

TRAFFIC IMPACT STUDY

Owl Place
Commercial

For

Owl & Meridian Commercial
El Paso County, Colorado

CR-22-001

June 2022

Also see FHU
comment
memo.

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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 & Meridian 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.

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.

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 understood to entail the new construction of a 4,000 square foot gas station convenience store supporting up to 14 vehicle fueling positions, an approximate 2,000 square foot coffee/donut shop with drive-through window, a 4,000 square foot automated car wash with one wash tunnel, and two high-turnover quick-serve restaurants of approximately 1,500 square feet and 2,900 square feet, respectively. For analysis purposes it is assumed that the smaller quick-serve restaurant will provide a drive-through and may operate as a fast-food restaurant. It is noted that land uses are conceptual in nature and may be subject to change.

Proposed access to the development is provided at the following locations: one full-movement access onto Owl Place (referred to as Access A), and one roundabout intersection onto future Eastonville Road extension (referred to as Access B). It is noted that the Eastonville Road extension and roundabout intersection is currently under construction. For analysis purposes, and given the conceptual nature of proposed land uses, proposed accesses are considered to be internal to the overall development area and are not specifically analyzed. Access operations are generally considered to be comparable to or better than that of the closest major intersection.

They will need to be, with preliminary plan

now completed

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.



Figure 1
SITE LOCATION



Existing and Committed Surface Transportation Network

Please **also** indicate that the 2040 roadway plan identifies woodmen Rd as an expressway (west of Meridian rd). (see page 54, map 14 of MTCP)

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, and Bent Grass Meadows 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 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.

The study intersections of Meridian Road with E Woodmen 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.

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.

Pursuant to ongoing adjacent development plans, it is anticipated that Eastonville Road will be extended further west with ultimate connections to E Woodmen Road to the south. As noted above, this extension is currently **under construction** and, for analysis purposes, is anticipated to be built-out by Year 2024. With this extension, it is also **anticipated** that the Eastonville Road intersection will be signalized and will provide dedicated turn lanes for all approaches with dual left turn lanes for the eastbound approach.

In reference to the County's MTCP, the remaining study area roadways appear to be built to their ultimate cross-sections excluding potential improvements required due to the proposed development.

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.

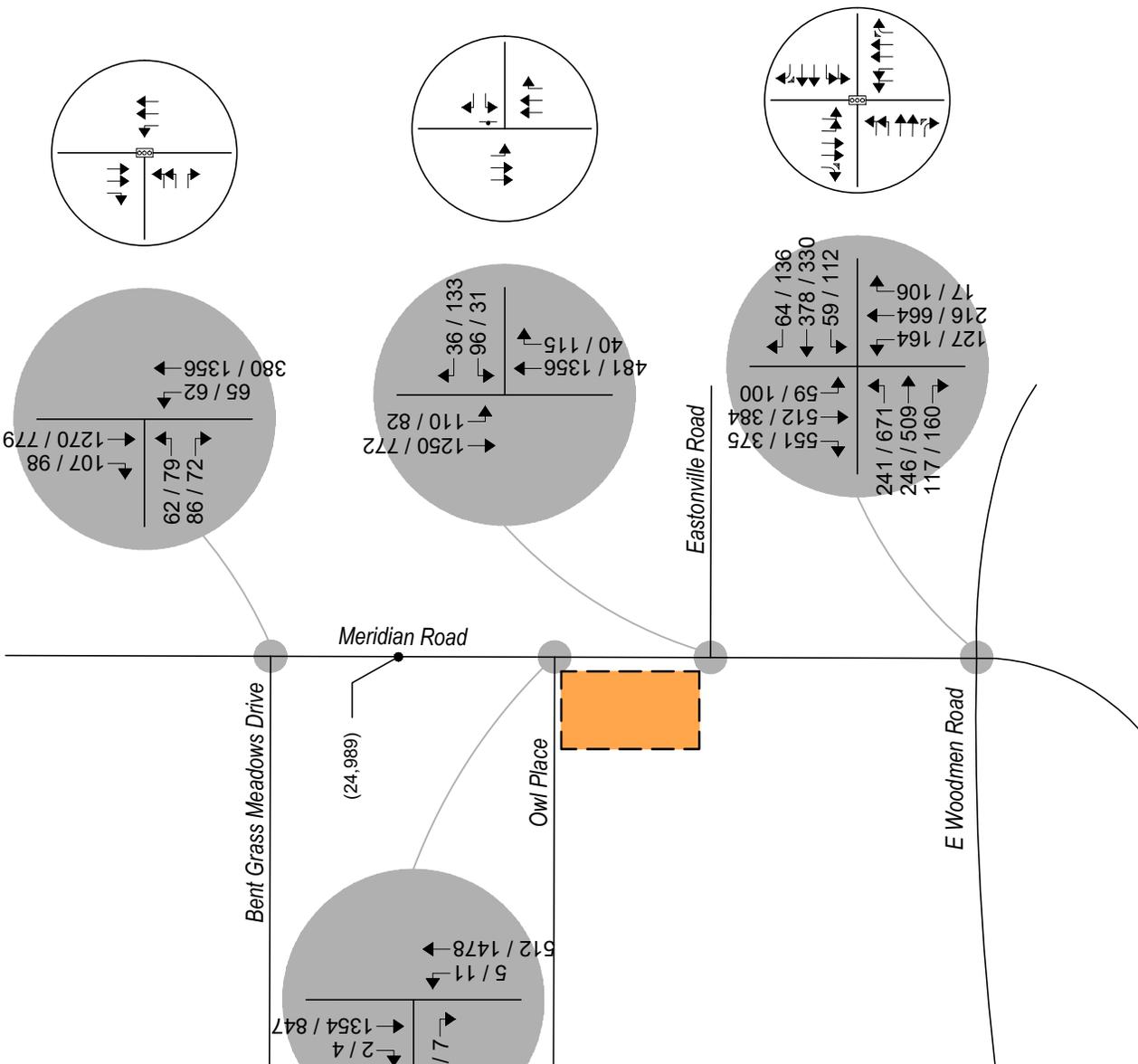
Peak hour traffic counts and 24-hour traffic volumes shown for Meridian Road and the intersection of Meridian Road with Bent Grass Meadows Drive were obtained from a previous traffic study³. Referenced counts were collected on March 29, 2022.

Newly collected and referenced counts representing existing traffic volumes, as well as existing intersection geometries, are shown on Figure 3.

Existing signal timing parameters for the intersections of Meridian Road with E Woodmen Road and Bent Grass Meadows Drive were assumed based on the existing signal head configuration and allowable movements, and pursuant to typical signal timing data described within the County's ECM. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

See recently approved
timing plan. (8/18, not
on EDARP yet)

³ Bent Grass Dunkin' Donuts, SM ROCHA, LLC, April 2022.



LEGEND

- Study Intersection Volumes
- Study Intersection Lane Geometry
- ▭ Development Site

Figure 3
EXISTING TRAFFIC
Volumes & 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 (30.5) | D (36.2) |
| Meridian Road / Bent Grass Meadows Drive (Signalized) | A (7.5) | A (6.8) |
| Meridian Road / Eastonville Road (Stop-Controlled) | | |
| Westbound Left | C | F |
| Westbound Right | A | B |
| Southbound Left | A | B |
| Meridian Road / Owl Place (Stop-Controlled) | | |
| Eastbound Right | B | A |
| Northbound Left | 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.

recently signalized

The unsignalized intersection of Meridian Road with Eastonville Road has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B during the afternoon peak traffic hour. Exceptions would include the westbound left turning movement 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.

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.

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

III. Future Traffic Conditions Without Proposed Development

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

To account for projected increases in background traffic for Years 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 Plan⁴ 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.

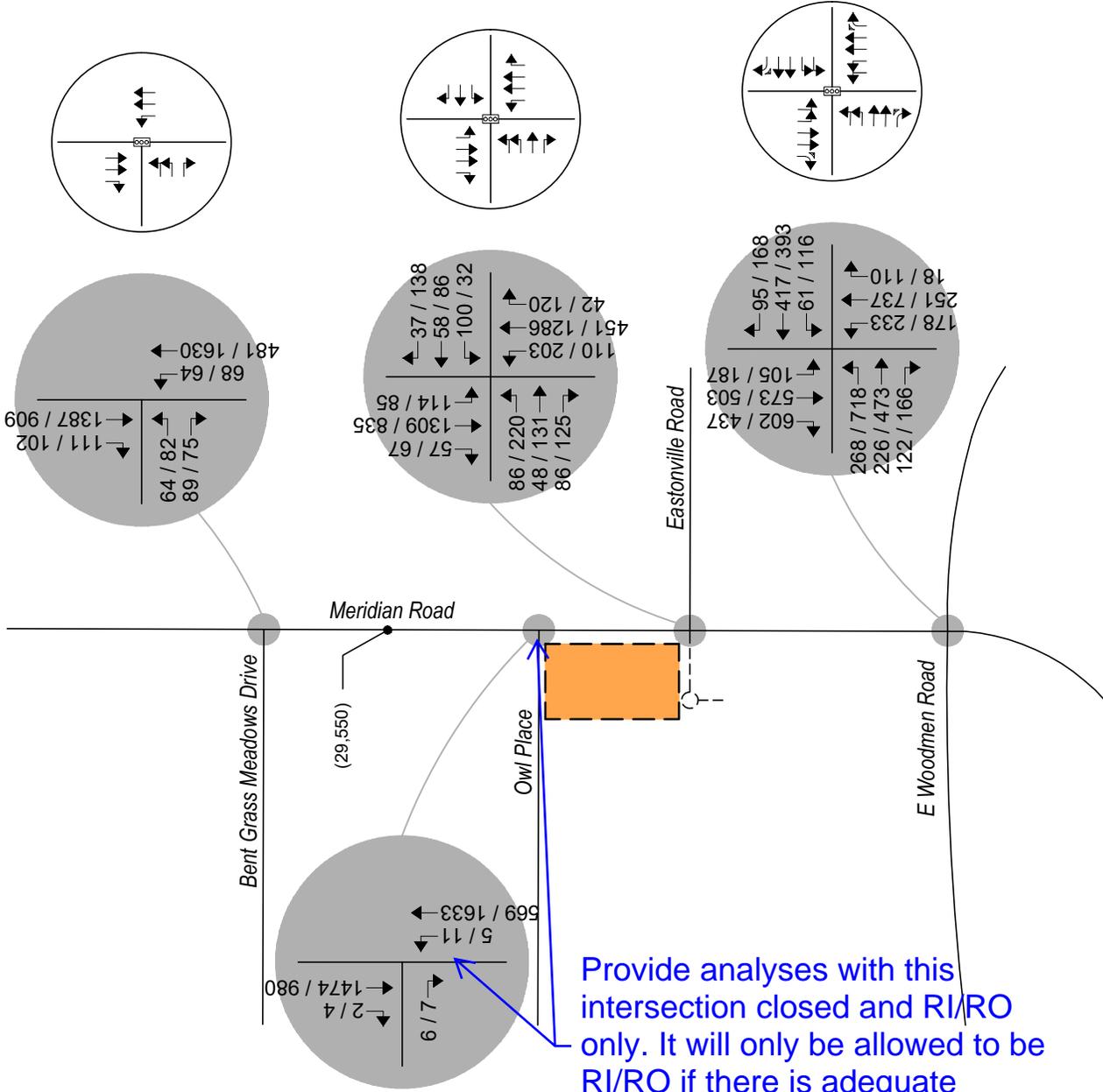
To account for projected traffic from adjacent developments not yet built, trip generations from the previously prepared Falcon Marketplace Traffic Impact Analysis⁵, provided by the County's Electronic Development Application Review Program (EDARP), were added to background traffic volumes.

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 Eastonville Road extension west of Meridian Road and the improvement of the intersection including signalization. Year 2040 also assumes signal timing parameters for the Meridian Road intersections with optimized intersection splits in effort to better long-term intersection performance.

Projected background traffic volumes and intersection geometry for Years 2024 and 2040 are shown on Figure 4 and Figure 5, respectively.

⁴ Moving Forward 2045: Pikes Peak Area Regional Transportation Plan, PPACG, January 2020.

⁵ Falcon Marketplace Traffic Impact Analysis, LSC Transportation Consultants Inc., September 2018.



LEGEND

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

OWL & MERIDIAN COMMERCIAL
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants

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

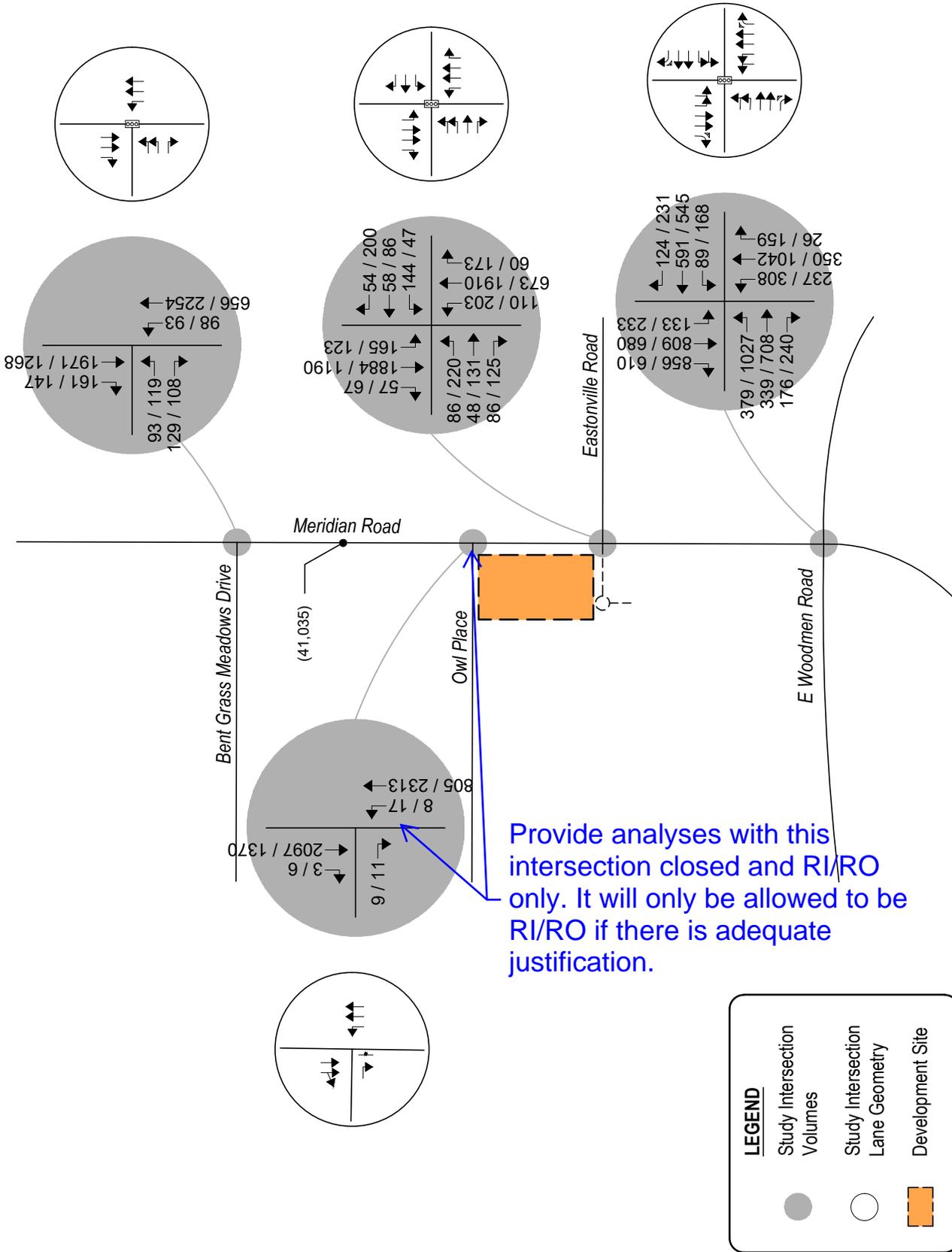


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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 (29.9) | D (39.0) |
| Meridian Road / Bent Grass Meadows Drive (Signalized) | A (8.3) | A (5.5) |
| Meridian Road / Eastonville Road (Signalized) | B (19.7) | C (21.5) |
| Meridian Road / Owl Place (Stop-Controlled) | | |
| Eastbound Right | B | B |
| Northbound Left | A | A |

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled 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 Bent Grass Meadows Drive has overall operations at LOS A during both the AM and PM peak traffic hours.

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

The unsignalized intersection of Meridian Road with Owl Place operates at or better than LOS B 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) | E (62.3) | E (68.7) |
| Meridian Road / Bent Grass Meadows Drive (Signalized) | B (18.1) | B (10.6) |
| Meridian Road / Eastonville Road (Signalized) | E (61.1) | D (45.7) |
| Meridian Road / Owl Place (Stop-Controlled) | | |
| Eastbound Right | C | B |
| Northbound Left | C | A |

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

The TIS should recommend background improvements and identify appropriate reimbursement potential.

