MASTER TRAFFIC IMPACT STUDY

For

The Markets at Bent Grass
El Paso County, Colorado
(EPC No.: CR-26-01, SP-26-02)

March 2026
Revised: May 2026

Prepared for:

Evergreen
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Prepared by:

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Fred Lantz, PE

25-022358

Traffic Engineer's Statement

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

05/22/2026

Fred Lantz, PE #23410 Date

Developer's Statement

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

05/22/2026

Evergreen Date
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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 zoning application entitled The Markets at Bent Grass.

This assumed commercial development is conceptual and anticipated to consist of various commercial uses including a home improvement superstore, restaurants, a gas station, and a variety of retail shops. The development is located at the northeast of the intersection of Bent Grass Meadows Drive with Woodmen Frontage Road in El Paso County, Colorado.

This study has been revised to address County review comments received and dated 4/1/2026.

Study Area

The study area to be examined in this analysis encompasses the E Woodmen Road corridor between Golden Sage Drive and Meridian Road, the Woodmen Frontage Road corridor between Golden Sage Drive and Falcon Market Place, as well as the Bent Grass Meadows Drive Corridor between Woodmen Frontage Road and Meridian Road.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the assumed development is currently vacant and is surrounded by a mix of light industrial, commercial, and residential land uses.

The assumed development is conceptual, and specific land uses are subject to change. However, for purposes of this analysis, site construction is assumed to entail a day care center, strip retail, home improvement store, free-standing discount superstore, drive-in bank, fast casual restaurants, restaurants with drive-through, coffee/donut shop with drive-through, automobile parts and service center, and gas station convenience store. Table 5 of this analysis presents assumed sizes of each described land use.

Direct access to the overall development is conceptual and subject to change pursuant to final lot configuration, therefore only key site access drives were considered in this analysis. However, it is expected that intersection operations for site access drives will be comparable to or better than operational results determined for adjacent area intersections. General access is anticipated to include various locations along Bent Grass Meadows Drive and Woodmen Frontage Road with connection to the regional roadway network via the intersections of Golden Sage Drive with E Woodmen Road, Woodmen Frontage Road and Falcon Market Place, and Bent Grass Meadows Drive with Meridian Road.

Additionally, the development assumes the realignment of Woodmen Frontage Road to allow for improved site connectivity and circulation by introducing a new full-movement intersection with E Woodmen Road. This intersection is assumed to be designed as a Continuous Green T-Intersection (CGT). A CGT is a T-intersection design where one major street (E Woodmen Road) direction of travel (the top side of the "T") can pass through the intersection without stopping and opposite major street (E Woodmen Road) direction of travel is typically controlled by a traffic signal. Left-turn vehicles from the side street (Bent Grass Meadows Drive) use a channelized receiving lane on the major street (E Woodmen Road) to merge onto the major street. A CGT intersection is typically signalized but can also be designed without a traffic signal. Intersections of this type are common and have performed well in other states including Colorado. CGT intersections are shown to reduce delays at high-volume locations by removing the need to stop both directions of mainline traffic to accommodate left turns. A CGT intersection can also be referred to as a Turbo-T, High-T, or Seagull intersection.

The above-described access to E Woodmen Road is compliant to the E Woodmen Road Access Management Plan for Bent Grass Meadows Drive connection.

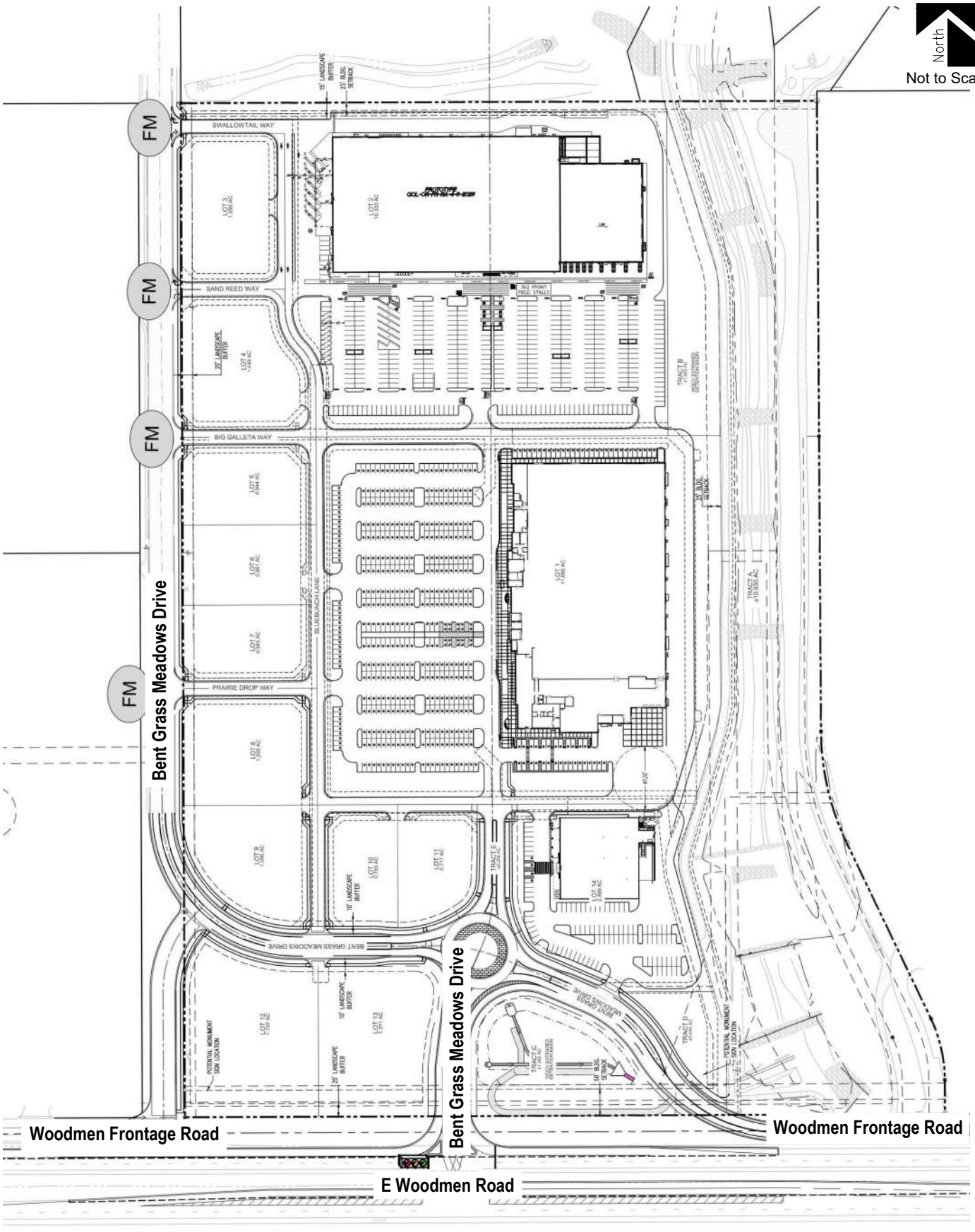
Through detailed coordination and collaboration between El Paso County and the City of Colorado Springs, implementation of the innovative CGT intersection control concept at Woodmen Road and Golden Sage Road has been conceptually approved. This CGT intersection is intended to work in tandem with the above-described CGT intersection and other planned corridor improvements to enhance traffic operations, improve corridor mobility, and help accommodate the significant travel demands anticipated along the E Woodmen Road corridor. It is further envisioned that this CGT configuration would allow westbound travel on E Woodmen Road to continue without interruption while restricting the north leg of Golden Sage Road to right-in/right-out movements. A copy of the County prepared concept of the coordinated CGT intersections is provided for reference in Appendix B.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2030.

General site and access locations are shown on Figure 1.

A conceptual site plan, as prepared by Galloway, is shown in Figure 2. This plan is provided for illustrative purposes only, and it is emphasized that assumed land uses are subject to change.


North
Not to Scale
Bent Grass Meadows Drive
Meridian Road
Development Site
E Woodmen Road
Woodmen Frontage Road
Golden Sage Road
Rolling Thunder Way
Foxtail Meadow Drive


North
Not to Scale
FM
FM
FM
FM
SWALLOWTAIL WAY
SAND REED WAY
BIG GALLETA WAY
PRAIRIE DROP WAY
BENT GRASS MEADOWS DRIVE
Bent Grass Meadows Drive
Bent Grass Meadows Drive
Woodmen Frontage Road
Woodmen Frontage Road
E Woodmen Road

Existing and Committed Surface Transportation Network

Within the study area, regional access to the proposed development area is provided by way of E Woodmen Road and Meridian Road while local access is provided via Bent Grass Meadows Drive, Woodmen Frontage Road, Golden Sage Drive, and Falcon Market Place. A brief description of each roadway, based on the City of Colorado Springs Major Thoroughfare Plan (MTP)[1] and Traffic Criteria Manual[2], and the County's 2024 Major Transportation Corridors Plan (MTCP)[3] and Engineering Criteria Manual (ECM)[4], is provided below:

E Woodmen Road is an east-west expressway 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.

Meridian Road is a north-south principal arterial roadway with 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.

Bent Grass Meadows Drive is a north-south urban collector roadway at Woodmen Frontage Road intersection having two through lanes (one lane 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.

Woodmen Frontage Road is an east-west frontage roadway with County classification as an urban major collector. Two through lanes (one lane in each direction) are provided with shared turn lanes at the intersections within the study area. Woodmen Frontage Road provides a posted speed limit of 35 MPH.

Golden Sage Drive is a north-south 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. Golden Sage Drive is unclassified in the City's MTP. However, per the City's Traffic Criteria Manual and the roadway's estimated right-of-way (ROW) width, Golden Sage Road is assumed to be classified as a collector roadway with a speed limit of 35 MPH.

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

[1] Major Thoroughfare Plan, City of Colorado Springs, August 2011.
[2] Engineering Criteria Manual, Section III: Traffic Criteria Manual, City of Colorado Springs City Engineering, July 2010.
[3] El Paso County Major Transportation Corridors Plan (MTCP), El Paso County, July 2024.
[4] El Paso County Engineering Criteria Manual, El Paso County, July 2023.

The study intersections of E Woodmen Road with Golden Sage Drive and Meridian Road, as well as the intersection of Meridian Road with Bent Grass Meadows Drive are signalized. The intersection of Woodmen Frontage Road with Falcon Market Place is a roundabout. 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.

In reference to the County's MTCP, E Woodmen Road is planned to be widened to six through lanes west of Golden Sage Road. However, in correspondence with County Staff, specific timing of this improvement is undetermined, but may occur as early as 2030. Additionally, pursuant to the Briargate Parkway-Stapleton Road Corridor Preservation Plan[5] (CPP) and Access Control Plan[6] (ACP), Meridian Road is anticipated to be widened to a six-lane principal arterial roadway by Year 2060. For purposes of this analysis, only the E Woodmen Road widening project is assumed to have occurred by Year 2045.

No other regional or specific improvements for the above-described roadways are known to be planned or committed at this time. These study area roadways appear to be built to their ultimate cross-sections.

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

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

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of E Woodmen Road with Golden Sage Drive and Meridian Road, as well as Woodmen Frontage Road with Golden Sage Drive, Bent Grass Meadows Drive, and Falcon Market Place, and the intersection of Meridian Road with Bent Grass Meadows Drive. Counts were collected on Wednesday, February 26, 2025, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

Existing volumes and intersection geometry are shown in Figures 3A and 3B, respectively. Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for study intersections were assumed based on the existing signal head configuration and allowable movements, and pursuant to typical signal timing data described within the County's Engineering Criteria Manual (ECM)[7]. Timings were used throughout this study to the best extent possible to remain consistent with typical City and County signal coordination plans.

[7] El Paso County Engineering Criteria Manual, El Paso County, October 2020.

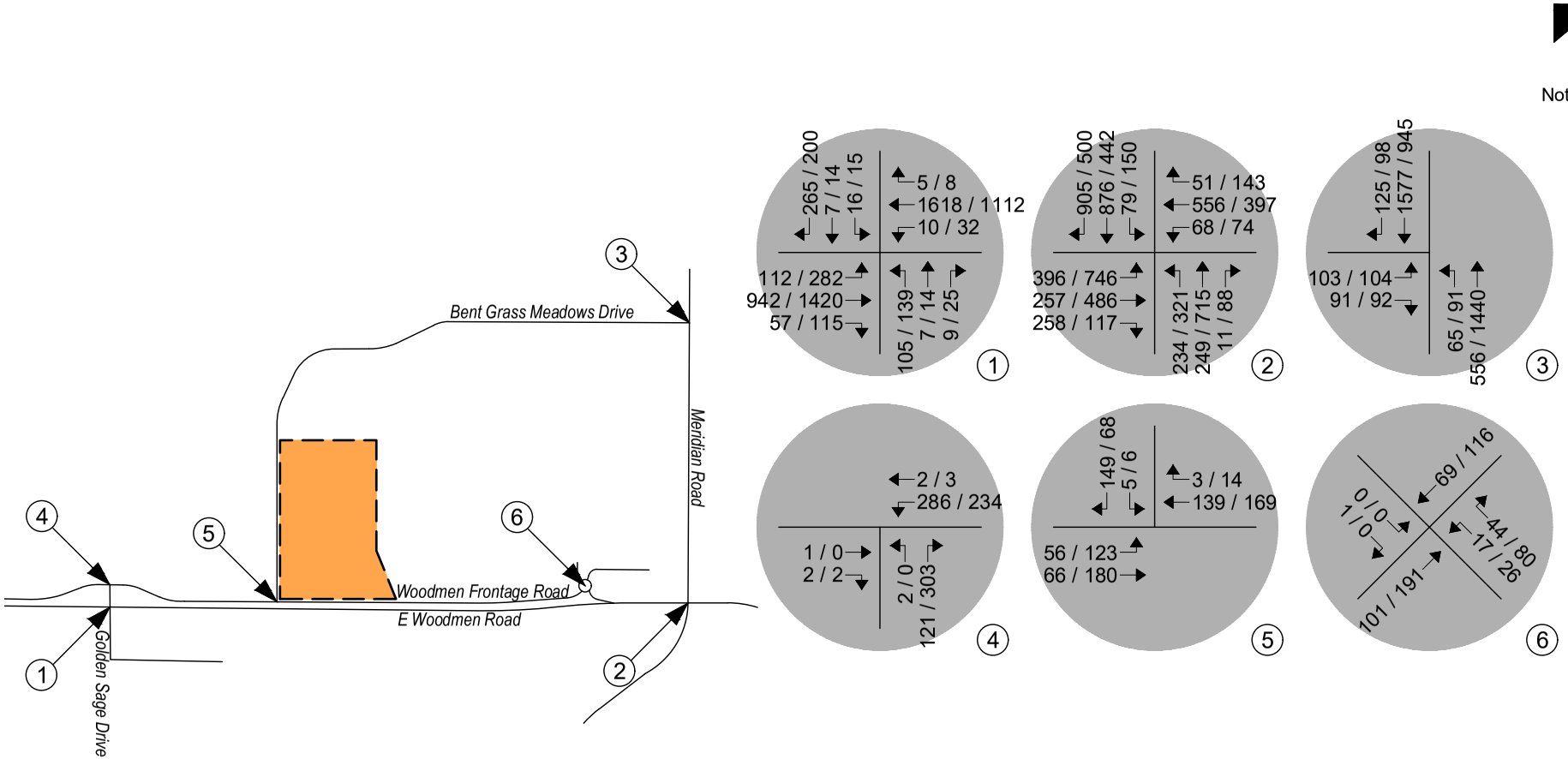
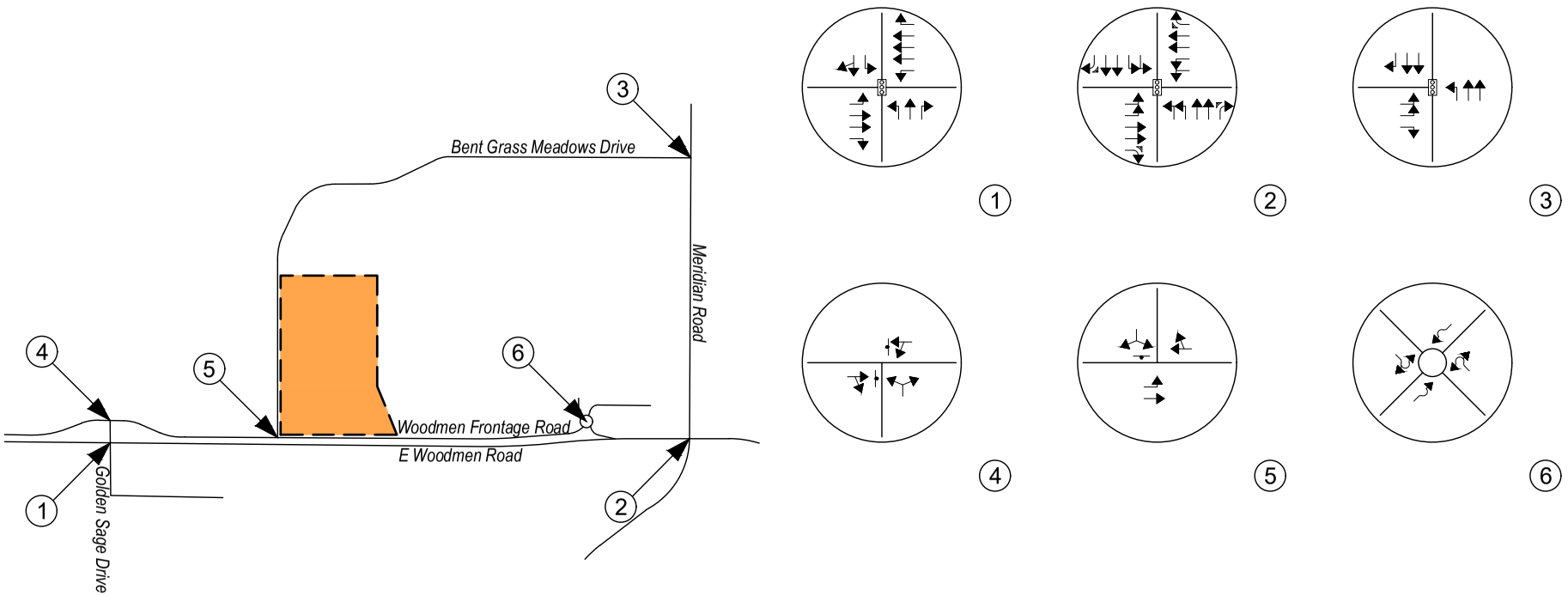


Figure 3A
EXISTING TRAFFIC
Intersection Volumes
AM / PM Peak Hour

North

Not to Scale



LEGEND

Study Intersection Lane Geometry

Development Site

Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized, Unsignalized and Roundabout Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM), 7th 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 control delay of each traffic movement.

It should be noted that exceptions include the intersection of Woodmen Frontage Road with Golden Sage Drive which currently operates as a two-way stop-controlled intersection with stop signs located on the eastbound and westbound approaches. HCM 7th Edition analysis methods do not provide results for an intersection configuration of this type. Therefore, HCM 2000 methodologies were utilized for determination of LOS at the study intersection.

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
E Woodmen Road / Golden Sage Drive (Signalized)	C (27.4)	C (25.5)
E Woodmen Road / Meridian Road (Signalized)	C (33.8)	D (40.1)
Meridian Road / Bent Grass Meadows Drive (Signalized)	B (13.3)	B (10.2)
Woodmen Frontage Road / Golden Sage Drive (Stop-Controlled)		
Eastbound Through and Right	A	A
Westbound Left and Through	B	B
Woodmen Frontage Road / Bent Grass Meadows Drive (Stop-Controlled)		
Eastbound Left	A	A
Southbound Left and Right	B	B
Woodmen Frontage Road / Falcon Market Place (Roundabout)		
Eastbound Through	A	A
Westbound Through	A	A
Northbound Left and Right	A	A
Southbound Left and Right	A	A

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

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of E Woodmen Road with Golden Sage Drive has overall operations at LOS C during both the morning and afternoon peak traffic hours.

The signalized intersection of E Woodmen Road with Meridian 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 B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Woodmen Frontage Road with Golden Sage Drive has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The unsignalized intersection of Woodmen Frontage Road with Bent Grass Meadows Drive has turning movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

The roundabout intersection of Woodmen Frontage Road with Falcon Market Place has turning movement operations at LOS A during both the morning and afternoon 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 2030 and 2045, a compounded annual growth rate was determined using historical traffic data for the surrounding area provided by CDOT's Online Transportation Information System (OTIS), CDOT's Traffic Count Database System (TCDS)[8], and using population growth estimates provided by the Pikes Peak Area Council of Governments' (PPACG) 2045 Long Range Transportation Plan[9] along the adjacent segments of E Woodmen Road, Meridian Road, and US Highway 24. These sources indicate an expected 20-year growth rate of approximately 1.3 percent annually. Therefore, an annual growth rate of 1.3 percent was applied to existing traffic volumes. This annual growth rate is assumed to account for general regional growth based on the level of ongoing in-fill development within the area, as well as for recent or newly constructed adjacent developments which may not be in full operational or occupied status.

In addition to the above identified growth rate for regional growth in the area, to account for projected traffic from known adjacent developments not yet built, trip generations from the following traffic studies were added to background traffic volumes as applicable:

- Percheron[10]
- Bent Grass East Commercial Filing No. 3[11]

It is important to note that trip generations from additional adjacent developments were also considered including those from recently construction or partially constructed development areas. This includes the Falcon Marketplace, Owl Place Commercial, and Bent Grass Commercial North development areas, in addition to the adjacent Falcon Meadows at Bent Grass and Banning Lewis Ranch Villages A-D residential subdivisions. However, upon consideration of these developments, and in reference to future volume projections as previously assessed in the Bent Grass East Commercial Filing No. 3 report, it is determined that existing count data already accounts for a portion of the expected traffic from these areas, and calculated future volumes are generally comparable to those previously estimated. It is noted that the Bent Grass East Commercial Filing no. 3 development included trips from these developments as part of background growth estimates. Based on these estimates being similar to those determined in this report, it is concluded that the applied 1.3 percent annual growth rate adequately accounts for other development trip generation not directly added to existing volumes.

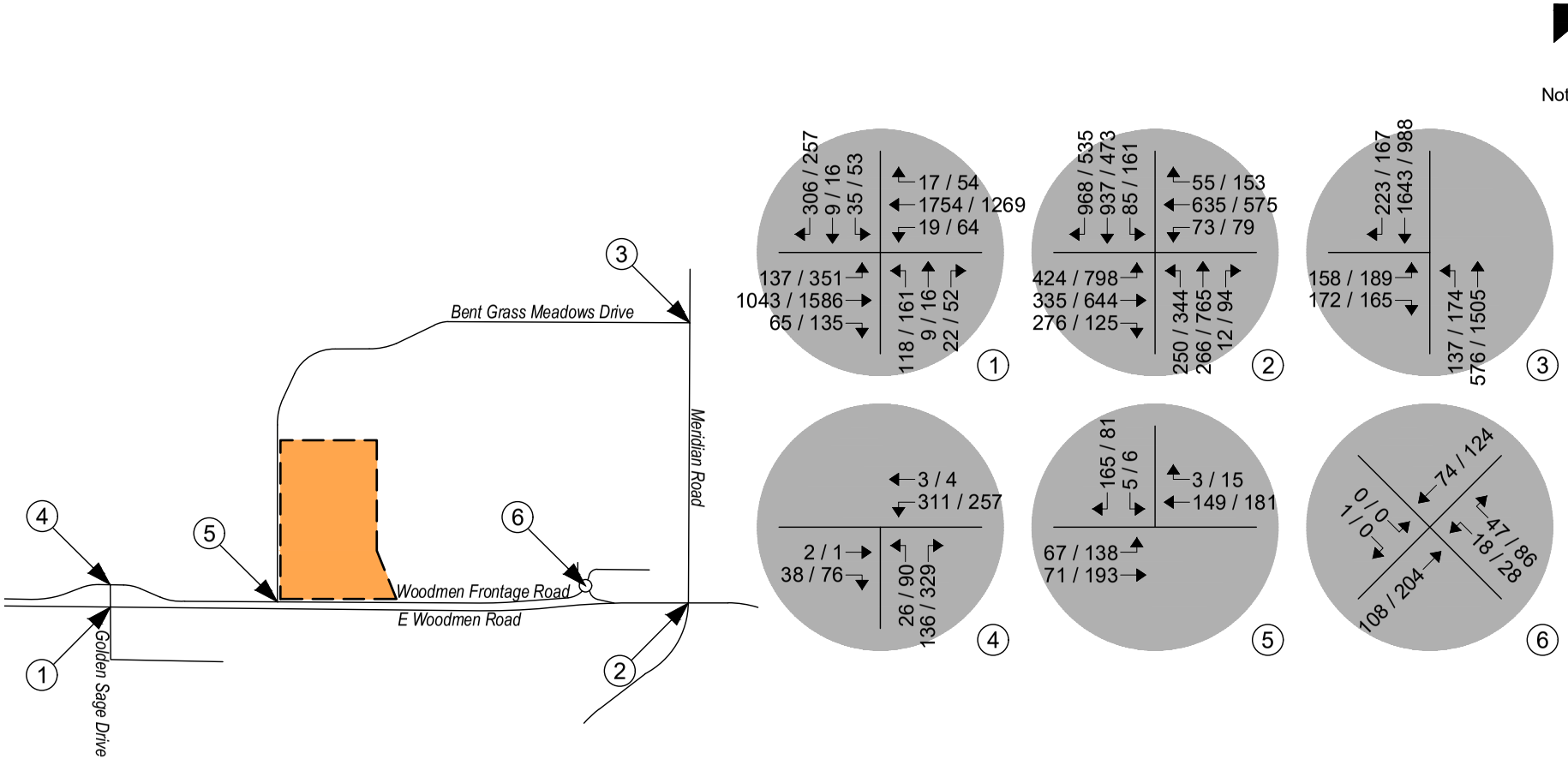
It is further noted that considering the substantial number of ongoing developments within the area, future volume projections may be subject to overly conservative estimates and unrealistically portray future conditions. Such over estimation may in turn result in minimizing or detracting from the actual impacts that may result from the currently proposed commercial development.

[8] Transportation Data Management System, MS2, 2021.
[9] Moving Forward 2045: Pikes Peak Area Regional Transportation Plan, PPACG, January 2020.
[10] Percheron Traffic Impact Study, SM Rocha LLC, October 2021.
[11] Bent Grass East Commercial F3 Updated Traffic Impact Analysis, LSC Transportation Consultants Inc., October 2021.

Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2030 and Year 2045 background traffic conditions assume no further improvements with exception to Year 2045 where widening of E Woodmen Road is assumed. This assumption provides for a conservative analysis. Year 2045 assumes existing signal timing parameters for study intersections with optimized intersection splits in effort to better long-term intersection performance.

Projected background traffic volumes and intersection geometry for Year 2030 are shown in Figures 4A and 4B, respectively.

Projected background traffic volumes and intersection geometry for Year 2045 are shown in Figures 5A and 5B, respectively.



