94	473	29
Internal Link Dist (ft)		333			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	529	315	422	265	240	366	432	1762	877	205	1660	836
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.45	0.34	0.13	0.39	0.43	0.54	0.81	0.15	0.49	0.57	0.09

Intersection Summary

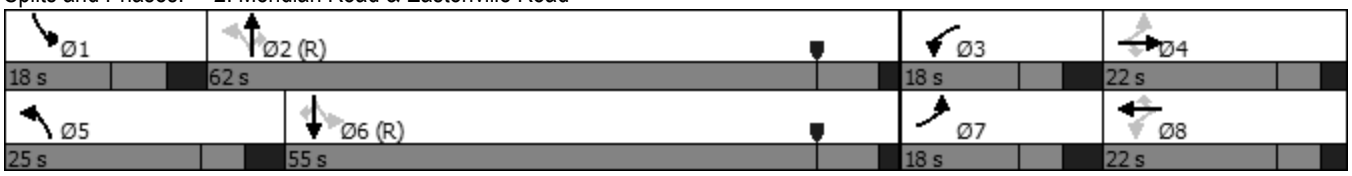
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

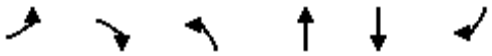
Maximum v/c Ratio: 0.81

Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 79.1%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	168	142	142	1594	886	173
Future Volume (vph)	168	142	142	1594	886	173
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.234			
Satd. Flow (perm)	3433	1583	436	3539	3539	1583
Satd. Flow (RTOR)		154				188
Lane Group Flow (vph)	183	154	154	1733	963	188
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	27.0	27.0	20.0	93.0	73.0	73.0
Total Split (%)	22.5%	22.5%	16.7%	77.5%	60.8%	60.8%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.7	11.7	92.3	93.3	76.6	76.6
Actuated g/C Ratio	0.10	0.10	0.77	0.78	0.64	0.64
v/c Ratio	0.55	0.53	0.36	0.63	0.43	0.17
Control Delay	57.5	14.4	2.2	1.7	12.0	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	14.4	2.2	1.7	12.0	1.8
LOS	E	B	A	A	B	A
Approach Delay	37.8			1.7	10.3	
Approach LOS	D			A	B	
Queue Length 50th (ft)	70	0	3	20	180	0
Queue Length 95th (ft)	106	62	m5	25	256	29
Internal Link Dist (ft)	333			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	557	386	463	2750	2258	1078
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	0.33	0.40	0.33	0.63	0.43	0.17

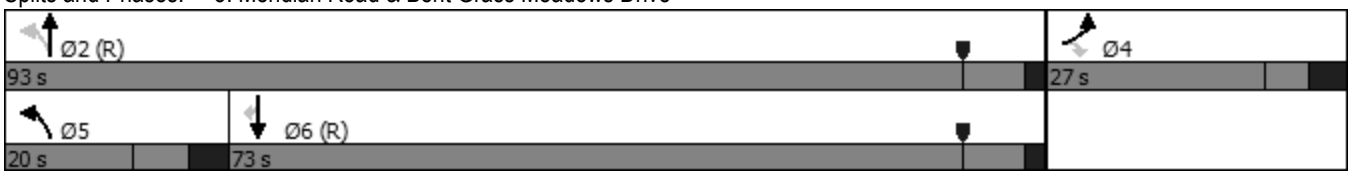
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 8.2	Intersection LOS: A
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	124	12	189	120	14	217
Future Vol, veh/h	124	12	189	120	14	217
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	135	13	205	130	15	236

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	675	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	540	-
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	-	-	1434	-	419	914
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	584	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1434	-	359	914
Mov Cap-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	836	-	-	1434	-
HCM Lane V/C Ratio	0.3	-	-	0.143	-
HCM Control Delay (s)	11.1	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.5	-

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	403	526	18
Demand Flow Rate, veh/h	411	536	18
Vehicles Circulating, veh/h	9	8	395
Vehicles Exiting, veh/h	535	405	25
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.3	6.4	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	411	536	18
Cap Entry Lane, veh/h	1367	1369	922
Entry HV Adj Factor	0.981	0.981	0.989
Flow Entry, veh/h	403	526	18
Cap Entry, veh/h	1341	1343	912
V/C Ratio	0.301	0.392	0.020
Control Delay, s/veh	5.3	6.4	4.1
LOS	A	A	A
95th %tile Queue, veh	1	2	0

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	0	0	7	0	0	0	15	8	0	0	9	0
Future Vol, veh/h	0	0	7	0	0	0	15	8	0	0	9	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	-	-	-	-	-	-	-	-	-	-	-	-
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	8	0	0	0	16	9	0	0	10	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	51	51	10	55	51	9	10	0	0	9	0	0
Stage 1	10	10	-	41	41	-	-	-	-	-	-	-
Stage 2	41	41	-	14	10	-	-	-	-	-	-	-
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	948	840	1071	943	840	1073	1610	-	-	1611	-	-
Stage 1	1011	887	-	974	861	-	-	-	-	-	-	-
Stage 2	974	861	-	1006	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	940	832	1071	929	832	1073	1610	-	-	1611	-	-
Mov Cap-2 Maneuver	940	832	-	929	832	-	-	-	-	-	-	-
Stage 1	1001	887	-	964	852	-	-	-	-	-	-	-
Stage 2	964	852	-	999	887	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	1071	-	1611	-	-
HCM Lane V/C Ratio	0.01	-	-	0.007	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	314	164	83	553	124	224	357	24	130	776	803
Future Volume (vph)	359	314	164	83	553	124	224	357	24	130	776	803
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			646
Lane Group Flow (vph)	390	341	178	90	601	135	243	388	26	141	843	873
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	25.0	41.5		14.5	31.0	31.0	20.0	45.9		18.1	44.0	
Total Split (%)	20.8%	34.6%		12.1%	25.8%	25.8%	16.7%	38.3%		15.1%	36.7%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	16.8	33.1	120.0	6.8	23.2	23.2	11.4	41.0	120.0	9.1	38.6	120.0
Actuated g/C Ratio	0.14	0.28	1.00	0.06	0.19	0.19	0.10	0.34	1.00	0.08	0.32	1.00
v/c Ratio	0.81	0.35	0.11	0.46	0.88	0.27	0.75	0.32	0.02	0.54	0.74	0.55
Control Delay	64.2	35.7	0.1	62.7	62.3	1.3	67.7	30.7	0.0	71.3	34.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.2	35.7	0.1	62.7	62.3	1.3	67.7	30.7	0.0	71.3	34.7	1.1
LOS	E	D	A	E	E	A	E	C	A	E	C	A
Approach Delay		41.0			52.4			43.2			21.7	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	152	110	0	35	238	0	95	119	0	60	246	0
Queue Length 95th (ft)	#216	152	0	63	#327	0	#150	163	0	m66	m300	m0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	500	1017	1583	200	707	516	333	1208	1583	274	1139	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.34	0.11	0.45	0.85	0.26	0.73	0.32	0.02	0.51	0.74	0.55

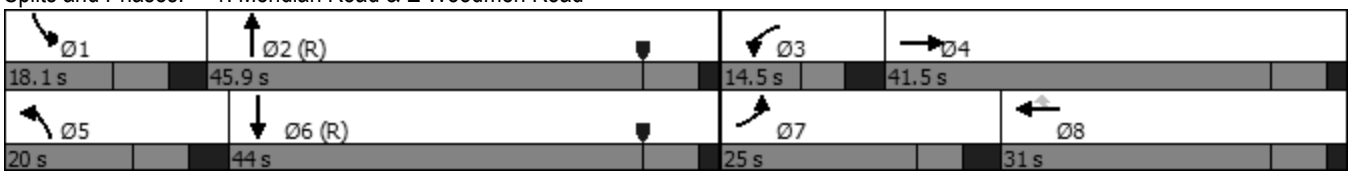
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 35.1	Intersection LOS: D
Intersection Capacity Utilization 78.4%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	48	94	134	58	58	117	657	56	161	1775	60
Future Volume (vph)	86	48	94	134	58	58	117	657	56	161	1775	60
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.585			0.723			0.061			0.322		
Satd. Flow (perm)	2114	1863	1583	1347	1863	1583	114	3539	1583	600	3539	1583
Satd. Flow (RTOR)			177			177			168			168
Lane Group Flow (vph)	93	52	102	146	63	63	127	714	61	175	1929	65
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	12.5	14.5	14.5	14.0	16.0	16.0	13.4	73.7	73.7	17.8	78.1	78.1
Total Split (%)	10.4%	12.1%	12.1%	11.7%	13.3%	13.3%	11.2%	61.4%	61.4%	14.8%	65.1%	65.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	13.8	8.0	8.0	13.3	9.2	9.2	72.7	66.8	66.8	78.3	70.6	70.6
Actuated g/C Ratio	0.12	0.07	0.07	0.11	0.08	0.08	0.61	0.56	0.56	0.65	0.59	0.59
v/c Ratio	0.28	0.42	0.38	0.85	0.44	0.22	0.85	0.36	0.06	0.37	0.93	0.07
Control Delay	44.7	64.5	4.0	86.6	63.0	1.8	68.4	22.1	2.9	2.5	22.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	64.5	4.0	86.6	63.0	1.8	68.4	22.1	2.9	2.5	22.2	0.1
LOS	D	E	A	F	E	A	E	C	A	A	C	A
Approach Delay		32.1			61.5			27.3			20.0	
Approach LOS		C			E			C			B	
Queue Length 50th (ft)	31	39	0	103	47	0	70	157	4	3	812	0
Queue Length 95th (ft)	56	82	0	#206	95	0	m#136	191	m12	m7	#894	m0
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	333	124	270	172	147	288	150	1968	955	485	2082	1000
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.42	0.38	0.85	0.43	0.22	0.85	0.36	0.06	0.36	0.93	0.07

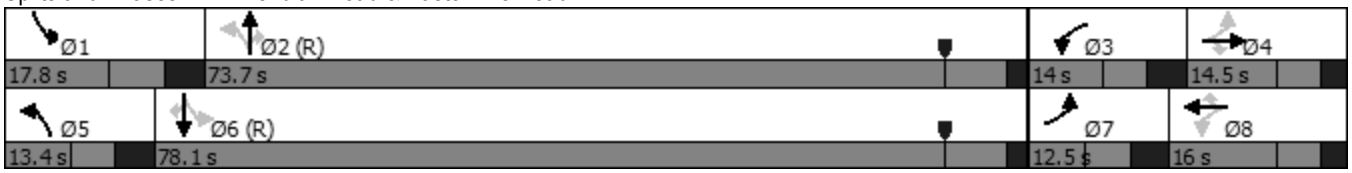
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

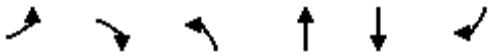
Maximum v/c Ratio: 0.93

Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	195	158	599	1800	245
Future Volume (vph)	138	195	158	599	1800	245
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.047			
Satd. Flow (perm)	3433	1583	88	3539	3539	1583
Satd. Flow (RTOR)		136				266
Lane Group Flow (vph)	150	212	172	651	1957	266
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	20.0	20.0	18.0	100.0	82.0	82.0
Total Split (%)	16.7%	16.7%	15.0%	83.3%	68.3%	68.3%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.9	10.9	93.1	94.1	75.8	75.8
Actuated g/C Ratio	0.09	0.09	0.78	0.78	0.63	0.63
v/c Ratio	0.48	0.79	0.84	0.23	0.88	0.24
Control Delay	56.8	41.4	49.8	12.8	24.3	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	41.4	49.8	12.8	24.3	1.7
LOS	E	D	D	B	C	A
Approach Delay	47.8			20.5	21.6	
Approach LOS	D			C	C	
Queue Length 50th (ft)	57	56	64	200	632	0
Queue Length 95th (ft)	91	#166	#200	257	763	31
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	357	286	208	2774	2236	1098
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	0.42	0.74	0.83	0.23	0.88	0.24

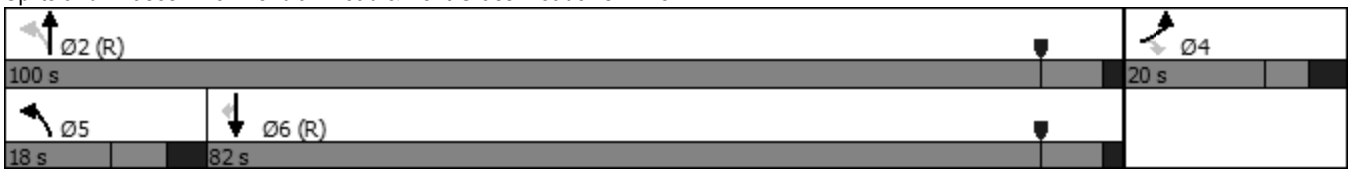
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	15	256	146	13	214
Future Vol, veh/h	123	15	256	146	13	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	134	16	278	159	14	233

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	150	0	849	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	715	-
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	-	-	1431	-	331	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1431	-	267	915
Mov Cap-2 Maneuver	-	-	-	-	267	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	391	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	803	-	-	1431	-
HCM Lane V/C Ratio	0.307	-	-	0.194	-
HCM Control Delay (s)	11.5	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.7	-