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 E operations during both the AM and PM peak traffic hours. The LOS E operations anticipated during both peak traffic periods is primarily attributed to the high eastbound, northbound and southbound left turning volumes. Given that dual left turn lanes exist for all left turning movements, **no additional mitigation measures are currently recommended.** It is noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along 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 Bent Grass Meadows Drive experiences LOS B operations during both the AM and PM peak traffic hours.

The study intersection of Meridian Road with Eastonville Road experiences LOS E operations during the AM peak traffic hour and LOS D operations during the PM peak traffic hour. The LOS E operation anticipated during the AM peak traffic period is primarily attributed to the high southbound through volumes. To mitigate the anticipated LOS E operation, it is recommended increasing southbound signal split timing by taking away from eastbound and westbound signal split timing. However, this may result in increased vehicle queues along Eastonville Road. It is recommended that County Staff continues to monitor the intersection in order to determine if additional improvements such as roadway widening along Meridian Road may be necessary to increase available roadway capacity.

The study intersection of Meridian Road with Owl Place experiences LOS C operations during the AM peak traffic hour and LOS B or better operations during the PM peak traffic hour.

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 932 (High-Turnover (Sit-Down) Restaurant), 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 & Meridian 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 CODE | LAND USE | UNIT | TRIP GENERATION RATES | | | | | | |
|-------------|-------------------------------|------|-----------------------|--------------|-------|-------|--------------|-------|-------|
| | | | 24 HOUR | AM PEAK HOUR | | | PM PEAK HOUR | | |
| | | | | ENTER | EXIT | TOTAL | ENTER | EXIT | TOTAL |
| 932 | High-Turnover Restaurant | KSF | 107.20 | 5.26 | 4.31 | 9.57 | 5.52 | 3.53 | 9.05 |
| 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.

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 |
| 932 | High-Turnover Restaurant | 2.9 KSF | 312 | 15 | 13 | 28 | 16 | 10 | 26 |
| 934 | Fast-Food Restaurant w/DTW | 1.5 KSF | 701 | 34 | 33 | 67 | 26 | 24 | 50 |
| 937 | Coffee/Donut Shop w/DTW | 2.0 KSF | 1,078 | 89 | 85 | 174 | 39 | 39 | 79 |
| 945 | Convenience Store/Gas Station | 4.0 KSF | 2,802 | 113 | 113 | 226 | 109 | 109 | 218 |
| 948 | Automated Car Wash | 1 CWT | 775 | * | * | * | 39 | 39 | 78 |
| <i>Proposed Total:</i> | | | 5,669 | 251 | 243 | 494 | 229 | 221 | 450 |

Key: KSF = Thousand Square Feet Gross Floor Area. CWT = Car Wash Tunnels.
 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 5,669 daily vehicle trips with 494 of those occurring during the morning peak hour and 450 during the afternoon peak hour.

Adjustments to Trip Generation Rates

A development of this type is likely to attract trips from within area land uses as well as 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 | |
| | | | <i>Pass-By Trip Reduction:</i> | 22% | 0% | 0% | 0% | 43% | 43% | 43% |
| 932 | High-Turnover Restaurant | 2.9 KSF | 245 | 15 | 13 | 28 | 9 | 6 | 15 | |
| | | | <i>Pass-By Trip Reduction:</i> | 50% | 49% | 49% | 49% | 50% | 50% | 50% |
| 934 | Fast-Food Restaurant w/DTW | 1.5 KSF | 354 | 17 | 17 | 34 | 13 | 12 | 25 | |
| | | | <i>Pass-By Trip Reduction:</i> | 60% | 60% | 60% | 60% | 60% | 60% | 60% |
| 937 | Coffee/Donut Shop w/DTW | 2.0 KSF | 431 | 35 | 34 | 69 | 16 | 16 | 32 | |
| | | | <i>Pass-By Trip Reduction:</i> | 59% | 62% | 62% | 62% | 56% | 56% | 56% |
| 945 | Convenience Store/Gas Station | 4.0 KSF | 1,149 | 43 | 43 | 86 | 48 | 48 | 96 | |
| | | | <i>Pass-By Trip Reduction:</i> | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| 948 | Automated Car Wash | 1.0 CWT | 775 | * | * | * | 39 | 39 | 78 | |
| | | | <i>Proposed Total:</i> | 2,954 | 111 | 106 | 217 | 125 | 120 | 245 |

Key: KSF = Thousand Square Feet Gross Floor Area. CWT = Car Wash Tunnels.

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 2,954 new daily trips with 217 of those occurring during the morning peak hour and 245 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.

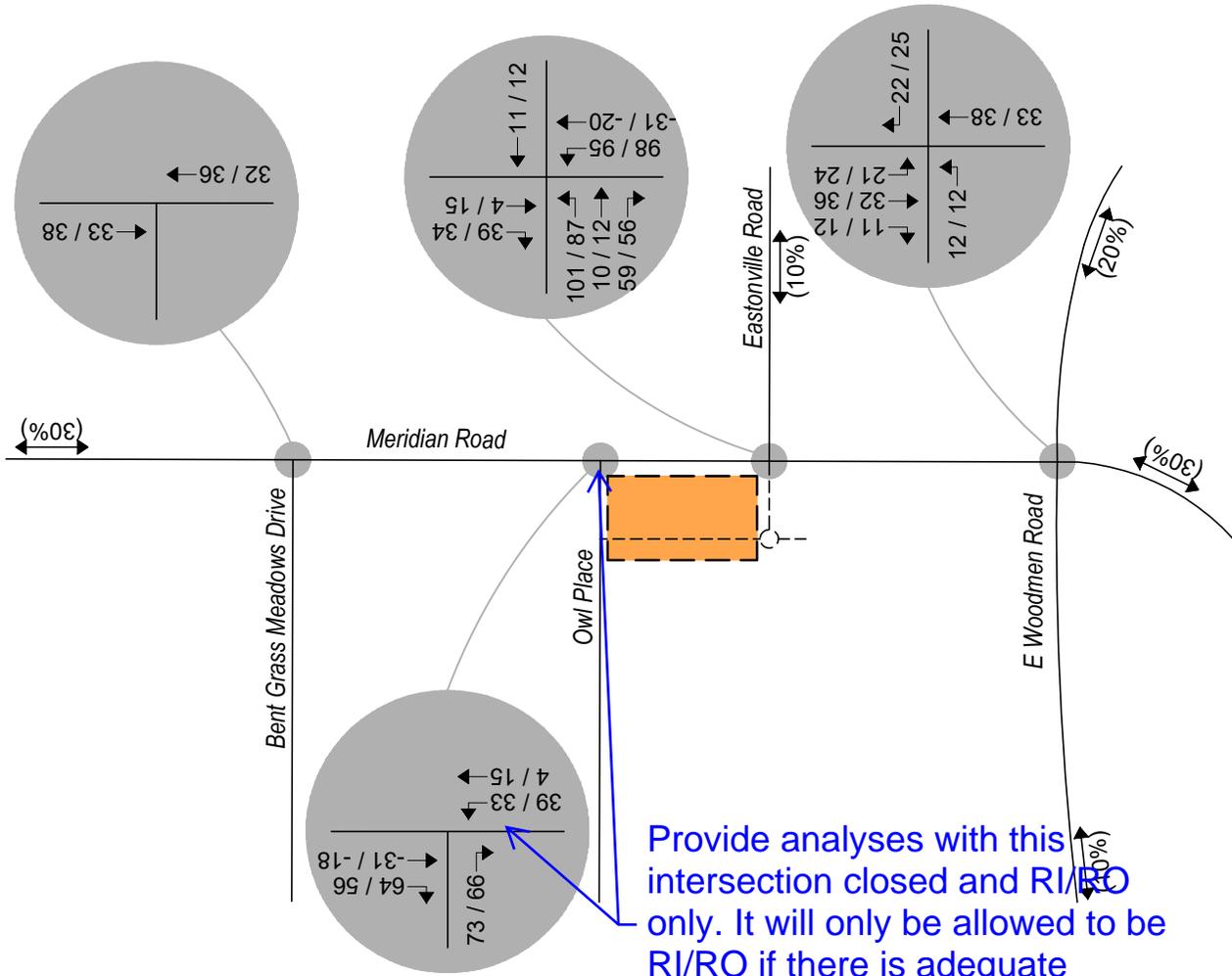
Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

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

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

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.



Provide analyses with this intersection closed and RI/RO only. It will only be allowed to be RI/RO if there is adequate justification.

LEGEND

- Study Intersection
- Volumes
- Development Site



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

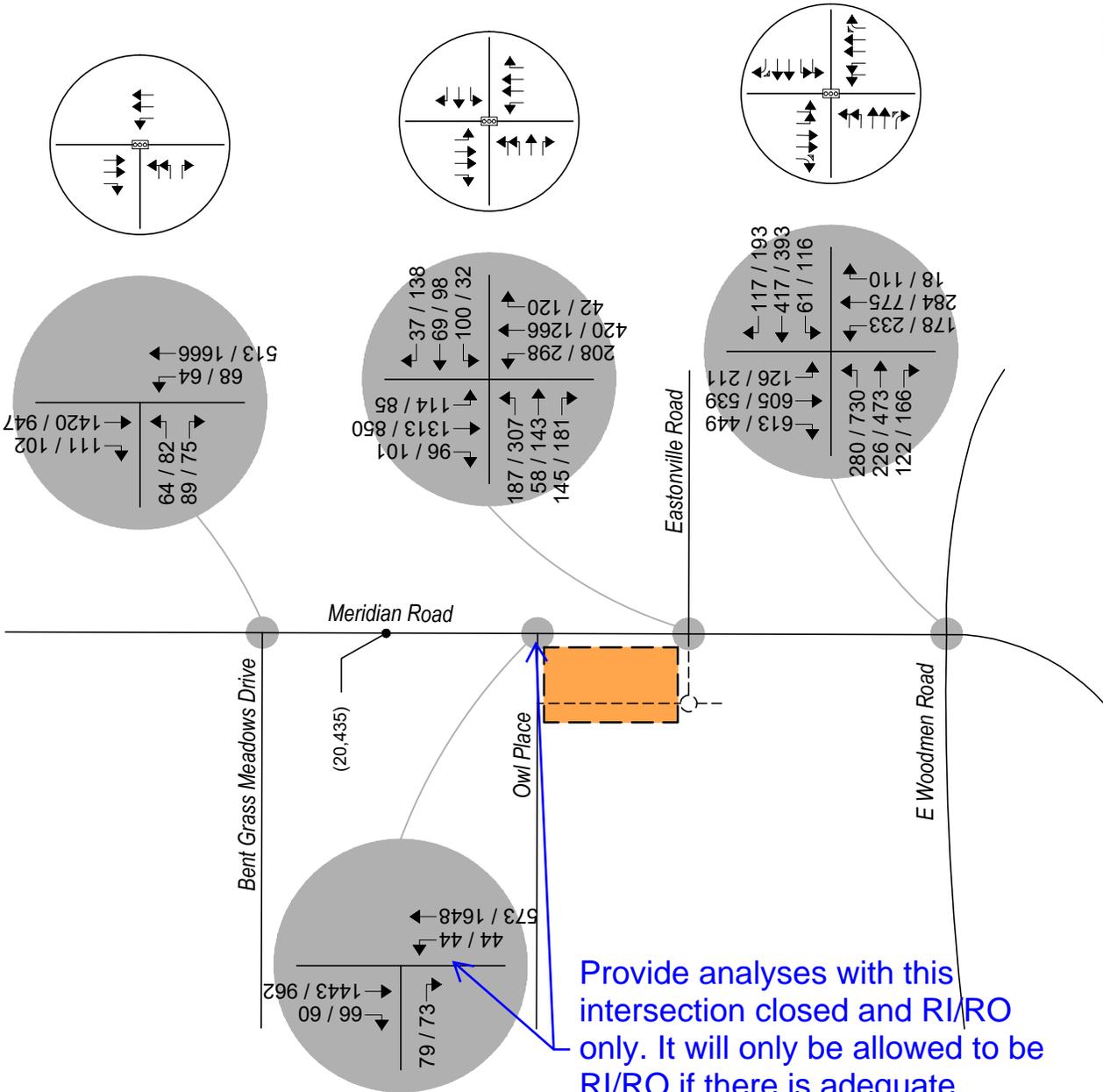
V. Future Traffic Conditions With Proposed Developments

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 paving of Owl Place along the property frontage and installation of exclusive turn lanes at site accesses as needed.

Projected Year 2024 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2040.



Provide analyses with this intersection closed and RI/RO only. It will only be allowed to be RI/RO if there is adequate justification.

LEGEND

- Study Intersection Volumes
- Study Intersection Lane Geometry
- Development Site

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

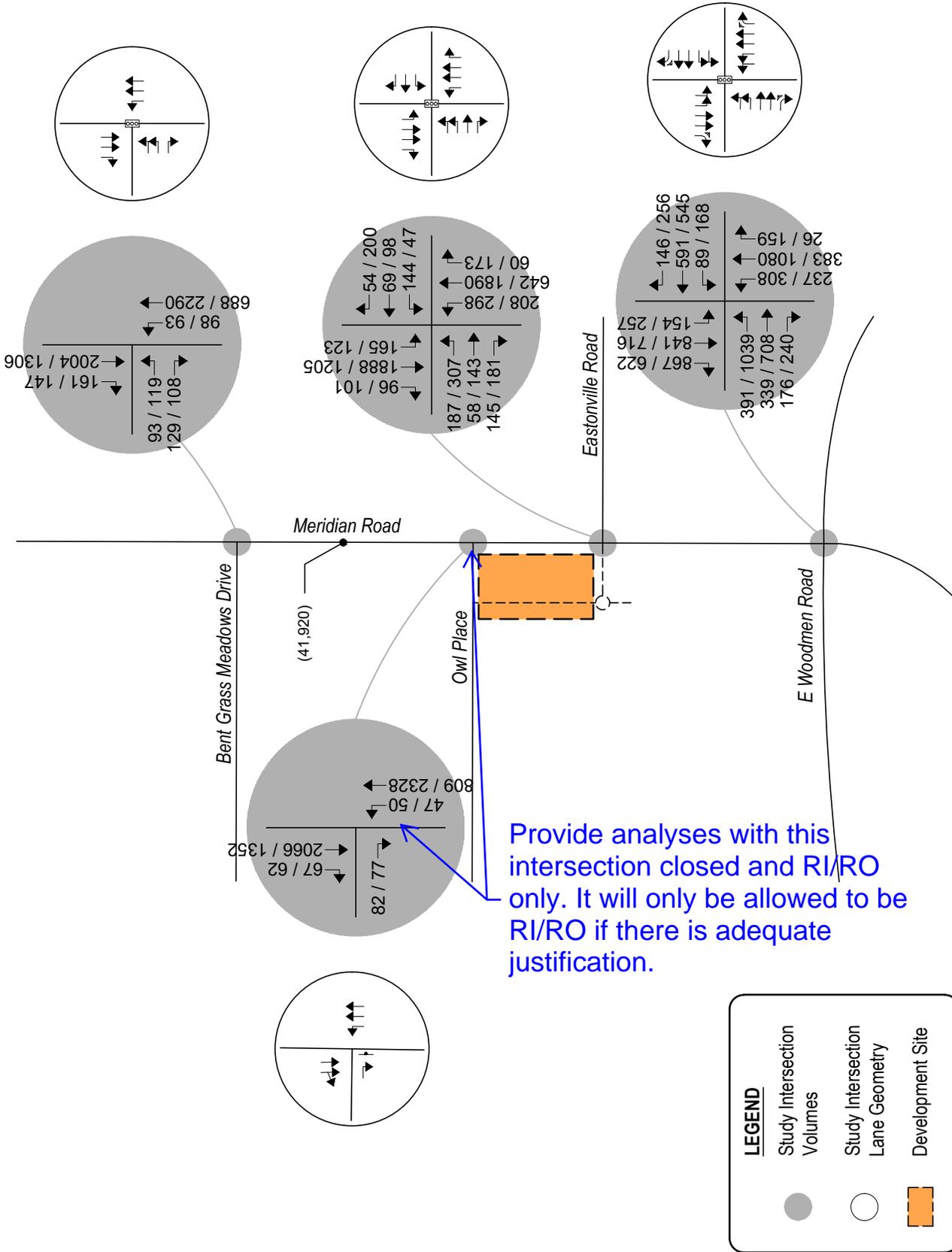


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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 (30.2) | D (40.3) |
| Meridian Road / Bent Grass Meadows Drive (Signalized) | A (8.4) | A (5.6) |
| Meridian Road / Eastonville Road (Signalized) | D (36.6) | C (25.1) |
| Meridian Road / Owl Place (Stop-Controlled) | | |
| Eastbound Right | B | B |
| Northbound Left | B | A |

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
Stop-Controlled 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) | E (68.9) | E (73.1) |
| Meridian Road / Bent Grass Meadows Drive (Signalized) | B (19.0) | B (10.4) |
| Meridian Road / Eastonville Road (Signalized) | F (144.9) | D (49.6) |
| Meridian Road / Owl Place (Stop-Controlled) | | |
| Eastbound Right | D | B |
| Northbound Left | C | A |

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

The TIS should recommend background improvements and identify appropriate reimbursement potential.