LEGEND

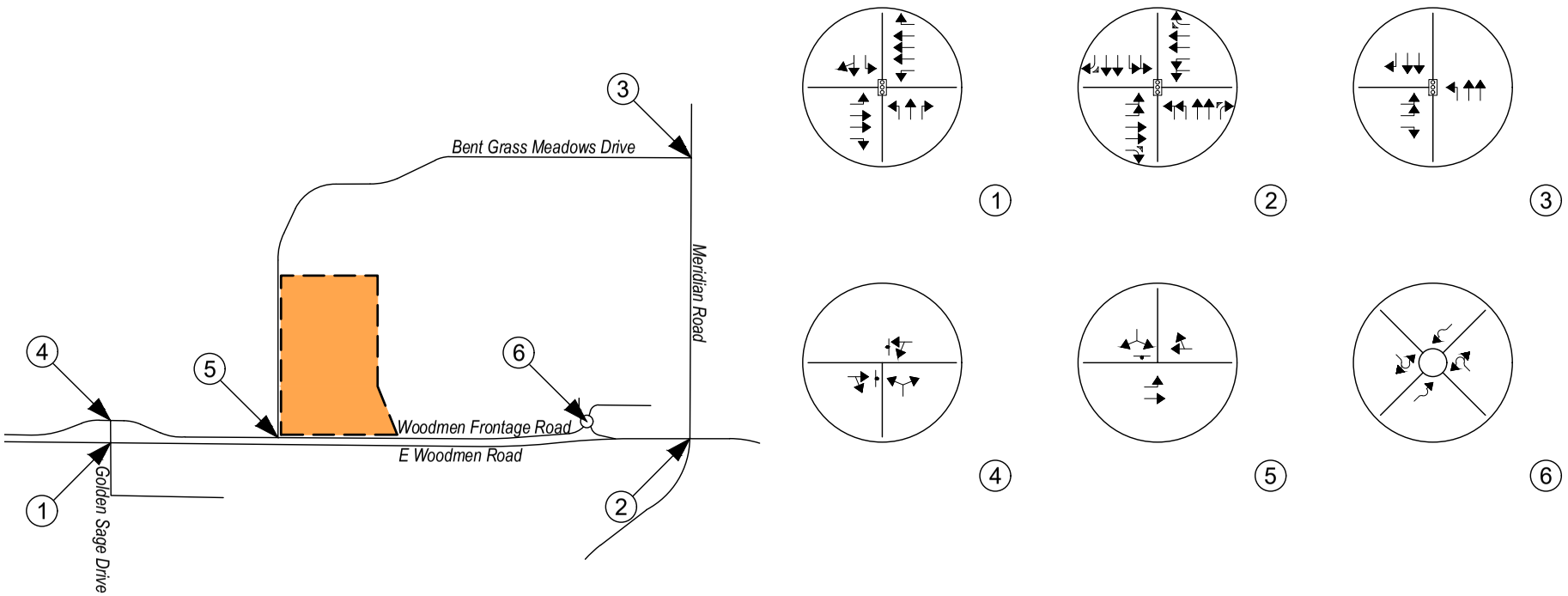
Study Intersection Volumes

Development Site

Figure 4A
BACKGROUND TRAFFIC - YEAR 2030
Intersection Volumes
AM / PM Peak Hour

North

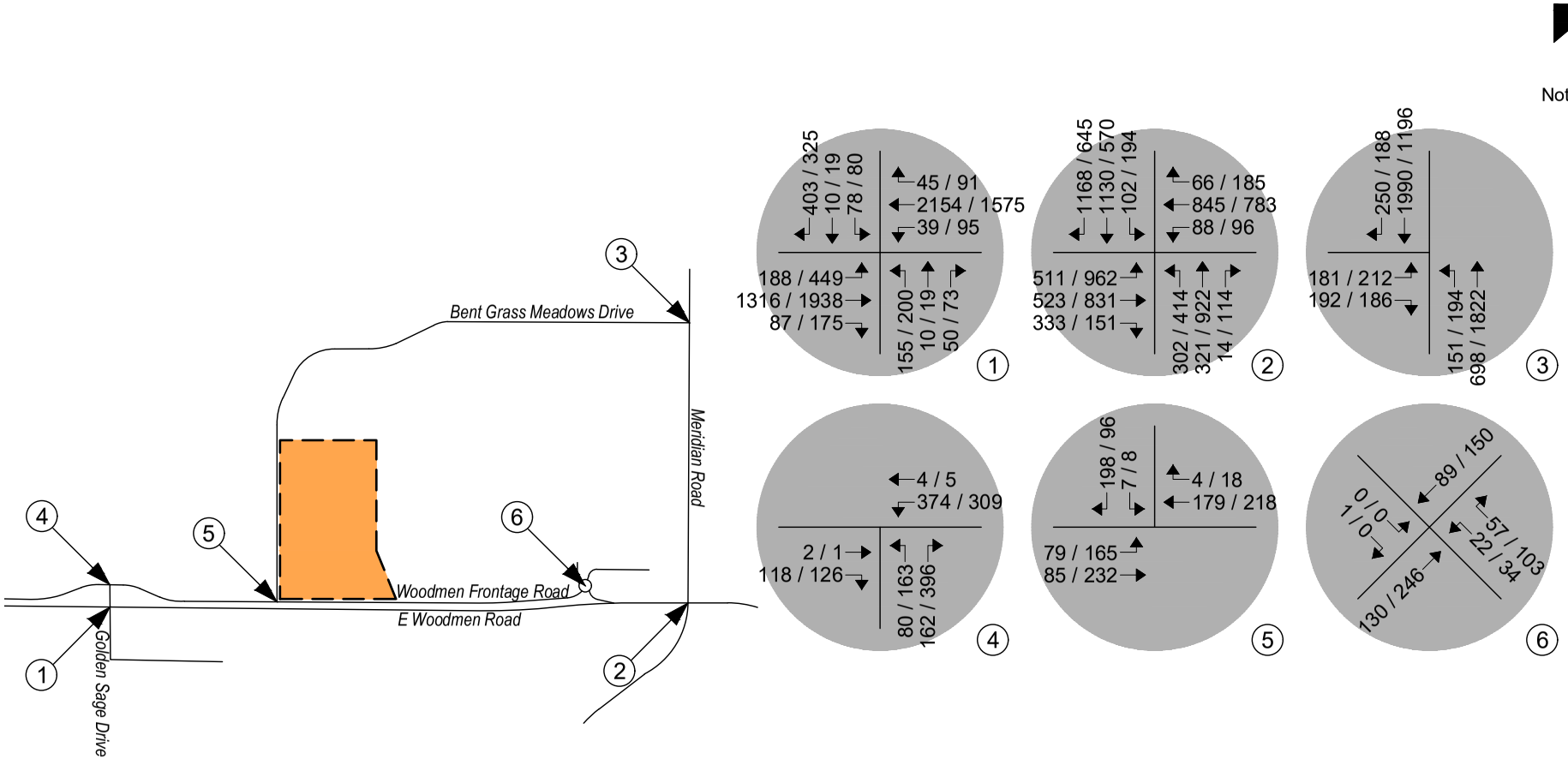
Not to Scale



LEGEND

Study Intersection Lane Geometry

Development Site



LEGEND

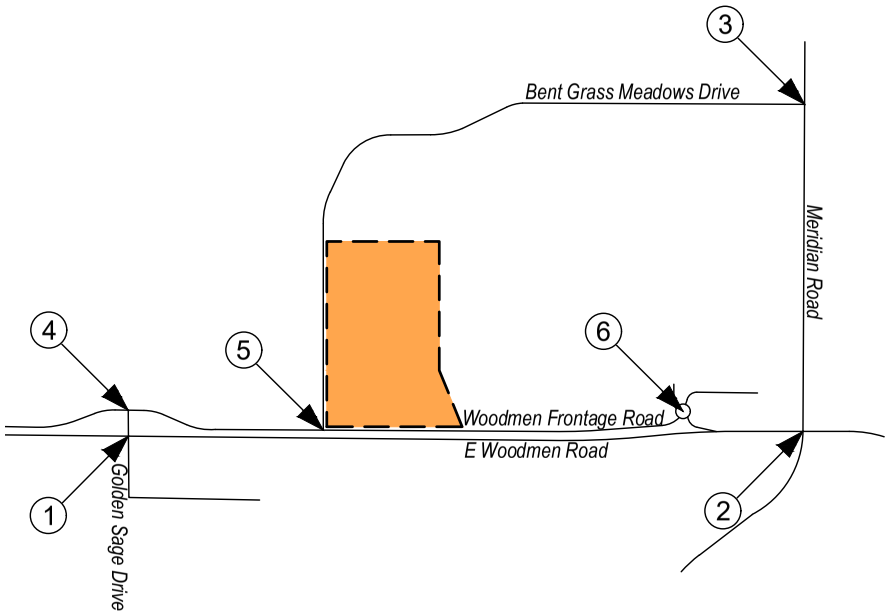
Study Intersection Volumes

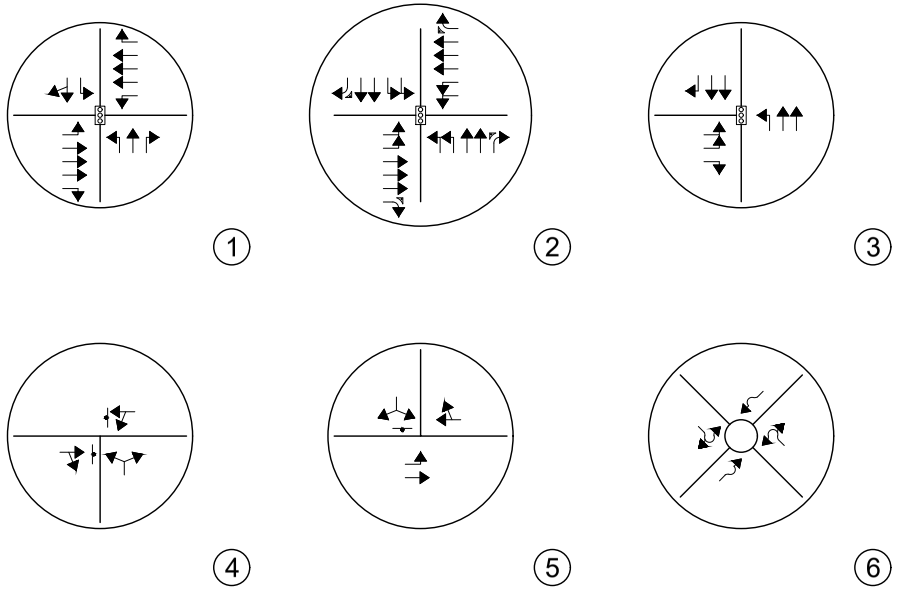
Development Site

Figure 5A
BACKGROUND TRAFFIC - YEAR 2045
Intersection Volumes
AM / PM Peak Hour

North

Not to Scale





LEGEND

Study Intersection
Lane Geometry

Development Site

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 2030 are listed in Table 2. Year 2045 operational results are summarized in Table 3.

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

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2030

INTERSECTION	LEVEL OF SERVICE	
LANE GROUPS	AM PEAK HOUR	PM PEAK HOUR
E Woodmen Road / Golden Sage Drive (Signalized)	D (38.3)	E (56.8)
E Woodmen Road / Meridian Road (Signalized)	D (36.8)	D (44.5)
Meridian Road / Bent Grass Meadows Drive (Signalized)	B (16.2)	B (12.5)
Woodmen Frontage Road / Golden Sage Drive (Stop-Controlled)		
Eastbound Through and Right	A	A
Westbound Left and Through	B	D
Woodmen Frontage Road / Bent Grass Meadows Drive (Stop-Controlled)		
Eastbound Left	A	A
Southbound Left and Right	B	B
Woodmen Frontage Road / Falcon Market Place (Roundabout)		
Eastbound Through	A	A
Westbound Through	A	A
Northbound Left and Right	A	A
Southbound Left and Right	A	A

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

Background Traffic Analysis Results – Year 2030

Year 2030 background traffic analysis indicates that the signalized intersection of E Woodmen Road with Golden Sage Drive has overall operations at LOS D during the AM peak traffic hour and LOS E during the PM peak traffic hour. The LOS E operation anticipated during the afternoon peak traffic period is attributed to the high eastbound left turning volumes, as well as the northbound left turn movement and high east-west through volumes.

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

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

Unsignalized and roundabout intersections within the study area operate at or better than LOS B during the AM peak traffic period and LOS D or better during the PM peak traffic period.

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
E Woodmen Road / Golden Sage Drive (Signalized)	D (52.3)	E (56.6)
E Woodmen Road / Meridian Road (Signalized)	D (46.1)	E (56.8)
Meridian Road / Bent Grass Meadows Drive (Signalized)	C (22.4)	B (13.7)
Woodmen Frontage Road / Golden Sage Drive (Stop-Controlled)		
Eastbound Through and Right	A	A
Westbound Left and Through	E	F
Woodmen Frontage Road / Bent Grass Meadows Drive (Stop-Controlled)		
Eastbound Left	A	A
Southbound Left and Right	B	B
Woodmen Frontage Road / Falcon Market Place (Roundabout)		
Eastbound Through	A	A
Westbound Through	A	A
Northbound Left and Right	A	A
Southbound Left and Right	A	A

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

Background Traffic Analysis Results – Year 2045

By 2045 and without the assumed development but considering widening of E Woodmen Road from four to six through lanes, the study intersection of E Woodmen Road with Golden Sage Drive experiences LOS E or better operations during both the AM and PM peak traffic hours. Said widening is expected to increase capacity along E Woodmen and allow optimization of signal splits and progression to mitigate poor operations if four through lanes remain.

The study intersection of E Woodmen Road with Meridian Road experiences LOS E or better operations during both the AM and PM peak traffic hours.

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

The study intersection of Woodmen Frontage Road with Golden Sage Drive generally experiences LOS A operations during both the AM and PM peak traffic hours. Exceptions include the westbound turning movements which operate at LOS E and LOS F during the AM and PM peak hours,

respectively. These LOS E and LOS F operations are primarily attributed to the high northbound to eastbound, and westbound to southbound traffic volumes, the stop-controlled nature of the Woodmen Frontage Road / Golden Sage Drive intersection, and the signalized control of the adjacent Golden Sage Drive / Woodmen Road intersection. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. Considering the existing intersection configuration, the long-term (Year 2045) peak hour analysis projects 95th percentile queue lengths associated with the LOS E and LOS F operations for the westbound left-turn and through movement at Woodmen Frontage Road / Golden Sage Drive to range from approximately 220 to 392 feet (approximately 9 to 16 vehicles assuming 25 feet of average vehicle spacing). It is noted that the closely spaced and signalized intersection of Woodmen Road / Golden Sage Drive is a primary contributor to the projected operational deficiencies at the Woodmen Frontage Road intersection. Existing signal operations at the Woodmen Road intersection are understood to prioritize progression and travel time along the Woodmen Road mainline corridor, which can limit side-street vehicle clearance opportunities and contribute to queue accumulation along Golden Sage Drive and the adjacent frontage road intersection. Potential operational mitigation measures could include refinement of signal timing and phasing at the Woodmen Road / Golden Sage Drive intersection to provide additional side-street vehicle clearance opportunities during peak periods while maintaining acceptable mainline progression along Woodmen Road. Such adjustments may improve the ability of queued vehicles from Woodmen Frontage Road to access Golden Sage Drive and continue through the adjacent signalized intersection. Additional long-term mitigation could include evaluation of signal control at the Golden Sage Drive / Woodmen Frontage Road intersection with coordinated operations integrated with the existing Woodmen Road traffic signal system. Coordinated signal timing, phasing, and offset optimization between the closely spaced intersections could improve overall corridor progression, reduce queue spillback potential, and enhance operational efficiency for both frontage road and side-street traffic movements. Actual mitigation measures, feasibility, and implementation strategies would require further evaluation beyond the scope of this traffic study and would be subject to review and approval by the City of Colorado Springs, as the governing agency responsible for operation and control of the Woodmen Road / Golden Sage Drive / Woodmen Frontage Road intersections.

The study intersection of Woodmen Frontage Road with Bent Grass Meadows Drive experiences LOS B or better operations during both the AM and PM peak traffic hours.

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

IV. Proposed Project Traffic

Trip Generation Estimation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in the Trip Generation Manual, 12th Edition, were applied to the assumed land use 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 and corresponding average trip generation rates identified in Table 4 were used for estimating trip generation because they provide a conservative and appropriate representation of the conceptual land use assumptions evaluated within this study. Average rates were intentionally applied in lieu of fitted curve equations given the preliminary and conceptual nature of the assumed land uses, development densities, and site configurations currently under consideration. Use of average rates is considered appropriate at this planning-level stage of analysis where detailed development parameters have not yet been finalized. Additionally, fitted curve equations are not available for certain land uses assumed within this study, further supporting the use of average trip generation rates for consistency and comparative analysis purposes.

As actual land uses, development densities, tenant mixes, access configurations, and site plans within The Markets at Bent Grass development area become more defined over time, it is anticipated that the traffic generation characteristics evaluated within this study may require refinement through more detailed traffic analyses or site-specific studies to assess whether additional transportation improvements may be necessary to mitigate potential traffic impacts. It is emphasized that the land uses and densities assumed within this study are conceptual in nature and represent a conservative assessment of potential full build-out conditions.

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
565	Day Care Center	KSF	39.30	5.77	5.11	10.88	5.05	5.70	10.75
813	Free-Standing Discount Superstore	KSF	50.52	1.05	0.83	1.88	2.12	2.20	4.32
822	Strip Retail Plaza (<40K)	KSF	54.45	2.16	1.77	3.93	3.15	3.15	6.29
862	Home Improvement Superstore	KSF	30.65	0.86	0.65	1.50	1.12	1.16	2.28
912	Drive-In Bank	KSF	98.95	5.77	4.18	9.95	10.52	10.52	21.03
930	Fast Casual Restaurant	KSF	225.89	1.01	0.57	1.58	7.61	6.74	14.35
934	Fast-Food Restaurant w/DTW	KSF	448.12	16.95	16.29	33.24	16.43	15.17	31.60
937	Coffee/Donut Shop w/DTW	KSF	600.50	43.56	41.85	85.41	19.50	19.50	39.00
943	Automobile Parts/Service Center	KSF	16.60	1.38	0.53	1.91	0.80	1.26	2.06
945	Conv. Store/Gas Station (VFP 9-15)	KSF	579.86	24.30	24.30	48.60	25.04	25.04	50.08

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

What uses does this pertain to?

Table 5 illustrates the projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes anticipated to be generated by the assumed development at full build-out based on the average trip generation rates presented in Table 4.

Unresolved:
Size is outside of the data range in the trip gen manual. Please address.

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
565	Day Care Center	10.0 KSF	393	58	51	109	51	57	108
813	Free-Standing Discount Superstore	148.0 KSF	7,477	156	122	278	313	326	639
822	Strip Retail Plaza (<40K)	15.5 KSF	844	34	27	61	49	49	97
862	Home Improvement Superstore	153.3 KSF	4,700	131	99	230	171	178	350
912	Drive-In Bank	4.5 KSF	445	26	19	45	47	47	95
930	Fast Casual Restaurant	5.0 KSF	1,129	5	3	8	38	34	72
934	Fast-Food Restaurant w/DTW	5.0 KSF	2,241	85	81	166	82	76	158
937	Coffee/Donut Shop w/DTW	2.0 KSF	1,201	87	84	171	39	39	78
943	Automobile Parts/Service Center	2.5 KSF	42	3	1	5	2	3	5
945	Conv. Store/Gas Station (VFP 9-15)	4.0 KSF	2,319	97	97	194	100	100	200
		Total:	*20,791*	*682*	*585*	*1,267*	*893*	*909*	*1,802*

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

What uses does this pertain to?

Upon build-out of assumed land uses and densities, Table 5 illustrates that the proposed development has the potential to generate approximately 20,791 daily vehicle trips with 1,267 of those occurring during the morning peak hour and 1,802 during the afternoon peak hour.

Adjustments to Trip Generation Rates

It is considered likely that a mixed-use development of this type will attract trips from within area land uses. Utilizing research obtained by the National Cooperative Highway Research Program (NCHRP), ITE created an estimation tool[12] for determining internal capture for mixed-use developments. Using NCHRP Report 684 methodology, it was determined that the assumed land uses have potential for 9 percent of peak hour trips being captured internally. This potential capture reduction was then rounded to ten percent. It is noted that, given the conceptual nature of the assumed land uses, the estimated internal capture percentage may be subject to change and could potentially increase as development details become more defined. However, the estimate is considered reasonable and typical for mixed-use commercial developments.

ITE's internal capture spreadsheets are provided for reference in Appendix B.

[12] NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, National Cooperative Highway Research Program, October 2010.

Table 6 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the assumed development upon build-out with reductions applied due to internal capture.

Table 6 – Trip Generation Summary with Reductions

ITE CODE	LAND USE	SIZE	TOTAL EXTERNAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
565	Day Care Center	10.0 KSF	393	58	51	109	51	57	108
813	Free-Standing Discount Superstore	148.0 KSF	7,477	156	122	278	313	326	639
822	Strip Retail Plaza (<40K)	15.5 KSF	844	34	27	61	49	49	97
862	Home Improvement Superstore	153.3 KSF	4,700	131	99	230	171	178	350
912	Drive-In Bank	4.5 KSF	445	26	19	45	47	47	95
930	Fast Casual Restaurant	5.0 KSF	1,129	5	3	8	38	34	72
934	Fast-Food Restaurant w/DTW	5.0 KSF	2,241	85	81	166	82	76	158
937	Coffee/Donut Shop w/DTW	2.0 KSF	1,201	87	84	171	39	39	78
943	Automobile Parts/Service Center	2.5 KSF	42	3	1	5	2	3	5
945	Conv. Store/Gas Station (VFP 9-15)	4.0 KSF	2,319	97	97	194	100	100	200
	Internal Capture Reduction:		*10%*	*10%*	*10%*	*10%*	*10%*	*10%*	*10%*
	Total External Trips:		*18,712*	*613*	*527*	*1,140*	*803*	*818*	*1,622*

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

Upon assumed build-out with consideration for internal capture trip reductions, Table 6 presents that the conceptual development has the potential to generate approximately 18,712 daily trips with 1,140 of those occurring during the morning peak hour and 1,622 during the afternoon peak hour.

Trip Distribution

To assess the potential impacts and benefits associated with the addition of a new intersection on E. Woodmen Road, the Year 2030 and 2045 Background Traffic Volumes were reassessed for the Total Traffic Volume analysis to establish a baseline condition from which total build-out traffic conditions could be evaluated. This reassessment considers a scenario in which the assumed intersection is constructed without the proposed commercial development. Construction of this intersection is considered likely to have a direct impact on ideal routes for existing traffic attempting to access current residential and commercial sites located along Woodmen Frontage Road. Typically, drivers select routes based on a combination of the shortest path from point of origin to destination, ease of navigation, relative speed and travel time, and existing congestion. Considering these factors, Year 2030 and 2045 background traffic volumes were assessed and redistributed to utilize the new intersection. Assumptions regarding new preferred routes are generally described as follows:

- Assumed development access by way of a new full-movement intersection to be located on E Woodmen Road. Said intersection would be anticipated to provide a new access drive (referred to as Bent Grass Meadows Drive) connecting to Woodmen Frontage Road, which in turn would be realigned to provide additional separation between the two roadways. The access is assumed to be positioned approximately one-half mile east of the E Woodmen Road intersection with

Golden Sage Road to allow for adequate corridor progression. Additionally, to ensure minimal disruption to through volumes along the E Woodmen Road corridor, the intersection is assumed to be designed as a Continuous Green T-Intersection (CGT) providing no interruption to eastbound through traffic. Provision of such intersection is believed likely to provide improved site connectivity in addition to offering an alternative route for existing and background trips seeking to access the Falcon Meadows area that currently utilize the Golden Sage Drive intersection to do so.

- Vehicle trips traveling eastbound on E Woodmen Road to Golden Sage Drive, then traveling eastbound along Woodmen Frontage Road to either Bent Grass Meadows Drive or continuing east, are expected to choose the more direct route provided by the new intersection. Likewise, the inverse of this route for vehicles seeking to head westbound on E Woodmen Road via the Golden Sage Drive intersection, are also considered more likely to access E Woodmen Road via the new intersection. In general, it is assumed that as much as 90 percent of existing trips utilizing these routes would change their path upon installation of the new intersection as it provides a more direct connection to E Woodmen Road.

- Some vehicle trips performing an eastbound right turn/northbound left turn at the intersection of Bent Grass Meadows Drive with Meridian Road are also assumed to consider the alternative route of access Falcon Meadows Residential development areas by instead performing a westbound right turn at the new intersection along E Woodmen Road. Such a route is considered to offer a comparable travel time and distance depending on the final destination of a given vehicle on Bent Grass Meadows Drive. For analysis purposes it is assumed that as much as 10 percent of existing trips utilizing this route may change their path.

- Additionally, vehicles performing an eastbound left turn movement at the intersection of E Woodmen Road with Meridian Road to head northbound on Meridian Road to Eastonville Road for access to the Falcon Marketplace commercial development, or adjacent residential development, are considered likely instead perform a westbound left turn movement at the new intersection. For analysis purposes it is assumed that as much as 20 percent of existing vehicle trips may choose this new route given that it provides a shorter path to access parts of the existing land uses when approaching from the west, while also avoiding likely congestion from the high projected volume of westbound left turns at the Meridian Road intersection.

Utilizing the above, 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, and in reference to distribution patterns of existing traffic count data.

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

Trip Assignment

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

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

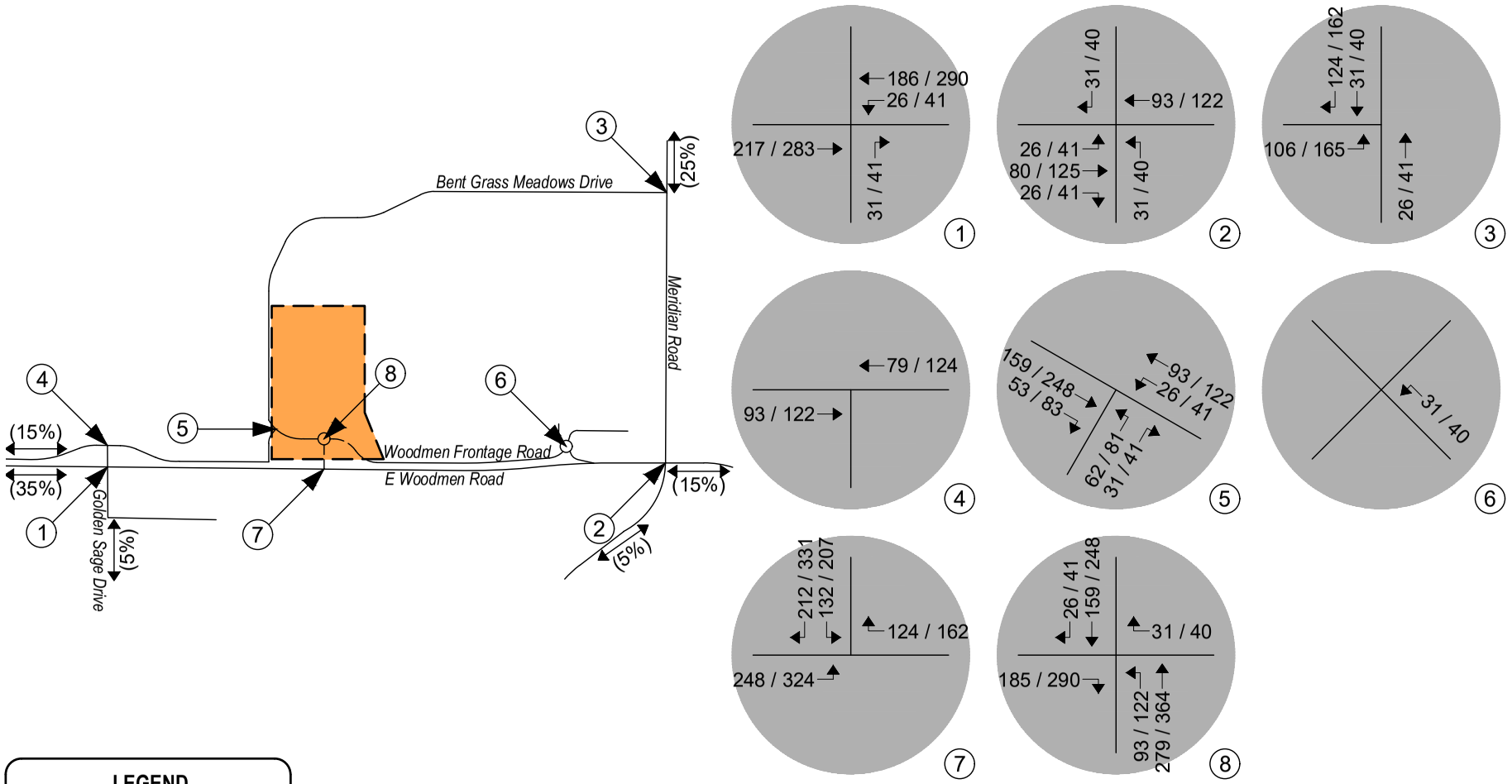


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED TRIPS
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Development

Total traffic is the traffic projected to be on area roadways with consideration of the assumed development. Total traffic includes background traffic projections for Years 2030 and 2045 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2030.