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	256	242	16
Demand Flow Rate, veh/h	261	247	16
Vehicles Circulating, veh/h	3	9	250
Vehicles Exiting, veh/h	253	257	14
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.2	3.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	261	247	16
Cap Entry Lane, veh/h	1376	1367	1069
Entry HV Adj Factor	0.981	0.980	0.991
Flow Entry, veh/h	256	242	16
Cap Entry, veh/h	1349	1339	1060
V/C Ratio	0.190	0.181	0.015
Control Delay, s/veh	4.2	4.2	3.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	0	0	0	10	3	0	0	6	0
Future Vol, veh/h	0	0	8	0	0	0	10	3	0	0	6	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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	0	0	0	11	3	0	0	7	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	32	32	7	37	32	3	7	0	0	3	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	12	7	-	-	-	-	-	-	-
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	976	861	1075	968	861	1081	1614	-	-	1619	-	-
Stage 1	1015	890	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	1009	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	971	855	1075	955	855	1081	1614	-	-	1619	-	-
Mov Cap-2 Maneuver	971	855	-	955	855	-	-	-	-	-	-	-
Stage 1	1008	890	-	986	868	-	-	-	-	-	-	-
Stage 2	986	868	-	1001	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	5.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1614	-	-	1075	-	1619	-	-
HCM Lane V/C Ratio	0.007	-	-	0.008	-	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	963	657	224	157	512	222	292	1001	148	228	668	577
Future Volume (vph)	963	657	224	157	512	222	292	1001	148	228	668	577
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			627
Lane Group Flow (vph)	1047	714	243	171	557	241	317	1088	161	248	726	627
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	39.0	43.5		18.5	23.0	23.0	20.6	42.0		16.0	37.4	
Total Split (%)	32.5%	36.3%		15.4%	19.2%	19.2%	17.2%	35.0%		13.3%	31.2%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	31.5	37.3	120.0	10.2	16.0	16.0	12.1	35.0	120.0	7.5	30.4	120.0
Actuated g/C Ratio	0.26	0.31	1.00	0.08	0.13	0.13	0.10	0.29	1.00	0.06	0.25	1.00
v/c Ratio	1.16	0.65	0.15	0.59	1.18	0.56	0.92	1.05	0.10	1.16	0.81	0.40
Control Delay	125.2	39.2	0.2	61.2	147.1	10.7	84.9	84.7	0.1	149.1	72.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.2	39.2	0.2	61.2	147.1	10.7	84.9	84.7	0.1	149.1	72.6	0.8
LOS	F	D	A	E	F	B	F	F	A	F	E	A
Approach Delay		79.4			98.0			76.1			56.3	
Approach LOS		E			F			E			E	
Queue Length 50th (ft)	~495	253	0	66	~272	0	127	~485	0	~118	312	0
Queue Length 95th (ft)	#626	322	0	103	#387	68	#212	#620	0	#206	377	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	901	1099	1583	314	471	427	346	1032	1583	214	896	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.65	0.15	0.54	1.18	0.56	0.92	1.05	0.10	1.16	0.81	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

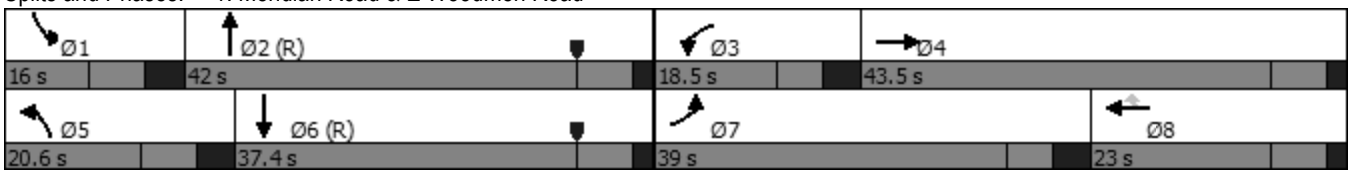
Maximum v/c Ratio: 1.18

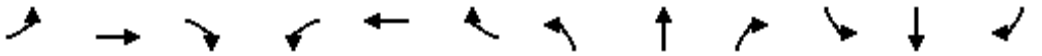
Intersection Signal Delay: 75.5	Intersection LOS: E
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Meridian Road & E Woodmen Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	131	135	43	86	193	218	1793	161	123	1139	73
Future Volume (vph)	220	131	135	43	86	193	218	1793	161	123	1139	73
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.595			0.608			0.115			0.066		
Satd. Flow (perm)	2150	1863	1583	1133	1863	1583	214	3539	1583	123	3539	1583
Satd. Flow (RTOR)			255			255			177			245
Lane Group Flow (vph)	239	142	147	47	93	210	237	1949	175	134	1238	79
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	13.3	16.6	16.6	12.5	15.8	15.8	27.6	76.1	76.1	14.8	63.3	63.3
Total Split (%)	11.1%	13.8%	13.8%	10.4%	13.2%	13.2%	23.0%	63.4%	63.4%	12.3%	52.8%	52.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.0	12.3	12.3	13.0	9.0	9.0	81.3	68.6	68.6	67.5	61.9	61.9
Actuated g/C Ratio	0.13	0.10	0.10	0.11	0.08	0.08	0.68	0.57	0.57	0.56	0.52	0.52
v/c Ratio	0.69	0.74	0.38	0.32	0.66	0.59	0.72	0.96	0.18	0.84	0.68	0.08
Control Delay	56.6	77.1	2.7	48.0	76.7	10.0	31.0	9.3	0.1	57.1	41.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	77.1	2.7	48.0	76.7	10.0	31.0	9.3	0.1	57.1	41.3	1.3
LOS	E	E	A	D	E	B	C	A	A	E	D	A
Approach Delay		47.1			32.8			10.8			40.6	
Approach LOS		D			C			B			D	
Queue Length 50th (ft)	85	111	0	31	71	0	87	276	0	63	527	0
Queue Length 95th (ft)	#129	#235	0	67	#145	39	m72	m210	m0	#173	608	m11
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	347	191	391	149	144	357	409	2023	980	159	1826	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.74	0.38	0.32	0.65	0.59	0.58	0.96	0.18	0.84	0.68	0.08

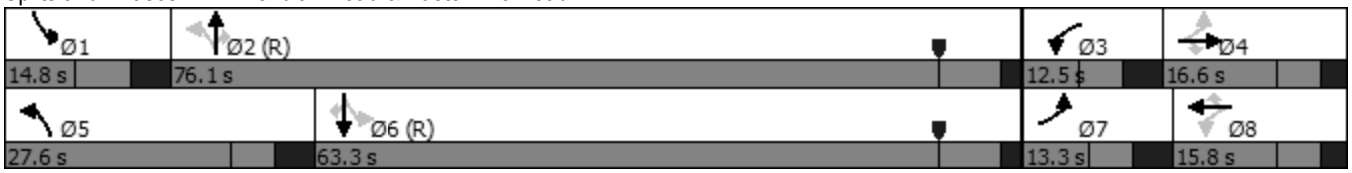
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

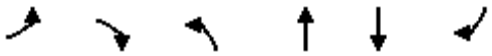
Maximum v/c Ratio: 0.96

Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	197	168	164	2082	1167	208
Future Volume (vph)	197	168	164	2082	1167	208
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.148			
Satd. Flow (perm)	3433	1583	276	3539	3539	1583
Satd. Flow (RTOR)		183				226
Lane Group Flow (vph)	214	183	178	2263	1268	226
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	21.0	21.0	21.6	99.0	77.4	77.4
Total Split (%)	17.5%	17.5%	18.0%	82.5%	64.5%	64.5%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.0	12.0	92.0	93.0	75.5	75.5
Actuated g/C Ratio	0.10	0.10	0.77	0.78	0.63	0.63
v/c Ratio	0.62	0.57	0.55	0.83	0.57	0.21
Control Delay	59.9	14.4	7.6	9.5	14.6	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	14.4	7.6	9.5	14.6	1.8
LOS	E	B	A	A	B	A
Approach Delay	38.9			9.3	12.7	
Approach LOS	D			A	B	
Queue Length 50th (ft)	82	0	9	869	281	0
Queue Length 95th (ft)	123	69	m11	m897	377	32
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	386	340	374	2741	2226	1079
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	0.55	0.54	0.48	0.83	0.57	0.21

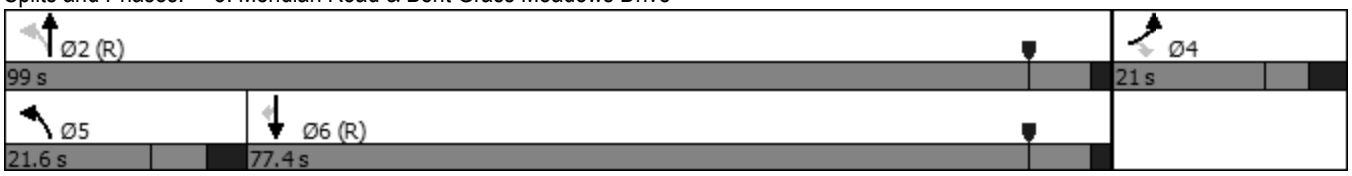
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	16	221	142	18	258
Future Vol, veh/h	147	16	221	142	18	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	160	17	240	154	20	280

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	177	0	794	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	634	-
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	-	-	1399	-	357	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	529	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1399	-	296	885
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	783	-	-	1399	-
HCM Lane V/C Ratio	0.383	-	-	0.172	-
HCM Control Delay (s)	12.4	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.6	-

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	410	526	21
Demand Flow Rate, veh/h	418	536	21
Vehicles Circulating, veh/h	9	11	395
Vehicles Exiting, veh/h	538	405	32
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.4	6.4	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	418	536	21
Cap Entry Lane, veh/h	1367	1364	922
Entry HV Adj Factor	0.981	0.981	0.991
Flow Entry, veh/h	410	526	21
Cap Entry, veh/h	1341	1339	914
V/C Ratio	0.306	0.393	0.023
Control Delay, s/veh	5.4	6.4	4.1
LOS	A	A	A
95th %tile Queue, veh	1	2	0

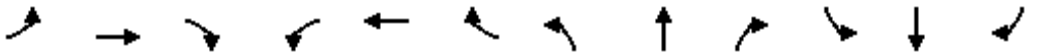
Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	10	0	0	0	21	8	0	0	9	0
Future Vol, veh/h	0	0	10	0	0	0	21	8	0	0	9	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	-	-	-	-	-	-	-	-	-	-	-	-
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	11	0	0	0	23	9	0	0	10	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	65	65	10	71	65	9	10	0	0	9	0	0
Stage 1	10	10	-	55	55	-	-	-	-	-	-	-
Stage 2	55	55	-	16	10	-	-	-	-	-	-	-
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	929	826	1071	920	826	1073	1610	-	-	1611	-	-
Stage 1	1011	887	-	957	849	-	-	-	-	-	-	-
Stage 2	957	849	-	1004	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	919	814	1071	901	814	1073	1610	-	-	1611	-	-
Mov Cap-2 Maneuver	919	814	-	901	814	-	-	-	-	-	-	-
Stage 1	997	887	-	944	837	-	-	-	-	-	-	-
Stage 2	944	837	-	994	887	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	5.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	1071	-	1611	-	-
HCM Lane V/C Ratio	0.014	-	-	0.01	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	287	226	122	61	417	127	178	306	18	134	618	618
Future Volume (vph)	287	226	122	61	417	127	178	306	18	134	618	618
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			245			182			245			670
Lane Group Flow (vph)	312	246	133	66	453	138	193	333	20	146	672	672
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	27.0	36.0		24.0	33.0	33.0	18.0	42.0		18.0	42.0	
Total Split (%)	22.5%	30.0%		20.0%	27.5%	27.5%	15.0%	35.0%		15.0%	35.0%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	16.0	31.6	120.0	7.7	20.7	20.7	11.0	43.7	120.0	9.6	42.4	120.0
Actuated g/C Ratio	0.13	0.26	1.00	0.06	0.17	0.17	0.09	0.36	1.00	0.08	0.35	1.00
v/c Ratio	0.68	0.26	0.08	0.30	0.74	0.33	0.61	0.26	0.01	0.53	0.54	0.42
Control Delay	57.4	35.8	0.1	56.6	54.8	4.1	61.4	29.1	0.0	62.3	34.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	35.8	0.1	56.6	54.8	4.1	61.4	29.1	0.0	62.3	34.7	0.5
LOS	E	D	A	E	D	A	E	C	A	E	C	A
Approach Delay		38.6			44.3			39.5			22.0	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	120	82	0	25	177	0	74	95	0	59	156	0
Queue Length 95th (ft)	163	110	0	48	223	24	#124	147	0	m76	m235	m0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	557	948	1583	472	766	485	317	1290	1583	288	1250	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.26	0.08	0.14	0.59	0.28	0.61	0.26	0.01	0.51	0.54	0.42

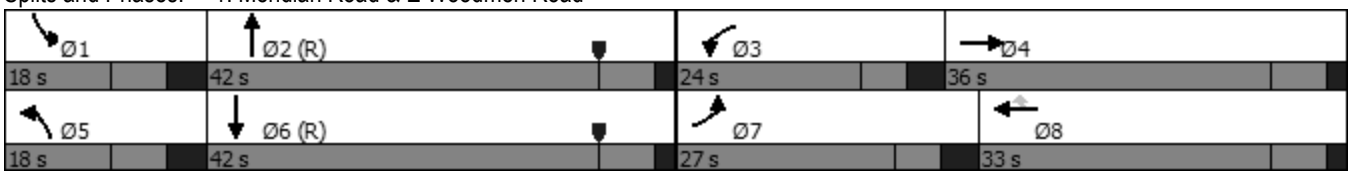
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 32.5	Intersection LOS: C
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Meridian Road & E Woodmen Road



Needs 2nd lane?