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 E operation during both the morning and afternoon peak traffic hours. 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. The LOS E operations anticipated during both peak traffic periods continue to be primarily attributed to the eastbound, northbound and southbound turning movements. As with background traffic conditions, given that dual left turn lanes exist for all left turning movements, **no additional mitigation measures are currently recommended.** It is however noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along 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 Bent Grass Meadows Drive is projected to have morning and afternoon peak traffic hour operations at LOS B.

The signalized intersection of Meridian Road with Eastonville Road is projected to have morning peak traffic hour operations at LOS F and LOS D during the afternoon peak traffic hour. The LOS F operation anticipated during the morning peak traffic period continues to be attributed to the high southbound through volumes. To mitigate the anticipated LOS F operation, it is recommended increasing southbound signal split timing by taking away from eastbound and westbound signal split timing. However, this may result in increased vehicle queues along Eastonville Road. It is recommended that County Staff continues to monitor the intersection in order to determine if additional improvements such as roadway widening along Meridian Road may be necessary to increase available roadway capacity.

Please also discuss/analyze for an acceleration lane from owl place to Eastonville. Currently there are acceleration lanes from Bent Grass to Owl Place and from Eastonville to Woodmen.

The stop-controlled intersection of Meridian Road with Owl Place is projected to have turning movement operations at LOS D or better for the morning peak traffic hour and LOS B or better for the afternoon peak traffic hour.

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 a left-turn westbound deceleration lane at Access A due to the high left-turn ingress volumes.

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.

No significant queues at the site access intersection of Meridian Road with Eastonville Road and Owl Place were indicated. The greatest on-site queue length anticipated occurs during the afternoon peak hour at the Eastonville Road intersection. The queue length is approximately 179 feet or between seven and eight vehicles for the eastbound approach, assuming a typical vehicle length of 25 feet. This queue length can be accommodated without impacting the roundabout intersection along Eastonville Road based on available intersection spacing and assumed geometry as previously considered within the Falcon Marketplace traffic study.

VII. Conclusion

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

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 intersection of Meridian Road with Eastonville Road has turning movement operations at or better than LOS C during the morning peak traffic hour and LOS B during the afternoon peak traffic hour. Exceptions would include the westbound left turning movement 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. 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. 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.

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 Bent Grass Meadows Drive has overall operations at LOS A during both the AM and PM peak traffic hours. The signalized intersection of Meridian Road with Eastonville Road has overall operations at LOS B during the AM peak traffic hour and LOS C during the PM peak traffic hour. The unsignalized intersection of Meridian Road with Owl Place operates 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 E operations during both the AM and PM peak traffic hours. The LOS E operations anticipated during both peak traffic periods is primarily attributed to the high eastbound, northbound and southbound left turning volumes. The study intersection of Meridian Road with Bent Grass Meadows Drive experiences LOS B operations during both the AM and PM peak traffic hours. The study intersection of Meridian Road with Eastonville Road experiences LOS E operations during the AM peak traffic hour and LOS D operations during the PM peak traffic hour. The LOS E operation anticipated during the AM peak traffic period is primarily attributed to the high southbound through volumes. The study intersection of Meridian Road with Owl Place experiences LOS C operations during the AM peak traffic hour and LOS B or better operations during the PM peak traffic hour.

It is noted that long-term operations may be better than shown given the potential for future planned roadway connections to the west along Woodmen Road to influence vehicle routes. As example, planned construction of future Banning Lewis Parkway within the City of Colorado Springs along 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 intersections 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 no negative impact to traffic operations for the existing and surrounding roadway system upon consideration of the various roadway and intersection control improvements assumed within this analysis. 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 D or better during peak traffic periods and upon build-out.

APPENDIX A

Traffic Count Data

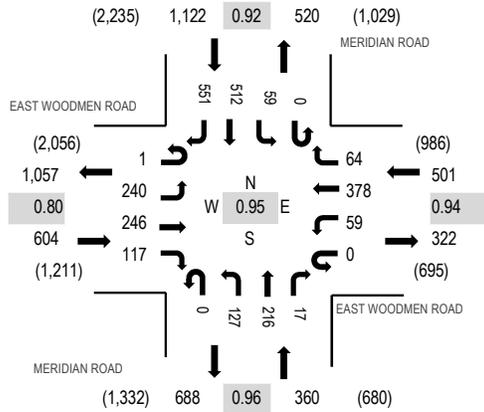
Location: 1 MERIDIAN ROAD & EAST WOODMEN ROAD AM

Date: Wednesday, June 1, 2022

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

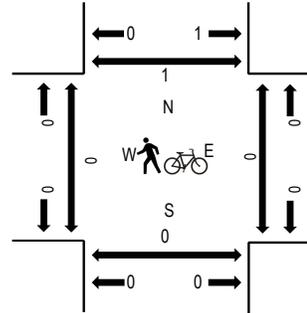
Peak 15-Minutes: 07:15 AM - 07:30 AM

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 | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------------|------|------|-------|--------------------------------|------|------|-------|-----------------------------|------|------|-------|-----------------------------|------|-------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 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 |

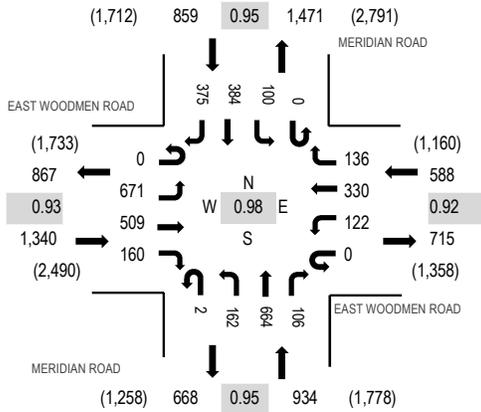
Location: 1 MERIDIAN ROAD & EAST WOODMEN ROAD PM

Date: Wednesday, June 1, 2022

Peak Hour: 04:45 PM - 05:45 PM

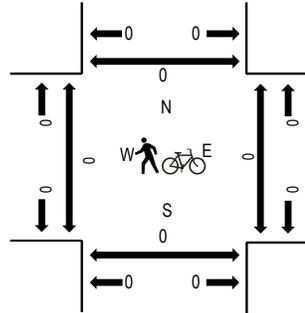
Peak 15-Minutes: 05:30 PM - 05:45 PM

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 | | | | 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 | 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 |

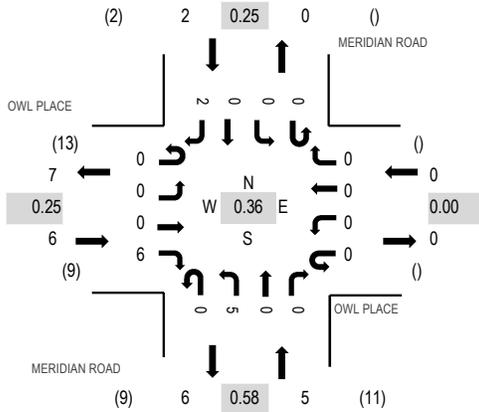
Location: 3 MERIDIAN ROAD & OWL PLACE AM

Date: Wednesday, June 1, 2022

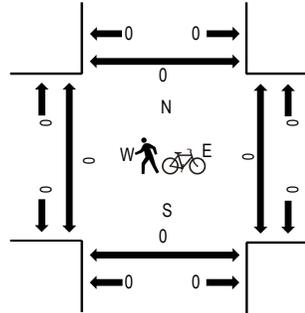
Peak Hour: 07:00 AM - 08:00 AM

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

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

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

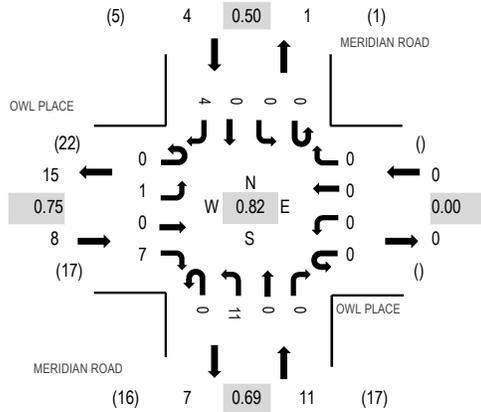
Location: 3 MERIDIAN ROAD & OWL PLACE PM

Date: Wednesday, June 1, 2022

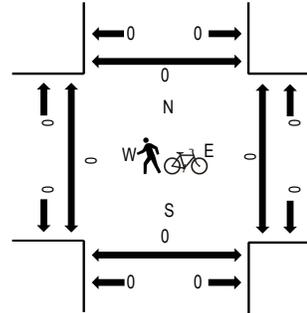
Peak Hour: 04:00 PM - 05:00 PM

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

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

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

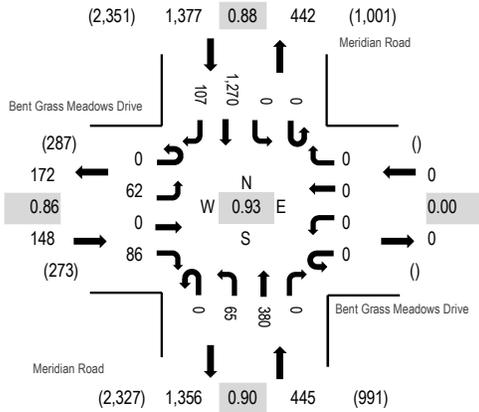
Location: 1 Meridian Road & Bent Grass Meadows Drive AM

Date: Tuesday, March 29, 2022

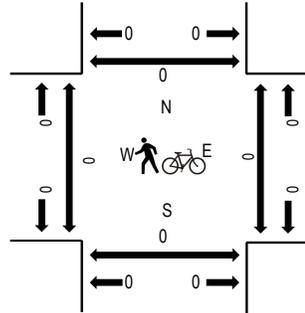
Peak Hour: 07:00 AM - 08:00 AM

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

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

| Interval Start Time | Bent Grass Meadows Drive Eastbound | | | | Bent Grass Meadows Drive Westbound | | | | Meridian Road Northbound | | | | Meridian Road Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | | |
|------------------------|------------------------------------|------|------|-------|------------------------------------|------|------|-------|--------------------------|------|------|-------|--------------------------|------|-------|-------|-------|--------------|----------------------|------|-------|-------|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North | |
| 7:00 AM | 0 | 17 | 0 | 18 | 0 | 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 | 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 | 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 | 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 | 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 | 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 | |

Location: 1 Meridian Road & Bent Grass Meadows Drive PM

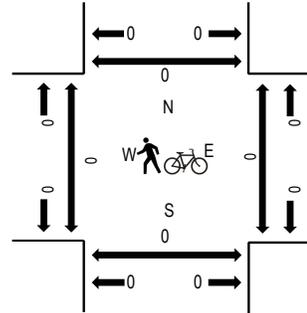
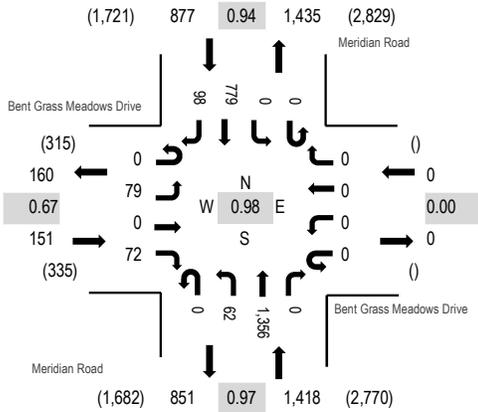
Date: Tuesday, March 29, 2022

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

| Interval Start Time | Bent Grass Meadows Drive Eastbound | | | | Bent Grass Meadows Drive Westbound | | | | Meridian Road Northbound | | | Meridian Road 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 | 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 |

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 | - |
| Vol. | - | 656 | 1364 | - |
| PM Peak | - | 17:00 | 16:00 | - |
| Vol. | - | 1400 | 846 | - |
| Grand Total | | 12308 | 12681 | 24989 |
| Percent | | 49.3% | 50.7% | |
| ADT | | ADT 24,989 | ADT 24,989 | |

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 ($v/c \leq 1.0$) | 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

Timings
1: Meridian Road & E Woodmen Road

Existing Traffic Volumes
AM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| 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) | | | 142 | | | 142 | | | 142 | | | 232 |
| Lane Group Flow (vph) | 262 | 267 | 127 | 64 | 411 | 70 | 138 | 235 | 18 | 64 | 557 | 599 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 15.0 | 30.0 | 30.0 | 10.0 | 25.0 | 25.0 | 10.0 | 50.0 | 50.0 | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 15.0% | 30.0% | 30.0% | 10.0% | 25.0% | 25.0% | 10.0% | 50.0% | 50.0% | 10.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 9.9 | 23.3 | 23.3 | 5.0 | 16.4 | 16.4 | 6.8 | 47.9 | 47.9 | 6.0 | 44.9 | 44.9 |
| Actuated g/C Ratio | 0.10 | 0.23 | 0.23 | 0.05 | 0.16 | 0.16 | 0.07 | 0.48 | 0.48 | 0.06 | 0.45 | 0.45 |
| v/c Ratio | 0.77 | 0.32 | 0.27 | 0.37 | 0.71 | 0.19 | 0.59 | 0.14 | 0.02 | 0.31 | 0.35 | 0.71 |
| Control Delay | 60.0 | 33.3 | 5.7 | 52.5 | 46.6 | 1.1 | 57.5 | 16.1 | 0.1 | 42.6 | 21.0 | 19.5 |
| 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 | 60.0 | 33.3 | 5.7 | 52.5 | 46.6 | 1.1 | 57.5 | 16.1 | 0.1 | 42.6 | 21.0 | 19.5 |
| LOS | E | C | A | D | D | A | E | B | A | D | C | B |
| Approach Delay | | 38.6 | | | 41.4 | | | 29.9 | | | 21.4 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 85 | 76 | 0 | 20 | 131 | 0 | 44 | 45 | 0 | 20 | 106 | 134 |
| Queue Length 95th (ft) | #143 | 110 | 37 | 42 | 178 | 0 | #98 | 70 | 0 | m41 | 175 | 278 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 343 | 871 | 496 | 171 | 672 | 415 | 233 | 1694 | 831 | 204 | 1589 | 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 | 0.76 | 0.31 | 0.26 | 0.37 | 0.61 | 0.17 | 0.59 | 0.14 | 0.02 | 0.31 | 0.35 | 0.71 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Timings
1: Meridian Road & E Woodmen Road

Existing Traffic Volumes
 AM Peak Hour

Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 30.5 Intersection LOS: C
 Intersection Capacity Utilization 62.9% ICU Level of Service B
 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

| | | | | |
|--|---|--|---|--|
|  Ø1 |  |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 50 s | | 10 s | 30 s |
|  Ø5 |  |  Ø6 (R) |  Ø7 |  Ø8 |
| 10 s | 50 s | | 15 s | 25 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Existing Traffic Volumes
AM Peak Hour



| 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 | | 0.151 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 281 | 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 25.0 | 25.0 | 15.0 | 75.0 | 60.0 | 60.0 |
| Total Split (%) | 25.0% | 25.0% | 15.0% | 75.0% | 60.0% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 7.6 | 7.6 | 84.5 | 84.7 | 75.6 | 75.6 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.84 | 0.85 | 0.76 | 0.76 |
| v/c Ratio | 0.26 | 0.45 | 0.22 | 0.14 | 0.52 | 0.09 |
| Control Delay | 45.3 | 16.6 | 4.7 | 1.1 | 7.6 | 1.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.3 | 16.6 | 4.7 | 1.1 | 7.6 | 1.3 |
| LOS | D | B | A | A | A | A |
| Approach Delay | 28.6 | | | 1.6 | 7.1 | |
| Approach LOS | C | | | A | A | |
| Queue Length 50th (ft) | 21 | 0 | 3 | 11 | 194 | 0 |
| Queue Length 95th (ft) | 41 | 46 | m8 | m18 | 283 | 17 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 686 | 391 | 386 | 2999 | 2675 | 1225 |
| 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 | 0.10 | 0.24 | 0.18 | 0.14 | 0.52 | 0.09 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Existing Traffic Volumes
 AM Peak Hour

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 56.8%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 2: Meridian Road & Bent Grass Meadows Drive

| | | | |
|--|------|--|--|
|  Ø2 (R) | |  Ø4 | |
| 75 s | | 25 s | |
|  Ø5 | |  Ø6 (R) | |
| 15 s | 60 s | | |