Pursuant to area roadway improvement discussions provided in Section III, Year 2030 and Year 2045 total traffic conditions assume the CGT intersections, applicable auxiliary lanes, and realignment of Woodmen Frontage Road. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency. As discussed for Year 2045 Background Traffic Conditions, E Woodmen Road is assumed as a six-lane roadway.

Projected Year 2030 total traffic volumes and intersection geometry are shown in Figures 7A and 7B, respectively.

Figures 8A and 8B show projected total traffic volumes and intersection geometry for Year 2045, respectively.

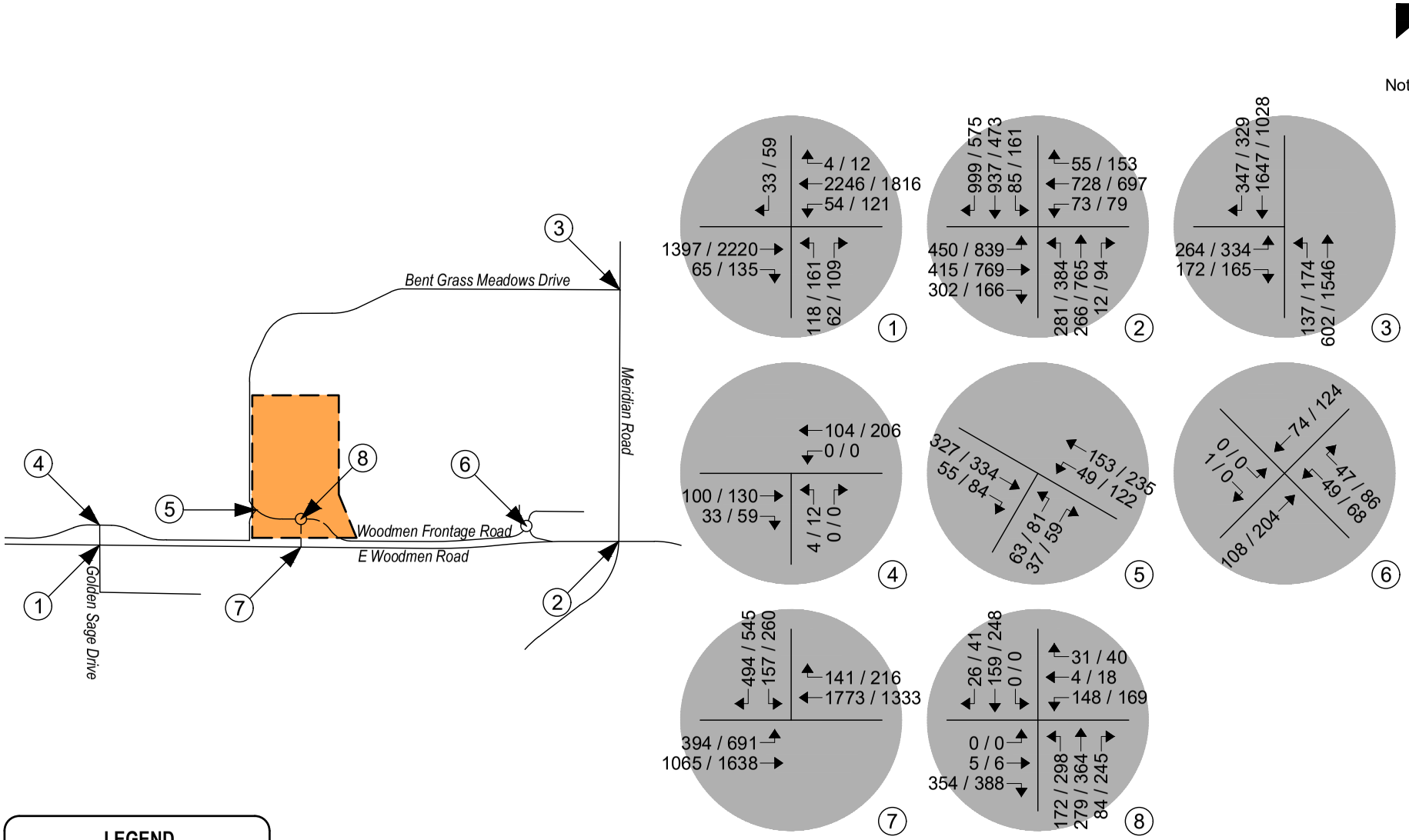
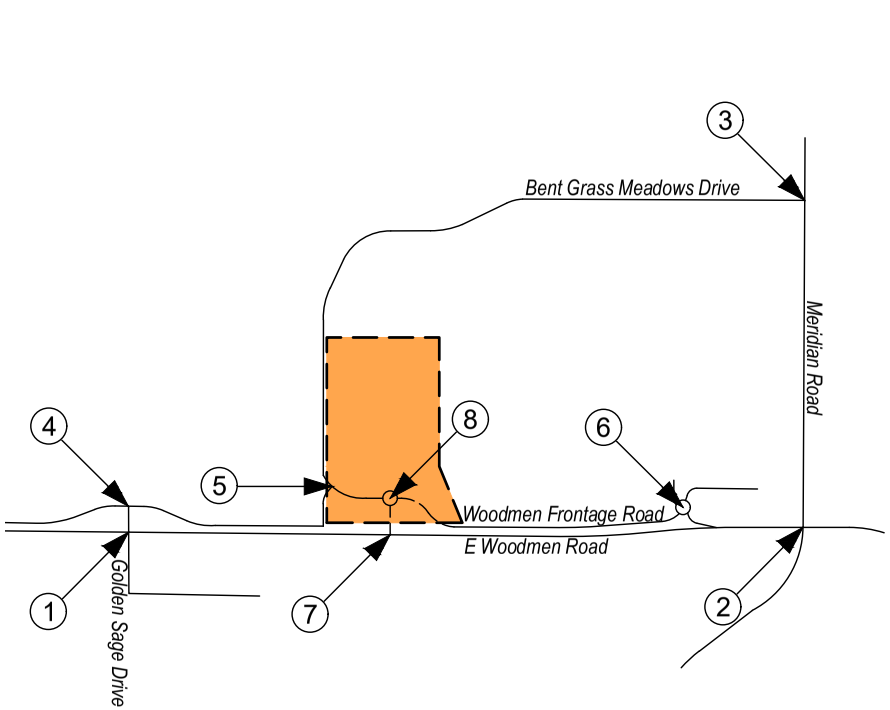
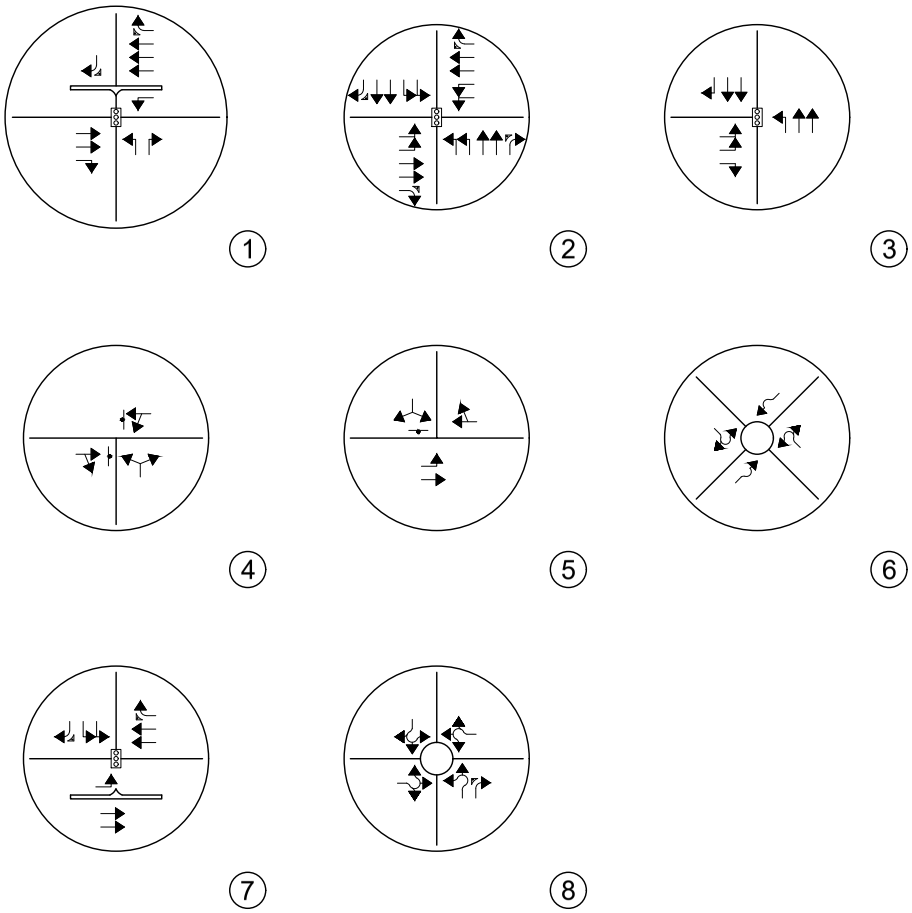


Figure 7A
TOTAL TRAFFIC - YEAR 2030
Intersection Volumes
AM / PM Peak Hour

North

Not to Scale





LEGEND

Study Intersection
Lane Geometry

Development Site

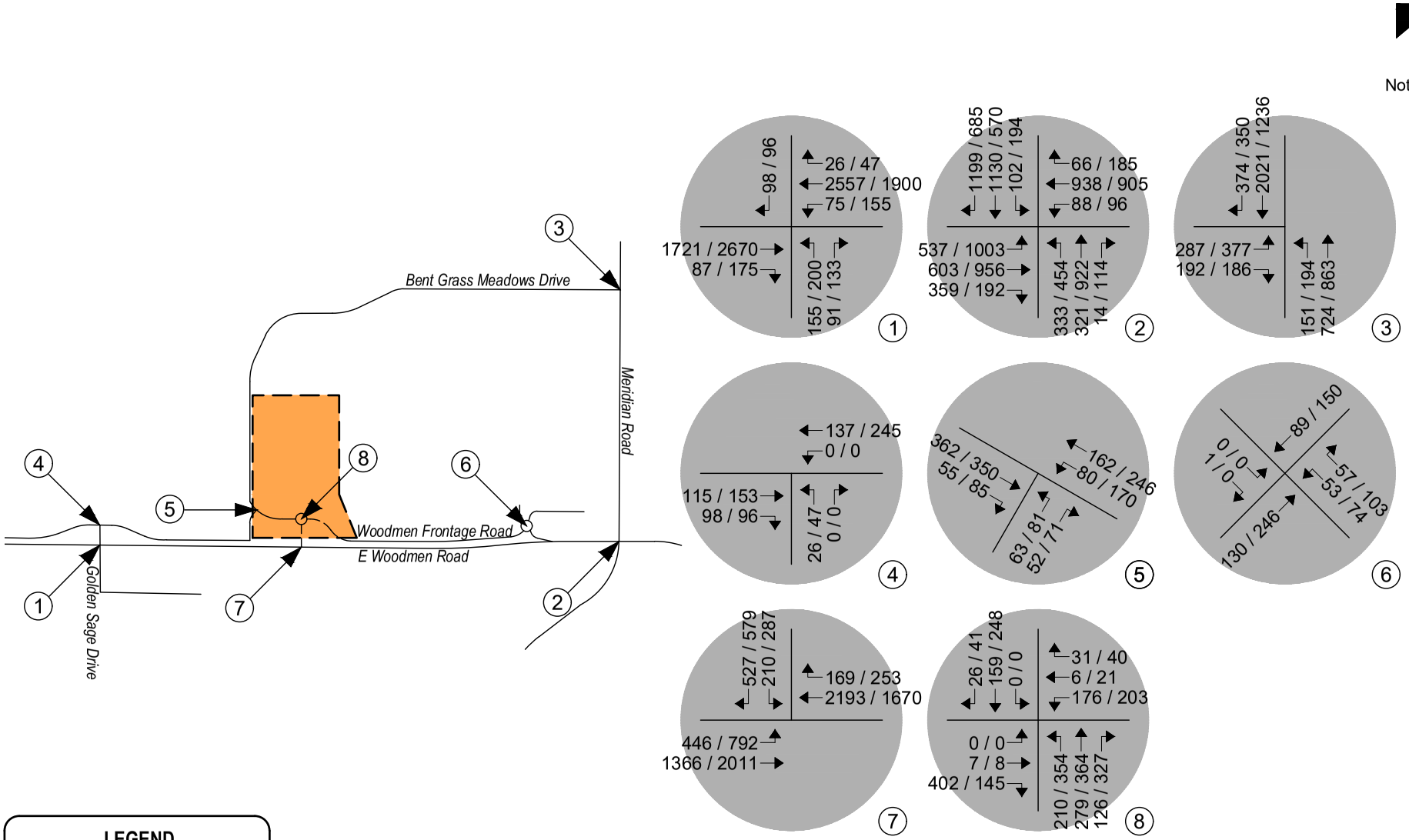
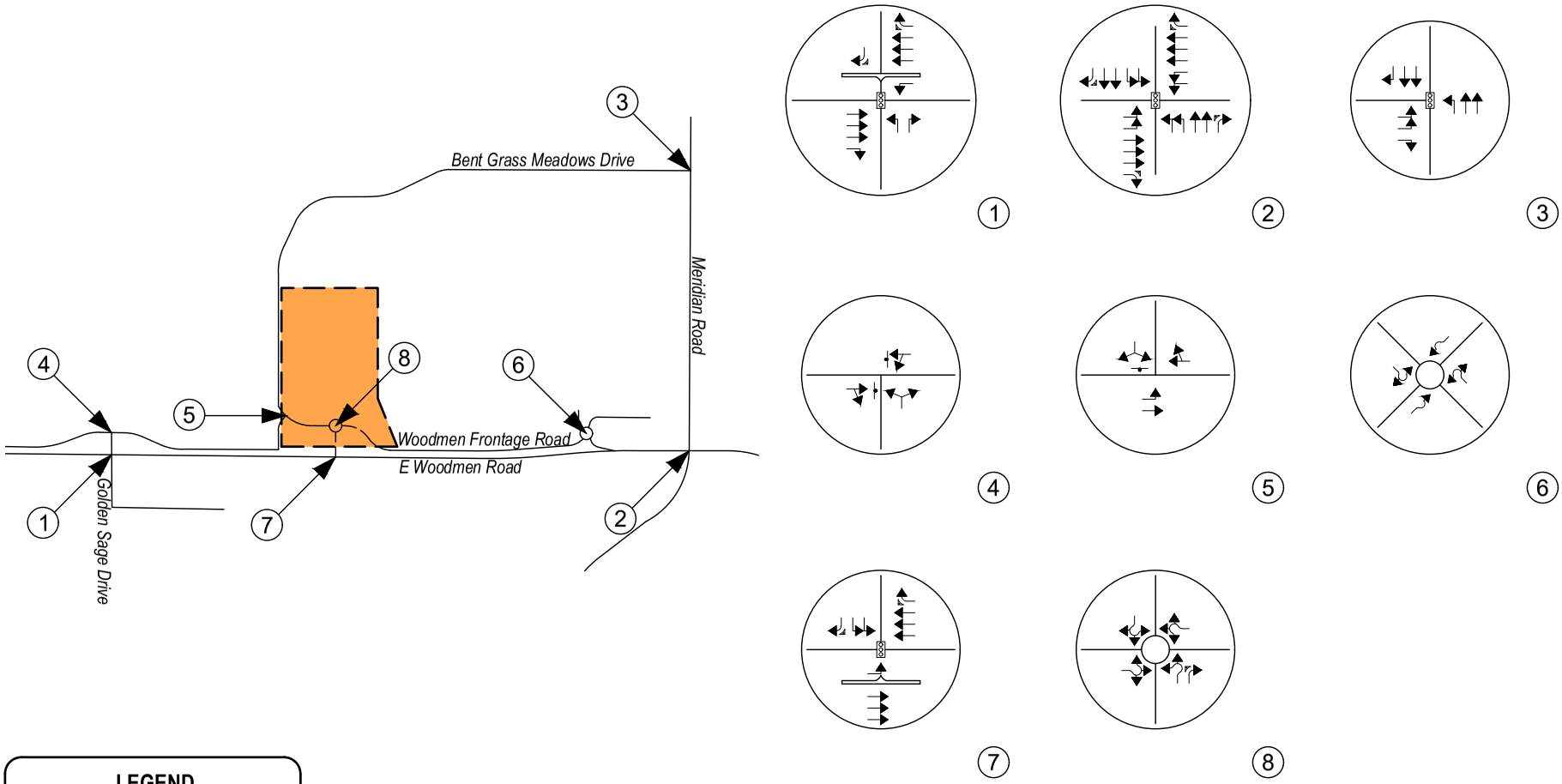


Figure 8A
TOTAL TRAFFIC - YEAR 2045
Intersection Volumes
AM / PM Peak Hour


North
Not to Scale
Bent Grass Meadows Drive
Meridian Road
Woodmen Frontage Road
E Woodmen Road
Golden Sage Drive
1
2
3
4
5
6
7
8
LEGEND
Study Intersection Lane Geometry
Development Site

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. The analyses and procedures 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.

Total traffic level of service analysis results for Years 2030 and 2045 are summarized in Table 6 and Table 7, respectively.

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

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2030

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
E Woodmen Road / Golden Sage Drive (Signalized)	A (8.3)	D (38.6)
E Woodmen Road / Meridian Road (Signalized)	D (40.6)	D (46.1)
Meridian Road / Bent Grass Meadows Drive (Signalized)	B (17.5)	B (17.2)
E Woodmen Road / Bent Grass Meadows Drive (Signalized)	D (40.8)	D (45.1)
Woodmen Frontage Road / Golden Sage Drive (Stop-Controlled)		
Eastbound Through and Right	A	B
Westbound Left and Through	A	B
Woodmen Frontage Road / Bent Grass Meadows Drive (Stop-Controlled)		
Eastbound Left and Right	B	C
Northbound Left	A	A
Woodmen Frontage Road / Falcon Market Place (Roundabout)		
Eastbound Through	A	A
Westbound Through	A	A
Northbound Left and Right	A	A
Southbound Left and Right	A	A
Woodmen Frontage Road / Bent Grass Meadows Drive (Roundabout)		
Eastbound Left, Through and Right	A	A
Westbound Left, Through and Right	A	A
Northbound Left and Through	A	A
Southobound Left, Through and Right	A	A

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

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2045

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
E Woodmen Road / Golden Sage Drive (Signalized)	B (10.8)	C (21.7)
E Woodmen Road / Meridian Road (Signalized)	D (54.3)	E (67.4)
Meridian Road / Bent Grass Meadows Drive (Signalized)	C (24.0)	B (17.6)
E Woodmen Road / Bent Grass Meadows Drive (Signalized)	C (32.4)	D (48.6)
Woodmen Frontage Road / Golden Sage Drive (Stop-Controlled)		
Eastbound Through and Right	B	B
Westbound Left and Through	B	B
Woodmen Frontage Road / Bent Grass Meadows Drive (Stop-Controlled)		
Eastbound Left and Right	B	C
Northbound Left	A	A
Woodmen Frontage Road / Falcon Market Place (Roundabout)		
Eastbound Through	A	A
Westbound Through	A	A
Northbound Left and Right	A	A
Southbound Left and Right	A	A
Woodmen Frontage Road / Bent Grass Meadows Drive (Roundabout)		
Eastbound Left, Through and Right	A	B
Westbound Left, Through and Right	A	A
Northbound Left and Through	A	A
Southobound Left, Through and Right	A	A

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

Total Traffic Analysis Results Upon Assumed Development Build-Out

Table 7 illustrates how, by Year 2045 and upon assumed development build-out, the CGT intersection of E Woodmen Road with Golden Sage Drive shows an LOS C or better operation during both the morning and afternoon peak traffic hours.

The signalized intersection of E Woodmen Road with Meridian Road is projected to have morning peak traffic hour operations at LOS D and afternoon peak traffic hour operations at LOS E.

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

The stop-controlled intersection of Woodmen Frontage Road with Golden Sage Drive has a long-term projection to have turn movement operations at LOS B for the morning and afternoon peak traffic hours.

The stop-controlled intersection of Woodmen Frontage Road with Bent Grass Meadows Drive is projected to have turning movement operations at or better than LOS C for both the morning and afternoon peak traffic hours.

The stop-controlled intersection of Woodmen Frontage Road with Falcon Market Place is projected to have traffic operations at LOS A during both morning and afternoon peak traffic hours.

VI. Project Impacts

It is emphasized that 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.

Development Impacts

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to cause some impact to the existing and surrounding roadway system. However, upon consideration of new additional access onto E Woodmen Road, it is concluded that the development can be accommodated without causing negative impact to future projected operations. It is noted that some delay is still anticipated under long-term scenarios, however the primary cause of this delay is identified as being due to high eastbound and westbound through volumes along E Woodmen Road. With all conservative assumptions defined in this analysis, and with application of applicable mitigation measures, the study intersections are projected to operate at future levels of service comparable to Year 2045 background traffic conditions.

It is however emphasized that as actual land uses, densities, or site plans within The Markets at Bent Grass 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.

Recommended Improvements

Beyond standard frontage improvements required by the County and pursuant to the analyses performed, it is recommended that additional direct access to E Woodmen Road be provided to provide mitigation to congestion on side streets, as well as along the E Woodmen Road corridor for specific turning movements. Analysis results indicate that this addition would not only provide benefit to the proposed commercial development but would also likely improve operations for background traffic conditions and continued regional growth.

Additionally, it is noted that to accommodate long-term regional traffic growth along the E Woodmen Road corridor, and to maintain acceptable intersection operations, it is recommended that E Woodmen Road be widened from four to six through lanes prior to Year 2045.

Table 8 illustrates the recommended roadway and intersection control improvements associated with the proposed development and adjacent area.

Table 8 – Recommended Improvements Summary

IMPROVEMENT	TYPE	TIMING	RESPONSIBILITY
New direct full-movement (CGT) intersection with associated auxiliary lanes on Woodmen Road east of existing Bent Grass Meadows Drive	Access / Intersection	This development	Developer
Conversion of existing full movement signalized Woodmen Road / Golden Sage Road intersection to full-movement (CGT) intersection with associated auxiliary lanes	Access / Intersection	This development	Developer
Realignment of Woodmen Frontage Road and Bent Grass Meadows Drive for accommodation of new direct full movement CGT intersection on Woodmen Road	Roadway Segment	This development	Developer Whoever warrants the need; i.e. County, City, or Developer
Construct new roundabout (RAB) with Woodmen Frontage Road realignment	Access / Intersection	This development	Developer
Widen Woodmen Road to six-lane cross-section east of Golden Sage Road to Meridian Road	Roadway Segment	When warranted. Based on Expressway Classification per 2040 MTCP	Master planned. Whoever warrants the need; i.e. County or City

Sight Distance Analysis

A preliminary sight distance assessment was performed pursuant to Section 2.4 of the County's ECM for the proposed site accesses along the realigned Bent Grass Meadows Drive. For purposes of this analysis, it was assumed that the roadway realignment will include a reduced posted speed limit of 25 MPH. Pursuant to Table 2-35 of the ECM, the required entering sight distance for access onto a two-lane public roadway with a posted speed limit of 25 MPH is 325 feet.

In review of the conceptual site plan, as shown in Figure 2, it is noted that there is some overlap of sight distance areas between the accesses proposed. However, no other significant obstructions or hindrances to sight distance are identified. In is noted that pursuant to County criteria, access spacing should provide sufficient separation to accommodate the necessary sight distance areas. However, with consideration for the proximity of the new roundabout intersection for Woodmen Road access and other stop-controlled intersections, it is likely that additional access separation cannot be reasonably achieved without presenting significant impacts to the adjacent intersections. Furthermore, restriction or removal of access is not recommended as this is likely to negatively impact site circulation, emergency vehicle access, and access operations. With all other operational goals achieved pursuant to the performed analysis, it is believed that the access as proposed may be accommodated without any significant operational or safety concerns. It is understood that access locations may be subject to change upon further site plan development, and final access locations may require additional County approvals. A deviation request for reduced access spacing is anticipated to be coordinated with County Staff as may be required.

Roundabout Consideration

A preliminary roundabout design, as prepared by Galloway and shown on Figure 2, was developed for this conceptual development and the proposed Bent Grass Meadows Drive realignment and access intersection to Woodmen Road. The preliminary design was prepared using the latest County design standards to establish a reliable basis for roadway geometry, operational analysis, and overall site planning while demonstrating conformance with prior design discussions conducted with County Staff.

Given the conceptual nature of the proposed development at this stage, detailed design parameters and final engineering elements are not anticipated to be necessary for the purposes of this traffic study or preliminary entitlement review. It is, however, anticipated that comprehensive design review and refinement will occur during subsequent final design and construction plan stages of the site development process.

Reference the separate roundabout analysis

VII. Conclusion

This traffic impact study is provided as a planning document and addressed the capacity, geometric, and control requirements associated with the development entitled The Markets at Bent Grass. This assumed mixed-use retail development is conceptual and anticipated to consist of various commercial uses including a home improvement superstore, restaurants, a gas station, and strip retail shops. The development is located at the northeast of the intersection of Bent Grass Meadows Drive with Woodmen Frontage Road in El Paso County, Colorado.

The study area to be examined in this analysis encompasses the E Woodmen Road corridor between Golden Sage Drive and Meridian Road, the Woodmen Frontage Road corridor between Golden Sage Drive and Falcon Market Place, as well as the Bent Grass Meadows Drive Corridor between Woodmen Frontage Road and Meridian Road.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2030 and Year 2045 background traffic conditions, and Year 2030 and Year 2045 total traffic conditions.

Analysis of existing traffic conditions indicates that all signalized intersections operate under LOS D or better conditions during their respective peak hour periods, while all stop-controlled and roundabout intersections operate with turn movements at or better than LOS B or better during their respective peak traffic periods.