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	61	247	100	71	45	273	394	42	121	1272	134
Future Volume (vph)	134	61	247	100	71	45	273	394	42	121	1272	134
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.574			0.714			0.066			0.503		
Satd. Flow (perm)	2074	1863	1583	1330	1863	1583	123	3539	1583	937	3539	1583
Satd. Flow (RTOR)			186			186			177			177
Lane Group Flow (vph)	146	66	268	109	77	49	297	428	46	132	1383	146
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	18.0	20.0	20.0	18.0	20.0	20.0	18.0	67.0	67.0	15.0	64.0	64.0
Total Split (%)	15.0%	16.7%	16.7%	15.0%	16.7%	16.7%	15.0%	55.8%	55.8%	12.5%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	21.3	11.5	11.5	19.4	12.0	12.0	74.3	61.8	61.8	62.4	56.5	56.5
Actuated g/C Ratio	0.18	0.10	0.10	0.16	0.10	0.10	0.62	0.52	0.52	0.52	0.47	0.47
v/c Ratio	0.29	0.37	0.84	0.43	0.41	0.15	1.16	0.23	0.05	0.25	0.83	0.17
Control Delay	38.0	56.2	39.9	43.6	57.0	1.0	144.1	23.0	1.5	5.2	29.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	56.2	39.9	43.6	57.0	1.0	144.1	23.0	1.5	5.2	29.4	4.2
LOS	D	E	D	D	E	A	F	C	A	A	C	A
Approach Delay		41.6			39.1			68.4			25.3	
Approach LOS		D			D			E			C	
Queue Length 50th (ft)	45	48	61	68	56	0	~260	92	1	27	578	29
Queue Length 95th (ft)	73	94	#190	118	106	0	#447	123	m8	m19	651	m36
Internal Link Dist (ft)		324			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	524	209	343	261	212	345	256	1822	901	534	1666	838
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.32	0.78	0.42	0.36	0.14	1.16	0.23	0.05	0.25	0.83	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

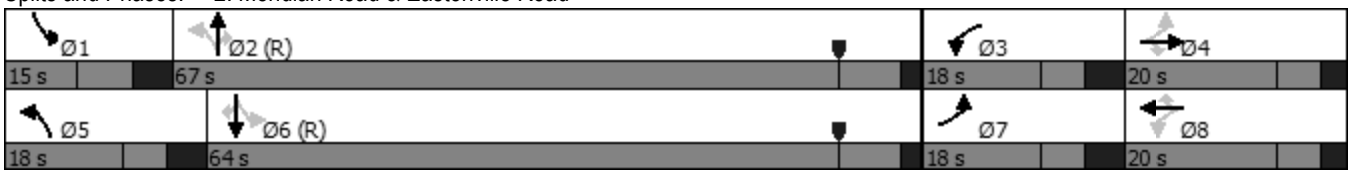
Intersection Signal Delay: 39.4	Intersection LOS: D
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	

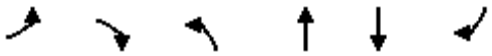
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 2: Meridian Road & Eastonville Road





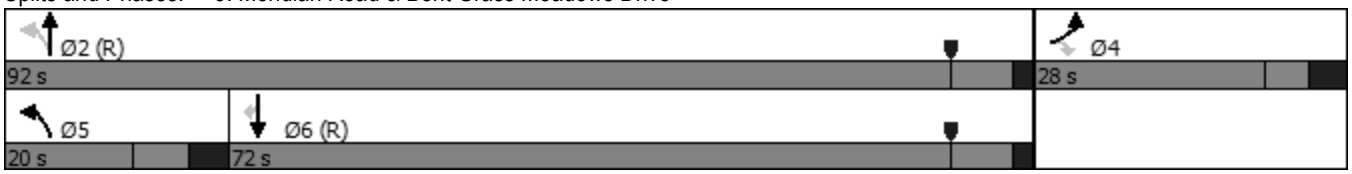
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	196	164	135	474	1327	262
Future Volume (vph)	196	164	135	474	1327	262
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.108			
Satd. Flow (perm)	3433	1583	201	3539	3539	1583
Satd. Flow (RTOR)		178				285
Lane Group Flow (vph)	213	178	147	515	1442	285
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	28.0	28.0	20.0	92.0	72.0	72.0
Total Split (%)	23.3%	23.3%	16.7%	76.7%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.7	12.7	91.3	92.3	74.4	74.4
Actuated g/C Ratio	0.11	0.11	0.76	0.77	0.62	0.62
v/c Ratio	0.59	0.55	0.53	0.19	0.66	0.26
Control Delay	57.5	13.5	17.5	9.6	17.4	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	13.5	17.5	9.6	17.4	2.1
LOS	E	B	B	A	B	A
Approach Delay	37.5			11.4	14.9	
Approach LOS	D			B	B	
Queue Length 50th (ft)	82	0	53	128	339	0
Queue Length 95th (ft)	119	65	74	130	518	39
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	586	418	311	2721	2194	1089
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	0.36	0.43	0.47	0.19	0.66	0.26

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	7.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	24	272	124	23	260
Future Vol, veh/h	103	24	272	124	23	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	112	26	296	135	25	283

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	138	0	839	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	727	-
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	-	-	1446	-	336	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	478	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1446	-	267	941
Mov Cap-2 Maneuver	-	-	-	-	267	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	380	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1446	-
HCM Lane V/C Ratio	0.394	-	-	0.204	-
HCM Control Delay (s)	12.6	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.8	-

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	520	242	248
Demand Flow Rate, veh/h	530	247	253
Vehicles Circulating, veh/h	3	246	250
Vehicles Exiting, veh/h	490	257	283
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.6	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	530	247	253
Cap Entry Lane, veh/h	1376	1074	1069
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	520	242	248
Cap Entry, veh/h	1350	1052	1048
V/C Ratio	0.385	0.230	0.237
Control Delay, s/veh	6.3	5.6	5.7
LOS	A	A	A
95th %tile Queue, veh	2	1	1

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	6	0	0	0	7	96	0	0	75	0
Future Vol, veh/h	0	0	6	0	0	0	7	96	0	0	75	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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	0	0	8	104	0	0	82	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	202	202	82	206	202	104	82	0	0	104	0	0
Stage 1	82	82	-	120	120	-	-	-	-	-	-	-
Stage 2	120	120	-	86	82	-	-	-	-	-	-	-
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	756	694	978	752	694	951	1515	-	-	1488	-	-
Stage 1	926	827	-	884	796	-	-	-	-	-	-	-
Stage 2	884	796	-	922	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	752	690	978	744	690	951	1515	-	-	1488	-	-
Mov Cap-2 Maneuver	752	690	-	744	690	-	-	-	-	-	-	-
Stage 1	920	827	-	879	791	-	-	-	-	-	-	-
Stage 2	879	791	-	916	827	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	978	-	1488	-	-
HCM Lane V/C Ratio	0.005	-	-	0.007	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	103	0	0	81
Future Vol, veh/h	0	0	103	0	0	81
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	0	0	112	0	0	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	200	112	0	0	112	0
Stage 1	112	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	789	941	-	-	1478	-
Stage 1	913	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	789	941	-	-	1478	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	913	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1478	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	57	46	130	40	41
Future Vol, veh/h	102	57	46	130	40	41
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	111	62	50	141	43	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	252	121	0	0	191	0
Stage 1	121	-	-	-	-	-
Stage 2	131	-	-	-	-	-
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	737	930	-	-	1383	-
Stage 1	904	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	930	-	-	1383	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	3.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1383	-
HCM Lane V/C Ratio	-	-	0.222	0.031	-
HCM Control Delay (s)	-	-	10.9	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

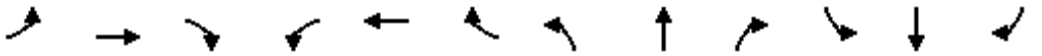
Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	36	140	116	29	114
Future Vol, veh/h	114	36	140	116	29	114
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	124	39	152	126	32	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	403	215	0	0	278	0
Stage 1	215	-	-	-	-	-
Stage 2	188	-	-	-	-	-
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	603	825	-	-	1285	-
Stage 1	821	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	587	825	-	-	1285	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	821	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1285	-
HCM Lane V/C Ratio	-	-	0.258	0.025	-
HCM Control Delay (s)	-	-	12.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	737	473	166	117	393	203	233	792	110	221	558	457
Future Volume (vph)	737	473	166	117	393	203	233	792	110	221	558	457
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			497
Lane Group Flow (vph)	801	514	180	127	427	221	253	861	120	240	607	497
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	38.0	37.0		26.0	25.0	25.0	18.0	39.0		18.0	39.0	
Total Split (%)	31.7%	30.8%		21.7%	20.8%	20.8%	15.0%	32.5%		15.0%	32.5%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	29.9	37.6	120.0	9.8	17.4	17.4	10.0	32.8	120.0	9.8	32.6	120.0
Actuated g/C Ratio	0.25	0.31	1.00	0.08	0.14	0.14	0.08	0.27	1.00	0.08	0.27	1.00
v/c Ratio	0.94	0.46	0.11	0.45	0.83	0.50	0.88	0.89	0.08	0.86	0.63	0.31
Control Delay	62.9	34.9	0.1	57.4	64.6	7.7	85.3	54.5	0.1	69.4	56.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	34.9	0.1	57.4	64.6	7.7	85.3	54.5	0.1	69.4	56.8	0.4
LOS	E	C	A	E	E	A	F	D	A	E	E	A
Approach Delay		45.7			47.2			55.5			38.2	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	312	165	0	48	170	0	102	341	0	98	253	0
Queue Length 95th (ft)	#426	225	0	79	#243	49	#182	#458	0	#173	317	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	872	1107	1583	529	530	449	286	968	1583	280	961	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.46	0.11	0.24	0.81	0.49	0.88	0.89	0.08	0.86	0.63	0.31

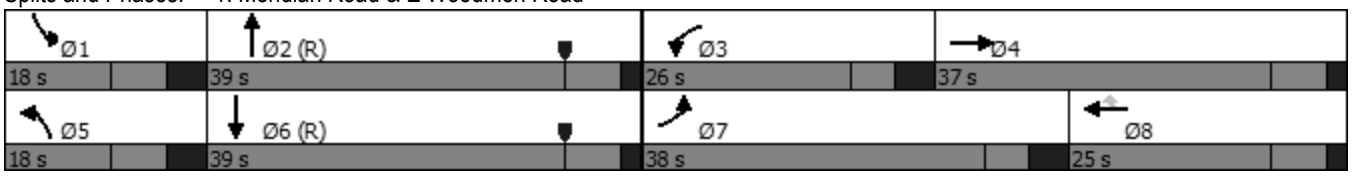
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 46.4	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	145	271	32	100	145	356	1242	120	93	823	134
Future Volume (vph)	260	145	271	32	100	145	356	1242	120	93	823	134
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.497			0.657			0.163			0.095		
Satd. Flow (perm)	1796	1863	1583	1224	1863	1583	304	3539	1583	177	3539	1583
Satd. Flow (RTOR)			295			186			177			177
Lane Group Flow (vph)	283	158	295	35	109	158	387	1350	130	101	895	146
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	18.0	22.0	22.0	18.0	22.0	22.0	25.0	62.0	62.0	18.0	55.0	55.0
Total Split (%)	15.0%	18.3%	18.3%	15.0%	18.3%	18.3%	20.8%	51.7%	51.7%	15.0%	45.8%	45.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.1	20.8	20.8	18.6	12.3	12.3	75.5	59.0	59.0	56.3	49.1	49.1
Actuated g/C Ratio	0.22	0.17	0.17	0.16	0.10	0.10	0.63	0.49	0.49	0.47	0.41	0.41
v/c Ratio	0.53	0.49	0.57	0.16	0.57	0.48	0.91	0.78	0.15	0.53	0.62	0.19
Control Delay	41.0	52.2	10.0	35.7	62.7	9.0	46.1	9.8	0.7	27.4	47.8	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	52.2	10.0	35.7	62.7	9.0	46.1	9.8	0.7	27.4	47.8	15.5
LOS	D	D	B	D	E	A	D	A	A	C	D	B
Approach Delay		31.0			31.5			16.7			41.9	
Approach LOS		C			C			B			D	
Queue Length 50th (ft)	93	118	0	21	82	0	132	286	2	51	380	28
Queue Length 95th (ft)	129	190	84	47	139	41	m#265	m370	m6	92	451	90
Internal Link Dist (ft)		333			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	534	323	518	270	240	366	424	1740	868	211	1448	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.49	0.57	0.13	0.45	0.43	0.91	0.78	0.15	0.48	0.62	0.19

Intersection Summary

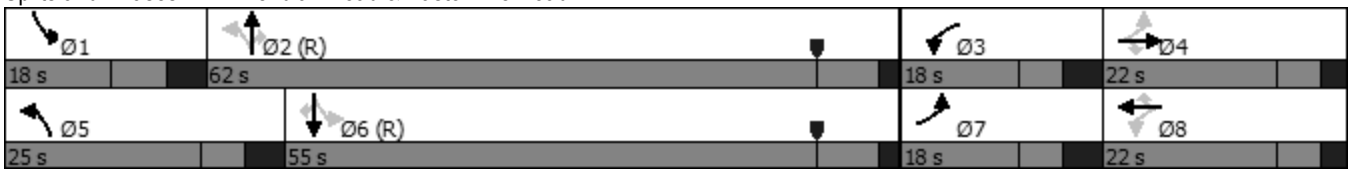
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

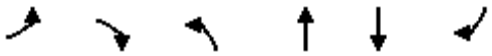
Maximum v/c Ratio: 0.91

Intersection Signal Delay: 27.5	Intersection LOS: C
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	236	142	142	1608	882	221
Future Volume (vph)	236	142	142	1608	882	221
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.230			
Satd. Flow (perm)	3433	1583	428	3539	3539	1583
Satd. Flow (RTOR)		154				240
Lane Group Flow (vph)	257	154	154	1748	959	240
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	27.0	27.0	20.0	93.0	73.0	73.0
Total Split (%)	22.5%	22.5%	16.7%	77.5%	60.8%	60.8%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	14.2	14.2	89.8	90.8	73.8	73.8
Actuated g/C Ratio	0.12	0.12	0.75	0.76	0.62	0.62
v/c Ratio	0.63	0.48	0.37	0.65	0.44	0.23
Control Delay	57.2	12.3	2.7	2.9	13.6	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	12.3	2.7	2.9	13.6	2.0
LOS	E	B	A	A	B	A
Approach Delay	40.4			2.8	11.2	
Approach LOS	D			A	B	
Queue Length 50th (ft)	99	0	5	27	192	0
Queue Length 95th (ft)	138	60	m7	34	275	35
Internal Link Dist (ft)	333			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	557	386	448	2676	2175	1065
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	0.46	0.40	0.34	0.65	0.44	0.23

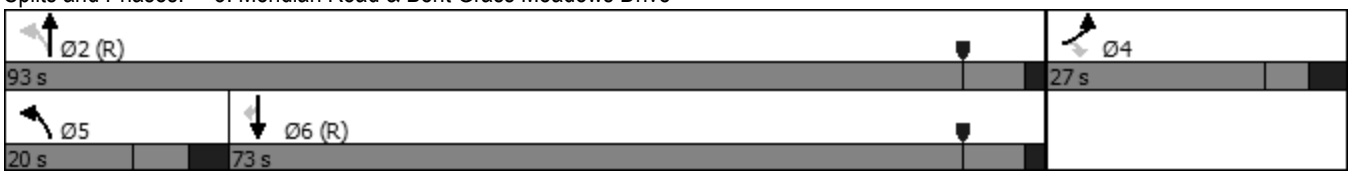
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 63.7%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	7.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	124	27	237	120	29	285
Future Vol, veh/h	124	27	237	120	29	285
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	135	29	258	130	32	310

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	781	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	646	-
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	-	-	1414	-	363	914
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1414	-	297	914
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	427	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	767	-	-	1414	-
HCM Lane V/C Ratio	0.445	-	-	0.182	-
HCM Control Delay (s)	13.4	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	-	-	0.7	-