HCM 6th TWSC
3: Meridian Road & Eastonville Road

Existing Traffic Volumes
AM Peak Hour

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.6 | | | | | |
| 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 | *389 | *896 | - | - | 1277 | - |
| Stage 1 | *841 | - | - | - | - | - |
| Stage 2 | *559 | - | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 | - |
| Mov Cap-1 Maneuver | *352 | *896 | - | - | 1277 | - |
| Mov Cap-2 Maneuver | *352 | - | - | - | - | - |
| Stage 1 | *841 | - | - | - | - | - |
| Stage 2 | *507 | - | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|-----|
| HCM Control Delay, s | 16.7 | 0 | 0.7 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | 352 | 896 | 1277 | - |
| HCM Lane V/C Ratio | - | - | 0.296 | 0.044 | 0.094 | - |
| HCM Control Delay (s) | - | - | 19.5 | 9.2 | 8.1 | - |
| HCM Lane LOS | - | - | C | A | A | - |
| HCM 95th %tile Q(veh) | - | - | 1.2 | 0.1 | 0.3 | - |

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

HCM 6th TWSC
4: Meridian Road & Owl Place

Existing Traffic Volumes
AM Peak Hour

| 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 | - | - | - |
| 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 | - | 737 | 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 | *532 | *796 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | - | *532 | *796 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.9 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | * 796 | - | 532 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.012 | - | - |
| HCM Control Delay (s) | 9.6 | - | 11.9 | - | - |
| 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

Timings
1: Meridian Road & E Woodmen Road

Existing Traffic Volumes
PM Peak Hour

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|--|---|---|---|---|---|---|
| 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) | | | 174 | | | 164 | | | 164 | | | 408 |
| Lane Group Flow (vph) | 729 | 553 | 174 | 122 | 359 | 148 | 178 | 722 | 115 | 109 | 417 | 408 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 40.0 | 50.0 | 50.0 | 15.0 | 25.0 | 25.0 | 15.0 | 40.0 | 40.0 | 15.0 | 40.0 | 40.0 |
| Total Split (%) | 33.3% | 41.7% | 41.7% | 12.5% | 20.8% | 20.8% | 12.5% | 33.3% | 33.3% | 12.5% | 33.3% | 33.3% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 30.5 | 38.3 | 38.3 | 9.0 | 16.8 | 16.8 | 10.2 | 41.8 | 41.8 | 8.8 | 40.5 | 40.5 |
| Actuated g/C Ratio | 0.25 | 0.32 | 0.32 | 0.08 | 0.14 | 0.14 | 0.08 | 0.35 | 0.35 | 0.07 | 0.34 | 0.34 |
| v/c Ratio | 0.84 | 0.49 | 0.28 | 0.47 | 0.73 | 0.41 | 0.61 | 0.59 | 0.17 | 0.43 | 0.35 | 0.51 |
| Control Delay | 51.4 | 33.9 | 5.0 | 59.2 | 58.1 | 8.7 | 62.4 | 35.9 | 2.0 | 56.9 | 32.7 | 6.5 |
| 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 | 51.4 | 33.9 | 5.0 | 59.2 | 58.1 | 8.7 | 62.4 | 35.9 | 2.0 | 56.9 | 32.7 | 6.5 |
| LOS | D | C | A | E | E | A | E | D | A | E | C | A |
| Approach Delay | | 39.2 | | | 46.7 | | | 36.7 | | | 24.0 | |
| Approach LOS | | D | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 273 | 179 | 0 | 47 | 141 | 0 | 69 | 245 | 0 | 42 | 118 | 1 |
| Queue Length 95th (ft) | 331 | 218 | 46 | 78 | 191 | 47 | 108 | 336 | 15 | 75 | 174 | 85 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 1001 | 1297 | 690 | 286 | 561 | 388 | 301 | 1233 | 658 | 287 | 1193 | 804 |
| 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 | 0.73 | 0.43 | 0.25 | 0.43 | 0.64 | 0.38 | 0.59 | 0.59 | 0.17 | 0.38 | 0.35 | 0.51 |

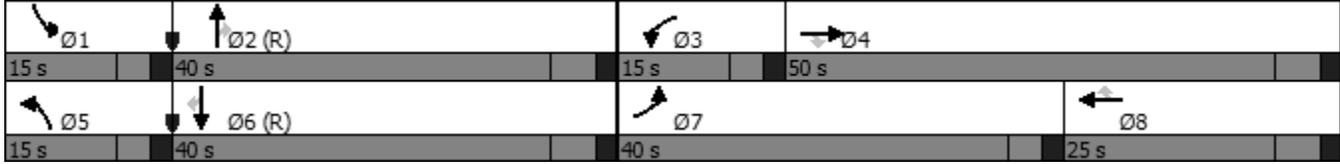
Intersection Summary
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Timings
 1: Meridian Road & E Woodmen Road

Existing Traffic Volumes
 PM Peak Hour

| | |
|---|------------------------|
| Maximum v/c Ratio: 0.84 | Intersection LOS: D |
| Intersection Signal Delay: 36.2 | ICU Level of Service C |
| Intersection Capacity Utilization 69.1% | |
| Analysis Period (min) 15 | |

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



Timings 2: Meridian Road & Bent Grass Meadows Drive

Existing Traffic Volumes
PM Peak Hour



| 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 | | 0.303 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 564 | 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 30.0 | 30.0 | 15.0 | 90.0 | 75.0 | 75.0 |
| Total Split (%) | 25.0% | 25.0% | 12.5% | 75.0% | 62.5% | 62.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 8.4 | 8.4 | 101.6 | 100.6 | 91.5 | 91.5 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.85 | 0.84 | 0.76 | 0.76 |
| v/c Ratio | 0.36 | 0.43 | 0.12 | 0.50 | 0.31 | 0.09 |
| Control Delay | 57.0 | 18.7 | 1.6 | 4.8 | 5.3 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.0 | 18.7 | 1.6 | 4.8 | 5.3 | 1.1 |
| LOS | E | B | A | A | A | A |
| Approach Delay | 38.8 | | | 4.7 | 4.8 | |
| Approach LOS | D | | | A | A | |
| Queue Length 50th (ft) | 33 | 0 | 3 | 301 | 100 | 0 |
| Queue Length 95th (ft) | 59 | 48 | m9 | 355 | 140 | 15 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 715 | 391 | 578 | 2966 | 2697 | 1232 |
| 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 | 0.12 | 0.20 | 0.12 | 0.50 | 0.31 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

HCM 6th TWSC
3: Meridian Road & Eastonville Road

Existing Traffic Volumes
PM Peak Hour

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 2.4 | | | | | |
| 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 |
| 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 | *77 | *523 | - | - | 721 |
| Stage 1 | *493 | - | - | - | - |
| Stage 2 | *732 | - | - | - | - |
| Platoon blocked, % | 1 | 1 | - | - | 1 |
| Mov Cap-1 Maneuver | *67 | *523 | - | - | 721 |
| Mov Cap-2 Maneuver | *67 | - | - | - | - |
| Stage 1 | *493 | - | - | - | - |
| Stage 2 | *642 | - | - | - | - |

| Approach | WB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 31.4 | 0 | 1 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h) | - | - | 67 | 523 | 721 | - |
| HCM Lane V/C Ratio | - | - | 0.503 | 0.276 | 0.124 | - |
| HCM Control Delay (s) | - | - | 104 | 14.5 | 10.7 | - |
| HCM Lane LOS | - | - | F | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 2 | 1.1 | 0.4 | - |

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

HCM 6th TWSC
4: Meridian Road & Owl Place

Existing Traffic Volumes
PM Peak Hour

| 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 | - | - | - |
| 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 | - | 463 | 925 | 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

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
 AM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 268 | 226 | 122 | 61 | 417 | 95 | 178 | 251 | 18 | 105 | 573 | 602 |
| Future Volume (vph) | 268 | 226 | 122 | 61 | 417 | 95 | 178 | 251 | 18 | 105 | 573 | 602 |
| 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) | | | 142 | | | 142 | | | 142 | | | 218 |
| Lane Group Flow (vph) | 291 | 246 | 133 | 66 | 453 | 103 | 193 | 273 | 20 | 114 | 623 | 654 |
| Turn Type | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 15.0 | 30.0 | 30.0 | 10.0 | 25.0 | 25.0 | 10.0 | 50.0 | 50.0 | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 15.0% | 30.0% | 30.0% | 10.0% | 25.0% | 25.0% | 10.0% | 50.0% | 50.0% | 10.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 10.0 | 24.1 | 24.1 | 5.0 | 17.1 | 17.1 | 6.9 | 44.8 | 44.8 | 6.1 | 44.0 | 44.0 |
| Actuated g/C Ratio | 0.10 | 0.24 | 0.24 | 0.05 | 0.17 | 0.17 | 0.07 | 0.45 | 0.45 | 0.06 | 0.44 | 0.44 |
| v/c Ratio | 0.85 | 0.29 | 0.27 | 0.39 | 0.75 | 0.27 | 0.81 | 0.17 | 0.03 | 0.55 | 0.40 | 0.80 |
| Control Delay | 67.3 | 32.4 | 6.2 | 52.8 | 47.6 | 4.2 | 74.3 | 17.1 | 0.1 | 68.8 | 10.1 | 12.0 |
| 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 | 67.3 | 32.4 | 6.2 | 52.8 | 47.6 | 4.2 | 74.3 | 17.1 | 0.1 | 68.8 | 10.1 | 12.0 |
| LOS | E | C | A | D | D | A | E | B | A | E | B | B |
| Approach Delay | | 42.4 | | | 41.0 | | | 39.1 | | | 15.8 | |
| Approach LOS | | D | | | D | | | D | | | B | |
| Queue Length 50th (ft) | 95 | 68 | 0 | 21 | 144 | 0 | 64 | 54 | 0 | 40 | 40 | 0 |
| Queue Length 95th (ft) | #165 | 102 | 41 | 43 | 196 | 22 | #145 | 80 | 0 | m56 | 59 | 105 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 343 | 880 | 500 | 171 | 672 | 415 | 237 | 1586 | 788 | 209 | 1557 | 818 |
| 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 | 0.85 | 0.28 | 0.27 | 0.39 | 0.67 | 0.25 | 0.81 | 0.17 | 0.03 | 0.55 | 0.40 | 0.80 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
 AM Peak Hour - Year 2024

Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 29.9 Intersection LOS: C
 Intersection Capacity Utilization 68.0% 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

| | | | |
|--|--|---|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 50 s | 10 s | 30 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 10 s | 50 s | 15 s | 25 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
AM Peak Hour - Year 2024



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 64 | 89 | 68 | 481 | 1387 | 111 |
| Future Volume (vph) | 64 | 89 | 68 | 481 | 1387 | 111 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.122 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 227 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 97 | | | | 121 |
| Lane Group Flow (vph) | 70 | 97 | 74 | 523 | 1508 | 121 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 25.0 | 25.0 | 15.0 | 75.0 | 60.0 | 60.0 |
| Total Split (%) | 25.0% | 25.0% | 15.0% | 75.0% | 60.0% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 7.7 | 7.7 | 82.3 | 81.3 | 72.1 | 72.1 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.82 | 0.81 | 0.72 | 0.72 |
| v/c Ratio | 0.27 | 0.46 | 0.26 | 0.18 | 0.59 | 0.10 |
| Control Delay | 45.4 | 16.5 | 9.4 | 1.6 | 8.9 | 1.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.4 | 16.5 | 9.4 | 1.6 | 8.9 | 1.3 |
| LOS | D | B | A | A | A | A |
| Approach Delay | 28.6 | | | 2.6 | 8.3 | |
| Approach LOS | C | | | A | A | |
| Queue Length 50th (ft) | 22 | 0 | 4 | 30 | 226 | 0 |
| Queue Length 95th (ft) | 43 | 48 | 32 | 36 | 336 | 18 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 686 | 394 | 340 | 2878 | 2550 | 1174 |
| 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 | 0.10 | 0.25 | 0.22 | 0.18 | 0.59 | 0.10 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated

Timings

2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
AM Peak Hour - Year 2024

| | |
|---|------------------------|
| Maximum v/c Ratio: 0.59 | |
| Intersection Signal Delay: 8.3 | Intersection LOS: A |
| Intersection Capacity Utilization 60.0% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Meridian Road & Bent Grass Meadows Drive

| | | |
|--|--|--|
|  Ø2 (R) 75 s |  |  Ø4 25 s |
|  Ø5 15 s |  Ø6 (R) 60 s | |

Timings
3: Meridian Road & Eastonville Road

Background Traffic Volumes
AM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 86 | 48 | 86 | 100 | 58 | 37 | 110 | 451 | 42 | 114 | 1309 | 57 |
| Future Volume (vph) | 86 | 48 | 86 | 100 | 58 | 37 | 110 | 451 | 42 | 114 | 1309 | 57 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.716 | | | 0.424 | | | 0.088 | | | 0.460 | | |
| Satd. Flow (perm) | 2587 | 1863 | 1583 | 790 | 1863 | 1583 | 164 | 3539 | 1583 | 857 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 196 | | | 142 | | | 185 | | | 185 |
| Lane Group Flow (vph) | 93 | 52 | 93 | 109 | 63 | 40 | 120 | 490 | 46 | 124 | 1423 | 62 |
| Turn Type | 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 25.0 | 25.0 | 25.0 | 40.0 | 40.0 | 10.0 | 40.0 | 40.0 | 10.0 | 40.0 | 40.0 |
| Total Split (%) | 10.0% | 25.0% | 25.0% | 25.0% | 40.0% | 40.0% | 10.0% | 40.0% | 40.0% | 10.0% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 12.1 | 8.2 | 8.2 | 21.6 | 13.7 | 13.7 | 63.7 | 54.1 | 54.1 | 62.8 | 53.7 | 53.7 |
| Actuated g/C Ratio | 0.12 | 0.08 | 0.08 | 0.22 | 0.14 | 0.14 | 0.64 | 0.54 | 0.54 | 0.63 | 0.54 | 0.54 |
| v/c Ratio | 0.26 | 0.34 | 0.30 | 0.40 | 0.25 | 0.12 | 0.50 | 0.26 | 0.05 | 0.20 | 0.75 | 0.07 |
| Control Delay | 31.2 | 48.6 | 2.5 | 34.5 | 38.7 | 0.7 | 19.3 | 14.2 | 2.1 | 9.5 | 21.8 | 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 | 31.2 | 48.6 | 2.5 | 34.5 | 38.7 | 0.7 | 19.3 | 14.2 | 2.1 | 9.5 | 21.8 | 0.4 |
| LOS | C | D | A | C | D | A | B | B | A | A | C | A |
| Approach Delay | | 23.8 | | | 29.4 | | | 14.3 | | | 20.0 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| Queue Length 50th (ft) | 24 | 32 | 0 | 57 | 36 | 0 | 18 | 111 | 1 | 26 | 243 | 0 |
| Queue Length 95th (ft) | 40 | 68 | 0 | 95 | 70 | 0 | m92 | m144 | m6 | m76 | #583 | m1 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 356 | 372 | 473 | 388 | 652 | 646 | 242 | 1913 | 940 | 613 | 1899 | 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 | 0.26 | 0.14 | 0.20 | 0.28 | 0.10 | 0.06 | 0.50 | 0.26 | 0.05 | 0.20 | 0.75 | 0.07 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Background Traffic Volumes
AM Peak Hour - Year 2024

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 19.7

Intersection LOS: B

Intersection Capacity Utilization 67.8%

ICU Level of Service C

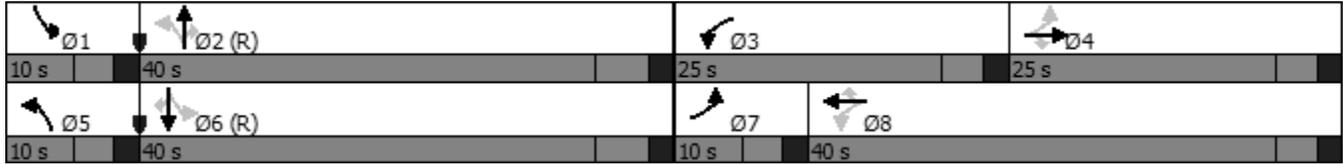
Analysis Period (min) 15

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: 3: Meridian Road & Eastonville Road



HCM 6th TWSC
4: Meridian Road & Owl Place

Background Traffic Volumes
AM Peak Hour - Year 2024

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↖ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 6 | 5 | 569 | 1474 | 2 |
| Future Vol, veh/h | 0 | 6 | 5 | 569 | 1474 | 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 | - | - | - |
| 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 | 618 | 1602 | 2 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | - | 802 | 1604 | 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 | *502 | *750 | - | - |
| Stage 1 | 0 | - | - | - | - |
| Stage 2 | 0 | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - |
| Mov Cap-1 Maneuver | - | *502 | *750 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 12.3 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | * 750 | - | 502 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.013 | - | - |
| HCM Control Delay (s) | 9.8 | - | 12.3 | - | - |
| 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