Under Year 2030 and 2045 background traffic conditions, operational analysis shows that study intersections along the E Woodmen Road corridor are projected to experience some operations of LOS E or better during peak traffic periods. The signalized intersection of Bent Grass Meadows Drive with Meridian Road is anticipated to experience LOS C or better operations during peak traffic periods. All stop-controlled and roundabout intersections generally anticipate turn movement operations at or better than LOS C during their respective peak traffic periods.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create some impact to traffic operations for the existing and surrounding roadway system. However, upon consideration for direct signalized access to E Woodmen Road, in addition to future widening of E Woodmen Road from four to six through lanes, it is anticipated that the assumed development can be accommodated without causing any negative impacts. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2045 background traffic conditions.

It is emphasized that the analysis performed in this traffic impact study presents a conceptual, high-level, assessment of future traffic conditions for planning purposes based on various assumptions regarding proposed and adjacent development areas which are subject to change. As actual land uses, densities, or site plans within The Markets at Bent Grass 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 specific transportation improvements needed to mitigate potential traffic impacts.

This study shall be based on the potential highest and best uses because it's not likely that an individual business with higher than anticipated traffic is going to reconstruct any public improvements

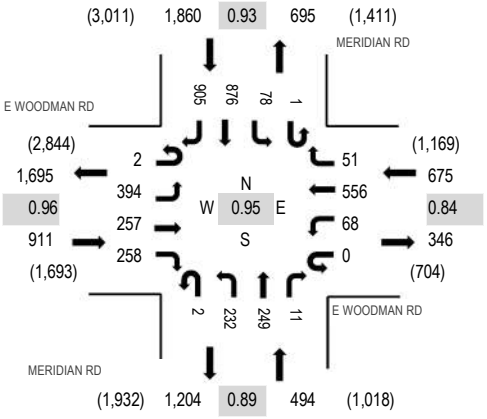
APPENDIX A

Traffic Count Data

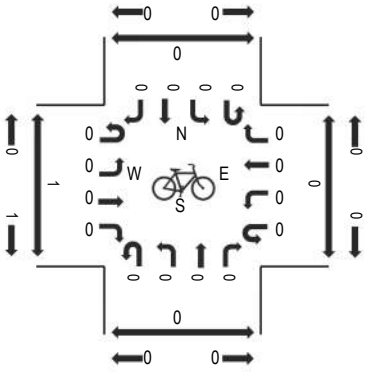
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 MERIDIAN RD & E WOODMAN RD AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

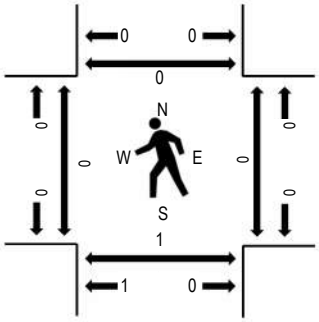
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

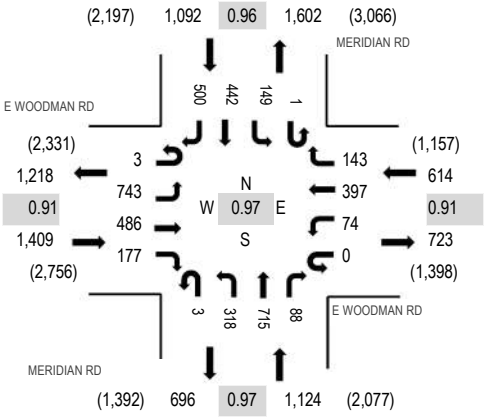
Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMAN RD Eastbound				E WOODMAN RD Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	86	55	61	0	17	155	12	0	52	58	3	0	6	194	247	946	3,940	0	0	0	0
7:15 AM	0	100	61	81	0	22	124	10	0	67	63	3	1	16	236	246	1,030	3,755	0	0	0	0
7:30 AM	0	98	67	65	0	18	171	11	0	59	75	1	0	23	228	222	1,038	3,512	0	0	0	0
7:45 AM	2	110	74	51	0	11	106	18	2	54	53	4	0	33	218	190	926	3,215	0	0	1	0
8:00 AM	1	97	67	52	0	13	88	10	0	52	93	4	0	16	125	143	761	2,951	0	0	0	0
8:15 AM	2	99	64	38	0	10	104	16	0	49	74	6	0	22	151	152	787		0	0	1	0
8:30 AM	1	76	73	37	0	11	113	15	1	51	66	6	0	22	113	156	741		0	0	0	0
8:45 AM	2	89	50	34	0	19	87	8	3	36	73	10	0	18	121	112	662		0	0	0	0
Count Total	8	755	511	419	0	121	948	100	6	420	555	37	1	156	1,386	1,468	6,891		0	0	2	0
Peak Hour	2	394	257	258	0	68	556	51	2	232	249	11	1	78	876	905	3,940		0	0	1	0

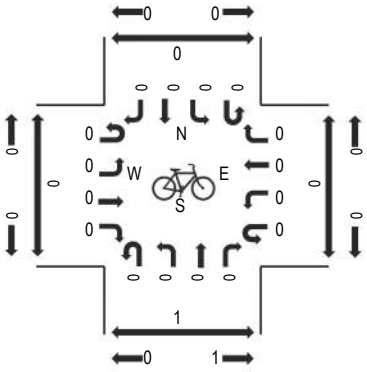
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 MERIDIAN RD & E WOODMAN RD PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

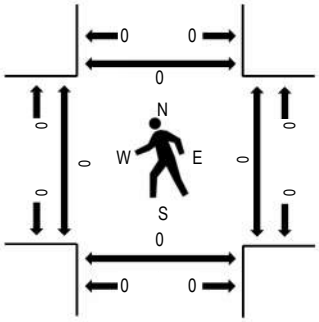
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMAN RD Eastbound				E WOODMAN RD Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	1	183	117	39	0	17	86	38	1	77	189	23	1	29	128	134	1,063	4,239	0	0	0	0
4:15 PM	0	191	118	44	0	20	109	29	1	81	169	31	0	44	97	110	1,044	4,207	0	0	0	0
4:30 PM	2	204	132	51	0	15	92	37	0	79	180	16	0	40	125	119	1,092	4,201	0	0	0	0
4:45 PM	0	165	119	43	0	22	110	39	1	81	177	18	0	36	92	137	1,040	4,125	0	0	0	0
5:00 PM	1	167	127	52	0	19	98	34	1	45	172	24	0	32	114	145	1,031	3,948	0	0	1	0
5:15 PM	2	173	117	43	0	25	91	31	0	74	168	20	0	38	109	147	1,038		0	0	0	0
5:30 PM	1	221	119	56	0	14	74	32	0	55	152	22	0	31	116	123	1,016		0	0	0	0
5:45 PM	3	135	93	37	1	17	81	26	1	51	153	15	0	36	92	122	863		0	0	0	1
Count Total	10	1,439	942	365	1	149	741	266	5	543	1,360	169	1	286	873	1,037	8,187		0	0	1	1
Peak Hour	3	743	486	177	0	74	397	143	3	318	715	88	1	149	442	500	4,239		0	0	0	0

ALL TRAFFIC DATA SERVICES
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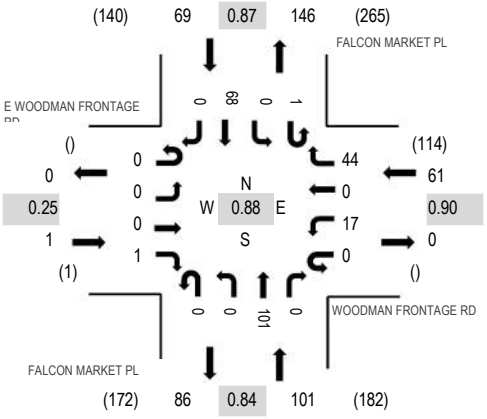
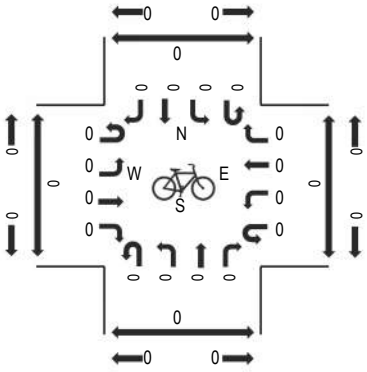
Location: 2 FALCON MARKET PL & WOODMAN FRONTAGE RD AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

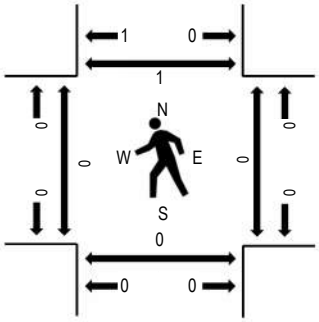
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMAN FRONTAGE RD Eastbound				WOODMAN FRONTAGE RD Westbound				FALCON MARKET PL Northbound				FALCON MARKET PL Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	0	0	8	0	6	0	0	26	0	0	0	14	0	54	208	1	0	0	0
7:15 AM	0	0	0	0	0	5	0	9	0	0	18	0	0	0	21	0	53	207	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	9	0	0	19	0	0	0	16	0	45	220	0	0	0	0
7:45 AM	0	0	0	0	0	5	0	12	0	0	19	0	1	0	19	0	56	232	0	0	0	0
8:00 AM	0	0	0	0	0	3	0	8	0	0	26	0	0	0	16	0	53	229	0	0	0	0
8:15 AM	0	0	0	0	0	3	0	14	0	0	30	0	0	0	19	0	66		0	0	0	0
8:30 AM	0	0	0	1	0	6	0	10	0	0	26	0	0	0	14	0	57		0	0	0	1
8:45 AM	0	0	0	0	0	1	0	14	0	0	18	0	0	0	20	0	53		0	0	0	0
Count Total	0	0	0	1	0	32	0	82	0	0	182	0	1	0	139	0	437		1	0	0	1
Peak Hour	0	0	0	1	0	17	0	44	0	0	101	0	1	0	68	0	232		0	0	0	1

ALL TRAFFIC DATA SERVICES
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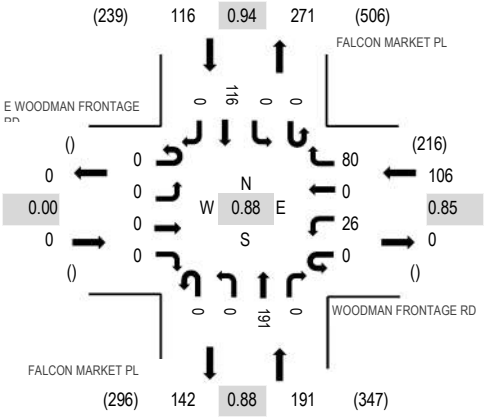
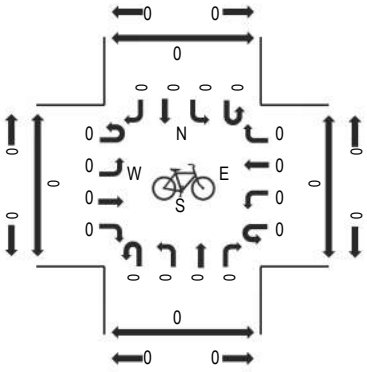
Location: 2 FALCON MARKET PL & WOODMAN FRONTAGE RD PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

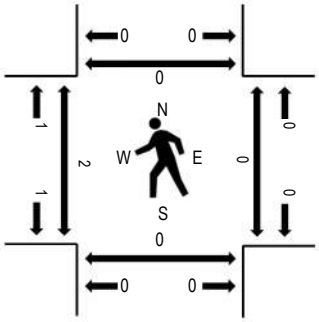
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMAN FRONTAGE RD Eastbound				WOODMAN FRONTAGE RD Westbound				FALCON MARKET PL Northbound				FALCON MARKET PL Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	11	0	22	0	0	49	0	0	0	32	0	114	392	0	0	0	0
4:15 PM	0	0	0	0	0	11	0	15	0	0	39	0	2	0	29	0	96	377	0	0	0	0
4:30 PM	0	0	0	0	0	8	0	19	0	0	39	0	1	0	31	0	98	399	2	0	0	0
4:45 PM	0	0	0	0	0	9	0	17	0	0	33	0	0	0	25	0	84	413	0	0	0	0
5:00 PM	0	0	0	0	0	5	0	12	0	0	51	0	0	0	31	0	99	410	2	0	0	0
5:15 PM	0	0	0	0	0	9	0	26	0	0	53	0	0	0	30	0	118		0	0	0	0
5:30 PM	0	0	0	0	0	3	0	25	0	0	54	0	0	0	30	0	112		0	0	0	0
5:45 PM	0	0	0	0	0	4	0	20	0	0	29	0	0	0	28	0	81		1	0	0	0
Count Total	0	0	0	0	0	60	0	156	0	0	347	0	3	0	236	0	802		5	0	0	0
Peak Hour	0	0	0	0	0	26	0	80	0	0	191	0	0	0	116	0	413		2	0	0	0

ALL TRAFFIC DATA SERVICES
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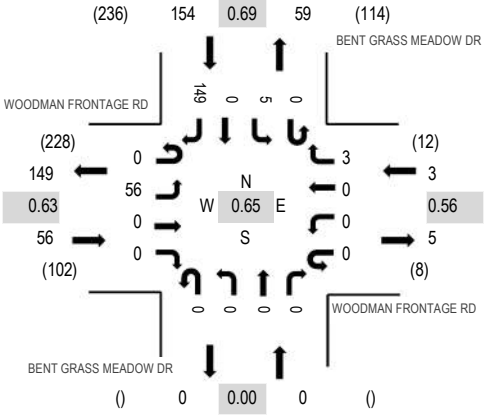
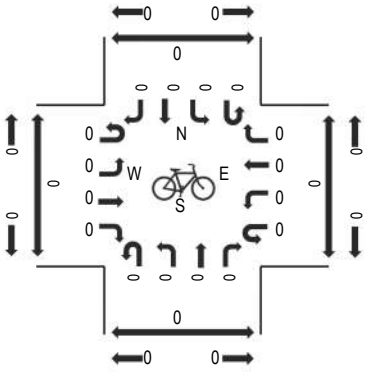
Location: 3 BENT GRASS MEADOW DR & WOODMAN FRONTAGE RD AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

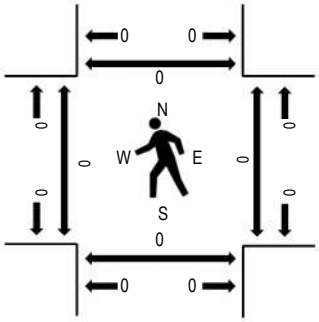
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODMAN FRONTAGE RD Eastbound				WOODMAN FRONTAGE RD Westbound				BENT GRASS MEADOW DR Northbound				BENT GRASS MEADOW DR Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	0	0	0	0	0	1	0	0	0	0	0	1	0	33	38	213	0	0	0	0
7:15 AM	0	13	0	0	0	0	0	1	0	0	0	0	0	1	0	37	52	212	0	0	0	0
7:30 AM	0	26	0	0	0	0	0	0	0	0	0	0	0	3	0	53	82	189	0	0	0	0
7:45 AM	0	14	0	0	0	0	0	1	0	0	0	0	0	0	0	26	41	153	0	0	0	0
8:00 AM	0	12	0	0	0	0	0	2	0	0	0	0	0	0	0	23	37	137	0	0	0	0
8:15 AM	0	10	0	0	0	0	0	2	0	0	0	0	0	1	0	16	29		0	0	0	0
8:30 AM	0	12	0	0	0	0	0	4	0	0	0	0	0	1	0	29	46		0	0	0	0
8:45 AM	0	12	0	0	0	0	0	1	0	0	0	0	0	1	0	11	25		0	0	0	0
Count Total	0	102	0	0	0	0	0	12	0	0	0	0	0	8	0	228	350		0	0	0	0
Peak Hour	0	56	0	0	0	0	0	3	0	0	0	0	0	5	0	149	213		0	0	0	0

ALL TRAFFIC DATA SERVICES
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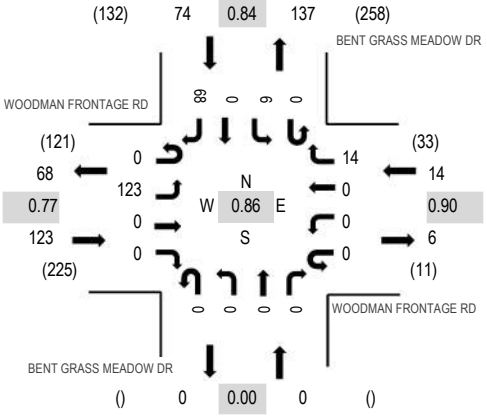
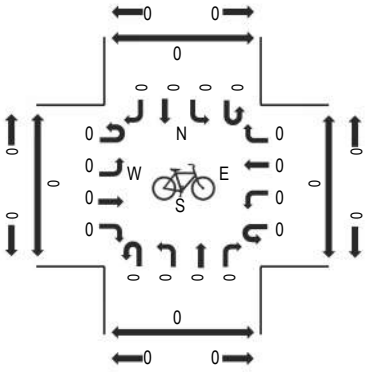
Location: 3 BENT GRASS MEADOW DR & WOODMAN FRONTAGE RD PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

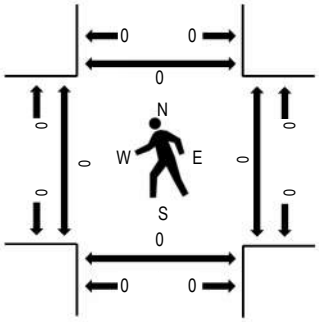
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODMAN FRONTAGE RD Eastbound				WOODMAN FRONTAGE RD Westbound				BENT GRASS MEADOW DR Northbound				BENT GRASS MEADOW DR Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	28	0	0	0	0	0	4	0	0	0	0	0	2	0	13	47	187	0	0	0	0
4:15 PM	0	19	0	0	0	0	0	6	0	0	0	0	0	0	0	11	36	186	0	0	0	0
4:30 PM	0	31	0	0	0	0	0	4	0	0	0	0	0	1	0	16	52	211	0	0	0	0
4:45 PM	0	29	0	0	0	0	0	1	0	0	0	0	0	1	0	21	52	206	0	0	0	0
5:00 PM	0	23	0	0	0	0	0	4	0	0	0	0	0	4	0	15	46	203	0	0	0	0
5:15 PM	0	40	0	0	0	0	0	5	0	0	0	0	0	0	0	16	61		0	0	0	0
5:30 PM	0	26	0	0	0	0	0	4	0	0	0	0	0	2	0	15	47		0	0	0	0
5:45 PM	0	29	0	0	0	0	0	5	0	0	0	0	0	1	0	14	49		0	0	0	0
Count Total	0	225	0	0	0	0	0	33	0	0	0	0	0	11	0	121	390		0	0	0	0
Peak Hour	0	123	0	0	0	0	0	14	0	0	0	0	0	6	0	68	211		0	0	0	0

ALL TRAFFIC DATA SERVICES
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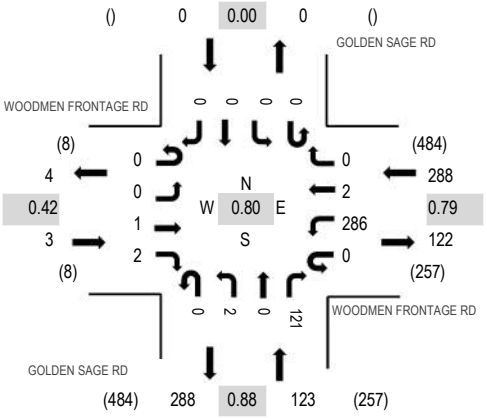
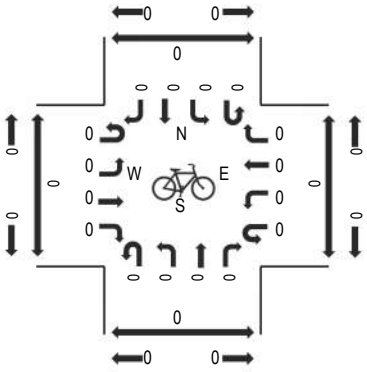
Location: 4 GOLDEN SAGE RD & WOODMEN FRONTAGE RD AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

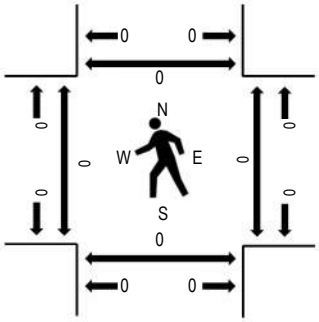
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

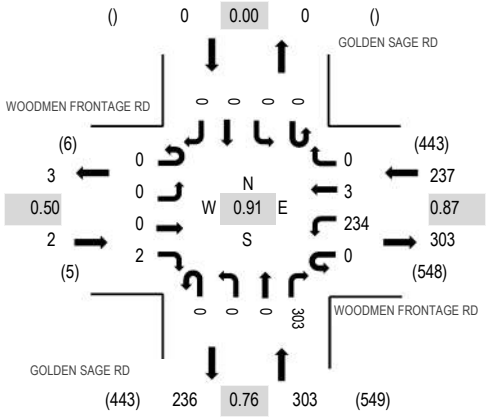
Traffic Counts - Motorized Vehicles

Interval Start Time	WOODMEN FRONTAGE RD Eastbound				WOODMEN FRONTAGE RD Westbound				GOLDEN SAGE RD Northbound				GOLDEN SAGE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	2	0	73	1	0	0	0	0	24	0	0	0	0	100	414	0	0	0	0
7:15 AM	0	0	1	0	0	69	0	0	0	0	0	32	0	0	0	0	102	403	0	0	0	0
7:30 AM	0	0	0	0	0	90	1	0	0	2	0	36	0	0	0	0	129	388	0	0	0	0
7:45 AM	0	0	0	0	0	54	0	0	0	0	0	29	0	0	0	0	83	345	0	0	0	0
8:00 AM	0	0	0	0	0	48	0	0	0	0	0	41	0	0	0	0	89	335	0	0	0	0
8:15 AM	0	0	0	1	0	49	0	0	0	1	0	36	0	0	0	0	87		0	0	0	0
8:30 AM	0	0	0	1	0	54	1	0	0	0	0	30	0	0	0	0	86		0	0	0	0
8:45 AM	0	0	2	1	0	42	2	0	0	0	0	26	0	0	0	0	73		0	0	0	0
Count Total	0	0	3	5	0	479	5	0	0	3	0	254	0	0	0	0	749		0	0	0	0
Peak Hour	0	0	1	2	0	286	2	0	0	2	0	121	0	0	0	0	414		0	0	0	0

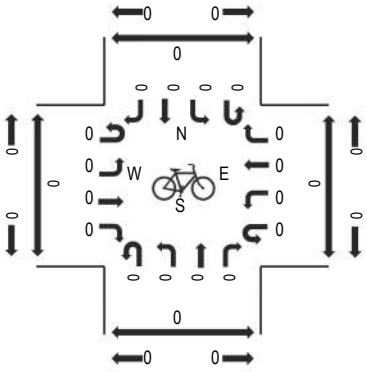
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 GOLDEN SAGE RD & WOODMEN FRONTAGE RD PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

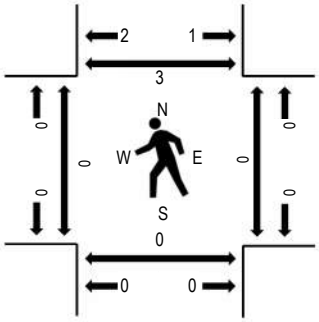
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

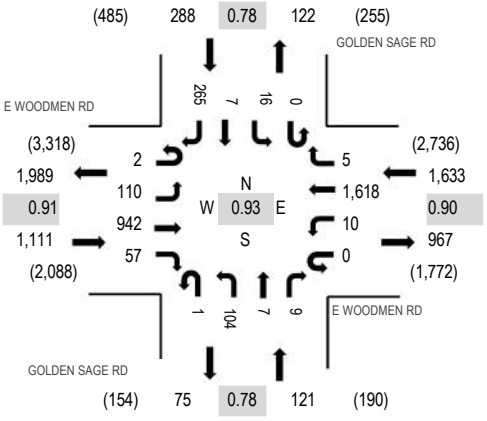
Traffic Counts - Motorized Vehicles

Interval Start Time	WOODMEN FRONTAGE RD Eastbound				WOODMEN FRONTAGE RD Westbound				GOLDEN SAGE RD Northbound				GOLDEN SAGE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	1	0	61	0	0	0	0	0	62	0	0	0	0	124	481	0	0	0	0
4:15 PM	0	0	1	0	0	40	0	0	0	1	0	59	0	0	0	0	101	486	0	0	0	0
4:30 PM	0	0	0	1	0	59	1	0	0	1	0	65	0	0	0	0	127	534	0	0	0	0
4:45 PM	0	0	0	0	0	62	0	0	0	0	0	67	0	0	0	0	129	542	0	0	0	0
5:00 PM	0	0	0	2	0	56	2	0	0	0	0	69	0	0	0	0	129	516	0	0	0	2
5:15 PM	0	0	0	0	0	49	0	0	0	0	0	100	0	0	0	0	149		0	0	0	0
5:30 PM	0	0	0	0	0	67	1	0	0	0	0	67	0	0	0	0	135		0	0	0	1
5:45 PM	0	0	0	0	0	45	0	0	0	0	0	58	0	0	0	0	103		0	0	0	0
Count Total	0	0	1	4	0	439	4	0	0	2	0	547	0	0	0	0	997		0	0	0	3
Peak Hour	0	0	0	2	0	234	3	0	0	0	0	303	0	0	0	0	542		0	0	0	3

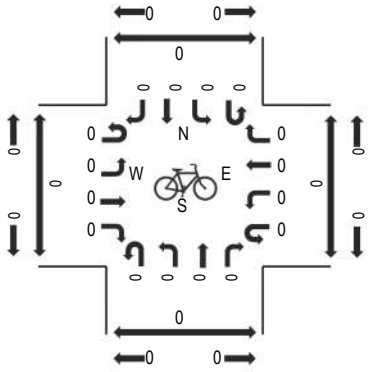
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 GOLDEN SAGE RD & E WOODMEN RD AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

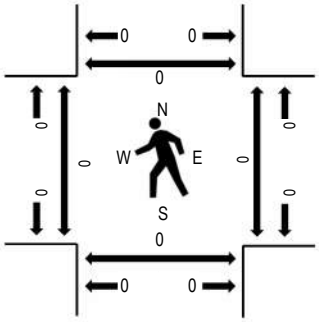
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

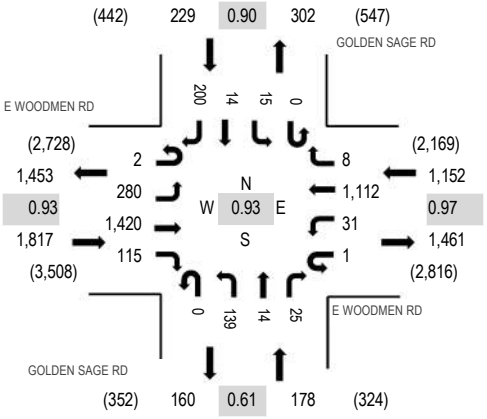
Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMEN RD Eastbound				E WOODMEN RD Westbound				GOLDEN SAGE RD Northbound				GOLDEN SAGE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	20	198	10	0	2	404	3	0	25	1	6	0	6	1	68	744	3,153	0	0	0	0
7:15 AM	0	30	251	14	0	1	450	1	1	36	1	1	0	4	0	62	852	3,001	0	0	0	0
7:30 AM	2	33	226	14	0	5	399	0	0	22	4	2	0	3	3	86	799	2,781	0	0	0	0
7:45 AM	0	27	267	19	0	2	365	1	0	21	1	0	0	3	3	49	758	2,571	0	0	0	0
8:00 AM	1	37	207	16	0	3	258	2	0	16	1	3	0	1	3	44	592	2,346	0	0	0	0
8:15 AM	0	35	221	10	0	5	292	2	0	17	0	0	0	5	1	44	632		0	0	0	0
8:30 AM	1	30	187	13	0	1	288	0	0	13	0	0	0	4	4	48	589		0	0	0	0
8:45 AM	0	26	174	19	0	2	250	0	0	18	0	1	0	2	2	39	533		0	0	0	0
Count Total	4	238	1,731	115	0	21	2,706	9	1	168	8	13	0	28	17	440	5,499		0	0	0	0
Peak Hour	2	110	942	57	0	10	1,618	5	1	104	7	9	0	16	7	265	3,153		0	0	0	0