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	641	526	227
Demand Flow Rate, veh/h	654	536	231
Vehicles Circulating, veh/h	9	221	395
Vehicles Exiting, veh/h	748	405	268
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	8.9	6.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	654	536	231
Cap Entry Lane, veh/h	1367	1101	922
Entry HV Adj Factor	0.980	0.981	0.982
Flow Entry, veh/h	641	526	227
Cap Entry, veh/h	1340	1080	906
V/C Ratio	0.478	0.487	0.250
Control Delay, s/veh	7.5	8.9	6.6
LOS	A	A	A
95th %tile Queue, veh	3	3	1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	7	0	0	0	15	91	0	0	72	0
Future Vol, veh/h	0	0	7	0	0	0	15	91	0	0	72	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	-	-	-	-	-	-	-	-	-	-	-	-
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	8	0	0	0	16	99	0	0	78	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	209	209	78	213	209	99	78	0	0	99	0	0
Stage 1	78	78	-	131	131	-	-	-	-	-	-	-
Stage 2	131	131	-	82	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	748	688	983	744	688	957	1520	-	-	1494	-	-
Stage 1	931	830	-	873	788	-	-	-	-	-	-	-
Stage 2	873	788	-	926	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	742	680	983	732	680	957	1520	-	-	1494	-	-
Mov Cap-2 Maneuver	742	680	-	732	680	-	-	-	-	-	-	-
Stage 1	921	830	-	863	779	-	-	-	-	-	-	-
Stage 2	863	779	-	919	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	983	-	1494	-	-
HCM Lane V/C Ratio	0.011	-	-	0.008	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	20	86	24	17	62
Future Vol, veh/h	19	20	86	24	17	62
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	21	22	93	26	18	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	209	106	0	0	119	0
Stage 1	106	-	-	-	-	-
Stage 2	103	-	-	-	-	-
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	779	948	-	-	1469	-
Stage 1	918	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	769	948	-	-	1469	-
Mov Cap-2 Maneuver	769	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	851	1469	-
HCM Lane V/C Ratio	-	-	0.05	0.013	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	28	82	81	22	59
Future Vol, veh/h	65	28	82	81	22	59
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	71	30	89	88	24	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	133	0	0	177	0
Stage 1	133	-	-	-	-	-
Stage 2	112	-	-	-	-	-
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	743	916	-	-	1399	-
Stage 1	893	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	730	916	-	-	1399	-
Mov Cap-2 Maneuver	730	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	897	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	2.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1399	-
HCM Lane V/C Ratio	-	-	0.13	0.017	-
HCM Control Delay (s)	-	-	10.3	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	35	128	114	24	100
Future Vol, veh/h	109	35	128	114	24	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	118	38	139	124	26	109

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	362	201	0	0	263	0
Stage 1	201	-	-	-	-	-
Stage 2	161	-	-	-	-	-
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	637	840	-	-	1301	-
Stage 1	833	-	-	-	-	-
Stage 2	868	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	624	840	-	-	1301	-
Mov Cap-2 Maneuver	624	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	850	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	666	1301	-
HCM Lane V/C Ratio	-	-	0.235	0.02	-
HCM Control Delay (s)	-	-	12.1	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	314	164	83	553	150	224	383	24	156	802	816
Future Volume (vph)	373	314	164	83	553	150	224	383	24	156	802	816
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			635
Lane Group Flow (vph)	405	341	178	90	601	163	243	416	26	170	872	887
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	25.0	41.5		14.5	31.0	31.0	20.0	44.5		19.5	44.0	
Total Split (%)	20.8%	34.6%		12.1%	25.8%	25.8%	16.7%	37.1%		16.3%	36.7%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	17.0	33.3	120.0	6.8	23.2	23.2	11.3	39.6	120.0	10.2	38.5	120.0
Actuated g/C Ratio	0.14	0.28	1.00	0.06	0.19	0.19	0.09	0.33	1.00	0.08	0.32	1.00
v/c Ratio	0.84	0.35	0.11	0.46	0.88	0.32	0.75	0.36	0.02	0.58	0.77	0.56
Control Delay	65.8	35.5	0.1	62.7	62.3	1.8	68.2	32.2	0.0	61.7	38.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	35.5	0.1	62.7	62.3	1.8	68.2	32.2	0.0	61.7	38.5	1.2
LOS	E	D	A	E	E	A	E	C	A	E	D	A
Approach Delay		42.0			50.8			43.7			23.4	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	158	110	0	35	238	0	95	131	0	72	262	0
Queue Length 95th (ft)	#229	152	0	63	#327	0	#150	177	0	m72	m259	m0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	500	1017	1583	200	707	516	330	1168	1583	314	1136	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.34	0.11	0.45	0.85	0.32	0.74	0.36	0.02	0.54	0.77	0.56

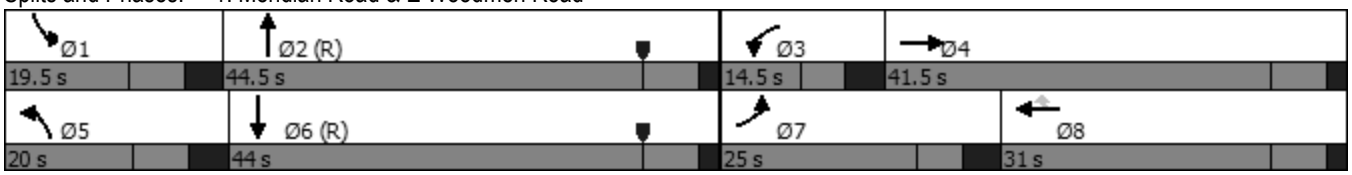
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 35.8	Intersection LOS: D
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	61	249	134	71	58	275	565	56	161	1720	135
Future Volume (vph)	134	61	249	134	71	58	275	565	56	161	1720	135
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.503			0.714			0.061			0.419		
Satd. Flow (perm)	1818	1863	1583	1330	1863	1583	114	3539	1583	780	3539	1583
Satd. Flow (RTOR)			186			186			177			177
Lane Group Flow (vph)	146	66	271	146	77	63	299	614	61	175	1870	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	12.5	15.6	15.6	12.6	15.7	15.7	22.3	74.2	74.2	17.6	69.5	69.5
Total Split (%)	10.4%	13.0%	13.0%	10.5%	13.1%	13.1%	18.6%	61.8%	61.8%	14.7%	57.9%	57.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.6	9.1	9.1	11.7	9.0	9.0	82.0	67.2	67.2	69.6	62.0	62.0
Actuated g/C Ratio	0.12	0.08	0.08	0.10	0.08	0.08	0.68	0.56	0.56	0.58	0.52	0.52
v/c Ratio	0.44	0.47	0.93	0.99	0.56	0.22	1.06	0.31	0.06	0.33	1.02	0.16
Control Delay	48.6	64.6	56.7	121.3	69.3	1.7	105.7	20.8	2.3	4.1	45.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	64.6	56.7	121.3	69.3	1.7	105.7	20.8	2.3	4.1	45.1	1.7
LOS	D	E	E	F	E	A	F	C	A	A	D	A
Approach Delay		55.3			81.0			45.7			38.9	
Approach LOS		E			F			D			D	
Queue Length 50th (ft)	51	50	65	103	58	0	~211	133	3	18	~832	10
Queue Length 95th (ft)	82	98	#232	#229	110	0	m#367	164	m11	m19	#967	m12
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	330	141	291	148	142	293	282	1982	964	530	1828	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.47	0.93	0.99	0.54	0.22	1.06	0.31	0.06	0.33	1.02	0.16

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

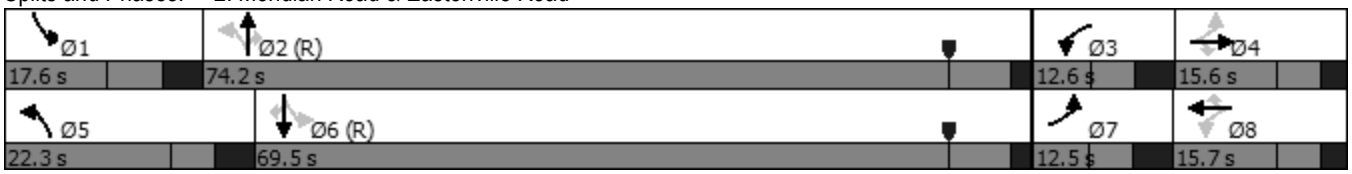
Intersection Signal Delay: 45.6	Intersection LOS: D
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

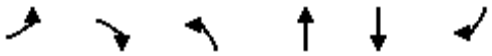
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	218	195	158	611	1784	301
Future Volume (vph)	218	195	158	611	1784	301
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.048			
Satd. Flow (perm)	3433	1583	89	3539	3539	1583
Satd. Flow (RTOR)		163				327
Lane Group Flow (vph)	237	212	172	664	1939	327
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	19.9	19.9	20.2	100.1	79.9	79.9
Total Split (%)	16.6%	16.6%	16.8%	83.4%	66.6%	66.6%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.8	11.8	92.2	93.2	74.1	74.1
Actuated g/C Ratio	0.10	0.10	0.77	0.78	0.62	0.62
v/c Ratio	0.70	0.70	0.80	0.24	0.89	0.30
Control Delay	64.1	27.5	45.5	10.7	26.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	27.5	45.5	10.7	26.3	1.8
LOS	E	C	D	B	C	A
Approach Delay	46.8			17.9	22.7	
Approach LOS	D			B	C	
Queue Length 50th (ft)	92	36	60	128	652	0
Queue Length 95th (ft)	136	120	#179	178	788	36
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	354	309	232	2747	2186	1102
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	0.67	0.69	0.74	0.24	0.89	0.30

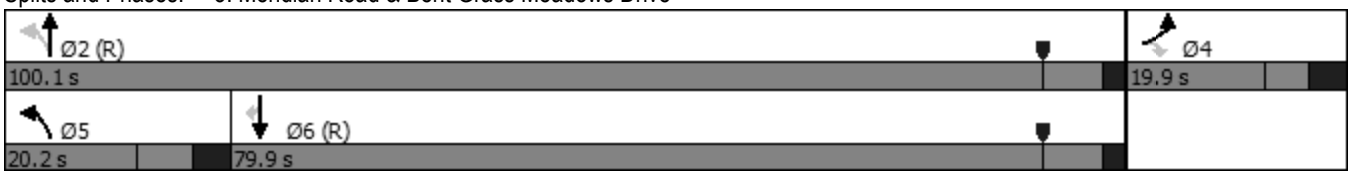
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	7.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	28	312	146	26	294
Future Vol, veh/h	123	28	312	146	26	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	134	30	339	159	28	320

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	971	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	837	-
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	-	-	1414	-	280	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1414	-	213	915
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	323	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.7	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	722	-	-	1414	-
HCM Lane V/C Ratio	0.482	-	-	0.24	-
HCM Control Delay (s)	14.5	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.6	-	-	0.9	-

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	523	242	250
Demand Flow Rate, veh/h	534	247	255
Vehicles Circulating, veh/h	3	248	250
Vehicles Exiting, veh/h	492	257	287
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.6	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	534	247	255
Cap Entry Lane, veh/h	1376	1071	1069
Entry HV Adj Factor	0.979	0.980	0.980
Flow Entry, veh/h	523	242	250
Cap Entry, veh/h	1347	1050	1048
V/C Ratio	0.388	0.231	0.238
Control Delay, s/veh	6.3	5.6	5.7
LOS	A	A	A
95th %tile Queue, veh	2	1	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	0	0	0	10	96	0	0	75	0
Future Vol, veh/h	0	0	8	0	0	0	10	96	0	0	75	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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	0	0	0	11	104	0	0	82	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	208	208	82	213	208	104	82	0	0	104	0	0
Stage 1	82	82	-	126	126	-	-	-	-	-	-	-
Stage 2	126	126	-	87	82	-	-	-	-	-	-	-
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	749	689	978	744	689	951	1515	-	-	1488	-	-
Stage 1	926	827	-	878	792	-	-	-	-	-	-	-
Stage 2	878	792	-	921	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	745	683	978	733	683	951	1515	-	-	1488	-	-
Mov Cap-2 Maneuver	745	683	-	733	683	-	-	-	-	-	-	-
Stage 1	919	827	-	871	786	-	-	-	-	-	-	-
Stage 2	871	786	-	913	827	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	978	-	1488	-	-
HCM Lane V/C Ratio	0.007	-	-	0.009	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	106	0	0	83
Future Vol, veh/h	0	0	106	0	0	83
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	0	0	115	0	0	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	205	115	0	0	115	0
Stage 1	115	-	-	-	-	-
Stage 2	90	-	-	-	-	-
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	783	937	-	-	1474	-
Stage 1	910	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	783	937	-	-	1474	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1474	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	57	49	130	40	43
Future Vol, veh/h	102	57	49	130	40	43
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	111	62	53	141	43	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	257	124	0	0	194	0
Stage 1	124	-	-	-	-	-
Stage 2	133	-	-	-	-	-
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	732	927	-	-	1379	-
Stage 1	902	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	709	927	-	-	1379	-
Mov Cap-2 Maneuver	709	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	774	1379	-
HCM Lane V/C Ratio	-	-	0.223	0.032	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	36	143	116	29	116
Future Vol, veh/h	114	36	143	116	29	116
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	124	39	155	126	32	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	218	0	0	281	0
Stage 1	218	-	-	-	-	-
Stage 2	190	-	-	-	-	-
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	599	822	-	-	1282	-
Stage 1	818	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	583	822	-	-	1282	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	1282	-
HCM Lane V/C Ratio	-	-	0.26	0.025	-
HCM Control Delay (s)	-	-	12.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	978	657	224	157	512	252	292	1031	148	257	697	592
Future Volume (vph)	978	657	224	157	512	252	292	1031	148	257	697	592
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			314			250			314			643
Lane Group Flow (vph)	1063	714	243	171	557	274	317	1121	161	279	758	643
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	38.0	42.5		18.5	23.0	23.0	20.6	42.0		17.0	38.4	
Total Split (%)	31.7%	35.4%		15.4%	19.2%	19.2%	17.2%	35.0%		14.2%	32.0%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	30.5	36.3	120.0	10.2	16.0	16.0	12.1	35.0	120.0	8.5	31.4	120.0
Actuated g/C Ratio	0.25	0.30	1.00	0.08	0.13	0.13	0.10	0.29	1.00	0.07	0.26	1.00
v/c Ratio	1.22	0.67	0.15	0.59	1.18	0.64	0.92	1.09	0.10	1.15	0.82	0.41
Control Delay	147.9	40.5	0.2	61.2	147.1	15.7	84.9	94.9	0.1	134.4	62.4	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.9	40.5	0.2	61.2	147.1	15.7	84.9	94.9	0.1	134.4	62.4	0.6
LOS	F	D	A	E	F	B	F	F	A	F	E	A
Approach Delay		92.2			96.5			83.4			50.7	
Approach LOS		F			F			F			D	
Queue Length 50th (ft)	~520	256	0	66	~272	17	127	~513	0	~132	323	0
Queue Length 95th (ft)	#652	326	0	103	#387	104	#212	#648	0	m#205	392	0
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	872	1069	1583	314	471	427	346	1032	1583	243	926	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.67	0.15	0.54	1.18	0.64	0.92	1.09	0.10	1.15	0.82	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