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
PM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 718 | 473 | 166 | 116 | 393 | 168 | 233 | 737 | 110 | 187 | 503 | 437 |
| Future Volume (vph) | 718 | 473 | 166 | 116 | 393 | 168 | 233 | 737 | 110 | 187 | 503 | 437 |
| 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) | | | 180 | | | 170 | | | 164 | | | 475 |
| Lane Group Flow (vph) | 780 | 514 | 180 | 126 | 427 | 183 | 253 | 801 | 120 | 203 | 547 | 475 |
| Turn Type | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 40.0 | 50.0 | 50.0 | 15.0 | 25.0 | 25.0 | 15.0 | 40.0 | 40.0 | 15.0 | 40.0 | 40.0 |
| Total Split (%) | 33.3% | 41.7% | 41.7% | 12.5% | 20.8% | 20.8% | 12.5% | 33.3% | 33.3% | 12.5% | 33.3% | 33.3% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 31.7 | 40.7 | 40.7 | 9.1 | 18.1 | 18.1 | 11.2 | 37.9 | 37.9 | 10.3 | 37.0 | 37.0 |
| Actuated g/C Ratio | 0.26 | 0.34 | 0.34 | 0.08 | 0.15 | 0.15 | 0.09 | 0.32 | 0.32 | 0.09 | 0.31 | 0.31 |
| v/c Ratio | 0.86 | 0.43 | 0.27 | 0.48 | 0.80 | 0.48 | 0.79 | 0.72 | 0.20 | 0.69 | 0.50 | 0.58 |
| Control Delay | 52.3 | 31.4 | 4.8 | 59.5 | 61.4 | 12.8 | 71.3 | 41.6 | 2.4 | 84.3 | 26.9 | 5.4 |
| 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 | 52.3 | 31.4 | 4.8 | 59.5 | 61.4 | 12.8 | 71.3 | 41.6 | 2.4 | 84.3 | 26.9 | 5.4 |
| LOS | D | C | A | E | E | B | E | D | A | F | C | A |
| Approach Delay | | 39.2 | | | 49.0 | | | 44.0 | | | 28.1 | |
| Approach LOS | | D | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 292 | 155 | 0 | 48 | 167 | 9 | 100 | 302 | 0 | 80 | 164 | 24 |
| Queue Length 95th (ft) | 360 | 202 | 47 | 80 | 226 | 76 | #176 | 379 | 19 | #133 | 131 | 58 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 1001 | 1297 | 694 | 286 | 564 | 395 | 321 | 1118 | 612 | 300 | 1091 | 816 |
| 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 | 0.40 | 0.26 | 0.44 | 0.76 | 0.46 | 0.79 | 0.72 | 0.20 | 0.68 | 0.50 | 0.58 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
 PM Peak Hour - Year 2024

Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 39.0 Intersection LOS: D
 Intersection Capacity Utilization 75.4% 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.

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

| | | | | |
|--|---|--|--|--|
|  Ø1 |  |  Ø2 (R) |  Ø3 |  Ø4 |
| 15 s | 40 s | | 15 s | 50 s |
|  Ø5 |  |  Ø6 (R) |  Ø7 |  Ø8 |
| 15 s | 40 s | | 40 s | 25 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
PM Peak Hour - Year 2024



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↖ | ↖ | ↖ | ↑↑ | ↑↑ | ↖ |
| Traffic Volume (vph) | 82 | 75 | 64 | 1630 | 909 | 102 |
| Future Volume (vph) | 82 | 75 | 64 | 1630 | 909 | 102 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.257 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 479 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 82 | | | | 111 |
| Lane Group Flow (vph) | 89 | 82 | 70 | 1772 | 988 | 111 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 30.0 | 30.0 | 15.0 | 90.0 | 75.0 | 75.0 |
| Total Split (%) | 25.0% | 25.0% | 12.5% | 75.0% | 62.5% | 62.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 8.5 | 8.5 | 101.5 | 100.5 | 91.4 | 91.4 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.85 | 0.84 | 0.76 | 0.76 |
| v/c Ratio | 0.37 | 0.44 | 0.15 | 0.60 | 0.37 | 0.09 |
| Control Delay | 57.0 | 18.6 | 1.5 | 2.6 | 5.7 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.0 | 18.6 | 1.5 | 2.6 | 5.7 | 1.0 |
| LOS | E | B | A | A | A | A |
| Approach Delay | 38.6 | | | 2.5 | 5.2 | |
| Approach LOS | D | | | A | A | |
| Queue Length 50th (ft) | 34 | 0 | 5 | 90 | 123 | 0 |
| Queue Length 95th (ft) | 60 | 49 | m6 | 102 | 172 | 15 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 715 | 394 | 512 | 2963 | 2694 | 1231 |
| 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 | 0.12 | 0.21 | 0.14 | 0.60 | 0.37 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Timings

2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
PM Peak Hour - Year 2024

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 5.5

Intersection LOS: A

Intersection Capacity Utilization 58.4%

ICU Level of Service B

Analysis Period (min) 15

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

Splits and Phases: 2: Meridian Road & Bent Grass Meadows Drive

| | | | |
|--|--|--|--|
|  Ø2 (R) | |  Ø4 | |
| 90 s | | 30 s | |
|  Ø5 |  Ø6 (R) | | |
| 15 s | 75 s | | |

Timings
3: Meridian Road & Eastonville Road

Background Traffic Volumes
 PM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 220 | 131 | 125 | 32 | 86 | 138 | 203 | 1286 | 120 | 85 | 835 | 67 |
| Future Volume (vph) | 220 | 131 | 125 | 32 | 86 | 138 | 203 | 1286 | 120 | 85 | 835 | 67 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.673 | | | 0.523 | | | 0.236 | | | 0.113 | | |
| Satd. Flow (perm) | 2432 | 1863 | 1583 | 974 | 1863 | 1583 | 440 | 3539 | 1583 | 210 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 209 | | | 164 | | | 155 | | | 200 |
| Lane Group Flow (vph) | 239 | 142 | 136 | 35 | 93 | 150 | 221 | 1398 | 130 | 92 | 908 | 73 |
| Turn Type | 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 25.0 | 25.0 | 25.0 | 40.0 | 40.0 | 20.0 | 60.0 | 60.0 | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 8.3% | 20.8% | 20.8% | 20.8% | 33.3% | 33.3% | 16.7% | 50.0% | 50.0% | 8.3% | 41.7% | 41.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 20.5 | 17.5 | 17.5 | 22.8 | 15.4 | 15.4 | 82.4 | 70.2 | 70.2 | 76.5 | 67.1 | 67.1 |
| Actuated g/C Ratio | 0.17 | 0.15 | 0.15 | 0.19 | 0.13 | 0.13 | 0.69 | 0.58 | 0.58 | 0.64 | 0.56 | 0.56 |
| v/c Ratio | 0.52 | 0.53 | 0.33 | 0.15 | 0.39 | 0.43 | 0.52 | 0.68 | 0.13 | 0.38 | 0.46 | 0.08 |
| Control Delay | 45.6 | 55.1 | 2.7 | 36.2 | 50.5 | 9.0 | 14.8 | 22.3 | 5.7 | 16.6 | 16.0 | 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 | 45.6 | 55.1 | 2.7 | 36.2 | 50.5 | 9.0 | 14.8 | 22.3 | 5.7 | 16.6 | 16.0 | 0.1 |
| LOS | D | E | A | D | D | A | B | C | A | B | B | A |
| Approach Delay | | 36.9 | | | 26.3 | | | 20.1 | | | 15.0 | |
| Approach LOS | | D | | | C | | | C | | | B | |
| Queue Length 50th (ft) | 80 | 106 | 0 | 22 | 66 | 0 | 86 | 322 | 16 | 21 | 171 | 0 |
| Queue Length 95th (ft) | 108 | 167 | 5 | 46 | 111 | 46 | m143 | 410 | m28 | 0 | 211 | 0 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 456 | 310 | 438 | 344 | 543 | 577 | 482 | 2069 | 989 | 243 | 1978 | 973 |
| 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 | 0.52 | 0.46 | 0.31 | 0.10 | 0.17 | 0.26 | 0.46 | 0.68 | 0.13 | 0.38 | 0.46 | 0.08 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Background Traffic Volumes

PM Peak Hour - Year 2024

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 21.5

Intersection LOS: C

Intersection Capacity Utilization 68.8%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 3: Meridian Road & Eastonville Road

| | | | |
|------|------|------|------|
| | | | |
| 10 s | 60 s | 25 s | 25 s |
| | | | |
| 20 s | 50 s | 10 s | 40 s |

HCM 6th TWSC
4: Meridian Road & Owl Place

Background Traffic Volumes
PM Peak Hour - Year 2024

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↘ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 7 | 11 | 1633 | 980 | 4 |
| Future Vol, veh/h | 0 | 7 | 11 | 1633 | 980 | 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 | - | - | - |
| 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 | 1775 | 1065 | 4 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | - | 535 | 1069 | 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 | *700 | 1038 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | - | *700 | 1038 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.2 | 0.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 1038 | - | 700 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | 0.011 | - | - |
| HCM Control Delay (s) | 8.5 | - | 10.2 | - | - |
| 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

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
AM Peak Hour - Year 2040

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 379 | 339 | 176 | 89 | 591 | 124 | 237 | 350 | 26 | 133 | 809 | 856 |
| Future Volume (vph) | 379 | 339 | 176 | 89 | 591 | 124 | 237 | 350 | 26 | 133 | 809 | 856 |
| 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) | | | 191 | | | 142 | | | 142 | | | 223 |
| Lane Group Flow (vph) | 412 | 368 | 191 | 97 | 642 | 135 | 258 | 380 | 28 | 145 | 879 | 930 |
| Turn Type | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 15.0 | 28.0 | 28.0 | 11.0 | 24.0 | 24.0 | 11.0 | 48.0 | 48.0 | 13.0 | 50.0 | 50.0 |
| Total Split (%) | 15.0% | 28.0% | 28.0% | 11.0% | 24.0% | 24.0% | 11.0% | 48.0% | 48.0% | 13.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 10.0 | 24.2 | 24.2 | 6.0 | 18.0 | 18.0 | 6.0 | 42.2 | 42.2 | 7.8 | 44.0 | 44.0 |
| Actuated g/C Ratio | 0.10 | 0.24 | 0.24 | 0.06 | 0.18 | 0.18 | 0.06 | 0.42 | 0.42 | 0.08 | 0.44 | 0.44 |
| v/c Ratio | 1.20 | 0.43 | 0.36 | 0.47 | 1.01 | 0.34 | 1.26 | 0.25 | 0.04 | 0.55 | 0.56 | 1.13 |
| Control Delay | 155.1 | 34.8 | 7.0 | 53.5 | 79.4 | 8.1 | 189.5 | 19.3 | 0.1 | 62.4 | 8.9 | 74.8 |
| 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 | 155.1 | 34.8 | 7.0 | 53.5 | 79.4 | 8.1 | 189.5 | 19.3 | 0.1 | 62.4 | 8.9 | 74.8 |
| LOS | F | C | A | D | E | A | F | B | A | E | A | E |
| Approach Delay | | 80.4 | | | 65.5 | | | 84.5 | | | 44.2 | |
| Approach LOS | | F | | | E | | | F | | | D | |
| Queue Length 50th (ft) | ~165 | 107 | 0 | 31 | ~220 | 0 | ~106 | 81 | 0 | 51 | 48 | ~588 |
| Queue Length 95th (ft) | #260 | 153 | 55 | 58 | #340 | 46 | #187 | 114 | 0 | m50 | m48 | m#169 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 343 | 856 | 528 | 205 | 637 | 401 | 205 | 1494 | 750 | 274 | 1557 | 821 |
| 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 | 1.20 | 0.43 | 0.36 | 0.47 | 1.01 | 0.34 | 1.26 | 0.25 | 0.04 | 0.53 | 0.56 | 1.13 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 140
 Control Type: Actuated-Coordinated

Timings

1: Meridian Road & E Woodmen Road

Background Traffic Volumes

AM Peak Hour - Year 2040

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 62.3

Intersection LOS: E

Intersection Capacity Utilization 90.3%

ICU Level of Service E

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

| | | | |
|--|--|---|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 13 s | 48 s | 11 s | 28 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 11 s | 50 s | 15 s | 24 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
AM Peak Hour - Year 2040



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 93 | 129 | 98 | 656 | 1971 | 161 |
| Future Volume (vph) | 93 | 129 | 98 | 656 | 1971 | 161 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.056 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 104 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 91 | | | | 175 |
| Lane Group Flow (vph) | 101 | 140 | 107 | 713 | 2142 | 175 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 24.0 | 24.0 | 10.0 | 76.0 | 66.0 | 66.0 |
| Total Split (%) | 24.0% | 24.0% | 10.0% | 76.0% | 66.0% | 66.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 9.6 | 9.6 | 80.4 | 79.4 | 66.9 | 66.9 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.80 | 0.79 | 0.67 | 0.67 |
| v/c Ratio | 0.31 | 0.60 | 0.51 | 0.25 | 0.90 | 0.16 |
| Control Delay | 43.5 | 27.9 | 37.4 | 2.0 | 22.0 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.5 | 27.9 | 37.4 | 2.0 | 22.0 | 1.6 |
| LOS | D | C | D | A | C | A |
| Approach Delay | 34.4 | | | 6.6 | 20.5 | |
| Approach LOS | C | | | A | C | |
| Queue Length 50th (ft) | 31 | 30 | 33 | 24 | 507 | 0 |
| Queue Length 95th (ft) | 54 | 86 | 97 | 29 | #896 | 25 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 652 | 374 | 209 | 2811 | 2368 | 1117 |
| 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 | 0.37 | 0.51 | 0.25 | 0.90 | 0.16 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
 AM Peak Hour - Year 2040

Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 18.1 Intersection LOS: B
 Intersection Capacity Utilization 77.4% 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.

Splits and Phases: 2: Meridian Road & Bent Grass Meadows Drive

| | | | |
|--------|--------|------|--|
| Ø2 (R) | | Ø4 | |
| 76 s | | 24 s | |
| Ø5 | Ø6 (R) | | |
| 10 s | 66 s | | |

Timings
3: Meridian Road & Eastonville Road

Background Traffic Volumes
AM Peak Hour - Year 2040

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |  |   |   |  |   |   |   |   |   |   |   |
| Traffic Volume (vph) | 86 | 48 | 86 | 144 | 58 | 54 | 110 | 673 | 60 | 165 | 1884 | 57 |
| Future Volume (vph) | 86 | 48 | 86 | 144 | 58 | 54 | 110 | 673 | 60 | 165 | 1884 | 57 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.716 | | | 0.424 | | | 0.081 | | | 0.307 | | |
| Satd. Flow (perm) | 2587 | 1863 | 1583 | 790 | 1863 | 1583 | 151 | 3539 | 1583 | 572 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 251 | | | 196 | | | 240 | | | 185 |
| Lane Group Flow (vph) | 93 | 52 | 93 | 157 | 63 | 59 | 120 | 732 | 65 | 179 | 2048 | 62 |
| 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 38.0 | 38.0 | 10.0 | 36.0 | 36.0 | 16.0 | 42.0 | 42.0 |
| Total Split (%) | 10.0% | 24.0% | 24.0% | 24.0% | 38.0% | 38.0% | 10.0% | 36.0% | 36.0% | 16.0% | 42.0% | 42.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 12.1 | 8.2 | 8.2 | 24.0 | 16.0 | 16.0 | 60.0 | 50.2 | 50.2 | 62.0 | 51.2 | 51.2 |
| Actuated g/C Ratio | 0.12 | 0.08 | 0.08 | 0.24 | 0.16 | 0.16 | 0.60 | 0.50 | 0.50 | 0.62 | 0.51 | 0.51 |
| v/c Ratio | 0.26 | 0.34 | 0.26 | 0.50 | 0.21 | 0.14 | 0.52 | 0.41 | 0.07 | 0.38 | 1.13 | 0.07 |
| Control Delay | 29.8 | 48.6 | 1.7 | 35.1 | 35.9 | 0.7 | 20.6 | 17.3 | 2.2 | 15.1 | 95.8 | 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 | 29.8 | 48.6 | 1.7 | 35.1 | 35.9 | 0.7 | 20.6 | 17.3 | 2.2 | 15.1 | 95.8 | 0.6 |
| LOS | C | D | A | D | D | A | C | B | A | B | F | A |
| Approach Delay | | 22.9 | | | 28.0 | | | 16.7 | | | 86.9 | |
| Approach LOS | | C | | | C | | | B | | | F | |
| Queue Length 50th (ft) | 23 | 32 | 0 | 81 | 35 | 0 | 24 | 172 | 2 | 70 | -814 | 0 |
| Queue Length 95th (ft) | 38 | 68 | 0 | 125 | 67 | 0 | m84 | m190 | m6 | m102 | #1076 | m0 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 356 | 353 | 504 | 392 | 614 | 653 | 232 | 1777 | 914 | 503 | 1813 | 901 |
| 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 | 0.26 | 0.15 | 0.18 | 0.40 | 0.10 | 0.09 | 0.52 | 0.41 | 0.07 | 0.36 | 1.13 | 0.07 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated