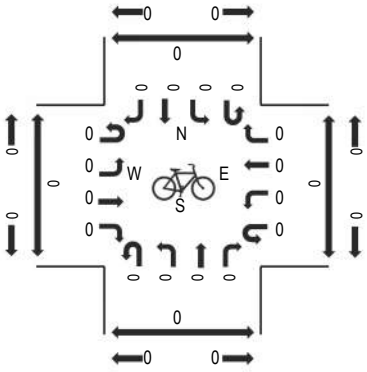
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 GOLDEN SAGE RD & E WOODMEN RD PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

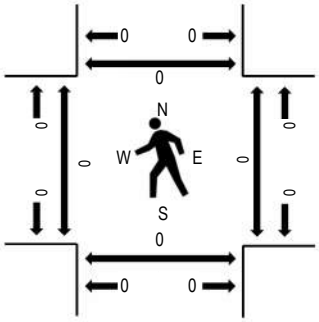
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

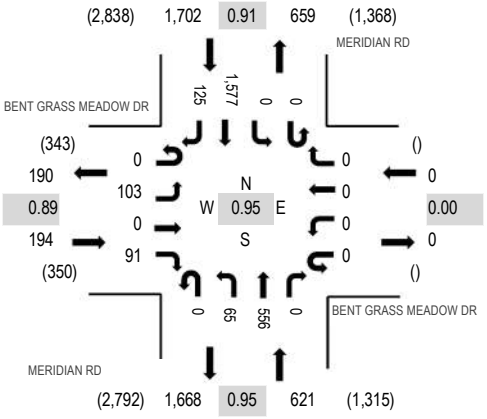
Traffic Counts - Motorized Vehicles

Interval Start Time	E WOODMEN RD Eastbound				E WOODMEN RD Westbound				GOLDEN SAGE RD Northbound				GOLDEN SAGE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	58	328	61	0	10	286	1	0	22	2	2	0	5	5	49	829	3,279	0	0	0	0
4:15 PM	1	54	363	35	0	4	246	1	0	38	5	5	0	4	2	37	795	3,261	0	0	0	0
4:30 PM	0	58	362	26	1	11	282	4	0	27	4	3	0	2	3	54	837	3,376	0	0	0	0
4:45 PM	1	64	358	20	0	2	272	1	0	30	3	5	0	6	1	55	818	3,337	0	0	0	0
5:00 PM	0	65	344	28	0	4	280	1	0	27	2	2	0	6	2	50	811	3,164	0	0	0	0
5:15 PM	1	93	356	41	0	14	278	2	0	55	5	15	0	1	8	41	910		0	0	0	0
5:30 PM	0	57	373	27	2	7	226	2	0	20	7	12	0	4	3	58	798		0	0	0	0
5:45 PM	3	57	250	24	0	10	222	0	0	29	1	3	0	4	4	38	645		0	0	0	0
Count Total	6	506	2,734	262	3	62	2,092	12	0	248	29	47	0	32	28	382	6,443		0	0	0	0
Peak Hour	2	280	1,420	115	1	31	1,112	8	0	139	14	25	0	15	14	200	3,376		0	0	0	0

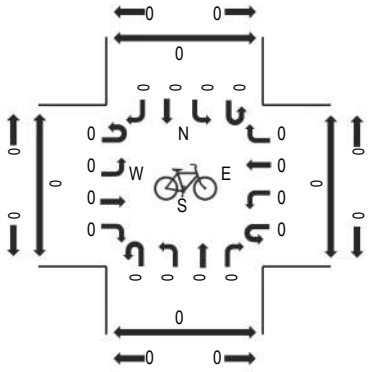
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 6 MERIDIAN RD & BENT GRASS MEADOW DR AM
Date: Wednesday, February 26, 2025
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

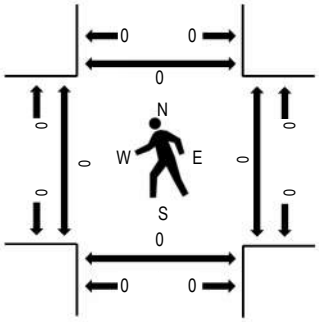
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

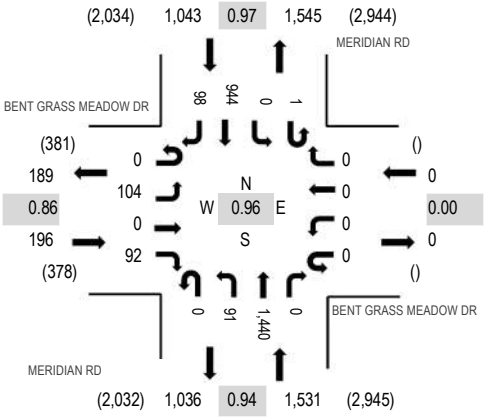
Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOW DR Eastbound				BENT GRASS MEADOW DR Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	21	0	24	0	0	0	0	0	16	123	0	0	0	368	29	581	2,517	0	0	0	0
7:15 AM	0	26	0	21	0	0	0	0	0	12	136	0	0	0	442	26	663	2,464	0	0	0	0
7:30 AM	0	31	0	24	0	0	0	0	0	15	155	0	0	0	398	37	660	2,322	0	0	0	0
7:45 AM	0	25	0	22	0	0	0	0	0	22	142	0	0	0	369	33	613	2,144	0	0	0	0
8:00 AM	0	25	0	21	0	0	0	0	0	19	164	0	0	0	280	19	528	1,986	0	0	0	0
8:15 AM	0	17	0	20	0	0	0	0	0	11	170	0	0	0	274	29	521		0	0	0	0
8:30 AM	0	13	0	28	0	0	0	0	0	14	148	0	0	0	254	25	482		0	0	0	0
8:45 AM	0	16	0	16	0	0	0	0	0	12	156	0	0	0	231	24	455		0	0	0	0
Count Total	0	174	0	176	0	0	0	0	0	121	1,194	0	0	0	2,616	222	4,503		0	0	0	0
Peak Hour	0	103	0	91	0	0	0	0	0	65	556	0	0	0	1,577	125	2,517		0	0	0	0

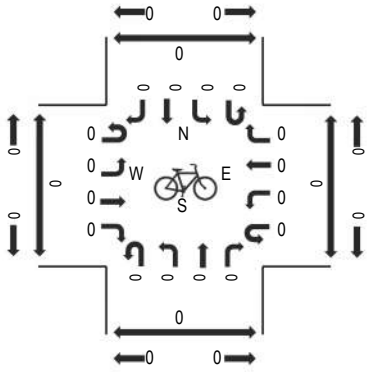
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 6 MERIDIAN RD & BENT GRASS MEADOW DR PM
Date: Wednesday, February 26, 2025
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

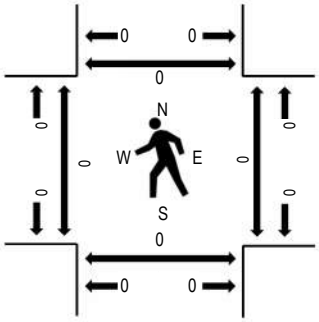
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BENT GRASS MEADOW DR Eastbound				BENT GRASS MEADOW DR Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	28	0	24	0	0	0	0	0	25	329	0	0	0	253	20	679	2,770	0	0	0	0
4:15 PM	0	23	0	20	0	0	0	0	0	26	372	0	0	0	200	28	669	2,751	0	0	0	0
4:30 PM	0	34	0	23	0	0	0	0	0	13	359	0	0	0	254	18	701	2,752	0	0	0	0
4:45 PM	0	19	0	25	0	0	0	0	0	27	380	0	1	0	237	32	721	2,707	0	0	0	0
5:00 PM	0	24	0	22	0	0	0	0	1	27	318	0	0	0	248	20	660	2,587	0	0	0	0
5:15 PM	0	23	0	20	0	0	0	0	0	33	350	0	0	0	223	21	670		0	0	0	0
5:30 PM	0	30	0	24	0	0	0	0	0	26	347	0	0	0	211	18	656		0	0	0	0
5:45 PM	0	22	0	17	0	0	0	0	0	27	285	0	0	0	230	20	601		0	0	0	0
Count Total	0	203	0	175	0	0	0	0	1	204	2,740	0	1	0	1,856	177	5,357		0	0	0	0
Peak Hour	0	104	0	92	0	0	0	0	0	91	1,440	0	1	0	944	98	2,770		0	0	0	0

APPENDIX B

Level of Service Definitions
ITE Internal Capture Worksheets
Woodmen Road Coordinated CGTs

The following information is referenced from the Highway Capacity Manual: A Guide for Multimodal Mobility Analysis, 7th Edition, Transportation Research Board, 2022: Chapter 19 – Signalized Intersections.

Motorized Vehicle Level of Service (LOS) for Signalized Intersections

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

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

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

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

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

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

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

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

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

The following information is referenced from the Highway Capacity Manual: A Guide for Multimodal Mobility Analysis, 7th Edition, Transportation Research Board, 2022: Chapter 20 – Two-Way Stop-Controlled Intersections, Chapter 21 – All-Way Stop-Controlled Intersections, and Chapter 22 - Roundabouts.

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

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

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

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

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

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Markets at Bent Grass	**Organization:**	SM ROCHA LLC
Project Location:	Bent Grass Meadows Dr & Woodmen Rd	**Performed By:**	SM ROCHA LLC
Scenario Description:	Build-Out	**Date:**	5/20/2026
Analysis Year:	2045	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	822,862,875	298	KSF	345	203	142
Restaurant	932,937	10	KSF	248	130	118
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]	VAR	20	KSF	177	94	83
				770	427	343

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		18	0	0	0
Restaurant	0	16		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	770	427	343
Internal Capture Percentage	9%	8%	10%
External Vehicle-Trips[5]	702	393	309
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	13%
Restaurant	14%	14%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Markets at Bent Grass
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	203	203	1.00	142	142
Restaurant	1.00	130	130	1.00	118	118
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	41		18	0	20	0
Restaurant	37	17		0	5	4
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		65	30	0	0	0
Retail	0		65	0	0	0
Restaurant	0	16		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	35	26	0		0
Hotel	0	8	8	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	16	187	203	187	0	0
Restaurant	18	112	130	112	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	94	94	94	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	18	124	142	124	0	0
Restaurant	16	102	118	102	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	83	83	83	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Bent Grass Marketplace	**Organization:**	SM ROCHA LLC
Project Location:	Bent Grass Meadows Dr & Woodmen Rd	**Performed By:**	SM ROCHA LLC
Scenario Description:	Build-Out	**Date:**	5/20/2026
Analysis Year:	2045	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail	821,862,875	298	KSF	725	359	366
Restaurant	932,937	10	KSF	150	83	67
Cinema/Entertainment				0		
Residential				0		
Hotel				0		
All Other Land Uses[2]	VAR	20	KSF	261	130	131
				1,136	572	564

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		24	0	0	0
Restaurant	0	27		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	1,136	572	564
Internal Capture Percentage	9%	9%	9%
External Vehicle-Trips[5]	1,034	521	513
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	8%	7%
Restaurant	29%	40%
Cinema/Entertainment	N/A	N/A
Residential	N/A	N/A
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Bent Grass Marketplace
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	359	359	1.00	366	366
Restaurant	1.00	83	83	1.00	67	67
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	0	0	1.00	0	0
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	7		106	15	95	18
Restaurant	2	27		5	12	5
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		29	2	0	0	0
Retail	0		24	0	0	0
Restaurant	0	180		0	0	0
Cinema/Entertainment	0	14	2		0	0
Residential	0	36	12	0		0
Hotel	0	7	4	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	27	332	359	332	0	0
Restaurant	24	59	83	59	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	130	130	130	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

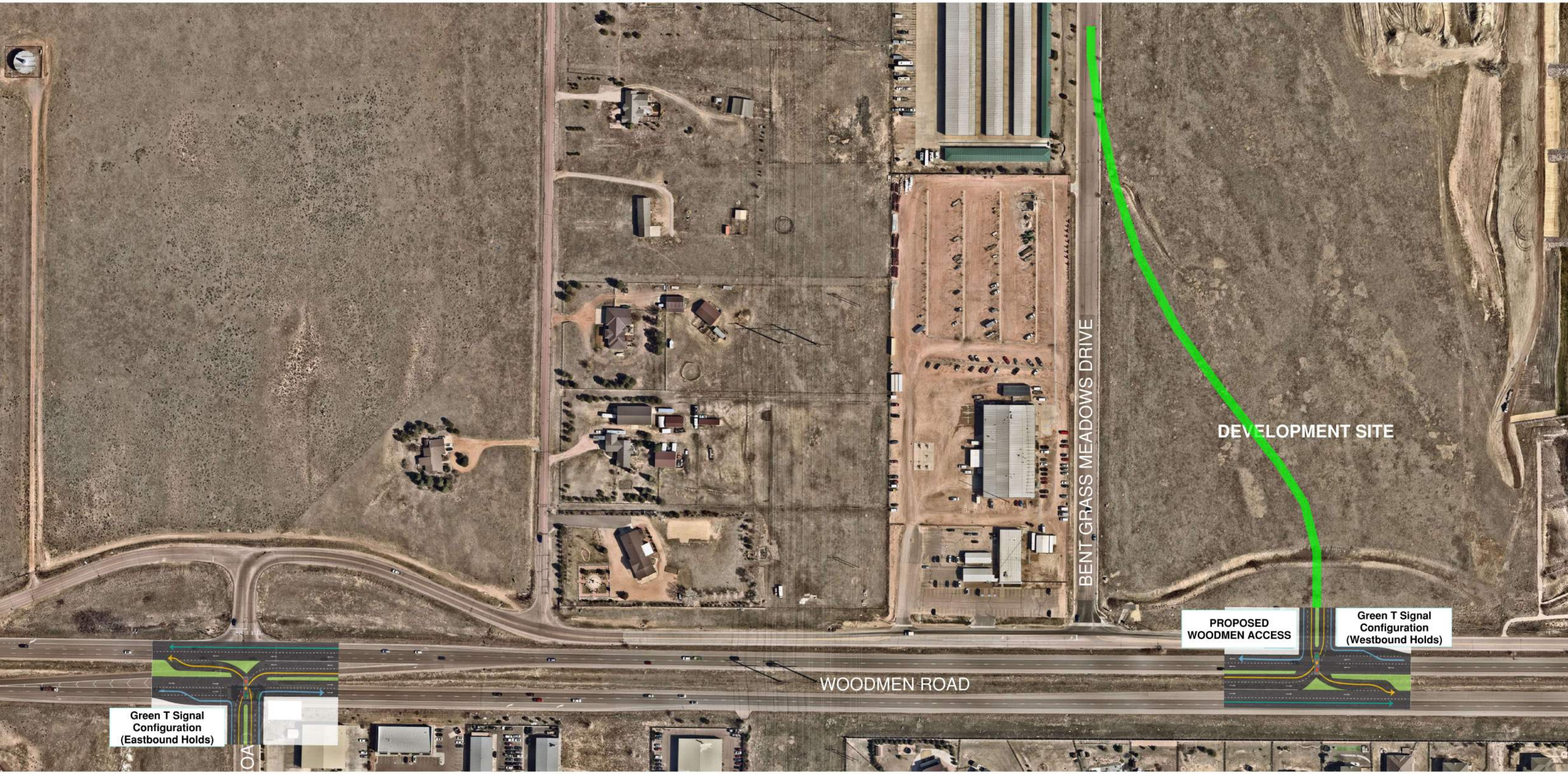
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	24	342	366	342	0	0
Restaurant	27	40	67	40	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	0	0	0	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	131	131	131	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.


BENT GRASS MEADOWS DRIVE
DEVELOPMENT SITE
WOODMEN ROAD
PROPOSED
WOODMEN ACCESS
Green T Signal
Configuration
(Westbound Holds)
Green T Signal
Configuration
(Eastbound Holds)

APPENDIX C

Capacity Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	942	57	10	1618	5	105	7	9	16	7	265
Future Volume (vph)	112	942	57	10	1618	5	105	7	9	16	7	265
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1591	0
Flt Permitted	0.053			0.259			0.272			0.752		
Satd. Flow (perm)	99	3539	1583	482	3539	1583	507	1863	1583	1401	1591	0
Satd. Flow (RTOR)			64			64			82		97	
Lane Group Flow (vph)	122	1024	62	11	1759	5	114	8	10	17	296	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	13.0	75.5	75.5	10.5	73.0	73.0	34.0	34.0	34.0	34.0	34.0	
Total Split (%)	10.8%	62.9%	62.9%	8.8%	60.8%	60.8%	28.3%	28.3%	28.3%	28.3%	28.3%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	83.9	80.3	80.3	77.3	69.8	69.8	25.6	25.6	25.6	25.6	25.6	
Actuated g/C Ratio	0.70	0.67	0.67	0.64	0.58	0.58	0.21	0.21	0.21	0.21	0.21	
v/c Ratio	0.69	0.43	0.05	0.02	0.85	0.00	1.05	0.02	0.02	0.05	0.71	
Control Delay (s/veh)	41.9	11.0	2.5	6.8	27.2	0.0	148.1	35.0	0.1	35.8	38.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	41.9	11.0	2.5	6.8	27.2	0.0	148.1	35.0	0.1	35.8	38.4	
LOS	D	B	A	A	C	A	F	C	A	D	D	
Approach Delay (s/veh)		13.7			27.1			130.1			38.3	
Approach LOS		B			C			F			D	
Queue Length 50th (ft)	43	184	0	3	613	0	87	5	0	10	139	
Queue Length 95th (ft)	#133	294	18	9	738	0	#206	18	0	30	240	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	180	2367	1080	369	2057	947	122	450	444	338	458	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.68	0.43	0.06	0.03	0.86	0.01	0.93	0.02	0.02	0.05	0.65	

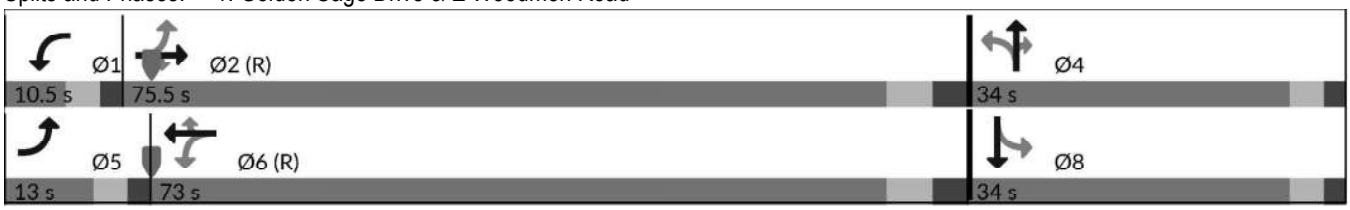
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay (s/veh): 27.4	Intersection LOS: C
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	257	258	68	556	51	234	249	11	79	876	905
Future Volume (vph)	396	257	258	68	556	51	234	249	11	79	876	905
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)			181			218			282			648
Lane Group Flow (vph)	430	279	280	74	604	55	254	271	12	86	952	984
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	24.0	47.0	47.0	11.0	34.0	34.0	17.0	51.0		11.0	45.0	
Total Split (%)	20.0%	39.2%	39.2%	9.2%	28.3%	28.3%	14.2%	42.5%		9.2%	37.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	18.2	43.7	43.7	6.2	29.5	29.5	12.1	43.9	120.0	6.6	36.2	120.0
Actuated g/C Ratio	0.15	0.36	0.36	0.05	0.25	0.25	0.10	0.37	1.00	0.06	0.30	1.00
v/c Ratio	0.82	0.21	0.40	0.41	0.69	0.09	0.73	0.20	0.00	0.45	0.89	0.62
Control Delay (s/veh)	63.5	28.3	12.8	62.7	46.9	0.3	65.4	26.7	0.0	81.5	39.2	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 (s/veh)	63.5	28.3	12.8	62.7	46.9	0.3	65.4	26.7	0.0	81.5	39.2	4.6
LOS	E	C	B	E	D	A	E	C	A	F	D	A
Approach Delay (s/veh)		39.3			45.0			44.5			24.2	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	167	83	55	29	235	0	98	75	0	36	330	236
Queue Length 95th (ft)	#235	117	131	55	298	0	#154	107	0	m53	397	175
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	543	1296	694	177	879	557	356	1315	1583	189	1120	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.22	0.40	0.42	0.69	0.10	0.71	0.21	0.01	0.46	0.85	0.62

Intersection Summary

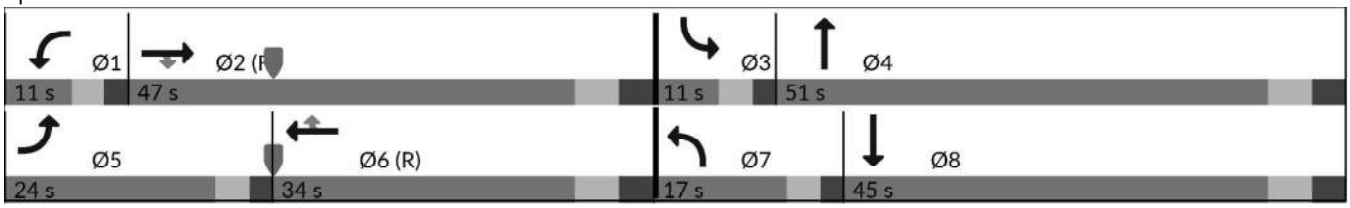
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay (s/veh): 33.8	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	103	91	65	556	1577	125
Future Volume (vph)	103	91	65	556	1577	125
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.074			
Satd. Flow (perm)	3433	1583	138	3539	3539	1583
Satd. Flow (RTOR)		99				136
Lane Group Flow (vph)	112	99	71	604	1714	136
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	12.0	97.0	85.0	85.0
Total Split (%)	19.2%	19.2%	10.0%	80.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	9.3	9.3	101.7	101.7	80.5	80.5
Actuated g/C Ratio	0.08	0.08	0.85	0.85	0.67	0.67
v/c Ratio	0.42	0.46	0.20	0.20	0.72	0.12
Control Delay (s/veh)	54.2	15.3	13.8	3.4	14.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.2	15.3	13.8	3.4	14.8	1.3
LOS	D	B	B	A	B	A
Approach Delay (s/veh)	36.0			4.5	13.9	
Approach LOS	D			A	B	
Queue Length 50th (ft)	43	1	15	73	407	0
Queue Length 95th (ft)	m71	m51	m27	94	490	20
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	529	327	344	2999	2374	1106
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	0.21	0.30	0.21	0.20	0.72	0.12

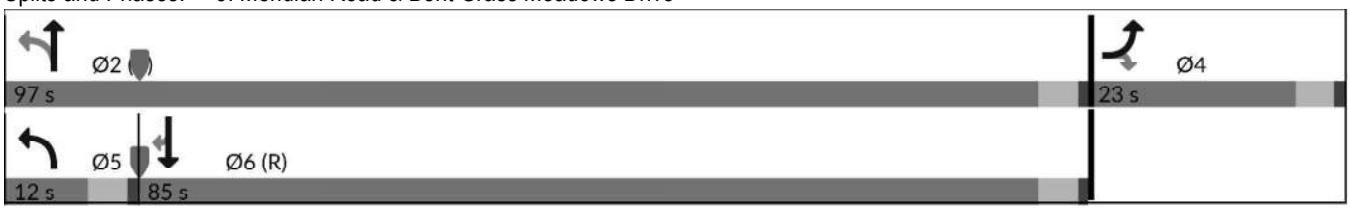
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay (s/veh): 13.3	Intersection LOS: B
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	2	286	2	2	121
Future Volume (Veh/h)	1	2	286	2	2	121
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	2	311	2	2	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	136	0	73	70	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	136	0	73	70	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	100	66	100	100	
cM capacity (veh/h)	754	1085	915	820	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	3	313	134
Volume Left	0	311	2
Volume Right	2	0	132
cSH	946	914	1623
Volume to Capacity	0.00	0.34	0.00
Queue Length 95th (ft)	0	38	0
Control Delay (s/veh)	8.8	11.0	0.1
Lane LOS	A	B	A
Approach Delay (s/veh)	8.8	11.0	0.1
Approach LOS	A	B	

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	56	66	139	3	5	149
Future Vol, veh/h	56	66	139	3	5	149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	72	151	3	5	162

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	154	0	-	0	346	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1426	-	-	-	651	893
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1426	-	-	-	623	893
Mov Cap-2 Maneuver	-	-	-	-	623	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	839	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.51	0	10.04
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1426	-	-	-	881
HCM Lane V/C Ratio	0.043	-	-	-	0.19
HCM Control Delay (s/veh)	7.6	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Intersection Delay, s/veh	3.2
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1	75	66	110
Demand Flow Rate, veh/h	1	77	67	112
Vehicles Circulating, veh/h	94	18	112	1
Vehicles Exiting, veh/h	0	161	1	95
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	2.9	3.2	3.1	3.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	L	R	L	TR	L
Assumed Moves	L	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.269	0.731	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	1	77	18	49	112
Cap Entry Lane, veh/h	1254	1355	1282	1282	1378
Entry HV Adj Factor	1.000	0.974	0.980	0.980	0.982
Flow Entry, veh/h	1	75	18	48	110
Cap Entry, veh/h	1254	1320	1257	1256	1354
V/C Ratio	0.001	0.057	0.014	0.038	0.081
Control Delay, s/veh	2.9	3.2	3.0	3.2	3.3
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	282	1420	115	32	1112	8	139	14	25	15	14	200
Future Volume (vph)	282	1420	115	32	1112	8	139	14	25	15	14	200
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1602	0
Flt Permitted	0.119			0.122			0.397			0.748		
Satd. Flow (perm)	222	3539	1583	227	3539	1583	740	1863	1583	1393	1602	0
Satd. Flow (RTOR)			125			109			127		217	
Lane Group Flow (vph)	307	1543	125	35	1209	9	151	15	27	16	232	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	27.0	73.4	73.4	10.6	57.0	57.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	22.5%	61.2%	61.2%	8.8%	47.5%	47.5%	30.0%	30.0%	30.0%	30.0%	30.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	84.6	76.1	76.1	66.7	58.9	58.9	25.4	25.4	25.4	25.4	25.4	
Actuated g/C Ratio	0.71	0.63	0.63	0.56	0.49	0.49	0.21	0.21	0.21	0.21	0.21	
v/c Ratio	0.77	0.68	0.11	0.17	0.69	0.01	0.96	0.03	0.06	0.05	0.45	
Control Delay (s/veh)	33.2	18.4	2.4	11.0	28.3	0.0	109.6	34.5	0.2	34.9	8.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.2	18.4	2.4	11.0	28.3	0.0	109.6	34.5	0.2	34.9	8.9	
LOS	C	B	A	B	C	A	F	C	A	C	A	
Approach Delay (s/veh)		19.8			27.7			88.5			10.6	
Approach LOS		B			C			F			B	
Queue Length 50th (ft)	125	445	0	8	398	0	114	9	0	10	9	
Queue Length 95th (ft)	236	574	27	20	523	0	#226	27	0	28	72	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	439	2244	1049	200	1738	832	191	481	503	359	574	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.70	0.69	0.12	0.18	0.70	0.01	0.79	0.03	0.05	0.04	0.40	