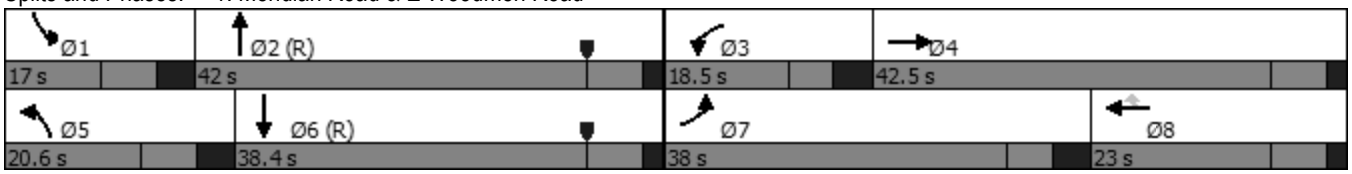
Intersection Signal Delay: 79.6	Intersection LOS: E
Intersection Capacity Utilization 102.5%	ICU Level of Service G
Analysis Period (min) 15	

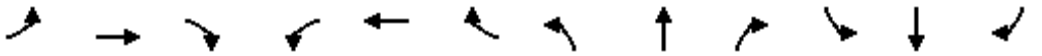
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 1: Meridian Road & E Woodmen Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	145	274	43	100	193	360	1726	161	123	1098	136
Future Volume (vph)	260	145	274	43	100	193	360	1726	161	123	1098	136
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.586			0.532			0.080			0.081		
Satd. Flow (perm)	2118	1863	1583	991	1863	1583	149	3539	1583	151	3539	1583
Satd. Flow (RTOR)			298			255			177			245
Lane Group Flow (vph)	283	158	298	47	109	210	391	1876	175	134	1193	148
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	13.0	18.0	18.0	12.5	17.5	17.5	33.2	74.5	74.5	15.0	56.3	56.3
Total Split (%)	10.8%	15.0%	15.0%	10.4%	14.6%	14.6%	27.7%	62.1%	62.1%	12.5%	46.9%	46.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.8	13.4	13.4	14.4	10.4	10.4	82.6	67.3	67.3	56.8	51.0	51.0
Actuated g/C Ratio	0.14	0.11	0.11	0.12	0.09	0.09	0.69	0.56	0.56	0.47	0.42	0.42
v/c Ratio	0.79	0.76	0.68	0.31	0.68	0.57	0.92	0.95	0.18	0.82	0.79	0.18
Control Delay	63.3	76.2	14.2	46.7	74.1	9.0	47.0	8.4	0.1	54.0	51.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	76.2	14.2	46.7	74.1	9.0	47.0	8.4	0.1	54.0	51.9	8.6
LOS	E	E	B	D	E	A	D	A	A	D	D	A
Approach Delay		46.2			33.2			14.0			47.7	
Approach LOS		D			C			B			D	
Queue Length 50th (ft)	100	123	0	31	83	0	199	322	1	64	514	20
Queue Length 95th (ft)	#166	#249	90	66	#157	39	m179	m212	m1	#165	589	63
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	356	208	441	151	170	376	449	1983	965	164	1504	813
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.76	0.68	0.31	0.64	0.56	0.87	0.95	0.18	0.82	0.79	0.18

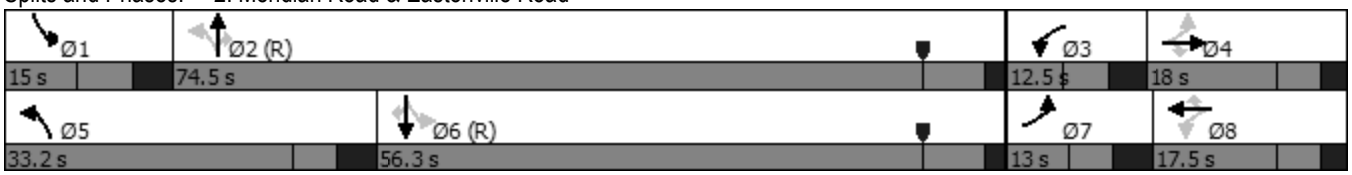
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

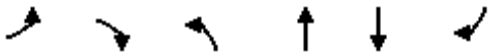
Maximum v/c Ratio: 0.95

Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	265	168	164	2096	1163	256
Future Volume (vph)	265	168	164	2096	1163	256
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.144			
Satd. Flow (perm)	3433	1583	268	3539	3539	1583
Satd. Flow (RTOR)		183				278
Lane Group Flow (vph)	288	183	178	2278	1264	278
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	22.0	22.0	21.6	98.0	76.4	76.4
Total Split (%)	18.3%	18.3%	18.0%	81.7%	63.7%	63.7%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.7	13.7	90.3	91.3	73.7	73.7
Actuated g/C Ratio	0.11	0.11	0.75	0.76	0.61	0.61
v/c Ratio	0.74	0.54	0.56	0.85	0.58	0.26
Control Delay	63.3	13.1	8.7	10.1	15.7	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	13.1	8.7	10.1	15.7	1.9
LOS	E	B	A	B	B	A
Approach Delay	43.8			10.0	13.2	
Approach LOS	D			A	B	
Queue Length 50th (ft)	111	0	10	854	294	0
Queue Length 95th (ft)	159	68	m11	m895	387	35
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	414	352	365	2693	2172	1079
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	0.52	0.49	0.85	0.58	0.26

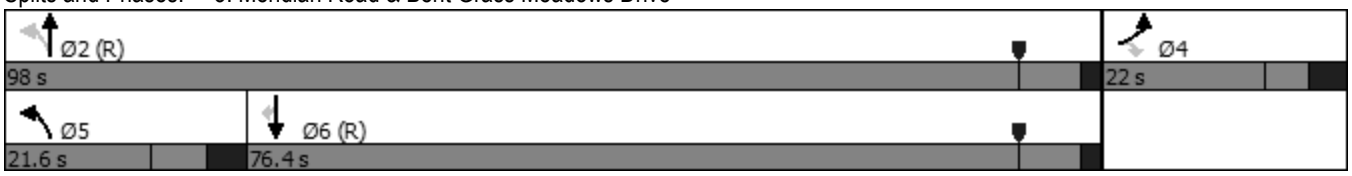
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	8.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	31	269	142	33	326
Future Vol, veh/h	147	31	269	142	33	326
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	160	34	292	154	36	354

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	898	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	738	-
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	-	-	1379	-	310	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1379	-	244	885
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	713	-	-	1379	-
HCM Lane V/C Ratio	0.547	-	-	0.212	-
HCM Control Delay (s)	16	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.3	-	-	0.8	-

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	648	526	231
Demand Flow Rate, veh/h	661	536	235
Vehicles Circulating, veh/h	9	225	395
Vehicles Exiting, veh/h	752	405	275
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.6	8.9	6.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	661	536	235
Cap Entry Lane, veh/h	1367	1097	922
Entry HV Adj Factor	0.980	0.981	0.982
Flow Entry, veh/h	648	526	231
Cap Entry, veh/h	1340	1076	906
V/C Ratio	0.483	0.489	0.255
Control Delay, s/veh	7.6	8.9	6.6
LOS	A	A	A
95th %tile Queue, veh	3	3	1

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	10	0	0	0	21	91	0	0	72	0
Future Vol, veh/h	0	0	10	0	0	0	21	91	0	0	72	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	-	-	-	-	-	-	-	-	-	-	-	-
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	11	0	0	0	23	99	0	0	78	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	223	223	78	229	223	99	78	0	0	99	0	0
Stage 1	78	78	-	145	145	-	-	-	-	-	-	-
Stage 2	145	145	-	84	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	733	676	983	726	676	957	1520	-	-	1494	-	-
Stage 1	931	830	-	858	777	-	-	-	-	-	-	-
Stage 2	858	777	-	924	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	724	665	983	709	665	957	1520	-	-	1494	-	-
Mov Cap-2 Maneuver	724	665	-	709	665	-	-	-	-	-	-	-
Stage 1	916	830	-	844	765	-	-	-	-	-	-	-
Stage 2	844	765	-	914	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	1.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	983	-	1494	-	-
HCM Lane V/C Ratio	0.015	-	-	0.011	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	20	92	24	17	65
Future Vol, veh/h	19	20	92	24	17	65
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	21	22	100	26	18	71

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	220	113	0	0	126	0
Stage 1	113	-	-	-	-	-
Stage 2	107	-	-	-	-	-
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	768	940	-	-	1460	-
Stage 1	912	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	758	940	-	-	1460	-
Mov Cap-2 Maneuver	758	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1460	-
HCM Lane V/C Ratio	-	-	0.05	0.013	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	28	88	81	22	62
Future Vol, veh/h	65	28	88	81	22	62
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	71	30	96	88	24	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	255	140	0	0	184	0
Stage 1	140	-	-	-	-	-
Stage 2	115	-	-	-	-	-
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	734	908	-	-	1391	-
Stage 1	887	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	908	-	-	1391	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	769	1391	-
HCM Lane V/C Ratio	-	-	0.131	0.017	-
HCM Control Delay (s)	-	-	10.4	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	35	134	114	24	103
Future Vol, veh/h	109	35	134	114	24	103
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	118	38	146	124	26	112

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	208	0	0	270	0
Stage 1	208	-	-	-	-	-
Stage 2	164	-	-	-	-	-
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	629	832	-	-	1293	-
Stage 1	827	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	616	832	-	-	1293	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	847	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	657	1293	-
HCM Lane V/C Ratio	-	-	0.238	0.02	-
HCM Control Delay (s)	-	-	12.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

APPENDIX D

Meridian Road Widening – Capacity Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	314	164	83	553	124	224	357	24	130	776	803
Future Volume (vph)	359	314	164	83	553	124	224	357	24	130	776	803
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Satd. Flow (RTOR)			314			250			314			585
Lane Group Flow (vph)	390	341	178	90	601	135	243	388	26	141	843	873
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	28.2	48.7		14.5	35.0	35.0	22.7	38.7		18.1	34.1	
Total Split (%)	23.5%	40.6%		12.1%	29.2%	29.2%	18.9%	32.3%		15.1%	28.4%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	18.2	36.4	120.0	6.8	25.0	25.0	12.9	37.6	120.0	9.2	33.9	120.0
Actuated g/C Ratio	0.15	0.30	1.00	0.06	0.21	0.21	0.11	0.31	1.00	0.08	0.28	1.00
v/c Ratio	0.75	0.32	0.11	0.46	0.81	0.26	0.66	0.24	0.02	0.54	0.59	0.55
Control Delay	58.0	32.2	0.1	62.7	54.7	1.2	60.4	32.5	0.0	76.1	33.5	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	32.2	0.1	62.7	54.7	1.2	60.4	32.5	0.0	76.1	33.5	7.7
LOS	E	C	A	E	D	A	E	C	A	E	C	A
Approach Delay		37.0			46.8			41.5			24.6	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	150	104	0	35	232	0	93	84	0	60	111	168
Queue Length 95th (ft)	200	138	0	63	294	0	137	118	0	m81	220	215
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	592	1229	1583	200	825	561	406	1591	1583	278	1436	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.28	0.11	0.45	0.73	0.24	0.60	0.24	0.02	0.51	0.59	0.55

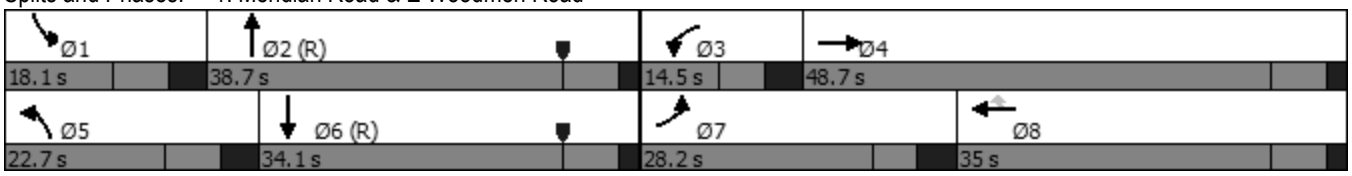
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	48	94	134	58	58	117	657	56	161	1775	60
Future Volume (vph)	86	48	94	134	58	58	117	657	56	161	1775	60
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.716			0.415			0.068			0.348		
Satd. Flow (perm)	2587	1863	1583	773	1863	1583	127	5085	1583	648	5085	1583
Satd. Flow (RTOR)			186			186			177			177
Lane Group Flow (vph)	93	52	102	146	63	63	127	714	61	175	1929	65
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	12.6	15.5	15.5	20.1	23.0	23.0	20.3	66.2	66.2	18.2	64.1	64.1
Total Split (%)	10.5%	12.9%	12.9%	16.8%	19.2%	19.2%	16.9%	55.2%	55.2%	15.2%	53.4%	53.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	12.6	8.5	8.5	26.7	17.8	17.8	70.2	60.5	60.5	69.1	60.9	60.9
Actuated g/C Ratio	0.10	0.07	0.07	0.22	0.15	0.15	0.58	0.50	0.50	0.58	0.51	0.51
v/c Ratio	0.30	0.39	0.36	0.54	0.23	0.16	0.61	0.28	0.07	0.38	0.75	0.07
Control Delay	40.3	62.2	3.5	47.2	48.8	0.9	43.2	24.2	2.5	6.5	22.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	62.2	3.5	47.2	48.8	0.9	43.2	24.2	2.5	6.5	22.8	0.8
LOS	D	E	A	D	D	A	D	C	A	A	C	A
Approach Delay		29.7			36.8			25.4			20.8	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	29	39	0	95	44	0	70	110	3	25	528	0
Queue Length 95th (ft)	52	81	0	158	88	0	m131	134	m13	26	614	m5
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	308	139	290	277	282	398	252	2563	885	467	2582	891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.37	0.35	0.53	0.22	0.16	0.50	0.28	0.07	0.37	0.75	0.07