HCM 6th TWSC
4: Meridian Road & Owl Place

Background Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↖ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 9 | 8 | 805 | 2097 | 3 |
| Future Vol, veh/h | 0 | 9 | 8 | 805 | 2097 | 3 |
| 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 | - | - | - |
| 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 | 10 | 9 | 875 | 2279 | 3 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | - | 1141 | 2282 | 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 | *229 | *342 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | - | *229 | *342 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 21.4 | 0.2 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | * 342 | - | 229 | - | - |
| HCM Lane V/C Ratio | 0.025 | - | 0.043 | - | - |
| HCM Control Delay (s) | 15.8 | - | 21.4 | - | - |
| HCM Lane LOS | C | - | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.1 | - | - |

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

Timings
1: Meridian Road & E Woodmen Road

Background Traffic Volumes
PM Peak Hour - Year 2040

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   |  |   |   |  |   |   |  | | | |
| Traffic Volume (vph) | 1027 | 708 | 240 | 168 | 545 | 231 | 308 | 1042 | 159 | 233 | 680 | 610 |
| Future Volume (vph) | 1027 | 708 | 240 | 168 | 545 | 231 | 308 | 1042 | 159 | 233 | 680 | 610 |
| 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) | | | 202 | | | 164 | | | 164 | | | 587 |
| Lane Group Flow (vph) | 1116 | 770 | 261 | 183 | 592 | 251 | 335 | 1133 | 173 | 253 | 739 | 663 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 40.0 | 48.0 | 48.0 | 16.0 | 24.0 | 24.0 | 17.0 | 43.0 | 43.0 | 13.0 | 39.0 | 39.0 |
| Total Split (%) | 33.3% | 40.0% | 40.0% | 13.3% | 20.0% | 20.0% | 14.2% | 35.8% | 35.8% | 10.8% | 32.5% | 32.5% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 35.0 | 42.6 | 42.6 | 10.4 | 18.0 | 18.0 | 12.0 | 37.0 | 37.0 | 8.0 | 33.0 | 33.0 |
| Actuated g/C Ratio | 0.29 | 0.36 | 0.36 | 0.09 | 0.15 | 0.15 | 0.10 | 0.31 | 0.31 | 0.07 | 0.28 | 0.28 |
| v/c Ratio | 1.11 | 0.61 | 0.38 | 0.62 | 1.12 | 0.67 | 0.98 | 1.04 | 0.29 | 1.11 | 0.76 | 0.77 |
| Control Delay | 105.2 | 34.6 | 9.0 | 62.3 | 121.8 | 26.7 | 97.1 | 78.5 | 6.7 | 145.5 | 48.8 | 18.5 |
| 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 | 105.2 | 34.6 | 9.0 | 62.3 | 121.8 | 26.7 | 97.1 | 78.5 | 6.7 | 145.5 | 48.8 | 18.5 |
| LOS | F | C | A | E | F | C | F | E | A | F | D | B |
| Approach Delay | | 68.2 | | | 88.0 | | | 74.7 | | | 51.4 | |
| Approach LOS | | E | | | F | | | E | | | D | |
| Queue Length 50th (ft) | ~511 | 258 | 31 | 71 | ~276 | 61 | 135 | ~498 | 5 | ~119 | 191 | 124 |
| Queue Length 95th (ft) | #643 | 326 | 96 | 110 | #394 | 155 | #231 | #633 | 57 | m#193 | 274 | 278 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 1001 | 1256 | 692 | 314 | 530 | 376 | 343 | 1091 | 601 | 228 | 973 | 860 |
| 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 | 1.11 | 0.61 | 0.38 | 0.58 | 1.12 | 0.67 | 0.98 | 1.04 | 0.29 | 1.11 | 0.76 | 0.77 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 130
 Control Type: Actuated-Coordinated

Timings

1: Meridian Road & E Woodmen Road

Background Traffic Volumes

PM Peak Hour - Year 2040

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 68.7

Intersection LOS: E

Intersection Capacity Utilization 98.1%

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.

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

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

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 13 s | 43 s | 16 s | 48 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 17 s | 39 s | 40 s | 24 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
PM Peak Hour - Year 2040



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 119 | 108 | 93 | 2254 | 1268 | 147 |
| Future Volume (vph) | 119 | 108 | 93 | 2254 | 1268 | 147 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.152 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 283 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 117 | | | | 160 |
| Lane Group Flow (vph) | 129 | 117 | 101 | 2450 | 1378 | 160 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 24.0 | 24.0 | 11.0 | 96.0 | 85.0 | 85.0 |
| Total Split (%) | 20.0% | 20.0% | 9.2% | 80.0% | 70.8% | 70.8% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 9.9 | 9.9 | 100.1 | 99.1 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.83 | 0.83 | 0.73 | 0.73 |
| v/c Ratio | 0.46 | 0.49 | 0.32 | 0.84 | 0.53 | 0.13 |
| Control Delay | 57.4 | 16.5 | 2.6 | 10.0 | 8.5 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.4 | 16.5 | 2.6 | 10.0 | 8.5 | 1.1 |
| LOS | E | B | A | A | A | A |
| Approach Delay | 37.9 | | | 9.7 | 7.7 | |
| Approach LOS | D | | | A | A | |
| Queue Length 50th (ft) | 50 | 0 | 6 | 207 | 219 | 0 |
| Queue Length 95th (ft) | 80 | 56 | m5 | m252 | 304 | 20 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 543 | 349 | 320 | 2923 | 2578 | 1196 |
| 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 | 0.24 | 0.34 | 0.32 | 0.84 | 0.53 | 0.13 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings

2: Meridian Road & Bent Grass Meadows Drive

Background Traffic Volumes
PM Peak Hour - Year 2040

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 10.6

Intersection LOS: B

Intersection Capacity Utilization 75.6%

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 & Bent Grass Meadows Drive

| | | | |
|--|--|--|--|
|  Ø2 (R) | |  Ø4 | |
| 96 s | | 24 s | |
|  Ø5 |  Ø6 (R) | | |
| 11 s | 85 s | | |

Timings
3: Meridian Road & Eastonville Road

Background Traffic Volumes
 PM Peak Hour - Year 2040

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 220 | 131 | 125 | 47 | 86 | 200 | 203 | 1910 | 173 | 123 | 1190 | 67 |
| Future Volume (vph) | 220 | 131 | 125 | 47 | 86 | 200 | 203 | 1910 | 173 | 123 | 1190 | 67 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.697 | | | 0.448 | | | 0.087 | | | 0.070 | | |
| Satd. Flow (perm) | 2519 | 1863 | 1583 | 835 | 1863 | 1583 | 162 | 3539 | 1583 | 130 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 164 | | | 118 | | | 164 | | | 155 |
| Lane Group Flow (vph) | 239 | 142 | 136 | 51 | 93 | 217 | 221 | 2076 | 188 | 134 | 1293 | 73 |
| Turn Type | 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 38.0 | 38.0 | 15.0 | 62.0 | 62.0 | 10.0 | 57.0 | 57.0 |
| Total Split (%) | 8.3% | 20.0% | 20.0% | 20.0% | 31.7% | 31.7% | 12.5% | 51.7% | 51.7% | 8.3% | 47.5% | 47.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 20.0 | 16.0 | 16.0 | 25.0 | 17.0 | 17.0 | 83.0 | 64.7 | 64.7 | 71.8 | 58.4 | 58.4 |
| Actuated g/C Ratio | 0.17 | 0.13 | 0.13 | 0.21 | 0.14 | 0.14 | 0.69 | 0.54 | 0.54 | 0.60 | 0.49 | 0.49 |
| v/c Ratio | 0.52 | 0.57 | 0.39 | 0.22 | 0.35 | 0.67 | 0.61 | 1.09 | 0.20 | 0.54 | 0.75 | 0.09 |
| Control Delay | 44.7 | 58.4 | 7.0 | 36.5 | 48.1 | 31.2 | 29.3 | 70.0 | 8.1 | 33.5 | 24.2 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 44.7 | 58.4 | 7.0 | 36.5 | 48.1 | 31.2 | 29.3 | 70.0 | 8.1 | 33.5 | 24.2 | 0.2 |
| LOS | D | E | A | D | D | C | C | E | A | C | C | A |
| Approach Delay | | 38.5 | | | 36.3 | | | 61.7 | | | 23.8 | |
| Approach LOS | | D | | | D | | | E | | | C | |
| Queue Length 50th (ft) | 79 | 106 | 0 | 32 | 66 | 71 | 129 | ~978 | 30 | 63 | 263 | 0 |
| Queue Length 95th (ft) | 106 | 167 | 36 | 60 | 109 | 146 | m127 | m#982 | m28 | 140 | 316 | 0 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 457 | 296 | 389 | 338 | 512 | 520 | 361 | 1906 | 928 | 246 | 1722 | 850 |
| 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 | 0.52 | 0.48 | 0.35 | 0.15 | 0.18 | 0.42 | 0.61 | 1.09 | 0.20 | 0.54 | 0.75 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Background Traffic Volumes

PM Peak Hour - Year 2040

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 45.7

Intersection LOS: D

Intersection Capacity Utilization 88.2%

ICU Level of Service E

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: 3: Meridian Road & Eastonville Road

| | | | |
|--|--|---|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 62 s | 24 s | 24 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 15 s | 57 s | 10 s | 38 s |

HCM 6th TWSC
4: Meridian Road & Owl Place

Background Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↘ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 11 | 17 | 2313 | 1370 | 6 |
| Future Vol, veh/h | 0 | 11 | 17 | 2313 | 1370 | 6 |
| 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 | - | - | - |
| 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 | 12 | 18 | 2514 | 1489 | 7 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | - | 748 | 1496 | 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 | 0.024 | - | 0.023 | - | - |
| HCM Control Delay (s) | 9.7 | - | 12 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.1 | - | - |

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

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
 AM Peak Hour - Year 2024

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |   |  |   |   |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 280 | 226 | 122 | 61 | 417 | 117 | 178 | 284 | 18 | 126 | 605 | 613 |
| Future Volume (vph) | 280 | 226 | 122 | 61 | 417 | 117 | 178 | 284 | 18 | 126 | 605 | 613 |
| 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) | | | 142 | | | 142 | | | 142 | | | 218 |
| Lane Group Flow (vph) | 304 | 246 | 133 | 66 | 453 | 127 | 193 | 309 | 20 | 137 | 658 | 666 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 15.0 | 30.0 | 30.0 | 10.0 | 25.0 | 25.0 | 10.0 | 50.0 | 50.0 | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 15.0% | 30.0% | 30.0% | 10.0% | 25.0% | 25.0% | 10.0% | 50.0% | 50.0% | 10.0% | 50.0% | 50.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 10.0 | 24.1 | 24.1 | 5.0 | 17.1 | 17.1 | 6.9 | 44.6 | 44.6 | 6.3 | 44.0 | 44.0 |
| Actuated g/C Ratio | 0.10 | 0.24 | 0.24 | 0.05 | 0.17 | 0.17 | 0.07 | 0.45 | 0.45 | 0.06 | 0.44 | 0.44 |
| v/c Ratio | 0.89 | 0.29 | 0.27 | 0.39 | 0.75 | 0.33 | 0.81 | 0.20 | 0.03 | 0.64 | 0.42 | 0.81 |
| Control Delay | 72.3 | 32.4 | 6.2 | 52.8 | 47.6 | 7.2 | 74.3 | 17.4 | 0.1 | 64.4 | 9.7 | 12.3 |
| 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 | 72.3 | 32.4 | 6.2 | 52.8 | 47.6 | 7.2 | 74.3 | 17.4 | 0.1 | 64.4 | 9.7 | 12.3 |
| LOS | E | C | A | D | D | A | E | B | A | E | A | B |
| Approach Delay | | 45.1 | | | 40.2 | | | 37.8 | | | 16.0 | |
| Approach LOS | | D | | | D | | | D | | | B | |
| Queue Length 50th (ft) | 100 | 68 | 0 | 21 | 144 | 0 | 64 | 62 | 0 | 48 | 46 | 0 |
| Queue Length 95th (ft) | #176 | 102 | 41 | 43 | 196 | 39 | #145 | 90 | 0 | m53 | m63 | m92 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 343 | 880 | 500 | 171 | 672 | 415 | 237 | 1580 | 785 | 215 | 1557 | 818 |
| 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 | 0.89 | 0.28 | 0.27 | 0.39 | 0.67 | 0.31 | 0.81 | 0.20 | 0.03 | 0.64 | 0.42 | 0.81 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
 AM Peak Hour - Year 2024

Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 30.2 Intersection LOS: C
 Intersection Capacity Utilization 68.7% 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

| | | | | |
|--|---|--|---|--|
|  Ø1 |  |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 50 s | | 10 s | 30 s |
|  Ø5 |  |  Ø6 (R) |  Ø7 |  Ø8 |
| 10 s | 50 s | | 15 s | 25 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
AM Peak Hour - Year 2024



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 64 | 89 | 68 | 513 | 1420 | 111 |
| Future Volume (vph) | 64 | 89 | 68 | 513 | 1420 | 111 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.116 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 216 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 97 | | | | 121 |
| Lane Group Flow (vph) | 70 | 97 | 74 | 558 | 1543 | 121 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 25.0 | 25.0 | 15.0 | 75.0 | 60.0 | 60.0 |
| Total Split (%) | 25.0% | 25.0% | 15.0% | 75.0% | 60.0% | 60.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 7.7 | 7.7 | 82.3 | 81.3 | 72.1 | 72.1 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.82 | 0.81 | 0.72 | 0.72 |
| v/c Ratio | 0.27 | 0.46 | 0.27 | 0.19 | 0.61 | 0.10 |
| Control Delay | 45.4 | 16.5 | 7.5 | 2.1 | 9.1 | 1.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 45.4 | 16.5 | 7.5 | 2.1 | 9.1 | 1.3 |
| LOS | D | B | A | A | A | A |
| Approach Delay | 28.6 | | | 2.7 | 8.5 | |
| Approach LOS | C | | | A | A | |
| Queue Length 50th (ft) | 22 | 0 | 4 | 54 | 235 | 0 |
| Queue Length 95th (ft) | 43 | 48 | 28 | 49 | 351 | 18 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 686 | 394 | 333 | 2878 | 2550 | 1174 |
| 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 | 0.10 | 0.25 | 0.22 | 0.19 | 0.61 | 0.10 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
 AM Peak Hour - Year 2024

| | |
|---|------------------------|
| Maximum v/c Ratio: 0.61 | |
| Intersection Signal Delay: 8.4 | Intersection LOS: A |
| Intersection Capacity Utilization 60.9% | ICU Level of Service B |
| Analysis Period (min) 15 | |

Splits and Phases: 2: Meridian Road & Bent Grass Meadows Drive

| | | |
|--|--|--|
|  Ø2 (R) 75 s |  |  Ø4 25 s |
|  Ø5 15 s |   Ø6 (R) 60 s | |

Timings
3: Meridian Road & Eastonville Road

Total Traffic Volumes
AM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 187 | 58 | 145 | 100 | 69 | 37 | 208 | 420 | 42 | 114 | 1313 | 96 |
| Future Volume (vph) | 187 | 58 | 145 | 100 | 69 | 37 | 208 | 420 | 42 | 114 | 1313 | 96 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.708 | | | 0.547 | | | 0.092 | | | 0.489 | | |
| Satd. Flow (perm) | 2559 | 1863 | 1583 | 1019 | 1863 | 1583 | 171 | 3539 | 1583 | 911 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 196 | | | 142 | | | 185 | | | 185 |
| Lane Group Flow (vph) | 203 | 63 | 158 | 109 | 75 | 40 | 226 | 457 | 46 | 124 | 1427 | 104 |
| Turn Type | 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 25.0 | 25.0 | 25.0 | 40.0 | 40.0 | 10.0 | 40.0 | 40.0 | 10.0 | 40.0 | 40.0 |
| Total Split (%) | 10.0% | 25.0% | 25.0% | 25.0% | 40.0% | 40.0% | 10.0% | 40.0% | 40.0% | 10.0% | 40.0% | 40.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 15.2 | 8.8 | 8.8 | 22.0 | 13.9 | 13.9 | 65.7 | 51.5 | 51.5 | 48.8 | 39.5 | 39.5 |
| Actuated g/C Ratio | 0.15 | 0.09 | 0.09 | 0.22 | 0.14 | 0.14 | 0.66 | 0.52 | 0.52 | 0.49 | 0.40 | 0.40 |
| v/c Ratio | 0.45 | 0.39 | 0.50 | 0.36 | 0.29 | 0.12 | 0.52 | 0.25 | 0.05 | 0.24 | 1.02 | 0.14 |
| Control Delay | 34.5 | 49.2 | 8.6 | 33.0 | 39.3 | 0.7 | 23.0 | 14.8 | 1.8 | 10.8 | 55.7 | 2.4 |
| 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 | 34.5 | 49.2 | 8.6 | 33.0 | 39.3 | 0.7 | 23.0 | 14.8 | 1.8 | 10.8 | 55.7 | 2.4 |
| LOS | C | D | A | C | D | A | C | B | A | B | E | A |
| Approach Delay | | 27.1 | | | 29.3 | | | 16.6 | | | 48.9 | |
| Approach LOS | | C | | | C | | | B | | | D | |
| Queue Length 50th (ft) | 54 | 39 | 0 | 56 | 43 | 0 | 103 | 101 | 1 | 26 | 253 | 0 |
| Queue Length 95th (ft) | 76 | 78 | 34 | 94 | 79 | 0 | m179 | m133 | m5 | m77 | #698 | m10 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 454 | 372 | 473 | 402 | 652 | 646 | 435 | 1821 | 904 | 515 | 1397 | 737 |
| 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 | 0.17 | 0.33 | 0.27 | 0.12 | 0.06 | 0.52 | 0.25 | 0.05 | 0.24 | 1.02 | 0.14 |