Intersection Summary

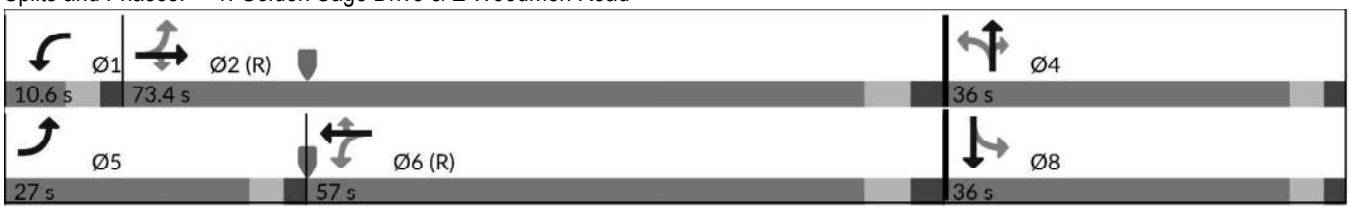
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay (s/veh): 25.5	Intersection LOS: C
Intersection Capacity Utilization 85.5%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	746	486	117	74	397	143	321	715	88	150	442	500
Future Volume (vph)	746	486	117	74	397	143	321	715	88	150	442	500
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)			173			218			282			543
Lane Group Flow (vph)	811	528	127	80	432	155	349	777	96	163	480	543
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	39.0	57.0	57.0	11.0	29.0	29.0	22.0	39.0		13.0	30.0	
Total Split (%)	32.5%	47.5%	47.5%	9.2%	24.2%	24.2%	18.3%	32.5%		10.8%	25.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	32.1	53.0	53.0	6.3	24.9	24.9	16.0	30.0	120.0	8.9	23.0	120.0
Actuated g/C Ratio	0.27	0.44	0.44	0.05	0.21	0.21	0.13	0.25	1.00	0.07	0.19	1.00
v/c Ratio	0.88	0.33	0.15	0.44	0.58	0.30	0.76	0.87	0.06	0.63	0.70	0.34
Control Delay (s/veh)	54.1	23.7	1.5	63.5	47.8	2.8	61.6	55.2	0.0	87.3	41.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.1	23.7	1.5	63.5	47.8	2.8	61.6	55.2	0.0	87.3	41.6	0.9
LOS	D	C	A	E	D	A	E	E	A	F	D	A
Approach Delay (s/veh)		38.7			39.3			52.7			29.3	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	304	150	0	31	169	0	134	298	0	69	168	1
Queue Length 95th (ft)	382	190	15	58	222	14	187	375	0	#115	235	21
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	972	1578	801	178	749	507	489	943	1583	255	692	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.33	0.16	0.45	0.58	0.31	0.71	0.82	0.06	0.64	0.69	0.34

Intersection Summary

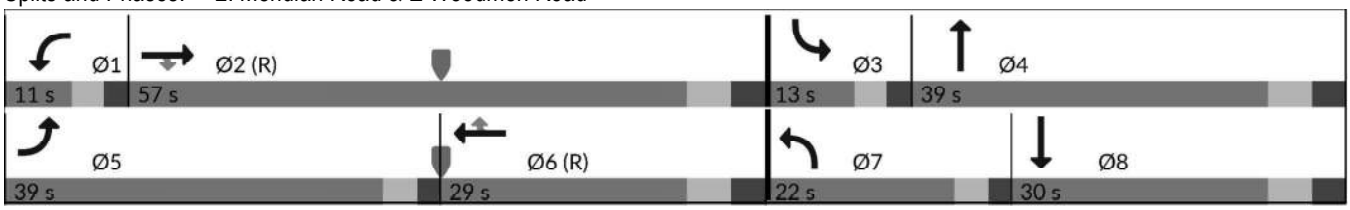
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay (s/veh): 40.1	Intersection LOS: D
Intersection Capacity Utilization 76.3%	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 & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	104	92	91	1440	945	98
Future Volume (vph)	104	92	91	1440	945	98
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.212			
Satd. Flow (perm)	3433	1583	395	3539	3539	1583
Satd. Flow (RTOR)		100				107
Lane Group Flow (vph)	113	100	99	1565	1027	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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	26.0	26.0	14.0	94.0	80.0	80.0
Total Split (%)	21.7%	21.7%	11.7%	78.3%	66.7%	66.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	9.3	9.3	101.7	101.7	75.5	75.5
Actuated g/C Ratio	0.08	0.08	0.85	0.85	0.63	0.63
v/c Ratio	0.42	0.46	0.16	0.52	0.46	0.10
Control Delay (s/veh)	49.3	14.7	1.9	6.6	12.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.3	14.7	1.9	6.6	12.4	1.8
LOS	D	B	A	A	B	A
Approach Delay (s/veh)	33.1			6.3	11.5	
Approach LOS	C			A	B	
Queue Length 50th (ft)	44	13	8	317	203	0
Queue Length 95th (ft)	m68	m51	m13	360	250	21
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	615	365	583	2998	2226	1035
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	0.18	0.27	0.17	0.52	0.46	0.10

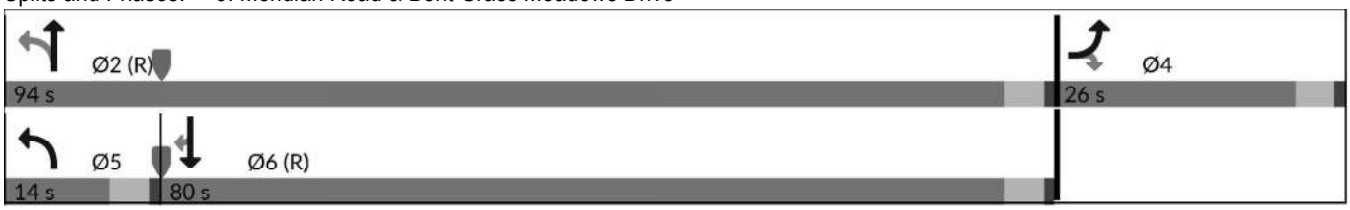
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay (s/veh): 10.2	Intersection LOS: B
Intersection Capacity Utilization 51.5%	ICU Level of Service A
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	2	234	3	0	303
Future Volume (Veh/h)	0	2	234	3	0	303
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	254	3	0	329
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	329	0	167	165	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	329	0	167	165	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	100	68	100	100	
cM capacity (veh/h)	590	1085	796	728	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	2	257	329
Volume Left	0	254	0
Volume Right	2	0	329
cSH	1085	795	1623
Volume to Capacity	0.00	0.32	0.00
Queue Length 95th (ft)	0	35	0
Control Delay (s/veh)	8.3	11.7	0.0
Lane LOS	A	B	
Approach Delay (s/veh)	8.3	11.7	0.0
Approach LOS	A	B	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	123	180	169	14	6	68
Future Vol, veh/h	123	180	169	14	6	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	134	196	184	15	7	74

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	199	0	-	0	654	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	463	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1373	-	-	-	431	850
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	634	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1373	-	-	-	389	850
Mov Cap-2 Maneuver	-	-	-	-	389	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.21	0	10.18
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1373	-	-	-	776
HCM Lane V/C Ratio	0.097	-	-	-	0.104
HCM Control Delay (s/veh)	7.9	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	126	115	208
Demand Flow Rate, veh/h	0	129	118	212
Vehicles Circulating, veh/h	158	29	212	0
Vehicles Exiting, veh/h	0	301	0	158
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.5	3.7	3.9
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	L	R	L	TR	L
Assumed Moves	L	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.246	0.754	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	0	129	29	89	212
Cap Entry Lane, veh/h	1174	1340	1171	1171	1380
Entry HV Adj Factor	1.000	0.977	0.980	0.978	0.981
Flow Entry, veh/h	0	126	28	87	208
Cap Entry, veh/h	1174	1308	1148	1145	1354
V/C Ratio	0.000	0.096	0.025	0.076	0.154
Control Delay, s/veh	3.1	3.5	3.3	3.8	3.9
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	1043	65	19	1754	17	118	9	22	35	9	306
Future Volume (vph)	137	1043	65	19	1754	17	118	9	22	35	9	306
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1591	0
Flt Permitted	0.056			0.209			0.241			0.751		
Satd. Flow (perm)	104	3539	1583	389	3539	1583	449	1863	1583	1399	1591	0
Satd. Flow (RTOR)			71			64			82		92	
Lane Group Flow (vph)	149	1134	71	21	1907	18	128	10	24	38	343	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	13.0	75.5	75.5	10.5	73.0	73.0	34.0	34.0	34.0	34.0	34.0	
Total Split (%)	10.8%	62.9%	62.9%	8.8%	60.8%	60.8%	28.3%	28.3%	28.3%	28.3%	28.3%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	80.0	74.8	74.8	73.5	66.0	66.0	29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio	0.67	0.62	0.62	0.61	0.55	0.55	0.24	0.24	0.24	0.24	0.24	
v/c Ratio	0.82	0.51	0.07	0.06	0.97	0.02	1.18	0.02	0.05	0.11	0.75	
Control Delay (s/veh)	58.9	14.2	2.8	7.1	42.9	0.0	185.7	35.0	0.2	36.6	42.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	58.9	14.2	2.8	7.1	42.9	0.0	185.7	35.0	0.2	36.6	42.3	
LOS	E	B	A	A	D	A	F	C	A	D	D	
Approach Delay (s/veh)		18.6			42.2			148.9			41.8	
Approach LOS		B			D			F			D	
Queue Length 50th (ft)	62	213	0	5	725	0	~119	6	0	23	184	
Queue Length 95th (ft)	#182	338	20	13	#930	0	#246	20	0	53	#305	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	180	2205	1013	301	1946	899	108	450	444	338	454	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.83	0.51	0.07	0.07	0.98	0.02	1.19	0.02	0.05	0.11	0.76	

Intersection Summary

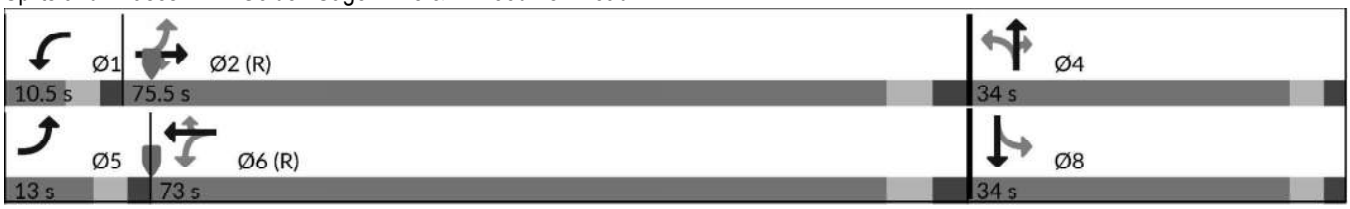
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay (s/veh): 38.3	Intersection LOS: D
Intersection Capacity Utilization 100.4%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	424	335	276	73	635	55	250	266	12	85	937	968
Future Volume (vph)	424	335	276	73	635	55	250	266	12	85	937	968
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)			176			173			236			648
Lane Group Flow (vph)	461	364	300	79	690	60	272	289	13	92	1018	1052
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	23.0	48.0	48.0	11.0	36.0	36.0	16.0	49.0		12.0	45.0	
Total Split (%)	19.2%	40.0%	40.0%	9.2%	30.0%	30.0%	13.3%	40.8%		10.0%	37.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	17.9	43.2	43.2	6.0	29.2	29.2	11.7	42.0	120.0	7.0	37.2	120.0
Actuated g/C Ratio	0.15	0.36	0.36	0.05	0.24	0.24	0.10	0.35	1.00	0.06	0.31	1.00
v/c Ratio	0.90	0.28	0.43	0.46	0.80	0.11	0.81	0.23	0.00	0.46	0.92	0.66
Control Delay (s/veh)	72.5	28.9	14.4	64.4	51.0	0.4	72.4	28.1	0.0	79.4	42.5	5.2
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 (s/veh)	72.5	28.9	14.4	64.4	51.0	0.4	72.4	28.1	0.0	79.4	42.5	5.2
LOS	E	C	B	E	D	A	E	C	A	E	D	A
Approach Delay (s/veh)		43.0			48.7			48.5			26.0	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	182	108	69	31	266	0	108	82	0	38	371	111
Queue Length 95th (ft)	#275	148	150	57	338	0	#184	117	0	m53	#514	211
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	514	1293	689	171	878	522	335	1252	1583	203	1120	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.28	0.44	0.46	0.79	0.11	0.81	0.23	0.01	0.45	0.91	0.66

Intersection Summary

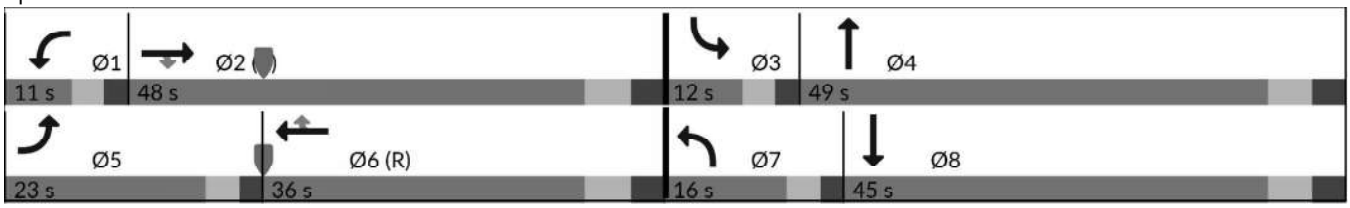
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 36.8	Intersection LOS: D
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	158	172	137	576	1643	223
Future Volume (vph)	158	172	137	576	1643	223
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.064			
Satd. Flow (perm)	3433	1583	119	3539	3539	1583
Satd. Flow (RTOR)		120				242
Lane Group Flow (vph)	172	187	149	626	1786	242
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	12.0	97.0	85.0	85.0
Total Split (%)	19.2%	19.2%	10.0%	80.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	12.4	12.4	98.6	98.6	80.5	80.5
Actuated g/C Ratio	0.10	0.10	0.82	0.82	0.67	0.67
v/c Ratio	0.48	0.69	0.52	0.21	0.75	0.21
Control Delay (s/veh)	52.6	31.0	35.7	4.1	15.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.6	31.0	35.7	4.1	15.7	1.3
LOS	D	C	D	A	B	A
Approach Delay (s/veh)	41.4			10.2	14.0	
Approach LOS	D			B	B	
Queue Length 50th (ft)	67	51	58	76	442	0
Queue Length 95th (ft)	m94	m117	m98	m98	532	25
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	529	345	284	2907	2374	1141
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.54	0.52	0.22	0.75	0.21

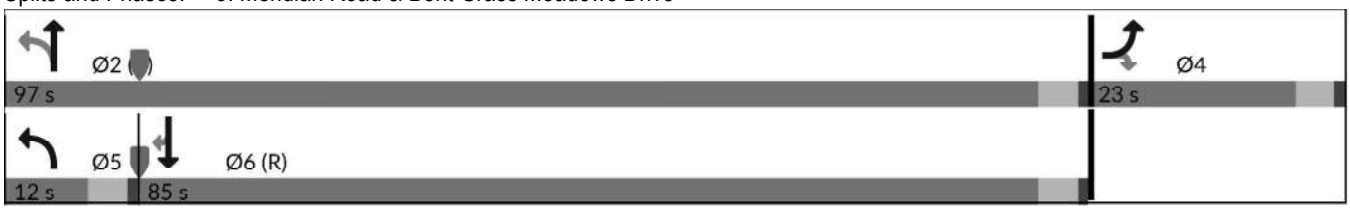
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay (s/veh): 16.2	Intersection LOS: B
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 & Bent Grass Meadows Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2	38	311	3	26	136
Future Volume (Veh/h)	2	38	311	3	26	136
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	41	338	3	28	148
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	204	0	172	130	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204	0	172	130	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	96	55	100	98	
cM capacity (veh/h)	680	1085	750	747	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	43	341	176
Volume Left	0	338	28
Volume Right	41	0	148
cSH	1056	750	1623
Volume to Capacity	0.04	0.45	0.02
Queue Length 95th (ft)	3	60	1
Control Delay (s/veh)	8.6	13.7	1.3
Lane LOS	A	B	A
Approach Delay (s/veh)	8.6	13.7	1.3
Approach LOS	A	B	

Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	71	149	3	5	165
Future Vol, veh/h	67	71	149	3	5	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	77	162	3	5	179

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	165	0	-	0	386	164
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1413	-	-	-	617	881
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1413	-	-	-	585	881
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.73	0	10.26
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1413	-	-	-	868
HCM Lane V/C Ratio	0.052	-	-	-	0.213
HCM Control Delay (s/veh)	7.7	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Intersection	
Intersection Delay, s/veh	3.2
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1	80	71	117
Demand Flow Rate, veh/h	1	82	72	119
Vehicles Circulating, veh/h	102	20	119	1
Vehicles Exiting, veh/h	0	171	1	102
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	2.9	3.2	3.2	3.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	L	R	L	TR	L
Assumed Moves	L	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.278	0.722	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	1	82	20	52	119
Cap Entry Lane, veh/h	1244	1352	1274	1274	1378
Entry HV Adj Factor	1.000	0.976	0.980	0.981	0.983
Flow Entry, veh/h	1	80	20	51	117
Cap Entry, veh/h	1244	1319	1249	1250	1355
V/C Ratio	0.001	0.061	0.016	0.041	0.086
Control Delay, s/veh	2.9	3.2	3.0	3.2	3.3
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	351	1586	135	64	1269	54	161	16	52	53	16	257
Future Volume (vph)	351	1586	135	64	1269	54	161	16	52	53	16	257
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1600	0
Flt Permitted	0.103			0.061			0.321			0.746		
Satd. Flow (perm)	192	3539	1583	114	3539	1583	598	1863	1583	1390	1600	0
Satd. Flow (RTOR)			147			64			82		118	
Lane Group Flow (vph)	382	1724	147	70	1379	59	175	17	57	58	296	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	13.0	75.5	75.5	10.5	73.0	73.0	34.0	34.0	34.0	34.0	34.0	
Total Split (%)	10.8%	62.9%	62.9%	8.8%	60.8%	60.8%	28.3%	28.3%	28.3%	28.3%	28.3%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	79.0	70.6	70.6	73.5	66.0	66.0	29.0	29.0	29.0	29.0	29.0	
Actuated g/C Ratio	0.66	0.59	0.59	0.61	0.55	0.55	0.24	0.24	0.24	0.24	0.24	
v/c Ratio	1.65	0.82	0.14	0.48	0.70	0.06	1.21	0.03	0.12	0.17	0.62	
Control Delay (s/veh)	334.0	24.9	2.2	22.7	22.4	2.9	184.1	35.3	4.0	37.7	30.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	334.0	24.9	2.2	22.7	22.4	2.9	184.1	35.3	4.0	37.7	30.3	
LOS	F	C	A	C	C	A	F	D	A	D	C	
Approach Delay (s/veh)		75.8			21.7			132.8			31.6	
Approach LOS		E			C			F			C	
Queue Length 50th (ft)	~340	559	0	17	396	0	~166	10	0	36	123	
Queue Length 95th (ft)	#537	673	28	48	480	18	#311	30	19	73	221	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	231	2082	991	145	1946	899	144	450	444	335	476	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.65	0.83	0.15	0.48	0.71	0.07	1.22	0.04	0.13	0.17	0.62	

Intersection Summary

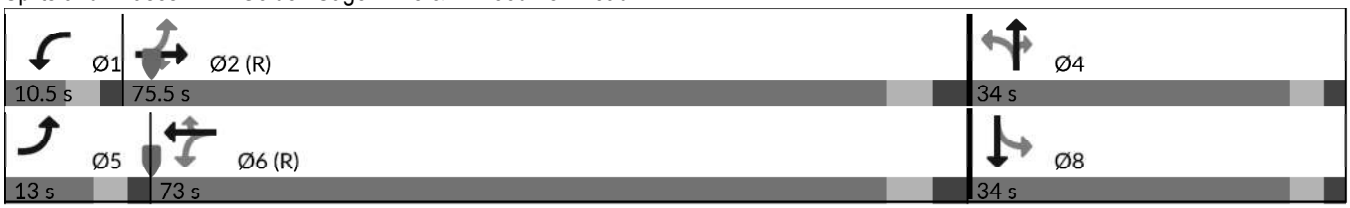
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.65

Intersection Signal Delay (s/veh): 56.8	Intersection LOS: E
Intersection Capacity Utilization 98.5%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	798	644	125	79	575	153	344	765	94	161	473	535
Future Volume (vph)	798	644	125	79	575	153	344	765	94	161	473	535
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)			173			218			282			582
Lane Group Flow (vph)	867	700	136	86	625	166	374	832	102	175	514	582
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	38.0	59.0	59.0	11.0	32.0	32.0	21.0	38.0		12.0	29.0	
Total Split (%)	31.7%	49.2%	49.2%	9.2%	26.7%	26.7%	17.5%	31.7%		10.0%	24.2%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	32.4	54.3	54.3	6.0	25.7	25.7	15.7	30.4	120.0	7.6	22.2	120.0
Actuated g/C Ratio	0.27	0.45	0.45	0.05	0.21	0.21	0.13	0.25	1.00	0.06	0.19	1.00
v/c Ratio	0.93	0.43	0.16	0.50	0.82	0.32	0.83	0.92	0.06	0.80	0.78	0.36
Control Delay (s/veh)	60.7	24.1	1.7	65.8	55.5	3.4	67.3	61.1	0.0	101.2	47.7	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 (s/veh)	60.7	24.1	1.7	65.8	55.5	3.4	67.3	61.1	0.0	101.2	47.7	1.0
LOS	E	C	A	E	E	A	E	E	A	F	D	A
Approach Delay (s/veh)		41.0			46.7			58.2			33.7	
Approach LOS		D			D			E			C	
Queue Length 50th (ft)	336	197	0	34	246	0	147	330	0	74	203	11
Queue Length 95th (ft)	#454	251	19	61	#336	23	#219	#446	0	#141	266	19
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	944	1604	812	172	762	512	461	914	1583	217	654	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.44	0.17	0.50	0.82	0.32	0.81	0.91	0.06	0.81	0.79	0.37

Intersection Summary

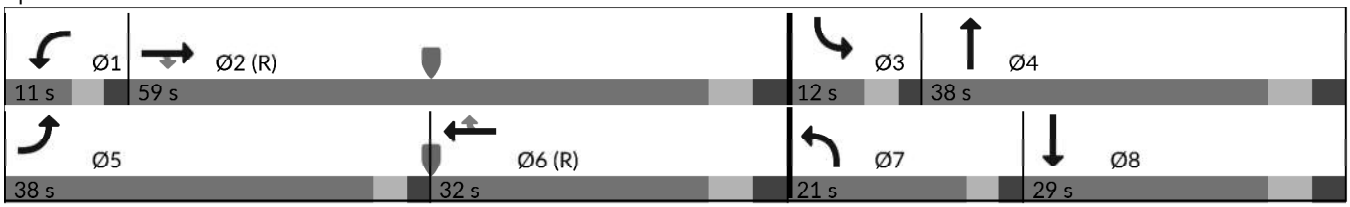
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 44.5	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	189	165	174	1505	988	167
Future Volume (vph)	189	165	174	1505	988	167
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.210			
Satd. Flow (perm)	3433	1583	391	3539	3539	1583
Satd. Flow (RTOR)		179				182
Lane Group Flow (vph)	205	179	189	1636	1074	182
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	12.0	97.0	85.0	85.0
Total Split (%)	19.2%	19.2%	10.0%	80.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	12.5	12.5	98.5	98.5	80.5	80.5
Actuated g/C Ratio	0.10	0.10	0.82	0.82	0.67	0.67
v/c Ratio	0.57	0.55	0.39	0.56	0.45	0.16
Control Delay (s/veh)	52.9	11.8	5.5	11.2	10.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.9	11.8	5.5	11.2	10.0	1.3
LOS	D	B	A	B	B	A
Approach Delay (s/veh)	33.8			10.7	8.8	
Approach LOS	C			B	A	
Queue Length 50th (ft)	79	7	37	342	188	0
Queue Length 95th (ft)	m93	m30	m49	m753	231	23
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	529	395	476	2905	2374	1121
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	0.39	0.45	0.40	0.56	0.45	0.16

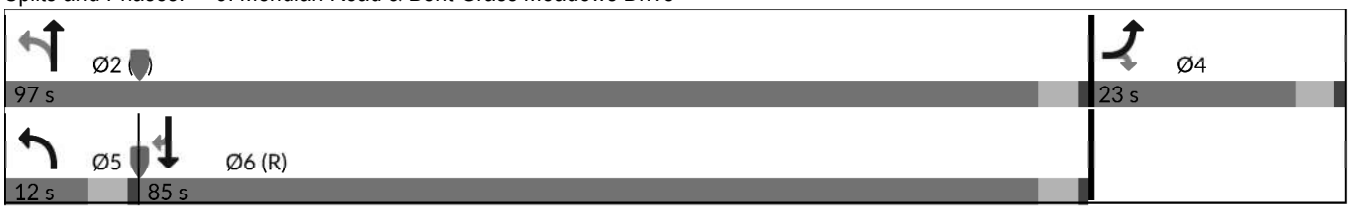
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay (s/veh): 12.5	Intersection LOS: B
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	76	257	4	90	329
Future Volume (Veh/h)	1	76	257	4	90	329
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	83	279	4	98	358
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	554	0	459	375	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	554	0	459	375	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	92	38	99	94	
cM capacity (veh/h)	414	1085	451	522	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	283	456
Volume Left	0	279	98
Volume Right	83	0	358
cSH	1064	452	1623
Volume to Capacity	0.08	0.63	0.06
Queue Length 95th (ft)	6	105	5
Control Delay (s/veh)	8.7	25.4	2.0
Lane LOS	A	D	A
Approach Delay (s/veh)	8.7	25.4	2.0
Approach LOS	A	D	

Intersection Summary			
Average Delay	10.7		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	138	193	181	15	6	81
Future Vol, veh/h	138	193	181	15	6	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	210	197	16	7	88

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	213	0	-	0	715	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1357	-	-	-	398	836
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1357	-	-	-	354	836
Mov Cap-2 Maneuver	-	-	-	-	354	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	SB
HCM Control Delay, s/v	3.33	0	10.38
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1357	-	-	-	764
HCM Lane V/C Ratio	0.111	-	-	-	0.124
HCM Control Delay (s/veh)	8	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4