Intersection Summary

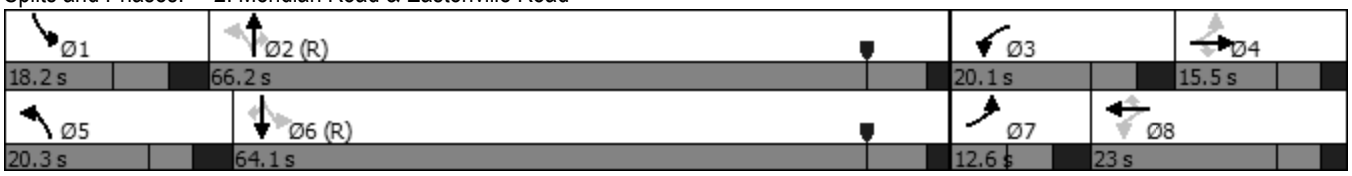
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

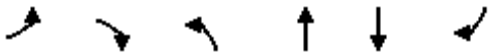
Maximum v/c Ratio: 0.75

Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & Eastonville Road





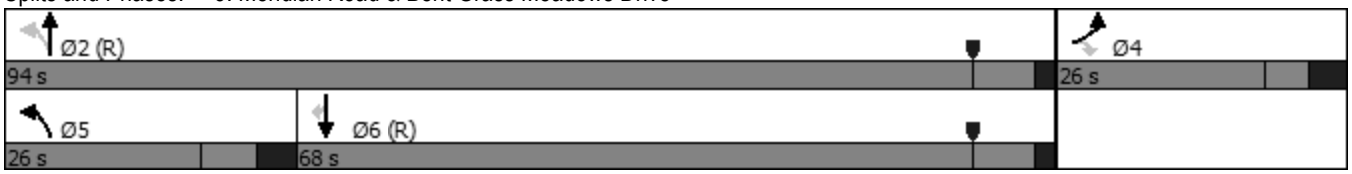
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	195	158	599	1800	245
Future Volume (vph)	138	195	158	599	1800	245
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.061			
Satd. Flow (perm)	3433	1583	114	5085	5085	1583
Satd. Flow (RTOR)		212				266
Lane Group Flow (vph)	150	212	172	651	1957	266
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	26.0	94.0	68.0	68.0
Total Split (%)	21.7%	21.7%	21.7%	78.3%	56.7%	56.7%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.8	10.8	93.2	94.2	73.7	73.7
Actuated g/C Ratio	0.09	0.09	0.78	0.78	0.61	0.61
v/c Ratio	0.49	0.63	0.68	0.16	0.63	0.25
Control Delay	56.9	15.6	23.5	9.4	16.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	15.6	23.5	9.4	16.6	2.2
LOS	E	B	C	A	B	A
Approach Delay	32.7			12.3	14.9	
Approach LOS	C			B	B	
Queue Length 50th (ft)	58	0	64	89	322	0
Queue Length 95th (ft)	89	73	100	110	464	40
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	529	423	332	3991	3122	1074
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	0.28	0.50	0.52	0.16	0.63	0.25

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 69.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	15	256	146	13	214
Future Vol, veh/h	123	15	256	146	13	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	134	16	278	159	14	233

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	150	0	849	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	715	-
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	-	-	1431	-	331	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1431	-	267	915
Mov Cap-2 Maneuver	-	-	-	-	267	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	391	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.2	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	803	-	-	1431	-
HCM Lane V/C Ratio	0.307	-	-	0.194	-
HCM Control Delay (s)	11.5	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.7	-

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	256	242	16
Demand Flow Rate, veh/h	261	247	16
Vehicles Circulating, veh/h	3	9	250
Vehicles Exiting, veh/h	253	257	14
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	4.2	3.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	261	247	16
Cap Entry Lane, veh/h	1376	1367	1069
Entry HV Adj Factor	0.981	0.980	0.991
Flow Entry, veh/h	256	242	16
Cap Entry, veh/h	1349	1339	1060
V/C Ratio	0.190	0.181	0.015
Control Delay, s/veh	4.2	4.2	3.5
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	0	0	0	10	3	0	0	6	0
Future Vol, veh/h	0	0	8	0	0	0	10	3	0	0	6	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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	0	0	0	11	3	0	0	7	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	32	32	7	37	32	3	7	0	0	3	0	0
Stage 1	7	7	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	12	7	-	-	-	-	-	-	-
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	976	861	1075	968	861	1081	1614	-	-	1619	-	-
Stage 1	1015	890	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	1009	890	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	971	855	1075	955	855	1081	1614	-	-	1619	-	-
Mov Cap-2 Maneuver	971	855	-	955	855	-	-	-	-	-	-	-
Stage 1	1008	890	-	986	868	-	-	-	-	-	-	-
Stage 2	986	868	-	1001	890	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	5.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1614	-	-	1075	-	1619	-	-
HCM Lane V/C Ratio	0.007	-	-	0.008	-	-	-	-
HCM Control Delay (s)	7.2	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	963	657	224	157	512	222	292	1001	148	228	668	577
Future Volume (vph)	963	657	224	157	512	222	292	1001	148	228	668	577
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Satd. Flow (RTOR)			314			250			314			627
Lane Group Flow (vph)	1047	714	243	171	557	241	317	1088	161	248	726	627
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	44.0	50.5		18.5	25.0	25.0	22.6	33.3		17.7	28.4	
Total Split (%)	36.7%	42.1%		15.4%	20.8%	20.8%	18.8%	27.8%		14.8%	23.7%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	36.5	44.3	120.0	10.2	18.0	18.0	13.7	26.3	120.0	9.2	21.8	120.0
Actuated g/C Ratio	0.30	0.37	1.00	0.08	0.15	0.15	0.11	0.22	1.00	0.08	0.18	1.00
v/c Ratio	1.00	0.55	0.15	0.59	1.05	0.54	0.81	0.98	0.10	0.94	0.79	0.40
Control Delay	70.5	32.0	0.2	61.2	102.2	9.8	68.3	68.6	0.1	94.8	79.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	32.0	0.2	61.2	102.2	9.8	68.3	68.6	0.1	94.8	79.1	5.0
LOS	E	C	A	E	F	A	E	E	A	F	E	A
Approach Delay		48.3			72.0			61.5			52.5	
Approach LOS		D			E			E			D	
Queue Length 50th (ft)	~420	230	0	66	~247	0	124	309	0	105	217	110
Queue Length 95th (ft)	#567	292	0	103	#362	66	#188	#407	0	#186	263	158
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	1044	1305	1583	314	530	449	403	1114	1583	263	921	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.55	0.15	0.54	1.05	0.54	0.79	0.98	0.10	0.94	0.79	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated

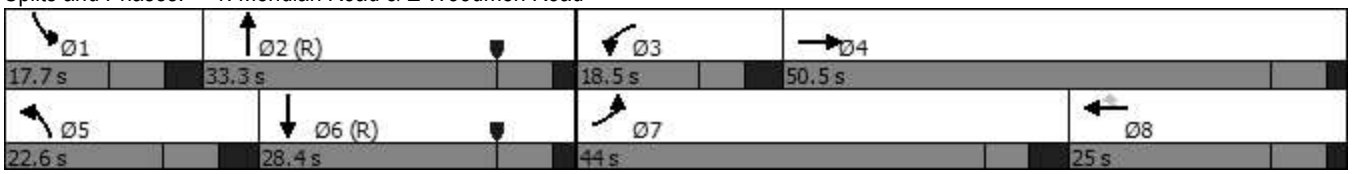
Maximum v/c Ratio: 1.05

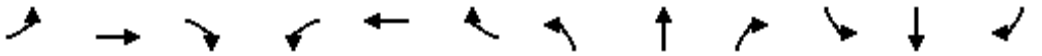
Intersection Signal Delay: 56.5	Intersection LOS: E
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Meridian Road & E Woodmen Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	131	135	43	86	193	218	1793	161	123	1139	73
Future Volume (vph)	220	131	135	43	86	193	218	1793	161	123	1139	73
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.595			0.666			0.153			0.070		
Satd. Flow (perm)	2150	1863	1583	1241	1863	1583	285	5085	1583	130	5085	1583
Satd. Flow (RTOR)			255			255			177			245
Lane Group Flow (vph)	239	142	147	47	93	210	237	1949	175	134	1238	79
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	14.0	23.4	23.4	12.6	22.0	22.0	26.9	65.0	65.0	19.0	57.1	57.1
Total Split (%)	11.7%	19.5%	19.5%	10.5%	18.3%	18.3%	22.4%	54.2%	54.2%	15.8%	47.6%	47.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	20.6	16.4	16.4	16.6	12.5	12.5	75.2	61.8	61.8	66.7	58.4	58.4
Actuated g/C Ratio	0.17	0.14	0.14	0.14	0.10	0.10	0.63	0.52	0.52	0.56	0.49	0.49
v/c Ratio	0.55	0.56	0.34	0.24	0.48	0.53	0.68	0.74	0.19	0.68	0.50	0.09
Control Delay	45.6	58.1	2.1	40.6	58.3	7.7	29.9	10.0	0.5	35.5	39.1	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	58.1	2.1	40.6	58.3	7.7	29.9	10.0	0.5	35.5	39.1	3.4
LOS	D	E	A	D	E	A	C	A	A	D	D	A
Approach Delay		36.8			25.6			11.3			36.8	
Approach LOS		D			C			B			D	
Queue Length 50th (ft)	80	106	0	30	69	0	76	291	1	67	363	3
Queue Length 95th (ft)	115	172	0	62	121	37	m71	m376	m1	#135	413	24
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	438	278	453	194	240	426	428	2617	900	218	2476	896
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.32	0.24	0.39	0.49	0.55	0.74	0.19	0.61	0.50	0.09

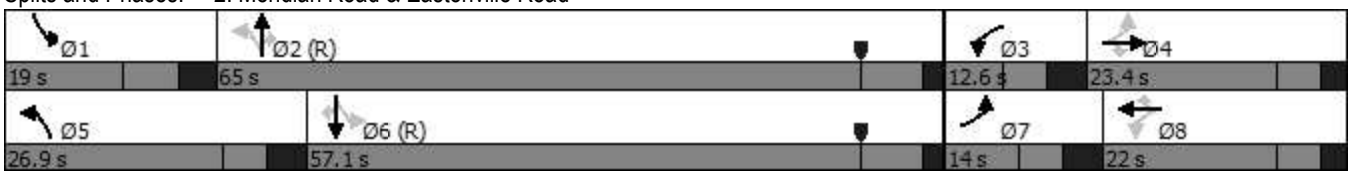
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

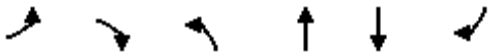
Maximum v/c Ratio: 0.74

Intersection Signal Delay: 23.1	Intersection LOS: C
Intersection Capacity Utilization 79.2%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	197	168	164	2082	1167	208
Future Volume (vph)	197	168	164	2082	1167	208
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.165			
Satd. Flow (perm)	3433	1583	307	5085	5085	1583
Satd. Flow (RTOR)		183				226
Lane Group Flow (vph)	214	183	178	2263	1268	226
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	29.0	29.0	29.0	91.0	62.0	62.0
Total Split (%)	24.2%	24.2%	24.2%	75.8%	51.7%	51.7%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.8	12.8	91.2	92.2	74.6	74.6
Actuated g/C Ratio	0.11	0.11	0.76	0.77	0.62	0.62
v/c Ratio	0.59	0.55	0.52	0.58	0.40	0.21
Control Delay	57.5	13.5	9.4	1.8	12.4	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	13.5	9.4	1.8	12.4	2.0
LOS	E	B	A	A	B	A
Approach Delay	37.2			2.4	10.9	
Approach LOS	D			A	B	
Queue Length 50th (ft)	82	0	8	14	167	0
Queue Length 95th (ft)	119	66	m34	17	236	34
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	615	433	483	3908	3160	1069
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	0.35	0.42	0.37	0.58	0.40	0.21

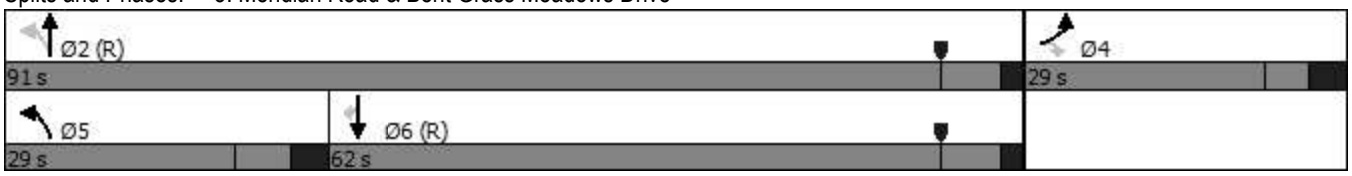
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	16	221	142	18	258
Future Vol, veh/h	147	16	221	142	18	258
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	160	17	240	154	20	280

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	177	0	794	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	634	-
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	-	-	1399	-	357	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	529	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1399	-	296	885
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	783	-	-	1399	-
HCM Lane V/C Ratio	0.383	-	-	0.172	-
HCM Control Delay (s)	12.4	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.6	-

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	410	526	21
Demand Flow Rate, veh/h	418	536	21
Vehicles Circulating, veh/h	9	11	395
Vehicles Exiting, veh/h	538	405	32
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.4	6.4	4.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	418	536	21
Cap Entry Lane, veh/h	1367	1364	922
Entry HV Adj Factor	0.981	0.981	0.991
Flow Entry, veh/h	410	526	21
Cap Entry, veh/h	1341	1339	914
V/C Ratio	0.306	0.393	0.023
Control Delay, s/veh	5.4	6.4	4.1
LOS	A	A	A
95th %tile Queue, veh	1	2	0