Intersection Summary

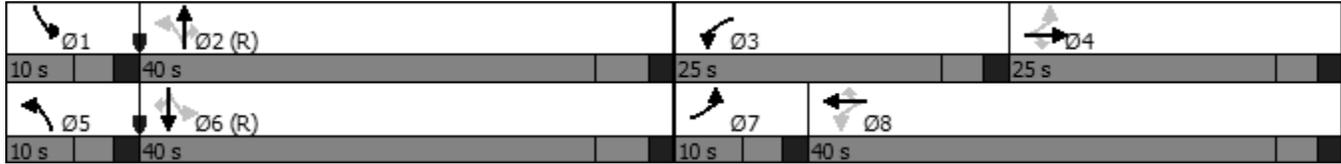
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Timings
3: Meridian Road & Eastonville Road

Total Traffic Volumes
 AM Peak Hour - Year 2024

Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 36.6 Intersection LOS: D
 Intersection Capacity Utilization 73.4% 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: 3: Meridian Road & Eastonville Road



HCM 6th TWSC
4: Meridian Road & Owl Place

Total Traffic Volumes
AM Peak Hour - Year 2024

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.7 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↖ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 79 | 44 | 573 | 1443 | 66 |
| Future Vol, veh/h | 0 | 79 | 44 | 573 | 1443 | 66 |
| 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 | - | - | - |
| 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 | 86 | 48 | 623 | 1568 | 72 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | - | 820 | 1640 | 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 | *502 | 712 | - | - |
| Stage 1 | 0 | - | - | - | - |
| Stage 2 | 0 | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - |
| Mov Cap-1 Maneuver | - | *502 | 712 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - |
| Stage 1 | - | - | - | - | - |
| Stage 2 | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 13.6 | 0.7 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 712 | - | 502 | - | - |
| HCM Lane V/C Ratio | 0.067 | - | 0.171 | - | - |
| HCM Control Delay (s) | 10.4 | - | 13.6 | - | - |
| HCM Lane LOS | B | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.6 | - | - |

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

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
 PM Peak Hour - Year 2024

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 730 | 473 | 166 | 116 | 393 | 193 | 233 | 775 | 110 | 211 | 539 | 449 |
| Future Volume (vph) | 730 | 473 | 166 | 116 | 393 | 193 | 233 | 775 | 110 | 211 | 539 | 449 |
| 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) | | | 180 | | | 167 | | | 164 | | | 488 |
| Lane Group Flow (vph) | 793 | 514 | 180 | 126 | 427 | 210 | 253 | 842 | 120 | 229 | 586 | 488 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 40.0 | 50.0 | 50.0 | 15.0 | 25.0 | 25.0 | 15.0 | 40.0 | 40.0 | 15.0 | 40.0 | 40.0 |
| Total Split (%) | 33.3% | 41.7% | 41.7% | 12.5% | 20.8% | 20.8% | 12.5% | 33.3% | 33.3% | 12.5% | 33.3% | 33.3% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 32.1 | 41.0 | 41.0 | 9.1 | 18.1 | 18.1 | 11.2 | 37.2 | 37.2 | 10.6 | 36.7 | 36.7 |
| Actuated g/C Ratio | 0.27 | 0.34 | 0.34 | 0.08 | 0.15 | 0.15 | 0.09 | 0.31 | 0.31 | 0.09 | 0.31 | 0.31 |
| v/c Ratio | 0.86 | 0.43 | 0.27 | 0.48 | 0.80 | 0.55 | 0.79 | 0.77 | 0.20 | 0.75 | 0.54 | 0.59 |
| Control Delay | 52.5 | 31.2 | 4.8 | 59.5 | 61.4 | 17.7 | 72.0 | 43.9 | 2.5 | 85.9 | 29.8 | 7.2 |
| 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 | 52.5 | 31.2 | 4.8 | 59.5 | 61.4 | 17.7 | 72.0 | 43.9 | 2.5 | 85.9 | 29.8 | 7.2 |
| LOS | D | C | A | E | E | B | E | D | A | F | C | A |
| Approach Delay | | 39.3 | | | 49.0 | | | 45.6 | | | 31.2 | |
| Approach LOS | | D | | | D | | | D | | | C | |
| Queue Length 50th (ft) | 297 | 155 | 0 | 48 | 167 | 29 | 100 | 323 | 0 | 96 | 95 | 0 |
| Queue Length 95th (ft) | 367 | 202 | 47 | 80 | 226 | 106 | #176 | 403 | 19 | #158 | 194 | 133 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 1001 | 1297 | 694 | 286 | 564 | 393 | 319 | 1098 | 604 | 304 | 1082 | 823 |
| 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 | 0.40 | 0.26 | 0.44 | 0.76 | 0.53 | 0.79 | 0.77 | 0.20 | 0.75 | 0.54 | 0.59 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
 PM Peak Hour - Year 2024

Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 40.3
 Intersection Capacity Utilization 77.5%
 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

| | | | |
|--|--|--|--|
|  Ø1 |   Ø2 (R) |  Ø3 |  Ø4 |
| 15 s | 40 s | 15 s | 50 s |
|  Ø5 |   Ø6 (R) |  Ø7 |  Ø8 |
| 15 s | 40 s | 40 s | 25 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
PM Peak Hour - Year 2024



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖↗ | ↖ | ↗ | ↑↑ | ↑↑ | ↖ |
| Traffic Volume (vph) | 82 | 75 | 64 | 1666 | 947 | 102 |
| Future Volume (vph) | 82 | 75 | 64 | 1666 | 947 | 102 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.244 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 455 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 82 | | | | 111 |
| Lane Group Flow (vph) | 89 | 82 | 70 | 1811 | 1029 | 111 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 30.0 | 30.0 | 15.0 | 90.0 | 75.0 | 75.0 |
| Total Split (%) | 25.0% | 25.0% | 12.5% | 75.0% | 62.5% | 62.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 8.5 | 8.5 | 101.5 | 100.5 | 91.4 | 91.4 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.85 | 0.84 | 0.76 | 0.76 |
| v/c Ratio | 0.37 | 0.44 | 0.15 | 0.61 | 0.38 | 0.09 |
| Control Delay | 57.0 | 18.6 | 1.6 | 2.8 | 5.8 | 1.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.0 | 18.6 | 1.6 | 2.8 | 5.8 | 1.0 |
| LOS | E | B | A | A | A | A |
| Approach Delay | 38.6 | | | 2.8 | 5.4 | |
| Approach LOS | D | | | A | A | |
| Queue Length 50th (ft) | 34 | 0 | 5 | 84 | 131 | 0 |
| Queue Length 95th (ft) | 60 | 49 | m6 | 105 | 182 | 15 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 715 | 394 | 494 | 2963 | 2694 | 1231 |
| 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 | 0.12 | 0.21 | 0.14 | 0.61 | 0.38 | 0.09 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
 PM Peak Hour - Year 2024

| | |
|---|------------------------|
| Maximum v/c Ratio: 0.61 | |
| Intersection Signal Delay: 5.6 | 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: 2: Meridian Road & Bent Grass Meadows Drive

| | |
|---|--|
|  Ø2 (R)  |  Ø4 |
| 90 s | 30 s |
|  Ø5   Ø6 (R) | |
| 15 s | 75 s |

Timings
3: Meridian Road & Eastonville Road

Total Traffic Volumes
PM Peak Hour - Year 2024

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 307 | 143 | 181 | 32 | 98 | 138 | 298 | 1266 | 120 | 85 | 850 | 101 |
| Future Volume (vph) | 307 | 143 | 181 | 32 | 98 | 138 | 298 | 1266 | 120 | 85 | 850 | 101 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.634 | | | 0.492 | | | 0.189 | | | 0.137 | | |
| Satd. Flow (perm) | 2291 | 1863 | 1583 | 916 | 1863 | 1583 | 352 | 3539 | 1583 | 255 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 209 | | | 164 | | | 155 | | | 200 |
| Lane Group Flow (vph) | 334 | 155 | 197 | 35 | 107 | 150 | 324 | 1376 | 130 | 92 | 924 | 110 |
| Turn Type | 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 25.0 | 25.0 | 25.0 | 40.0 | 40.0 | 20.0 | 60.0 | 60.0 | 10.0 | 50.0 | 50.0 |
| Total Split (%) | 8.3% | 20.8% | 20.8% | 20.8% | 33.3% | 33.3% | 16.7% | 50.0% | 50.0% | 8.3% | 41.7% | 41.7% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 21.2 | 18.2 | 18.2 | 23.6 | 16.2 | 16.2 | 83.8 | 69.4 | 69.4 | 66.1 | 56.6 | 56.6 |
| Actuated g/C Ratio | 0.18 | 0.15 | 0.15 | 0.20 | 0.14 | 0.14 | 0.70 | 0.58 | 0.58 | 0.55 | 0.47 | 0.47 |
| v/c Ratio | 0.74 | 0.55 | 0.47 | 0.15 | 0.43 | 0.42 | 0.65 | 0.67 | 0.13 | 0.37 | 0.55 | 0.13 |
| Control Delay | 53.8 | 55.0 | 8.9 | 35.6 | 50.8 | 8.6 | 27.2 | 22.5 | 5.4 | 14.1 | 22.3 | 0.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.8 | 55.0 | 8.9 | 35.6 | 50.8 | 8.6 | 27.2 | 22.5 | 5.4 | 14.1 | 22.3 | 0.3 |
| LOS | D | E | A | D | D | A | C | C | A | B | C | A |
| Approach Delay | | 41.2 | | | 27.3 | | | 22.1 | | | 19.5 | |
| Approach LOS | | D | | | C | | | C | | | B | |
| Queue Length 50th (ft) | 114 | 116 | 0 | 21 | 76 | 0 | 183 | 317 | 15 | 21 | 182 | 0 |
| Queue Length 95th (ft) | 146 | 179 | 56 | 45 | 123 | 45 | m269 | 404 | m24 | 53 | 337 | 0 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 453 | 313 | 440 | 346 | 543 | 577 | 495 | 2046 | 980 | 246 | 1670 | 852 |
| 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 | 0.74 | 0.50 | 0.45 | 0.10 | 0.20 | 0.26 | 0.65 | 0.67 | 0.13 | 0.37 | 0.55 | 0.13 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Total Traffic Volumes
PM Peak Hour - Year 2024

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 25.1

Intersection LOS: C

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 3: Meridian Road & Eastonville Road

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 60 s | 25 s | 25 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 20 s | 50 s | 10 s | 40 s |

HCM 6th TWSC
4: Meridian Road & Owl Place

Total Traffic Volumes
PM Peak Hour - Year 2024

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↘ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 73 | 44 | 1648 | 962 | 60 |
| Future Vol, veh/h | 0 | 73 | 44 | 1648 | 962 | 60 |
| 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 | - | - | - |
| 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 | 79 | 48 | 1791 | 1046 | 65 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | - | 556 | 1111 | 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 | *700 | 983 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | - | *700 | 983 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.8 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | 983 | - | 700 | - | - |
| HCM Lane V/C Ratio | 0.049 | - | 0.113 | - | - |
| HCM Control Delay (s) | 8.8 | - | 10.8 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.4 | - | - |

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

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
AM Peak Hour - Year 2040

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 391 | 339 | 176 | 89 | 591 | 146 | 237 | 383 | 26 | 154 | 841 | 867 |
| Future Volume (vph) | 391 | 339 | 176 | 89 | 591 | 146 | 237 | 383 | 26 | 154 | 841 | 867 |
| 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) | | | 177 | | | 159 | | | 142 | | | 231 |
| Lane Group Flow (vph) | 425 | 368 | 191 | 97 | 642 | 159 | 258 | 416 | 28 | 167 | 914 | 942 |
| Turn Type | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 15.0 | 28.0 | 28.0 | 11.0 | 24.0 | 24.0 | 10.0 | 47.0 | 47.0 | 14.0 | 51.0 | 51.0 |
| Total Split (%) | 15.0% | 28.0% | 28.0% | 11.0% | 24.0% | 24.0% | 10.0% | 47.0% | 47.0% | 14.0% | 51.0% | 51.0% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 10.0 | 24.2 | 24.2 | 6.0 | 18.0 | 18.0 | 5.0 | 41.3 | 41.3 | 8.7 | 45.0 | 45.0 |
| Actuated g/C Ratio | 0.10 | 0.24 | 0.24 | 0.06 | 0.18 | 0.18 | 0.05 | 0.41 | 0.41 | 0.09 | 0.45 | 0.45 |
| v/c Ratio | 1.24 | 0.43 | 0.37 | 0.47 | 1.01 | 0.38 | 1.51 | 0.28 | 0.04 | 0.56 | 0.57 | 1.12 |
| Control Delay | 169.0 | 34.8 | 8.6 | 53.5 | 79.4 | 8.8 | 291.2 | 20.3 | 0.1 | 60.0 | 9.5 | 75.7 |
| 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 | 169.0 | 34.8 | 8.6 | 53.5 | 79.4 | 8.8 | 291.2 | 20.3 | 0.1 | 60.0 | 9.5 | 75.7 |
| LOS | F | C | A | D | E | A | F | C | A | E | A | E |
| Approach Delay | | 87.7 | | | 64.1 | | | 119.1 | | | 44.5 | |
| Approach LOS | | F | | | E | | | F | | | D | |
| Queue Length 50th (ft) | ~174 | 107 | 7 | 31 | ~220 | 0 | ~118 | 91 | 0 | 59 | 65 | ~130 |
| Queue Length 95th (ft) | #270 | 153 | 63 | 58 | #340 | 54 | #198 | 127 | 0 | m46 | m51 | m73 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 343 | 856 | 517 | 205 | 637 | 415 | 171 | 1461 | 737 | 308 | 1592 | 839 |
| 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 | 1.24 | 0.43 | 0.37 | 0.47 | 1.01 | 0.38 | 1.51 | 0.28 | 0.04 | 0.54 | 0.57 | 1.12 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 140
 Control Type: Actuated-Coordinated

Timings

1: Meridian Road & E Woodmen Road

Total Traffic Volumes

AM Peak Hour - Year 2040

Maximum v/c Ratio: 1.51

Intersection Signal Delay: 68.9

Intersection LOS: E

Intersection Capacity Utilization 90.9%

ICU Level of Service E

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

| | | | | | | | |
|--|--|--|--|---|--|--|--|
|  Ø1 | |  Ø2 (R) | |  Ø3 | |  Ø4 | |
| 14 s | | 47 s | | 11 s | | 28 s | |
|  Ø5 | |  Ø6 (R) | |  Ø7 | |  Ø8 | |
| 10 s | | 51 s | | 15 s | | 24 s | |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
AM Peak Hour - Year 2040