Intersection	
Intersection Delay, s/veh	3.8
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	135	123	222
Demand Flow Rate, veh/h	0	138	126	226
Vehicles Circulating, veh/h	169	31	226	0
Vehicles Exiting, veh/h	0	321	0	169
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.6	3.8	4.0
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	L	R	L	TR	L
Assumed Moves	L	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.246	0.754	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	0	138	31	95	226
Cap Entry Lane, veh/h	1161	1337	1156	1156	1380
Entry HV Adj Factor	1.000	0.978	0.980	0.979	0.982
Flow Entry, veh/h	0	135	30	93	222
Cap Entry, veh/h	1161	1308	1133	1132	1355
V/C Ratio	0.000	0.103	0.027	0.082	0.164
Control Delay, s/veh	3.1	3.6	3.4	3.9	4.0
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	1316	87	39	2154	45	155	10	50	78	10	403
Future Volume (vph)	188	1316	87	39	2154	45	155	10	50	78	10	403
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1591	0
Flt Permitted	0.070			0.129			0.243			0.750		
Satd. Flow (perm)	130	5085	1583	240	5085	1583	453	1863	1583	1397	1591	0
Satd. Flow (RTOR)			95			64			82		106	
Lane Group Flow (vph)	204	1430	95	42	2341	49	168	11	54	85	449	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	14.6	63.3	63.3	10.6	59.3	59.3	46.1	46.1	46.1	46.1	46.1	
Total Split (%)	12.2%	52.8%	52.8%	8.8%	49.4%	49.4%	38.4%	38.4%	38.4%	38.4%	38.4%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	68.1	58.4	58.4	59.9	52.3	52.3	41.1	41.1	41.1	41.1	41.1	
Actuated g/C Ratio	0.57	0.49	0.49	0.50	0.44	0.44	0.34	0.34	0.34	0.34	0.34	
v/c Ratio	1.00	0.58	0.12	0.22	1.06	0.07	1.08	0.02	0.09	0.18	0.73	
Control Delay (s/veh)	92.9	23.6	3.8	14.4	69.5	3.3	135.5	26.3	2.6	28.9	34.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	92.9	23.6	3.8	14.4	69.5	3.3	135.5	26.3	2.6	28.9	34.2	
LOS	F	C	A	B	E	A	F	C	A	C	C	
Approach Delay (s/veh)		30.7			67.2			99.5			33.3	
Approach LOS		C			E			F			C	
Queue Length 50th (ft)	109	297	0	14	~739	0	~148	6	0	47	240	
Queue Length 95th (ft)	#273	346	30	30	#834	17	#294	19	14	87	372	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	204	2475	819	191	2216	726	155	638	596	478	614	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.00	0.58	0.12	0.22	1.06	0.07	1.08	0.02	0.09	0.18	0.73	

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

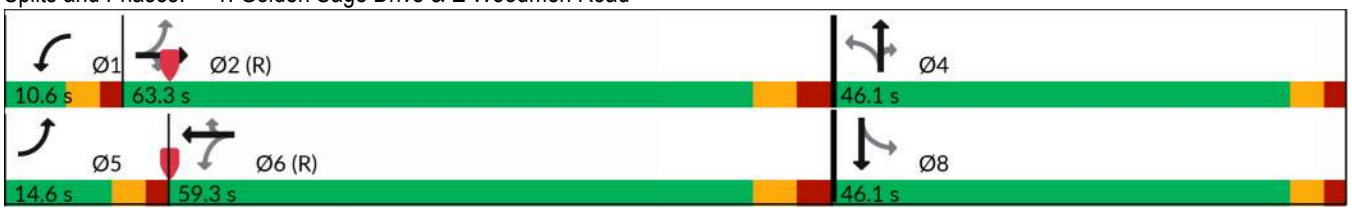
Maximum v/c Ratio: 1.08

Intersection Signal Delay (s/veh): 52.3	Intersection LOS: D
Intersection Capacity Utilization 104.4%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	523	333	88	845	66	302	321	14	102	1130	1168
Future Volume (vph)	511	523	333	88	845	66	302	321	14	102	1130	1168
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			175			173			236			649
Lane Group Flow (vph)	555	568	362	96	918	72	328	349	15	111	1228	1270
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	25.0	42.0	42.0	12.0	29.0	29.0	17.0	53.0		13.0	49.0	
Total Split (%)	20.8%	35.0%	35.0%	10.0%	24.2%	24.2%	14.2%	44.2%		10.8%	40.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	20.0	35.1	35.1	6.9	22.0	22.0	12.0	46.3	120.0	7.7	42.0	120.0
Actuated g/C Ratio	0.17	0.29	0.29	0.06	0.18	0.18	0.10	0.39	1.00	0.06	0.35	1.00
v/c Ratio	0.97	0.38	0.62	0.49	0.98	0.17	0.96	0.26	0.01	0.50	0.99	0.80
Control Delay (s/veh)	80.9	34.7	23.5	63.6	75.1	0.8	92.7	25.9	0.0	72.5	51.2	9.8
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 (s/veh)	80.9	34.7	23.5	63.6	75.1	0.8	92.7	25.9	0.0	72.5	51.2	9.8
LOS	F	C	C	E	E	A	F	C	A	E	D	A
Approach Delay (s/veh)		49.3			69.1			57.0			31.9	
Approach LOS		D			E			E			C	
Queue Length 50th (ft)	226	130	126	38	266	0	134	97	0	47	458	290
Queue Length 95th (ft)	#340	167	234	68	#363	0	#228	135	0	m56	m#622	m278
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	572	1488	586	200	932	431	343	1364	1583	228	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.38	0.62	0.48	0.98	0.17	0.96	0.26	0.01	0.49	0.99	0.80

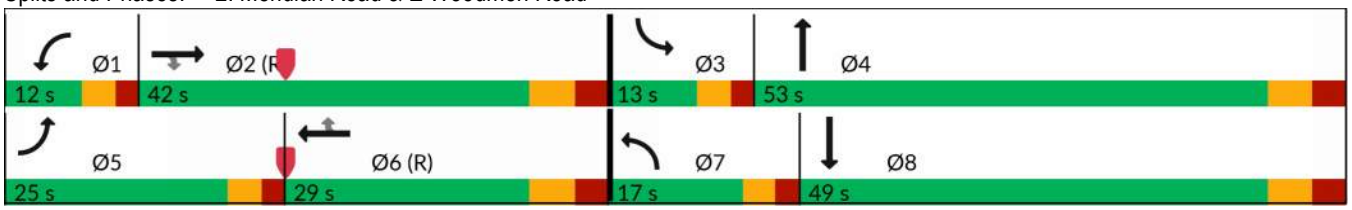
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 46.1	Intersection LOS: D
Intersection Capacity Utilization 90.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	192	151	698	1990	250
Future Volume (vph)	181	192	151	698	1990	250
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.047			
Satd. Flow (perm)	3433	1583	88	3539	3539	1583
Satd. Flow (RTOR)		116				272
Lane Group Flow (vph)	197	209	164	759	2163	272
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	13.0	97.5	84.5	84.5
Total Split (%)	18.8%	18.8%	10.8%	81.3%	70.4%	70.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.3	13.3	97.7	97.7	80.0	80.0
Actuated g/C Ratio	0.11	0.11	0.81	0.81	0.67	0.67
v/c Ratio	0.52	0.75	0.64	0.26	0.92	0.24
Control Delay (s/veh)	52.1	37.4	47.3	5.7	24.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.1	37.4	47.3	5.7	24.9	1.3
LOS	D	D	D	A	C	A
Approach Delay (s/veh)	44.5			13.1	22.3	
Approach LOS	D			B	C	
Queue Length 50th (ft)	77	72	86	100	703	0
Queue Length 95th (ft)	m106	m140	m#134	m118	855	28
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	514	336	256	2880	2359	1146
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	0.38	0.62	0.64	0.26	0.92	0.24

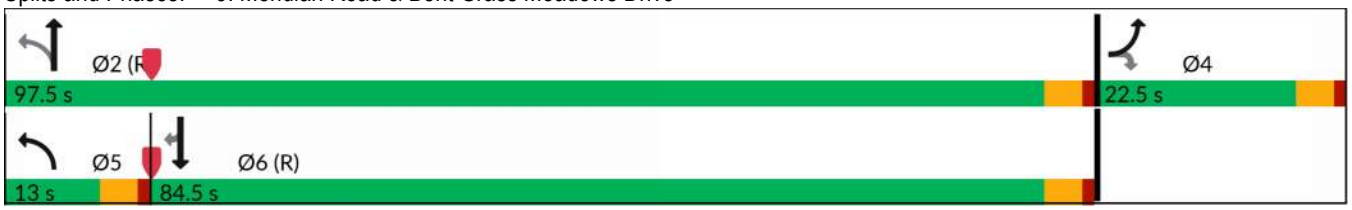
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay (s/veh): 22.4	Intersection LOS: C
Intersection Capacity Utilization 79.8%	ICU Level of Service D
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2	118	374	4	80	162
Future Volume (Veh/h)	2	118	374	4	80	162
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	128	407	4	87	176
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	350	0	391	262	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	350	0	391	262	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	88	15	99	95	
cM capacity (veh/h)	543	1085	479	608	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	130	411	263
Volume Left	0	407	87
Volume Right	128	0	176
cSH	1069	480	1623
Volume to Capacity	0.12	0.86	0.05
Queue Length 95th (ft)	10	220	4
Control Delay (s/veh)	8.8	42.8	2.7
Lane LOS	A	E	A
Approach Delay (s/veh)	8.8	42.8	2.7
Approach LOS	A	E	

Intersection Summary			
Average Delay	24.2		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	79	85	179	4	7	198
Future Vol, veh/h	79	85	179	4	7	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	92	195	4	8	215

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	199	0	-	0	461	197
Stage 1	-	-	-	-	197	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1373	-	-	-	559	844
Stage 1	-	-	-	-	836	-
Stage 2	-	-	-	-	780	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1373	-	-	-	524	844
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	780	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.76	0	10.95
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1373	-	-	-	827
HCM Lane V/C Ratio	0.063	-	-	-	0.269
HCM Ctrl Dly (s/v)	7.8	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1

Intersection	
Intersection Delay, s/veh	3.4
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1	97	86	141
Demand Flow Rate, veh/h	1	99	87	144
Vehicles Circulating, veh/h	123	24	144	1
Vehicles Exiting, veh/h	0	207	1	123
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.0	3.3	3.3	3.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	LR	R	L	TR	L
Assumed Moves	LR	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.276	0.724	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	1	99	24	63	144
Cap Entry Lane, veh/h	1217	1346	1246	1246	1378
Entry HV Adj Factor	1.000	0.980	0.980	0.984	0.979
Flow Entry, veh/h	1	97	24	62	141
Cap Entry, veh/h	1217	1319	1221	1226	1350
V/C Ratio	0.001	0.074	0.019	0.051	0.104
Control Delay, s/veh	3.0	3.3	3.1	3.3	3.5
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	449	1938	175	95	1575	91	200	19	73	80	19	325
Future Volume (vph)	449	1938	175	95	1575	91	200	19	73	80	19	325
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1770	1863	1583	1770	1598	0
Flt Permitted	0.094			0.106			0.324			0.744		
Satd. Flow (perm)	175	5085	1583	197	5085	1583	604	1863	1583	1386	1598	0
Satd. Flow (RTOR)			190			109			127		353	
Lane Group Flow (vph)	488	2107	190	103	1712	99	217	21	79	87	374	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	8	8	
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	
Minimum Split (s)	10.5	25.0	25.0	10.5	25.0	25.0	23.5	23.5	23.5	23.5	23.5	
Total Split (s)	30.4	63.3	63.3	11.7	44.6	44.6	45.0	45.0	45.0	45.0	45.0	
Total Split (%)	25.3%	52.8%	52.8%	9.8%	37.2%	37.2%	37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	
Lead/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	None	None	None	None	None	
Act Effct Green (s)	70.0	56.3	56.3	46.3	37.6	37.6	40.0	40.0	40.0	40.0	40.0	
Actuated g/C Ratio	0.58	0.47	0.47	0.39	0.31	0.31	0.33	0.33	0.33	0.33	0.33	
v/c Ratio	1.11	0.88	0.23	0.63	1.07	0.17	1.08	0.03	0.13	0.19	0.49	
Control Delay (s/veh)	110.6	34.4	3.2	38.5	85.2	5.3	125.5	27.3	1.4	29.9	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	110.6	34.4	3.2	38.5	85.2	5.3	125.5	27.3	1.4	29.9	6.2	
LOS	F	C	A	D	F	A	F	C	A	C	A	
Approach Delay (s/veh)		45.6			78.5			88.1			10.7	
Approach LOS		D			E			F			B	
Queue Length 50th (ft)	~385	536	0	34	~549	0	~191	11	0	48	11	
Queue Length 95th (ft)	#602	611	40	#95	#647	34	#351	30	8	91	84	
Internal Link Dist (ft)		2147			1854			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)	439	2386	843	163	1593	570	201	621	612	462	768	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.11	0.88	0.23	0.63	1.07	0.17	1.08	0.03	0.13	0.19	0.49	

Intersection Summary

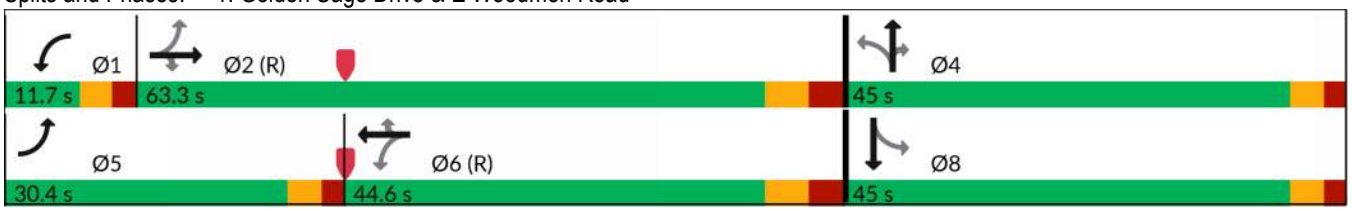
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay (s/veh): 56.6	Intersection LOS: E
Intersection Capacity Utilization 105.8%	ICU Level of Service G
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	962	831	151	96	783	185	414	922	114	194	570	645
Future Volume (vph)	962	831	151	96	783	185	414	922	114	194	570	645
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			173			218			282			699
Lane Group Flow (vph)	1046	903	164	104	851	201	450	1002	124	211	620	701
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	40.0	55.0	55.0	12.0	27.0	27.0	21.0	40.0		13.0	32.0	
Total Split (%)	33.3%	45.8%	45.8%	10.0%	22.5%	22.5%	17.5%	33.3%		10.8%	26.7%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	35.0	48.1	48.1	6.9	20.0	20.0	16.0	33.0	120.0	8.0	25.0	120.0
Actuated g/C Ratio	0.29	0.40	0.40	0.06	0.17	0.17	0.13	0.28	1.00	0.07	0.21	1.00
v/c Ratio	1.04	0.44	0.22	0.53	1.00	0.45	0.98	1.03	0.08	0.93	0.84	0.44
Control Delay (s/veh)	82.4	27.1	3.7	65.0	82.0	8.0	90.6	79.6	0.1	113.3	44.0	1.8
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 (s/veh)	82.4	27.1	3.7	65.0	82.0	8.0	90.6	79.6	0.1	113.3	44.0	1.8
LOS	F	C	A	E	F	A	F	E	A	F	D	A
Approach Delay (s/veh)		52.7			67.6			76.5			34.2	
Approach LOS		D			E			E			C	
Queue Length 50th (ft)	~460	187	0	41	~249	0	184	~444	0	91	191	21
Queue Length 95th (ft)	#592	227	38	72	#347	54	#293	#578	0	#168	#303	40
Internal Link Dist (ft)		715			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	1001	2038	738	200	847	445	457	973	1583	228	737	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.44	0.22	0.52	1.00	0.45	0.98	1.03	0.08	0.93	0.84	0.44

Intersection Summary

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

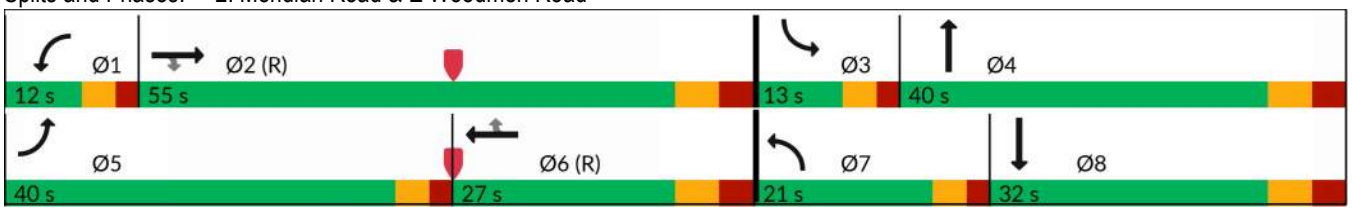
Maximum v/c Ratio: 1.04

Intersection Signal Delay (s/veh): 56.8	Intersection LOS: E
Intersection Capacity Utilization 93.6%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	212	186	194	1822	1196	188
Future Volume (vph)	212	186	194	1822	1196	188
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.120			
Satd. Flow (perm)	3433	1583	224	3539	3539	1583
Satd. Flow (RTOR)		202				204
Lane Group Flow (vph)	230	202	211	1980	1300	204
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	24.0	24.0	23.0	96.0	73.0	73.0
Total Split (%)	20.0%	20.0%	19.2%	80.0%	60.8%	60.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	13.3	13.3	97.7	97.7	68.5	68.5
Actuated g/C Ratio	0.11	0.11	0.81	0.81	0.57	0.57
v/c Ratio	0.61	0.57	0.42	0.69	0.64	0.21
Control Delay (s/veh)	50.2	11.6	10.2	7.5	19.3	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.2	11.6	10.2	7.5	19.3	2.1
LOS	D	B	B	A	B	A
Approach Delay (s/veh)	32.2			7.7	17.0	
Approach LOS	C			A	B	
Queue Length 50th (ft)	92	32	29	425	347	0
Queue Length 95th (ft)	m115	m52	m29	m406	421	33
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	557	426	500	2881	2020	991
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	0.41	0.47	0.42	0.69	0.64	0.21

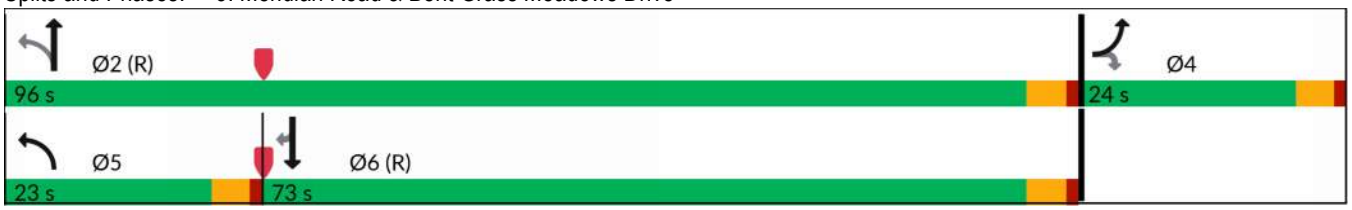
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay (s/veh): 13.7	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	126	309	5	163	396
Future Volume (Veh/h)	1	126	309	5	163	396
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	137	336	5	177	430
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	784	0	707	569	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	0	707	569	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	100	87	0	99	89	
cM capacity (veh/h)	290	1085	280	385	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	138	341	607
Volume Left	0	336	177
Volume Right	137	0	430
cSH	1064	281	1623
Volume to Capacity	0.13	1.21	0.11
Queue Length 95th (ft)	11	392	9
Control Delay (s/veh)	8.9	162.4	3.0
Lane LOS	A	F	A
Approach Delay (s/veh)	8.9	162.4	3.0
Approach LOS	A	F	

Intersection Summary			
Average Delay	53.8		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	232	218	18	8	96
Future Vol, veh/h	165	232	218	18	8	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	310	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	252	237	20	9	104

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	257	0	-	0	858	247
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	611	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1308	-	-	-	327	792
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1308	-	-	-	283	792
Mov Cap-2 Maneuver	-	-	-	-	283	-
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	542	-

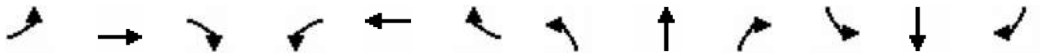
Approach	EB	WB	SB
HCM Ctrl Dly, s/v	3.4	0	11.18
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1308	-	-	-	696
HCM Lane V/C Ratio	0.137	-	-	-	0.163
HCM Ctrl Dly (s/v)	8.2	-	-	-	11.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	SB	NW	NE
Entry Lanes	1	1	2	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	163	149	267
Demand Flow Rate, veh/h	0	166	152	272
Vehicles Circulating, veh/h	204	38	272	0
Vehicles Exiting, veh/h	0	386	0	204
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	3.8	4.0	4.3
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Right	Left
Designated Moves	LR	R	L	TR	L
Assumed Moves	LR	R	L	TR	L
RT Channelized					
Lane Util	1.000	1.000	0.250	0.750	1.000
Follow-Up Headway, s	2.609	2.609	2.535	2.535	2.609
Critical Headway, s	4.976	4.976	4.544	4.544	4.976
A (Intercept)	1380	1380	1420	1420	1380
B (Slope)	1.02e-3	1.02e-3	9.101e-4	9.101e-4	1.02e-3
Entry Flow, veh/h	0	166	38	114	272
Cap Entry Lane, veh/h	1121	1327	1109	1109	1380
Entry HV Adj Factor	1.000	0.982	0.980	0.982	0.982
Flow Entry, veh/h	0	163	37	112	267
Cap Entry, veh/h	1121	1303	1087	1089	1354
V/C Ratio	0.000	0.125	0.034	0.103	0.197
Control Delay, s/veh	3.2	3.8	3.6	4.2	4.3
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1397	65	54	2246	4	118	0	62	0	0	33
Future Volume (vph)	0	1397	65	54	2246	4	118	0	62	0	0	33
Satd. Flow (prot)	0	3539	1583	1770	5085	1583	1770	0	1583	0	0	1611
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3539	1583	1770	5085	1583	1770	0	1583	0	0	1611
Satd. Flow (RTOR)			71			127			127			
Lane Group Flow (vph)	0	1518	71	59	2441	4	128	0	67	0	0	36
Turn Type		NA	Perm	Prot	NA	Free	Prot		Free			Perm
Protected Phases		2		1	4 6!		4!					
Permitted Phases			2			Free			Free			4 6
Detector Phase		2	2	1	4 6		4					4 6
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0			5.0					
Minimum Split (s)		25.0	25.0	10.5			23.5					
Total Split (s)		79.0	79.0	15.0			26.0					
Total Split (%)		65.8%	65.8%	12.5%			21.7%					
Yellow Time (s)		4.0	4.0	3.0			3.0					
All-Red Time (s)		3.0	3.0	2.0			2.0					
Lost Time Adjust (s)		0.0	0.0	0.0			0.0					
Total Lost Time (s)		7.0	7.0	5.0			5.0					
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None			None					
Act Effct Green (s)		75.5	75.5	8.6	120.0	120.0	21.0		120.0			120.0
Actuated g/C Ratio		0.63	0.63	0.07	1.00	1.00	0.18		1.00			1.00
v/c Ratio		0.68	0.07	0.46	0.48	0.00	0.41		0.04			0.02
Control Delay (s/veh)		17.2	2.4	53.4	0.1	0.0	48.7		0.0			0.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay (s/veh)		17.2	2.4	53.4	0.1	0.0	48.7		0.0			0.0
LOS		B	A	D	A	A	D		A			A
Approach Delay (s/veh)		16.6			1.4			32.0				
Approach LOS		B			A			C				
Queue Length 50th (ft)		408	0	49	0	0	91		0			0
Queue Length 95th (ft)		500	19	m57	m0	m0	154		0			0
Internal Link Dist (ft)		740			818			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)		2227	1022	147	5085	1583	309		1583			1611
Starvation Cap Reductn		0	0	0	0	0	0		0			0
Spillback Cap Reductn		0	0	0	0	0	0		0			0
Storage Cap Reductn		0	0	0	0	0	0		0			0
Reduced v/c Ratio		0.68	0.07	0.40	0.48	0.00	0.41		0.04			0.02

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	94.0
Total Split (%)	78%
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

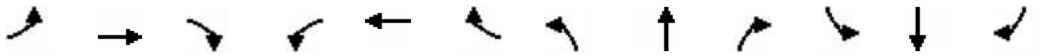
Maximum v/c Ratio: 0.68

Intersection Signal Delay (s/veh): 8.3	Intersection LOS: A
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	

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

! Phase conflict between lane groups.

Splits and Phases: 1: Golden Sage Drive/Golden Sage Road & E Woodmen Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	415	302	73	728	55	281	266	12	85	937	999
Future Volume (vph)	450	415	302	73	728	55	281	266	12	85	937	999
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)			178			173			236			621
Lane Group Flow (vph)	489	451	328	79	791	60	305	289	13	92	1018	1086
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	22.0	49.0	49.0	11.0	38.0	38.0	16.0	48.0		12.0	44.0	
Total Split (%)	18.3%	40.8%	40.8%	9.2%	31.7%	31.7%	13.3%	40.0%		10.0%	36.7%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	17.8	43.8	43.8	6.0	29.9	29.9	11.9	41.4	120.0	7.0	36.5	120.0
Actuated g/C Ratio	0.15	0.37	0.37	0.05	0.25	0.25	0.10	0.35	1.00	0.06	0.30	1.00
v/c Ratio	0.96	0.35	0.48	0.46	0.90	0.11	0.90	0.24	0.01	0.46	0.95	0.69
Control Delay (s/veh)	83.0	29.2	15.8	64.5	57.6	0.4	83.2	28.8	0.0	78.2	45.2	6.1
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 (s/veh)	83.0	29.2	15.8	64.5	57.6	0.4	83.2	28.8	0.0	78.2	45.2	6.1
LOS	F	C	B	E	E	A	F	C	A	E	D	A
Approach Delay (s/veh)		46.5			54.5			55.5			27.3	
Approach LOS		D			D			E			C	
Queue Length 50th (ft)	~202	137	87	31	314	0	125	85	0	37	388	152
Queue Length 95th (ft)	#317	184	176	58	#416	0	#218	121	0	m52	#535	284
Internal Link Dist (ft)		663			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	508	1295	692	171	914	537	339	1221	1583	203	1091	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.35	0.47	0.46	0.87	0.11	0.90	0.24	0.01	0.45	0.93	0.69

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

Maximum v/c Ratio: 0.96

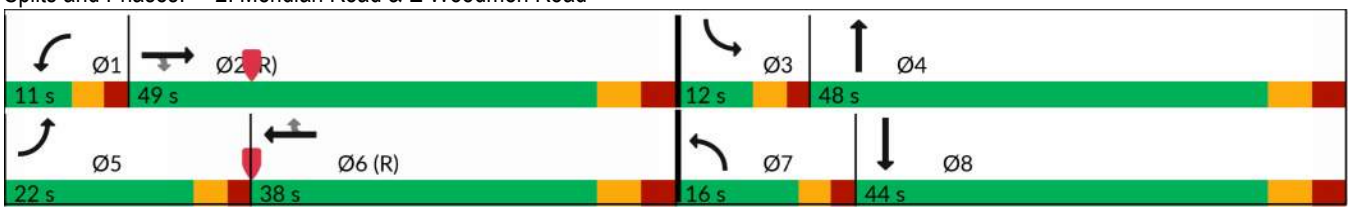
Intersection Signal Delay (s/veh): 40.6	Intersection LOS: D
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

~ 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: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	264	172	137	602	1674	347
Future Volume (vph)	264	172	137	602	1674	347
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.059			
Satd. Flow (perm)	3433	1583	110	3539	3539	1583
Satd. Flow (RTOR)		118				377
Lane Group Flow (vph)	287	187	149	654	1820	377
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	12.0	97.0	85.0	85.0
Total Split (%)	19.2%	19.2%	10.0%	80.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	15.1	15.1	95.9	95.9	80.5	80.5
Actuated g/C Ratio	0.13	0.13	0.80	0.80	0.67	0.67
v/c Ratio	0.66	0.62	0.63	0.23	0.77	0.32
Control Delay (s/veh)	57.6	28.3	42.2	4.1	16.2	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.6	28.3	42.2	4.1	16.2	1.4
LOS	E	C	D	A	B	A
Approach Delay (s/veh)	46.0			11.2	13.7	
Approach LOS	D			B	B	
Queue Length 50th (ft)	112	50	66	82	466	0
Queue Length 95th (ft)	155	126	m98	m96	561	31
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	529	343	238	2828	2374	1186
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.55	0.63	0.23	0.77	0.32

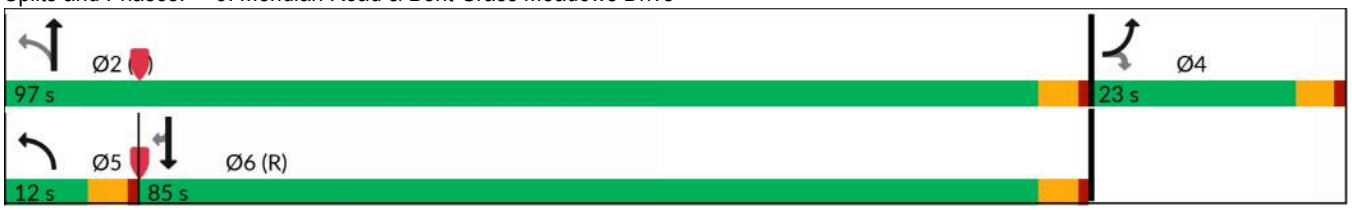
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 17.5	Intersection LOS: B
Intersection Capacity Utilization 72.6%	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 & Bent Grass Meadows Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	100	33	0	104	4	0
Future Volume (Veh/h)	100	33	0	104	4	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	36	0	113	4	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	8	0	99	8	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8	0	99	8	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	88	97	100	87	100	
cM capacity (veh/h)	885	1085	772	885	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	145	113	4
Volume Left	0	0	4
Volume Right	36	0	0
cSH	927	885	1623
Volume to Capacity	0.16	0.13	0.00*
Queue Length 95th (ft)	14	11	0
Control Delay (s/veh)	9.6	9.7	7.2
Lane LOS	A	A	A
Approach Delay (s/veh)	9.6	9.7	7.2
Approach LOS	A	A	

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.