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	0	0	10	0	0	0	21	8	0	0	9	0
Future Vol, veh/h	0	0	10	0	0	0	21	8	0	0	9	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	-	-	-	-	-	-	-	-	-	-	-	-
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	11	0	0	0	23	9	0	0	10	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	65	65	10	71	65	9	10	0	0	9	0	0
Stage 1	10	10	-	55	55	-	-	-	-	-	-	-
Stage 2	55	55	-	16	10	-	-	-	-	-	-	-
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	929	826	1071	920	826	1073	1610	-	-	1611	-	-
Stage 1	1011	887	-	957	849	-	-	-	-	-	-	-
Stage 2	957	849	-	1004	887	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	919	814	1071	901	814	1073	1610	-	-	1611	-	-
Mov Cap-2 Maneuver	919	814	-	901	814	-	-	-	-	-	-	-
Stage 1	997	887	-	944	837	-	-	-	-	-	-	-
Stage 2	944	837	-	994	887	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	0	5.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1610	-	-	1071	-	1611	-	-
HCM Lane V/C Ratio	0.014	-	-	0.01	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	373	314	164	83	553	150	224	383	24	156	802	816
Future Volume (vph)	373	314	164	83	553	150	224	383	24	156	802	816
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Satd. Flow (RTOR)			314			250			314			603
Lane Group Flow (vph)	405	341	178	90	601	163	243	416	26	170	872	887
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	28.0	46.5		14.5	33.0	33.0	22.0	39.5		19.5	37.0	
Total Split (%)	23.3%	38.8%		12.1%	27.5%	27.5%	18.3%	32.9%		16.3%	30.8%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	18.4	35.8	120.0	6.8	24.2	24.2	12.6	37.1	120.0	10.3	34.8	120.0
Actuated g/C Ratio	0.15	0.30	1.00	0.06	0.20	0.20	0.10	0.31	1.00	0.09	0.29	1.00
v/c Ratio	0.77	0.32	0.11	0.46	0.84	0.31	0.68	0.26	0.02	0.58	0.59	0.56
Control Delay	59.0	32.9	0.1	62.7	57.5	1.7	61.5	32.9	0.0	68.4	39.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	32.9	0.1	62.7	57.5	1.7	61.5	32.9	0.0	68.4	39.3	7.1
LOS	E	C	A	E	E	A	E	C	A	E	D	A
Approach Delay		38.0			47.4			41.8			27.1	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	155	104	0	35	232	0	93	93	0	72	148	160
Queue Length 95th (ft)	208	142	0	63	301	0	138	125	0	m93	208	217
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	586	1164	1583	200	767	539	387	1571	1583	315	1473	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.29	0.11	0.45	0.78	0.30	0.63	0.26	0.02	0.54	0.59	0.56

Intersection Summary

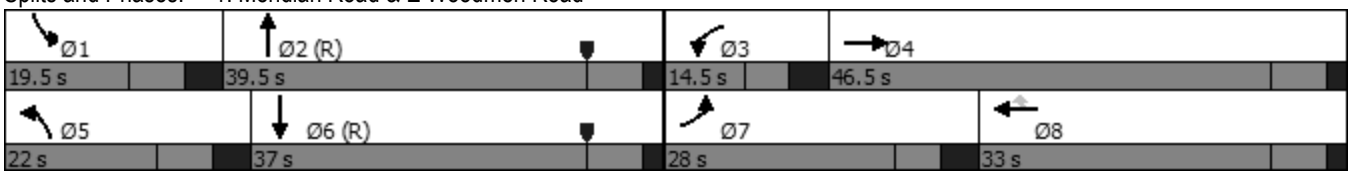
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 30 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 35.6	Intersection LOS: D
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	61	249	134	71	58	275	565	56	161	1720	135
Future Volume (vph)	134	61	249	134	71	58	275	565	56	161	1720	135
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.614			0.714			0.066			0.408		
Satd. Flow (perm)	2219	1863	1583	1330	1863	1583	123	5085	1583	760	5085	1583
Satd. Flow (RTOR)			255			255			177			245
Lane Group Flow (vph)	146	66	271	146	77	63	299	614	61	175	1870	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	12.6	20.0	20.0	14.4	21.8	21.8	28.1	67.5	67.5	18.1	57.5	57.5
Total Split (%)	10.5%	16.7%	16.7%	12.0%	18.2%	18.2%	23.4%	56.3%	56.3%	15.1%	47.9%	47.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.0	10.1	10.1	16.0	11.5	11.5	81.0	63.8	63.8	63.0	54.8	54.8
Actuated g/C Ratio	0.13	0.08	0.08	0.13	0.10	0.10	0.68	0.53	0.53	0.52	0.46	0.46
v/c Ratio	0.38	0.42	0.74	0.72	0.43	0.16	0.86	0.23	0.07	0.37	0.81	0.17
Control Delay	44.2	60.0	20.8	65.2	58.0	0.9	63.9	21.6	2.1	9.6	27.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	60.0	20.8	65.2	58.0	0.9	63.9	21.6	2.1	9.6	27.4	3.3
LOS	D	E	C	E	E	A	E	C	A	A	C	A
Approach Delay		33.2			49.1			33.3			24.4	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	49	50	12	101	57	0	208	92	3	52	554	21
Queue Length 95th (ft)	76	94	98	160	104	0	#331	115	m11	70	602	m35
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	380	209	404	202	237	424	375	2703	924	486	2321	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.32	0.67	0.72	0.32	0.15	0.80	0.23	0.07	0.36	0.81	0.17

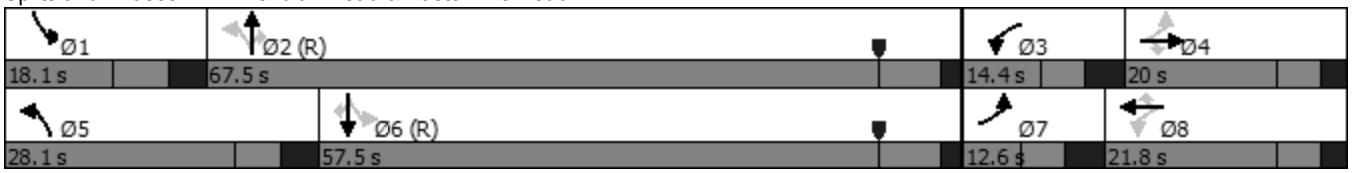
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

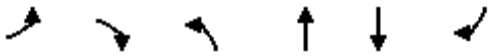
Maximum v/c Ratio: 0.86

Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 80.5%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





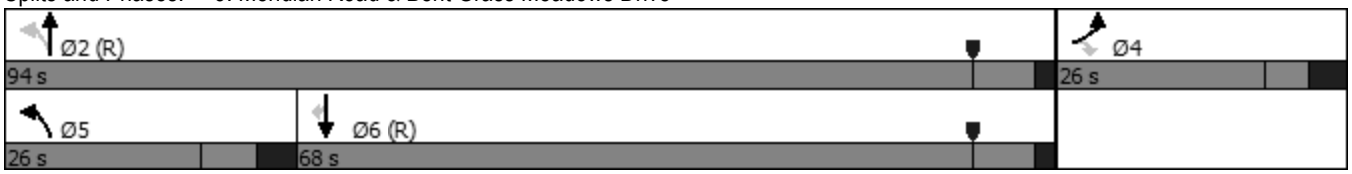
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	218	195	158	611	1784	301
Future Volume (vph)	218	195	158	611	1784	301
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.059			
Satd. Flow (perm)	3433	1583	110	5085	5085	1583
Satd. Flow (RTOR)		212				327
Lane Group Flow (vph)	237	212	172	664	1939	327
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	26.0	94.0	68.0	68.0
Total Split (%)	21.7%	21.7%	21.7%	78.3%	56.7%	56.7%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.8	13.8	90.2	91.2	70.7	70.7
Actuated g/C Ratio	0.12	0.12	0.75	0.76	0.59	0.59
v/c Ratio	0.60	0.57	0.69	0.17	0.65	0.31
Control Delay	56.7	12.8	28.8	10.6	18.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	12.8	28.8	10.6	18.8	2.4
LOS	E	B	C	B	B	A
Approach Delay	36.0			14.3	16.4	
Approach LOS	D			B	B	
Queue Length 50th (ft)	91	0	58	82	343	0
Queue Length 95th (ft)	128	69	120	119	487	46
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	529	423	325	3866	2994	1067
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	0.45	0.50	0.53	0.17	0.65	0.31

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	7.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	28	312	146	26	294
Future Vol, veh/h	123	28	312	146	26	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	134	30	339	159	28	320

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	971	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	837	-
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	-	-	1414	-	280	915
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1414	-	213	915
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	892	-
Stage 2	-	-	-	-	323	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.7	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	722	-	-	1414	-
HCM Lane V/C Ratio	0.482	-	-	0.24	-
HCM Control Delay (s)	14.5	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.6	-	-	0.9	-

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	523	242	250
Demand Flow Rate, veh/h	534	247	255
Vehicles Circulating, veh/h	3	248	250
Vehicles Exiting, veh/h	492	257	287
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.6	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	534	247	255
Cap Entry Lane, veh/h	1376	1071	1069
Entry HV Adj Factor	0.979	0.980	0.980
Flow Entry, veh/h	523	242	250
Cap Entry, veh/h	1347	1050	1048
V/C Ratio	0.388	0.231	0.238
Control Delay, s/veh	6.3	5.6	5.7
LOS	A	A	A
95th %tile Queue, veh	2	1	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	8	0	0	0	10	96	0	0	75	0
Future Vol, veh/h	0	0	8	0	0	0	10	96	0	0	75	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	-	-	-	-	-	-	-	-	-	-	-	-
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	9	0	0	0	11	104	0	0	82	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	208	208	82	213	208	104	82	0	0	104	0	0
Stage 1	82	82	-	126	126	-	-	-	-	-	-	-
Stage 2	126	126	-	87	82	-	-	-	-	-	-	-
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	749	689	978	744	689	951	1515	-	-	1488	-	-
Stage 1	926	827	-	878	792	-	-	-	-	-	-	-
Stage 2	878	792	-	921	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	745	683	978	733	683	951	1515	-	-	1488	-	-
Mov Cap-2 Maneuver	745	683	-	733	683	-	-	-	-	-	-	-
Stage 1	919	827	-	871	786	-	-	-	-	-	-	-
Stage 2	871	786	-	913	827	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1515	-	-	978	-	1488	-	-
HCM Lane V/C Ratio	0.007	-	-	0.009	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	106	0	0	83
Future Vol, veh/h	0	0	106	0	0	83
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	0	0	115	0	0	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	205	115	0	0	115	0
Stage 1	115	-	-	-	-	-
Stage 2	90	-	-	-	-	-
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	783	937	-	-	1474	-
Stage 1	910	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	783	937	-	-	1474	-
Mov Cap-2 Maneuver	783	-	-	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1474	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	57	49	130	40	43
Future Vol, veh/h	102	57	49	130	40	43
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	111	62	53	141	43	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	257	124	0	0	194	0
Stage 1	124	-	-	-	-	-
Stage 2	133	-	-	-	-	-
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	732	927	-	-	1379	-
Stage 1	902	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	709	927	-	-	1379	-
Mov Cap-2 Maneuver	709	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	864	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	774	1379	-
HCM Lane V/C Ratio	-	-	0.223	0.032	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	36	143	116	29	116
Future Vol, veh/h	114	36	143	116	29	116
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	124	39	155	126	32	126

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	408	218	0	0	281	0
Stage 1	218	-	-	-	-	-
Stage 2	190	-	-	-	-	-
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	599	822	-	-	1282	-
Stage 1	818	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	583	822	-	-	1282	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	627	1282	-
HCM Lane V/C Ratio	-	-	0.26	0.025	-
HCM Control Delay (s)	-	-	12.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	978	657	224	157	512	252	292	1031	148	257	697	592
Future Volume (vph)	978	657	224	157	512	252	292	1031	148	257	697	592
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	5085	1583	3433	5085	1583
Satd. Flow (RTOR)			314			250			314			643
Lane Group Flow (vph)	1063	714	243	171	557	274	317	1121	161	279	758	643
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			Free			Free
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	15.0		5.0	15.0	15.0	5.0	15.0		5.0	15.0	
Minimum Split (s)	12.5	22.0		12.5	22.0	22.0	13.5	22.0		13.5	22.0	
Total Split (s)	43.0	49.5		18.5	25.0	25.0	22.2	33.6		18.4	29.8	
Total Split (%)	35.8%	41.3%		15.4%	20.8%	20.8%	18.5%	28.0%		15.3%	24.8%	
Yellow Time (s)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	3.5	2.0		3.5	2.0	2.0	3.5	2.0		3.5	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.0		7.5	7.0	7.0	8.5	7.0		8.5	7.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	35.5	43.3	120.0	10.2	18.0	18.0	13.4	26.6	120.0	9.9	23.1	120.0
Actuated g/C Ratio	0.30	0.36	1.00	0.08	0.15	0.15	0.11	0.22	1.00	0.08	0.19	1.00
v/c Ratio	1.05	0.56	0.15	0.59	1.05	0.61	0.83	0.99	0.10	0.99	0.78	0.41
Control Delay	82.7	33.0	0.2	61.2	102.2	14.2	70.5	72.3	0.1	93.3	66.5	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	33.0	0.2	61.2	102.2	14.2	70.5	72.3	0.1	93.3	66.5	4.6
LOS	F	C	A	E	F	B	E	E	A	F	E	A
Approach Delay		55.2			71.1			64.7			47.2	
Approach LOS		E			E			E			D	
Queue Length 50th (ft)	~461	233	0	66	~247	16	125	319	0	118	225	108
Queue Length 95th (ft)	#592	296	0	103	#362	101	#193	#423	0	#209	272	140
Internal Link Dist (ft)		1105			882			544			1159	
Turn Bay Length (ft)	720			440			420			460		460
Base Capacity (vph)	1015	1276	1583	314	530	449	391	1127	1583	283	977	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.56	0.15	0.54	1.05	0.61	0.81	0.99	0.10	0.99	0.78	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 37 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated