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 93 | 129 | 98 | 688 | 2004 | 161 |
| Future Volume (vph) | 93 | 129 | 98 | 688 | 2004 | 161 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.056 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 104 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 91 | | | | 175 |
| Lane Group Flow (vph) | 101 | 140 | 107 | 748 | 2178 | 175 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 24.0 | 24.0 | 10.0 | 76.0 | 66.0 | 66.0 |
| Total Split (%) | 24.0% | 24.0% | 10.0% | 76.0% | 66.0% | 66.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 9.6 | 9.6 | 80.4 | 79.4 | 66.9 | 66.9 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.80 | 0.79 | 0.67 | 0.67 |
| v/c Ratio | 0.31 | 0.60 | 0.51 | 0.27 | 0.92 | 0.16 |
| Control Delay | 43.5 | 27.9 | 33.0 | 3.4 | 23.4 | 1.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.5 | 27.9 | 33.0 | 3.4 | 23.4 | 1.6 |
| LOS | D | C | C | A | C | A |
| Approach Delay | 34.4 | | | 7.1 | 21.7 | |
| Approach LOS | C | | | A | C | |
| Queue Length 50th (ft) | 31 | 30 | 31 | 48 | 530 | 0 |
| Queue Length 95th (ft) | 54 | 86 | 95 | 43 | #922 | 25 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 652 | 374 | 209 | 2811 | 2368 | 1117 |
| 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 | 0.37 | 0.51 | 0.27 | 0.92 | 0.16 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
 AM Peak Hour - Year 2040

| | |
|---|------------------------|
| Maximum v/c Ratio: 0.92 | |
| Intersection Signal Delay: 19.0 | Intersection LOS: B |
| Intersection Capacity Utilization 78.3% | 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: 2: Meridian Road & Bent Grass Meadows Drive

| | |
|--|--|
|  Ø2 (R)  76 s |  Ø4 24 s |
|  Ø5 10 s |  Ø6 (R) 66 s |

Timings
3: Meridian Road & Eastonville Road

Total Traffic Volumes
AM Peak Hour - Year 2040

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 187 | 58 | 145 | 144 | 69 | 54 | 208 | 642 | 60 | 165 | 1888 | 96 |
| Future Volume (vph) | 187 | 58 | 145 | 144 | 69 | 54 | 208 | 642 | 60 | 165 | 1888 | 96 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.708 | | | 0.477 | | | 0.095 | | | 0.386 | | |
| Satd. Flow (perm) | 2559 | 1863 | 1583 | 889 | 1863 | 1583 | 177 | 3539 | 1583 | 719 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 251 | | | 196 | | | 240 | | | 185 |
| Lane Group Flow (vph) | 203 | 63 | 158 | 157 | 75 | 59 | 226 | 698 | 65 | 179 | 2052 | 104 |
| 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 38.0 | 38.0 | 10.0 | 36.0 | 36.0 | 16.0 | 42.0 | 42.0 |
| Total Split (%) | 10.0% | 24.0% | 24.0% | 24.0% | 38.0% | 38.0% | 10.0% | 36.0% | 36.0% | 16.0% | 42.0% | 42.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 15.5 | 8.7 | 8.7 | 24.4 | 15.8 | 15.8 | 62.5 | 47.5 | 47.5 | 49.2 | 38.2 | 38.2 |
| Actuated g/C Ratio | 0.16 | 0.09 | 0.09 | 0.24 | 0.16 | 0.16 | 0.62 | 0.48 | 0.48 | 0.49 | 0.38 | 0.38 |
| v/c Ratio | 0.44 | 0.39 | 0.43 | 0.48 | 0.25 | 0.14 | 0.54 | 0.41 | 0.07 | 0.39 | 1.52 | 0.14 |
| Control Delay | 32.8 | 49.2 | 3.9 | 34.1 | 36.4 | 0.7 | 24.5 | 18.5 | 1.9 | 16.5 | 265.5 | 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 | 32.8 | 49.2 | 3.9 | 34.1 | 36.4 | 0.7 | 24.5 | 18.5 | 1.9 | 16.5 | 265.5 | 4.6 |
| LOS | C | D | A | C | D | A | C | B | A | B | F | A |
| Approach Delay | | 24.5 | | | 27.9 | | | 18.8 | | | 234.7 | |
| Approach LOS | | C | | | C | | | B | | | F | |
| Queue Length 50th (ft) | 52 | 39 | 0 | 81 | 42 | 0 | 120 | 160 | 1 | 70 | ~930 | 0 |
| Queue Length 95th (ft) | 73 | 78 | 2 | 123 | 76 | 0 | m159 | m179 | m6 | m102 | m#1117 | m1 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 465 | 353 | 504 | 402 | 614 | 653 | 416 | 1682 | 878 | 487 | 1353 | 719 |
| 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 | 0.18 | 0.31 | 0.39 | 0.12 | 0.09 | 0.54 | 0.41 | 0.07 | 0.37 | 1.52 | 0.14 |

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Total Traffic Volumes

AM Peak Hour - Year 2040

Maximum v/c Ratio: 1.52

Intersection Signal Delay: 144.9

Intersection LOS: F

Intersection Capacity Utilization 91.7%

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: 3: Meridian Road & Eastonville Road

| | | | | | | | |
|--|--|--|--|--|--|--|--|
|  Ø1 | |  Ø2 (R) | |  Ø3 | |  Ø4 | |
| 16 s | | 36 s | | 24 s | | 24 s | |
|  Ø5 | |  Ø6 (R) | |  Ø7 | |  Ø8 | |
| 10 s | | 42 s | | 10 s | | 38 s | |

HCM 6th TWSC
4: Meridian Road & Owl Place

Total Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.1 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↖ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 82 | 47 | 809 | 2066 | 67 |
| Future Vol, veh/h | 0 | 82 | 47 | 809 | 2066 | 67 |
| 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 | - | - | - |
| 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 | 89 | 51 | 879 | 2246 | 73 |

| Major/Minor | Minor2 | Major1 | Major2 | | | |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | - | 1160 | 2319 | 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 | *229 | *342 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | 1 | 1 | - | - | - |
| Mov Cap-1 Maneuver | - | *229 | *342 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 30.4 | 1 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | * 342 | - | 229 | - | - |
| HCM Lane V/C Ratio | 0.149 | - | 0.389 | - | - |
| HCM Control Delay (s) | 17.4 | - | 30.4 | - | - |
| HCM Lane LOS | C | - | D | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | 1.7 | - | - |

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

Timings
1: Meridian Road & E Woodmen Road

Total Traffic Volumes
PM Peak Hour - Year 2040

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 1039 | 708 | 240 | 168 | 545 | 256 | 308 | 1080 | 159 | 257 | 716 | 622 |
| Future Volume (vph) | 1039 | 708 | 240 | 168 | 545 | 256 | 308 | 1080 | 159 | 257 | 716 | 622 |
| 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) | | | 199 | | | 164 | | | 164 | | | 587 |
| Lane Group Flow (vph) | 1129 | 770 | 261 | 183 | 592 | 278 | 335 | 1174 | 173 | 279 | 778 | 676 |
| Turn Type | Prot | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 40.0 | 48.0 | 48.0 | 16.0 | 24.0 | 24.0 | 17.0 | 43.0 | 43.0 | 13.0 | 39.0 | 39.0 |
| Total Split (%) | 33.3% | 40.0% | 40.0% | 13.3% | 20.0% | 20.0% | 14.2% | 35.8% | 35.8% | 10.8% | 32.5% | 32.5% |
| Yellow Time (s) | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 35.0 | 42.6 | 42.6 | 10.4 | 18.0 | 18.0 | 12.0 | 37.0 | 37.0 | 8.0 | 33.0 | 33.0 |
| Actuated g/C Ratio | 0.29 | 0.36 | 0.36 | 0.09 | 0.15 | 0.15 | 0.10 | 0.31 | 0.31 | 0.07 | 0.28 | 0.28 |
| v/c Ratio | 1.13 | 0.61 | 0.38 | 0.62 | 1.12 | 0.74 | 0.98 | 1.08 | 0.29 | 1.22 | 0.80 | 0.79 |
| Control Delay | 109.9 | 34.6 | 9.3 | 62.3 | 121.8 | 32.6 | 97.1 | 90.0 | 6.7 | 177.6 | 47.6 | 19.2 |
| 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 | 109.9 | 34.6 | 9.3 | 62.3 | 121.8 | 32.6 | 97.1 | 90.0 | 6.7 | 177.6 | 47.6 | 19.2 |
| LOS | F | C | A | E | F | C | F | F | A | F | D | B |
| Approach Delay | | 70.9 | | | 87.9 | | | 82.9 | | | 57.5 | |
| Approach LOS | | E | | | F | | | F | | | E | |
| Queue Length 50th (ft) | ~522 | 258 | 32 | 71 | ~276 | 84 | 135 | ~533 | 5 | ~140 | 203 | 157 |
| Queue Length 95th (ft) | #655 | 326 | 98 | 110 | #394 | #201 | #231 | #669 | 57 | m#180 | m258 | m249 |
| Internal Link Dist (ft) | | 1105 | | | 882 | | | 544 | | | 1159 | |
| Turn Bay Length (ft) | 720 | | | 440 | | | 420 | | | 460 | | 460 |
| Base Capacity (vph) | 1001 | 1256 | 690 | 314 | 530 | 376 | 343 | 1091 | 601 | 228 | 973 | 860 |
| 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 | 1.13 | 0.61 | 0.38 | 0.58 | 1.12 | 0.74 | 0.98 | 1.08 | 0.29 | 1.22 | 0.80 | 0.79 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
 Natural Cycle: 150
 Control Type: Actuated-Coordinated

Timings

1: Meridian Road & E Woodmen Road

Total Traffic Volumes

PM Peak Hour - Year 2040

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 73.1

Intersection LOS: E

Intersection Capacity Utilization 100.2%

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

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 13 s | 43 s | 16 s | 48 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 17 s | 39 s | 40 s | 24 s |

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
PM Peak Hour - Year 2040



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 119 | 108 | 93 | 2290 | 1306 | 147 |
| Future Volume (vph) | 119 | 108 | 93 | 2290 | 1306 | 147 |
| Satd. Flow (prot) | 3433 | 1583 | 1770 | 3539 | 3539 | 1583 |
| Flt Permitted | 0.950 | | 0.143 | | | |
| Satd. Flow (perm) | 3433 | 1583 | 266 | 3539 | 3539 | 1583 |
| Satd. Flow (RTOR) | | 117 | | | | 160 |
| Lane Group Flow (vph) | 129 | 117 | 101 | 2489 | 1420 | 160 |
| 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) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 24.0 |
| Total Split (s) | 24.0 | 24.0 | 12.0 | 96.0 | 84.0 | 84.0 |
| Total Split (%) | 20.0% | 20.0% | 10.0% | 80.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 |
| 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) | 9.9 | 9.9 | 100.1 | 99.1 | 87.4 | 87.4 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.83 | 0.83 | 0.73 | 0.73 |
| v/c Ratio | 0.46 | 0.49 | 0.33 | 0.85 | 0.55 | 0.13 |
| Control Delay | 57.4 | 16.5 | 3.3 | 9.5 | 8.7 | 1.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.4 | 16.5 | 3.3 | 9.5 | 8.7 | 1.1 |
| LOS | E | B | A | A | A | A |
| Approach Delay | 37.9 | | | 9.3 | 7.9 | |
| Approach LOS | D | | | A | A | |
| Queue Length 50th (ft) | 50 | 0 | 10 | 165 | 230 | 0 |
| Queue Length 95th (ft) | 80 | 56 | m9 | m198 | 320 | 20 |
| Internal Link Dist (ft) | 763 | | | 1273 | 472 | |
| Turn Bay Length (ft) | 160 | | 700 | | | 330 |
| Base Capacity (vph) | 543 | 349 | 312 | 2923 | 2578 | 1196 |
| 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 | 0.24 | 0.34 | 0.32 | 0.85 | 0.55 | 0.13 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Timings
2: Meridian Road & Bent Grass Meadows Drive

Total Traffic Volumes
 PM Peak Hour - Year 2040

Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 10.4 Intersection LOS: B
 Intersection Capacity Utilization 76.6% 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 & Bent Grass Meadows Drive

| | | | |
|--|--|--|--|
|  Ø2 (R) | |  Ø4 | |
| 96 s | | 24 s | |
|  Ø5 |  Ø6 (R) | | |
| 12 s | 84 s | | |

Timings
3: Meridian Road & Eastonville Road

Total Traffic Volumes
PM Peak Hour - Year 2040

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |  |  |  |  |  |  |   |  |  |   |  |
| Traffic Volume (vph) | 307 | 143 | 181 | 47 | 98 | 200 | 298 | 1890 | 173 | 123 | 1205 | 101 |
| Future Volume (vph) | 307 | 143 | 181 | 47 | 98 | 200 | 298 | 1890 | 173 | 123 | 1205 | 101 |
| Satd. Flow (prot) | 3433 | 1863 | 1583 | 1770 | 1863 | 1583 | 1770 | 3539 | 1583 | 1770 | 3539 | 1583 |
| Flt Permitted | 0.547 | | | 0.547 | | | 0.076 | | | 0.084 | | |
| Satd. Flow (perm) | 1977 | 1863 | 1583 | 1019 | 1863 | 1583 | 142 | 3539 | 1583 | 156 | 3539 | 1583 |
| Satd. Flow (RTOR) | | | 209 | | | 164 | | | 166 | | | 200 |
| Lane Group Flow (vph) | 334 | 155 | 197 | 51 | 107 | 217 | 324 | 2054 | 188 | 134 | 1310 | 110 |
| 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 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 10.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 | 10.0 | 24.0 | 24.0 |
| Total Split (s) | 14.0 | 24.0 | 24.0 | 24.0 | 34.0 | 34.0 | 21.0 | 62.0 | 62.0 | 10.0 | 51.0 | 51.0 |
| Total Split (%) | 11.7% | 20.0% | 20.0% | 20.0% | 28.3% | 28.3% | 17.5% | 51.7% | 51.7% | 8.3% | 42.5% | 42.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 6.0 | 6.0 | 5.0 | 6.0 | 6.0 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 24.8 | 17.6 | 17.6 | 22.7 | 14.6 | 14.6 | 81.4 | 63.4 | 63.4 | 62.0 | 48.9 | 48.9 |
| Actuated g/C Ratio | 0.21 | 0.15 | 0.15 | 0.19 | 0.12 | 0.12 | 0.68 | 0.53 | 0.53 | 0.52 | 0.41 | 0.41 |
| v/c Ratio | 0.65 | 0.57 | 0.48 | 0.21 | 0.47 | 0.65 | 0.71 | 1.10 | 0.21 | 0.55 | 0.91 | 0.14 |
| Control Delay | 45.0 | 56.7 | 9.1 | 35.8 | 54.6 | 22.6 | 35.4 | 73.6 | 6.9 | 30.4 | 38.8 | 1.0 |
| 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 | 45.0 | 56.7 | 9.1 | 35.8 | 54.6 | 22.6 | 35.4 | 73.6 | 6.9 | 30.4 | 38.8 | 1.0 |
| LOS | D | E | A | D | D | C | D | E | A | C | D | A |
| Approach Delay | | 37.3 | | | 33.5 | | | 63.9 | | | 35.4 | |
| Approach LOS | | D | | | C | | | E | | | D | |
| Queue Length 50th (ft) | 113 | 116 | 0 | 31 | 79 | 38 | 222 | ~939 | 28 | 53 | 299 | 0 |
| Queue Length 95th (ft) | 144 | 179 | 56 | 60 | 127 | 112 | m214 | m#904 | m24 | 130 | #669 | 3 |
| Internal Link Dist (ft) | | 468 | | | 570 | | | 1159 | | | 643 | |
| Turn Bay Length (ft) | 100 | | 100 | 100 | | 100 | | | 400 | 375 | | 400 |
| Base Capacity (vph) | 517 | 307 | 436 | 361 | 450 | 506 | 455 | 1869 | 914 | 242 | 1443 | 764 |
| 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 | 0.65 | 0.50 | 0.45 | 0.14 | 0.24 | 0.43 | 0.71 | 1.10 | 0.21 | 0.55 | 0.91 | 0.14 |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated

Timings

3: Meridian Road & Eastonville Road

Total Traffic Volumes

PM Peak Hour - Year 2040

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 49.6

Intersection LOS: D

Intersection Capacity Utilization 90.5%

ICU Level of Service E

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: 3: Meridian Road & Eastonville Road

| | | | |
|--|--|---|--|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 10 s | 62 s | 24 s | 24 s |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 21 s | 51 s | 14 s | 34 s |

HCM 6th TWSC
4: Meridian Road & Owl Place

Adjust all for this intersection

Total Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.4 | | | | | |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | ↗ | ↖ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 0 | 77 | 50 | 2328 | 1352 | 62 |
| Future Vol, veh/h | 0 | 77 | 50 | 2328 | 1352 | 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 | 275 | - | - | - |
| 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 | 84 | 54 | 2530 | 1470 | 67 |

| Major/Minor | Minor2 | Major1 | Major2 | | |
|----------------------|--------|--------|--------|---|---|
| Conflicting Flow All | - | 769 | 1537 | 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 | 13.2 | 0.2 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h) | * 782 | - | 523 | - | - |
| HCM Lane V/C Ratio | 0.069 | - | 0.16 | - | - |
| HCM Control Delay (s) | 9.9 | - | 13.2 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.6 | - | - |

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