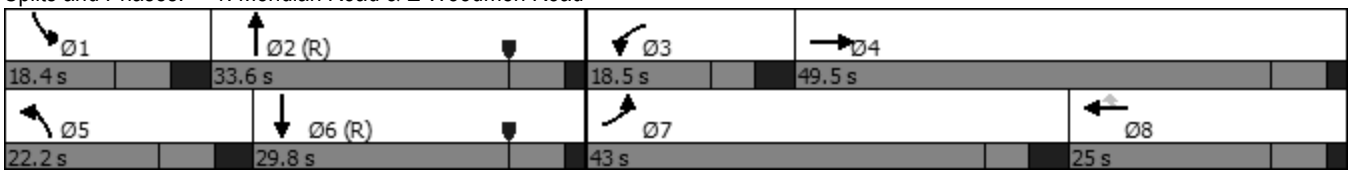
Maximum v/c Ratio: 1.05

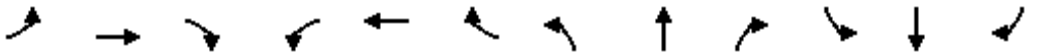
Intersection Signal Delay: 58.0	Intersection LOS: E
Intersection Capacity Utilization 93.9%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Meridian Road & E Woodmen Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	145	274	43	100	193	360	1726	161	123	1098	136
Future Volume (vph)	260	145	274	43	100	193	360	1726	161	123	1098	136
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	5085	1583	1770	5085	1583
Flt Permitted	0.538			0.657			0.120			0.090		
Satd. Flow (perm)	1944	1863	1583	1224	1863	1583	224	5085	1583	168	5085	1583
Satd. Flow (RTOR)			298			255			177			245
Lane Group Flow (vph)	283	158	298	47	109	210	391	1876	175	134	1193	148
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	8.0	8.0	5.0	8.0	8.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.5	14.5	14.5	12.5	14.5	14.5	12.5	22.5	22.5	13.5	22.5	22.5
Total Split (s)	15.0	24.0	24.0	12.6	21.6	21.6	38.0	64.4	64.4	19.0	45.4	45.4
Total Split (%)	12.5%	20.0%	20.0%	10.5%	18.0%	18.0%	31.7%	53.7%	53.7%	15.8%	37.8%	37.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.0	5.5	5.5
All-Red Time (s)	3.5	2.5	2.5	3.5	2.5	2.5	3.5	2.0	2.0	3.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	6.5	6.5	7.5	6.5	6.5	7.5	7.5	7.5	8.5	7.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.3	17.3	17.3	16.5	12.4	12.4	78.6	61.0	61.0	54.3	46.1	46.1
Actuated g/C Ratio	0.19	0.14	0.14	0.14	0.10	0.10	0.66	0.51	0.51	0.45	0.38	0.38
v/c Ratio	0.62	0.59	0.62	0.25	0.57	0.54	0.84	0.73	0.20	0.68	0.61	0.19
Control Delay	47.0	58.3	11.3	40.1	62.4	7.8	41.1	9.9	0.5	36.6	49.6	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.0	58.3	11.3	40.1	62.4	7.8	41.1	9.9	0.5	36.6	49.6	12.5
LOS	D	E	B	D	E	A	D	A	A	D	D	B
Approach Delay		35.0			28.2			14.2			44.7	
Approach LOS		D			C			B			D	
Queue Length 50th (ft)	95	118	0	29	81	0	176	267	0	68	354	24
Queue Length 95th (ft)	134	188	84	61	140	37	m155	m352	m1	#137	408	77
Internal Link Dist (ft)		323			570			1159			643	
Turn Bay Length (ft)	100		100	100		100	100		400	375		400
Base Capacity (vph)	454	288	497	191	234	422	539	2583	891	218	1954	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.55	0.60	0.25	0.47	0.50	0.73	0.73	0.20	0.61	0.61	0.19

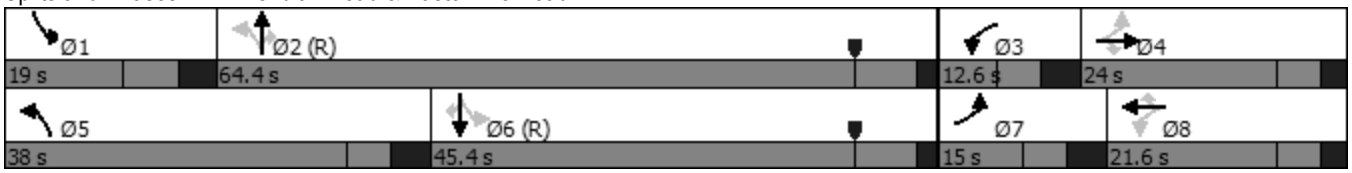
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 89 (74%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

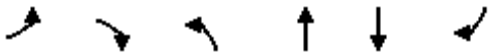
Maximum v/c Ratio: 0.84

Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Meridian Road & Eastonville Road





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	265	168	164	2096	1163	256
Future Volume (vph)	265	168	164	2096	1163	256
Satd. Flow (prot)	3433	1583	1770	5085	5085	1583
Flt Permitted	0.950		0.162			
Satd. Flow (perm)	3433	1583	302	5085	5085	1583
Satd. Flow (RTOR)		183				278
Lane Group Flow (vph)	288	183	178	2278	1264	278
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	8.0	8.0	5.0	15.0	15.0	15.0
Minimum Split (s)	15.5	15.5	13.5	22.5	22.5	22.5
Total Split (s)	29.0	29.0	29.0	91.0	62.0	62.0
Total Split (%)	24.2%	24.2%	24.2%	75.8%	51.7%	51.7%
Yellow Time (s)	4.0	4.0	5.0	5.5	5.5	5.5
All-Red Time (s)	3.5	3.5	3.5	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)	7.5	7.5	8.5	7.5	7.5	7.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.5	15.5	88.5	89.5	71.6	71.6
Actuated g/C Ratio	0.13	0.13	0.74	0.75	0.60	0.60
v/c Ratio	0.65	0.50	0.53	0.60	0.42	0.26
Control Delay	56.5	11.5	9.0	3.5	14.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	11.5	9.0	3.5	14.2	2.2
LOS	E	B	A	A	B	A
Approach Delay	39.0			3.9	12.0	
Approach LOS	D			A	B	
Queue Length 50th (ft)	111	0	7	19	178	0
Queue Length 95th (ft)	150	64	m29	50	258	41
Internal Link Dist (ft)	323			1273	472	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	615	433	473	3794	3034	1056
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	0.47	0.42	0.38	0.60	0.42	0.26

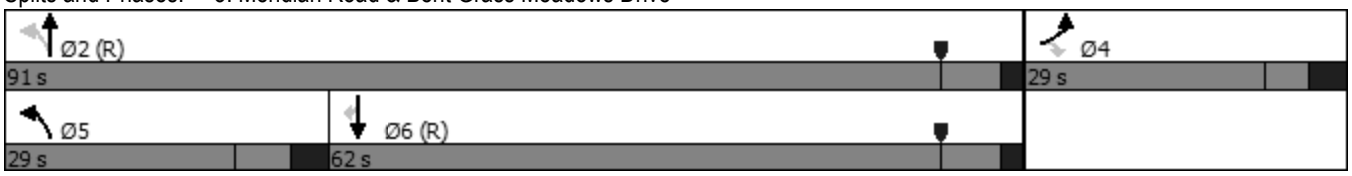
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 27 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 10.4	Intersection LOS: B
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 3: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	8.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	31	269	142	33	326
Future Vol, veh/h	147	31	269	142	33	326
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	195	-	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	160	34	292	154	36	354

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	194	0	898	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	738	-
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	-	-	1379	-	310	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	473	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1379	-	244	885
Mov Cap-2 Maneuver	-	-	-	-	244	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.4	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	713	-	-	1379	-
HCM Lane V/C Ratio	0.547	-	-	0.212	-
HCM Control Delay (s)	16	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.3	-	-	0.8	-

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	648	526	231
Demand Flow Rate, veh/h	661	536	235
Vehicles Circulating, veh/h	9	225	395
Vehicles Exiting, veh/h	752	405	275
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.6	8.9	6.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	661	536	235
Cap Entry Lane, veh/h	1367	1097	922
Entry HV Adj Factor	0.980	0.981	0.982
Flow Entry, veh/h	648	526	231
Cap Entry, veh/h	1340	1076	906
V/C Ratio	0.483	0.489	0.255
Control Delay, s/veh	7.6	8.9	6.6
LOS	A	A	A
95th %tile Queue, veh	3	3	1

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	10	0	0	0	21	91	0	0	72	0
Future Vol, veh/h	0	0	10	0	0	0	21	91	0	0	72	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	-	-	-	-	-	-	-	-	-	-	-	-
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	11	0	0	0	23	99	0	0	78	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	223	223	78	229	223	99	78	0	0	99	0	0
Stage 1	78	78	-	145	145	-	-	-	-	-	-	-
Stage 2	145	145	-	84	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	733	676	983	726	676	957	1520	-	-	1494	-	-
Stage 1	931	830	-	858	777	-	-	-	-	-	-	-
Stage 2	858	777	-	924	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	724	665	983	709	665	957	1520	-	-	1494	-	-
Mov Cap-2 Maneuver	724	665	-	709	665	-	-	-	-	-	-	-
Stage 1	916	830	-	844	765	-	-	-	-	-	-	-
Stage 2	844	765	-	914	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	1.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	983	-	1494	-	-
HCM Lane V/C Ratio	0.015	-	-	0.011	-	-	-	-
HCM Control Delay (s)	7.4	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	20	92	24	17	65
Future Vol, veh/h	19	20	92	24	17	65
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	21	22	100	26	18	71

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	220	113	0	0	126	0
Stage 1	113	-	-	-	-	-
Stage 2	107	-	-	-	-	-
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	768	940	-	-	1460	-
Stage 1	912	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	758	940	-	-	1460	-
Mov Cap-2 Maneuver	758	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	1.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1460	-
HCM Lane V/C Ratio	-	-	0.05	0.013	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	28	88	81	22	62
Future Vol, veh/h	65	28	88	81	22	62
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	71	30	96	88	24	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	255	140	0	0	184	0
Stage 1	140	-	-	-	-	-
Stage 2	115	-	-	-	-	-
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	734	908	-	-	1391	-
Stage 1	887	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	721	908	-	-	1391	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	769	1391	-
HCM Lane V/C Ratio	-	-	0.131	0.017	-
HCM Control Delay (s)	-	-	10.4	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	109	35	134	114	24	103
Future Vol, veh/h	109	35	134	114	24	103
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	118	38	146	124	26	112

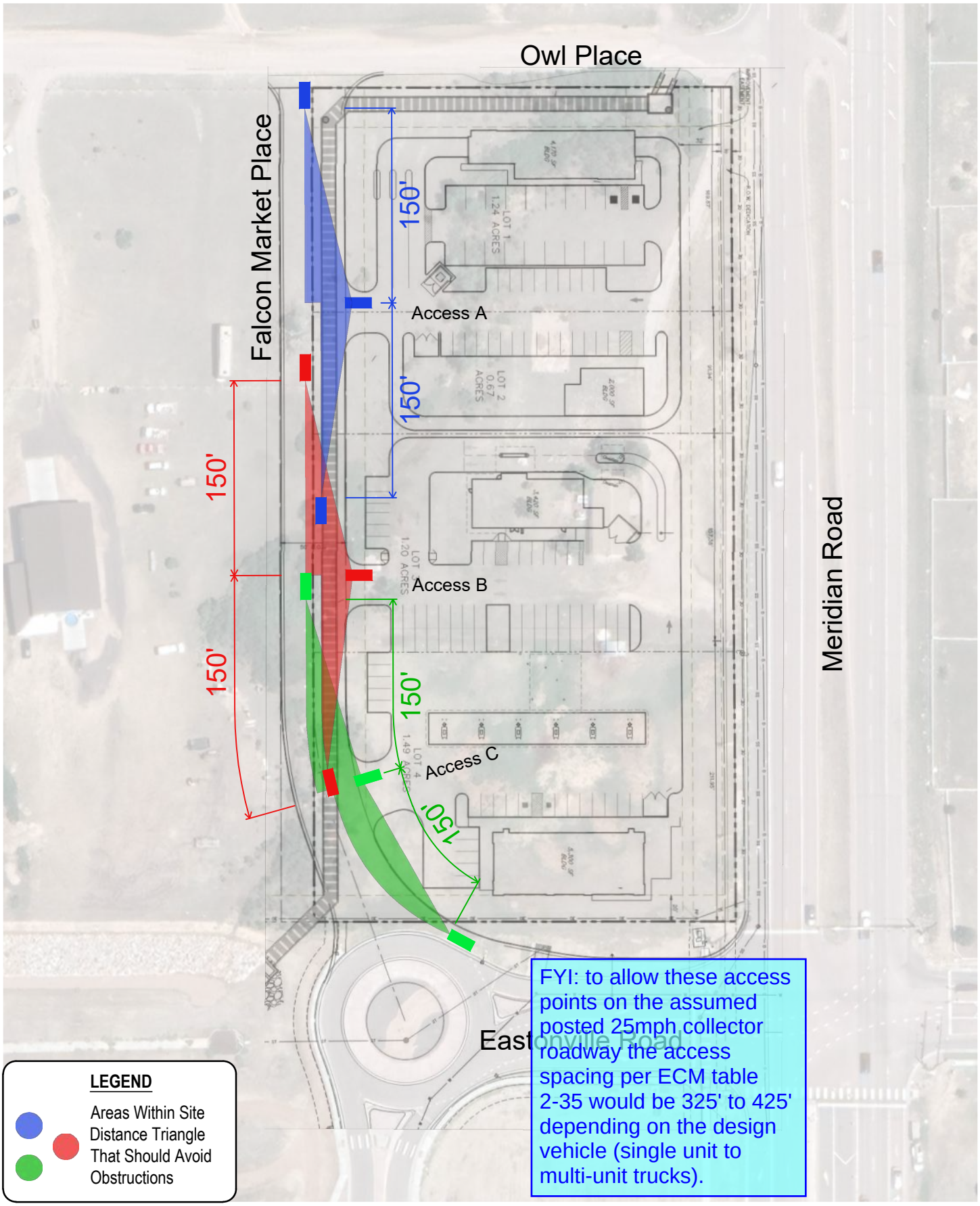
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	372	208	0	0	270	0
Stage 1	208	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	629	832	-	-	1293	-
Stage 1	827	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	616	832	-	-	1293	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	847	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	657	1293	-
HCM Lane V/C Ratio	-	-	0.238	0.02	-
HCM Control Delay (s)	-	-	12.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1	-

APPENDIX E

Conceptual Site Distance Exhibit



OWL PLACE COMMERCIAL
Intersection Sight Distance Exhibit

SM ROCHA, LLC
Traffic and Transportation Consultants

January 2023

0 100 North