Intersection	
Int Delay, s/veh	2.5

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	327	55	49	153	63	37
Future Vol, veh/h	327	55	49	153	63	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	-
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	355	60	53	166	68	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	415	0	658	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1144	-	429	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	773	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1144	-	409	662
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	737	-

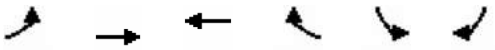
Approach	SE	NW	NE
HCM Ctrl Dly, s/v	0	2.01	13
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	558	1144	-	-	-
HCM Lane V/C Ratio	0.195	0.047	-	-	-
HCM Ctrl Dly (s/v)	13	8.3	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.7	0.1	-	-	-

Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	NB	SB	NE
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1	104	80	117
Demand Flow Rate, veh/h	1	106	82	119
Vehicles Circulating, veh/h	136	119	54	0
Vehicles Exiting, veh/h	0	0	171	137
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.0	3.7	3.3	3.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LR	LT	TR	L
Assumed Moves	LR	LT	TR	L
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	1	106	82	119
Cap Entry Lane, veh/h	1201	1222	1306	1380
Entry HV Adj Factor	1.000	0.980	0.976	0.983
Flow Entry, veh/h	1	104	80	117
Cap Entry, veh/h	1201	1198	1274	1357
V/C Ratio	0.001	0.087	0.063	0.086
Control Delay, s/veh	3.0	3.7	3.3	3.3
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	394	1065	1773	141	157	494	
Future Volume (vph)	394	1065	1773	141	157	494	
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583	
Satd. Flow (RTOR)				68		469	
Lane Group Flow (vph)	428	1158	1927	153	171	537	
Turn Type	Prot	NA	NA	Free	Prot	Free	
Protected Phases	5	2 8!	6		8!		2
Permitted Phases				Free		Free	
Detector Phase	5	2 8	6		8		
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0		5.0
Minimum Split (s)	22.5		22.5		22.5		22.5
Total Split (s)	32.0		65.5		22.5		97.5
Total Split (%)	26.7%		54.6%		18.8%		81%
Yellow Time (s)	3.5		3.5		3.5		3.5
All-Red Time (s)	1.0		1.0		1.0		1.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.5		4.5		4.5		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	Max		C-Max		None		C-Max
Act Effct Green (s)	30.8	120.0	61.0	120.0	14.7	120.0	
Actuated g/C Ratio	0.26	1.00	0.51	1.00	0.12	1.00	
v/c Ratio	0.94	0.33	1.07	0.10	0.41	0.34	
Control Delay (s/veh)	66.9	0.2	72.9	0.1	50.9	0.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	66.9	0.2	72.9	0.1	50.9	0.6	
LOS	E	A	E	A	D	A	
Approach Delay (s/veh)		18.2	67.6		12.7		
Approach LOS		B	E		B		
Queue Length 50th (ft)	362	0	~885	0	64	0	
Queue Length 95th (ft)	#590	0	#1026	0	98	0	
Internal Link Dist (ft)		500	953		339		
Turn Bay Length (ft)	490			350	150	150	
Base Capacity (vph)	454	3507	1798	1583	514	1583	
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	0.94	0.33	1.07	0.10	0.33	0.34	

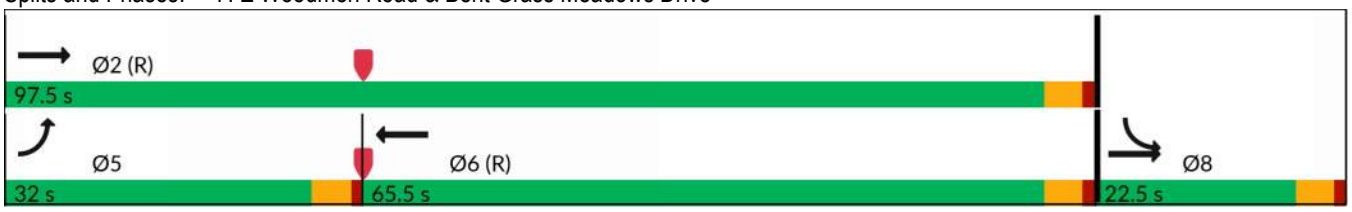
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay (s/veh): 40.8	Intersection LOS: D
Intersection Capacity Utilization 86.6%	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.
! Phase conflict between lane groups.

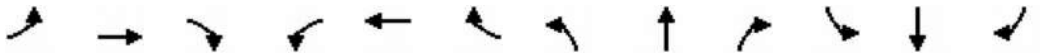
Splits and Phases: 7: E Woodmen Road & Bent Grass Meadows Drive



Intersection	
Intersection Delay, s/veh	5.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	390	199	581	201
Demand Flow Rate, veh/h	398	203	593	205
Vehicles Circulating, veh/h	340	500	5	359
Vehicles Exiting, veh/h	224	5	733	344
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.4	6.2	4.9	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.535	2.535	2.535		2.535
Critical Headway, s	4.328	4.328	4.328		4.328
A (Intercept)	1420	1420	1420		1420
B (Slope)	8.501e-4	8.501e-4	8.501e-4		8.501e-4
Entry Flow, veh/h	398	203	500	93	205
Cap Entry Lane, veh/h	1064	928	1414	1938	1047
Entry HV Adj Factor	0.980	0.980	0.980	0.980	0.978
Flow Entry, veh/h	390	199	490	91	201
Cap Entry, veh/h	1042	910	1386	1900	1024
V/C Ratio	0.374	0.219	0.354	0.048	0.196
Control Delay, s/veh	7.4	6.2	5.8	0.0	5.3
LOS	A	A	A	A	A
95th %tile Queue, veh	2	1	2	0	1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2220	135	121	1816	12	161	0	109	0	0	59
Future Volume (vph)	0	2220	135	121	1816	12	161	0	109	0	0	59
Satd. Flow (prot)	0	3539	1583	1770	5085	1583	1770	0	1583	0	0	1611
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	3539	1583	1770	5085	1583	1770	0	1583	0	0	1611
Satd. Flow (RTOR)			147			127			127			
Lane Group Flow (vph)	0	2413	147	132	1974	13	175	0	118	0	0	64
Turn Type		NA	Perm	Prot	NA	Free	Prot		Free			Perm
Protected Phases		2		1	4 6!		4!					
Permitted Phases			2			Free			Free			4 6
Detector Phase		2	2	1	4 6		4					4 6
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0			5.0					
Minimum Split (s)		25.0	25.0	10.5			23.5					
Total Split (s)		82.4	82.4	14.0			23.6					
Total Split (%)		68.7%	68.7%	11.7%			19.7%					
Yellow Time (s)		4.0	4.0	3.0			3.0					
All-Red Time (s)		3.0	3.0	2.0			2.0					
Lost Time Adjust (s)		0.0	0.0	0.0			0.0					
Total Lost Time (s)		7.0	7.0	5.0			5.0					
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None			None					
Act Effct Green (s)		75.4	75.4	9.2	120.0	120.0	18.4		120.0			120.0
Actuated g/C Ratio		0.63	0.63	0.08	1.00	1.00	0.15		1.00			1.00
v/c Ratio		1.09	0.14	0.98	0.39	0.01	0.65		0.07			0.04
Control Delay (s/veh)		70.2	1.7	104.8	0.1	0.0	59.7		0.1			0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay (s/veh)		70.2	1.7	104.8	0.1	0.0	59.7		0.1			0.1
LOS		E	A	F	A	A	E		A			A
Approach Delay (s/veh)		66.3			6.6			35.7			0.1	
Approach LOS		E			A			D			A	
Queue Length 50th (ft)		~1121	0	110	0	0	131		0			0
Queue Length 95th (ft)		#1256	24	m#136	m0	m0	210		0			0
Internal Link Dist (ft)		740			818			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)		2223	1049	135	5051	1583	274		1583			1600
Starvation Cap Reductn		0	0	0	0	0	0		0			0
Spillback Cap Reductn		0	0	0	0	0	0		0			0
Storage Cap Reductn		0	0	0	0	0	0		0			0
Reduced v/c Ratio		1.09	0.14	0.98	0.39	0.01	0.64		0.07			0.04

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	96.4
Total Split (%)	80%
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

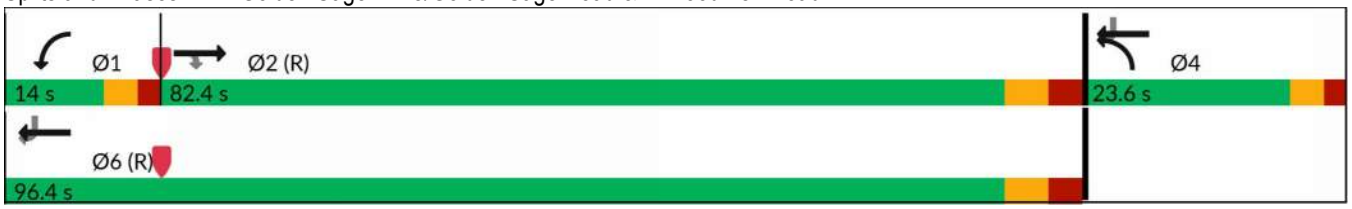
Intersection Summary

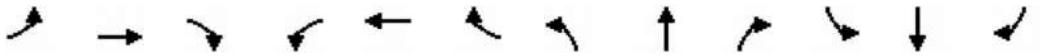
Maximum v/c Ratio: 1.09

Intersection Signal Delay (s/veh): 38.6	Intersection LOS: D
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.
! Phase conflict between lane groups.

Splits and Phases: 1: Golden Sage Drive/Golden Sage Road & E Woodmen Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	739	769	166	79	697	153	384	765	94	161	473	575
Future Volume (vph)	739	769	166	79	697	153	384	765	94	161	473	575
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			218			282			625
Lane Group Flow (vph)	803	836	180	86	758	166	417	832	102	175	514	625
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	38.0	59.0	59.0	11.0	32.0	32.0	21.0	38.0		12.0	29.0	
Total Split (%)	31.7%	49.2%	49.2%	9.2%	26.7%	26.7%	17.5%	31.7%		10.0%	24.2%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	31.5	54.8	54.8	6.0	27.2	27.2	16.0	30.4	120.0	7.0	21.4	120.0
Actuated g/C Ratio	0.26	0.46	0.46	0.05	0.23	0.23	0.13	0.25	1.00	0.06	0.18	1.00
v/c Ratio	0.89	0.52	0.22	0.50	0.95	0.31	0.91	0.93	0.06	0.88	0.82	0.39
Control Delay (s/veh)	55.8	25.4	3.6	65.9	67.6	3.3	76.7	61.2	0.1	112.5	49.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.8	25.4	3.6	65.9	67.6	3.3	76.7	61.2	0.1	112.5	49.9	1.3
LOS	E	C	A	E	E	A	E	E	A	F	D	A
Approach Delay (s/veh)		36.6			56.9			61.4			35.1	
Approach LOS		D			E			E			D	
Queue Length 50th (ft)	308	252	0	34	~335	0	169	335	0	75	205	19
Queue Length 95th (ft)	#392	315	42	62	#462	23	#263	#453	0	#143	271	29
Internal Link Dist (ft)		663			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	944	1617	820	172	801	527	457	914	1583	200	648	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.52	0.22	0.50	0.95	0.31	0.91	0.91	0.06	0.88	0.79	0.39

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

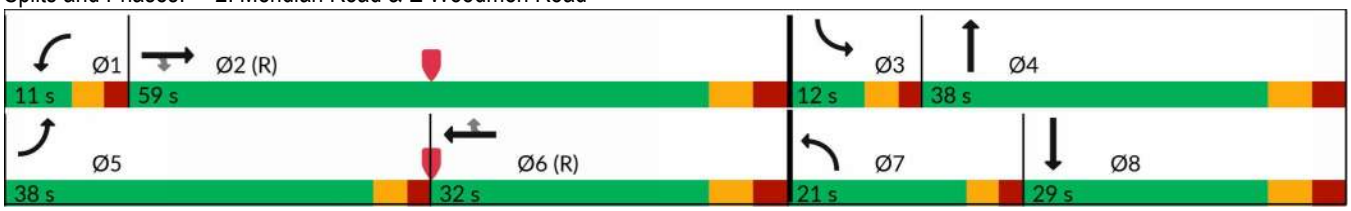
Maximum v/c Ratio: 0.95

Intersection Signal Delay (s/veh): 46.1	Intersection LOS: D
Intersection Capacity Utilization 86.1%	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.

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	354	165	174	1546	1028	329
Future Volume (vph)	354	165	174	1546	1028	329
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.198			
Satd. Flow (perm)	3433	1583	369	3539	3539	1583
Satd. Flow (RTOR)		179				358
Lane Group Flow (vph)	385	179	189	1680	1117	358
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	23.0	23.0	12.0	97.0	85.0	85.0
Total Split (%)	19.2%	19.2%	10.0%	80.8%	70.8%	70.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	17.2	17.2	93.8	93.8	80.5	80.5
Actuated g/C Ratio	0.14	0.14	0.78	0.78	0.67	0.67
v/c Ratio	0.78	0.47	0.48	0.61	0.47	0.30
Control Delay (s/veh)	61.3	10.8	9.2	16.5	10.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	61.3	10.8	9.2	16.5	10.3	1.4
LOS	E	B	A	B	B	A
Approach Delay (s/veh)	45.3			15.8	8.1	
Approach LOS	D			B	A	
Queue Length 50th (ft)	150	0	59	714	203	0
Queue Length 95th (ft)	206	65	m64	782	248	30
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	529	395	391	2765	2374	1179
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	0.73	0.45	0.48	0.61	0.47	0.30

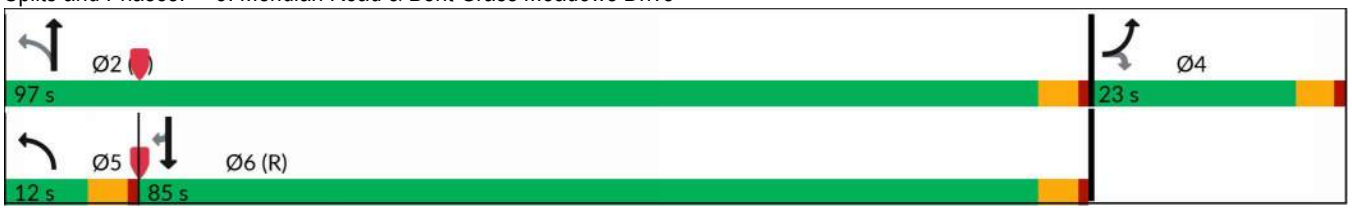
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	130	59	0	206	12	0
Future Volume (Veh/h)	130	59	0	206	12	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	64	0	224	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	26	0	161	26	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	26	0	161	26	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	84	94	100	74	99	
cM capacity (veh/h)	860	1085	658	860	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	205	224	13
Volume Left	0	0	13
Volume Right	64	0	0
cSH	920	860	1623
Volume to Capacity	0.22	0.26	0.00*
Queue Length 95th (ft)	21	26	1
Control Delay (s/veh)	10.0	10.7	7.2
Lane LOS	B	B	A
Approach Delay (s/veh)	10.0	10.7	7.2
Approach LOS	B	B	

Intersection Summary			
Average Delay	10.3		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.

Intersection	
Int Delay, s/veh	3.7

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	334	84	122	235	81	59
Future Vol, veh/h	334	84	122	235	81	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	-
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	363	91	133	255	88	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	454	0	929	409
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	521	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1106	-	297	643
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1106	-	261	643
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	525	-

Approach	SE	NW	NE
HCM Ctrl Dly, s/v	0	2.97	16.53
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	463	1106	-	-	-
HCM Lane V/C Ratio	0.329	0.12	-	-	-
HCM Ctrl Dly (s/v)	16.5	8.7	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	1.4	0.4	-	-	-

Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	NB	SB	NE
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	167	135	222
Demand Flow Rate, veh/h	0	170	138	226
Vehicles Circulating, veh/h	213	226	75	0
Vehicles Exiting, veh/h	0	0	321	213
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	4.7	3.8	4.0
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LR	LT	TR	L
Assumed Moves	LR	LT	TR	L
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	0	170	138	226
Cap Entry Lane, veh/h	1110	1096	1278	1380
Entry HV Adj Factor	1.000	0.980	0.978	0.982
Flow Entry, veh/h	0	167	135	222
Cap Entry, veh/h	1110	1074	1250	1355
V/C Ratio	0.000	0.155	0.108	0.164
Control Delay, s/veh	3.2	4.7	3.8	4.0
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	691	1638	1333	216	260	545	
Future Volume (vph)	691	1638	1333	216	260	545	
Satd. Flow (prot)	1770	3539	3539	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	3539	3539	1583	3433	1583	
Satd. Flow (RTOR)				139		592	
Lane Group Flow (vph)	751	1780	1449	235	283	592	
Turn Type	Prot	NA	NA	Free	Prot	Free	
Protected Phases	5	2 8!	6		8!		2
Permitted Phases				Free		Free	
Detector Phase	5	2 8	6		8		
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0		5.0
Minimum Split (s)	22.5		22.5		22.5		22.5
Total Split (s)	49.0		48.5		22.5		97.5
Total Split (%)	40.8%		40.4%		18.8%		81%
Yellow Time (s)	3.5		3.5		3.5		3.5
All-Red Time (s)	1.0		1.0		1.0		1.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.5		4.5		4.5		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	Max		C-Max		None		C-Max
Act Effct Green (s)	44.6	120.0	44.0	120.0	17.9	120.0	
Actuated g/C Ratio	0.37	1.00	0.37	1.00	0.15	1.00	
v/c Ratio	1.14	0.50	1.12	0.15	0.55	0.37	
Control Delay (s/veh)	92.9	0.0	99.8	0.2	51.9	0.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	92.9	0.0	99.8	0.2	51.9	0.7	
LOS	F	A	F	A	D	A	
Approach Delay (s/veh)		27.6	85.9		17.2		
Approach LOS		C	F		B		
Queue Length 50th (ft)	~716	0	~689	0	107	0	
Queue Length 95th (ft)	m#632	m0	#831	0	154	0	
Internal Link Dist (ft)		500	953		339		
Turn Bay Length (ft)	490			350	150	150	
Base Capacity (vph)	657	3514	1297	1583	514	1583	
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	1.14	0.51	1.12	0.15	0.55	0.37	

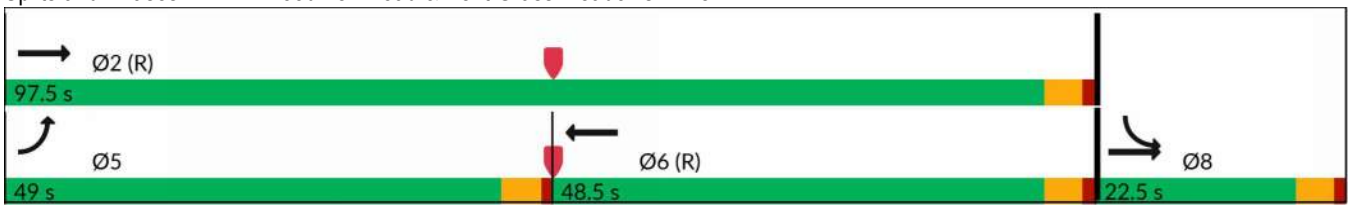
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay (s/veh): 45.1	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
! Phase conflict between lane groups.

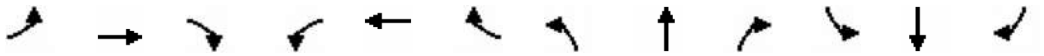
Splits and Phases: 7: E Woodmen Road & Bent Grass Meadows Drive



Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	429	247	986	315
Demand Flow Rate, veh/h	437	252	1005	321
Vehicles Circulating, veh/h	463	601	7	538
Vehicles Exiting, veh/h	396	7	893	315
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.3	7.6	4.0	8.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.535	2.535	2.535		2.535
Critical Headway, s	4.328	4.328	4.328		4.328
A (Intercept)	1420	1420	1420		1420
B (Slope)	8.501e-4	8.501e-4	8.501e-4		8.501e-4
Entry Flow, veh/h	437	252	601	404	321
Cap Entry Lane, veh/h	958	852	1412	1938	899
Entry HV Adj Factor	0.981	0.979	0.981	0.980	0.980
Flow Entry, veh/h	429	247	590	396	315
Cap Entry, veh/h	940	834	1385	1900	881
V/C Ratio	0.456	0.296	0.426	0.208	0.357
Control Delay, s/veh	9.3	7.6	6.6	0.0	8.1
LOS	A	A	A	A	A
95th %tile Queue, veh	2	1	2	1	2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1721	87	75	2557	26	155	0	91	0	0	98
Future Volume (vph)	0	1721	87	75	2557	26	155	0	91	0	0	98
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1770	0	1583	0	0	1611
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1770	0	1583	0	0	1611
Satd. Flow (RTOR)			95			127			127			
Lane Group Flow (vph)	0	1871	95	82	2779	28	168	0	99	0	0	107
Turn Type		NA	Perm	Prot	NA	Free	Prot		Free			Perm
Protected Phases		2		1	4 6!		4!					
Permitted Phases			2			Free			Free			4 6
Detector Phase		2	2	1	4 6		4					4 6
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0			5.0					
Minimum Split (s)		25.0	25.0	10.5			23.5					
Total Split (s)		70.0	70.0	18.0			32.0					
Total Split (%)		58.3%	58.3%	15.0%			26.7%					
Yellow Time (s)		4.0	4.0	3.0			3.0					
All-Red Time (s)		3.0	3.0	2.0			2.0					
Lost Time Adjust (s)		0.0	0.0	0.0			0.0					
Total Lost Time (s)		7.0	7.0	5.0			5.0					
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None			None					
Act Effct Green (s)		67.9	67.9	10.5	120.0	120.0	27.0		120.0			120.0
Actuated g/C Ratio		0.57	0.57	0.09	1.00	1.00	0.23		1.00			1.00
v/c Ratio		0.65	0.10	0.53	0.55	0.02	0.42		0.06			0.07
Control Delay (s/veh)		20.2	3.0	54.0	2.4	0.0	43.7		0.1			0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay (s/veh)		20.2	3.0	54.0	2.4	0.0	43.7		0.1			0.1
LOS		C	A	D	A	A	D		A			A
Approach Delay (s/veh)		19.4			3.9			27.5			0.1	
Approach LOS		B			A			C			A	
Queue Length 50th (ft)		373	0	68	22	0	114		0			0
Queue Length 95th (ft)		447	26	m78	m26	m0	185		0			0
Internal Link Dist (ft)		740			818			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)		2875	936	191	5085	1583	398		1583			1611
Starvation Cap Reductn		0	0	0	0	0	0		0			0
Spillback Cap Reductn		0	0	0	0	0	0		0			0
Storage Cap Reductn		0	0	0	0	0	0		0			0
Reduced v/c Ratio		0.65	0.10	0.43	0.55	0.02	0.42		0.06			0.07

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

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	88.0
Total Split (%)	73%
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Maximum v/c Ratio: 0.65

Intersection Signal Delay (s/veh): 10.8	Intersection LOS: B
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

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

! Phase conflict between lane groups.

Splits and Phases: 1: Golden Sage Drive/Golden Sage Road & E Woodmen Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	537	603	359	88	938	66	333	321	14	102	1130	1199
Future Volume (vph)	537	603	359	88	938	66	333	321	14	102	1130	1199
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			175			173			236			666
Lane Group Flow (vph)	584	655	390	96	1020	72	362	349	15	111	1228	1303
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	25.0	42.0	42.0	12.0	29.0	29.0	17.0	53.0		13.0	49.0	
Total Split (%)	20.8%	35.0%	35.0%	10.0%	24.2%	24.2%	14.2%	44.2%		10.8%	40.8%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	20.0	35.1	35.1	6.9	22.0	22.0	12.0	46.3	120.0	7.7	42.0	120.0
Actuated g/C Ratio	0.17	0.29	0.29	0.06	0.18	0.18	0.10	0.39	1.00	0.06	0.35	1.00
v/c Ratio	1.02	0.44	0.67	0.49	1.09	0.17	1.06	0.26	0.01	0.50	0.99	0.82
Control Delay (s/veh)	92.4	35.6	26.3	63.6	104.3	0.8	115.5	25.9	0.0	72.1	51.1	11.0
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 (s/veh)	92.4	35.6	26.3	63.6	104.3	0.8	115.5	25.9	0.0	72.1	51.1	11.0
LOS	F	D	C	E	F	A	F	C	A	E	D	B
Approach Delay (s/veh)		53.7			94.8			70.0			32.2	
Approach LOS		D			F			E			C	
Queue Length 50th (ft)	~251	153	149	38	~332	0	~160	97	0	47	461	303
Queue Length 95th (ft)	#368	193	266	68	#426	0	#260	135	0	m56	m#606	m307
Internal Link Dist (ft)		663			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	572	1488	586	200	932	431	343	1364	1583	228	1238	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.44	0.67	0.48	1.09	0.17	1.06	0.26	0.01	0.49	0.99	0.82

Intersection Summary

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

Maximum v/c Ratio: 1.09

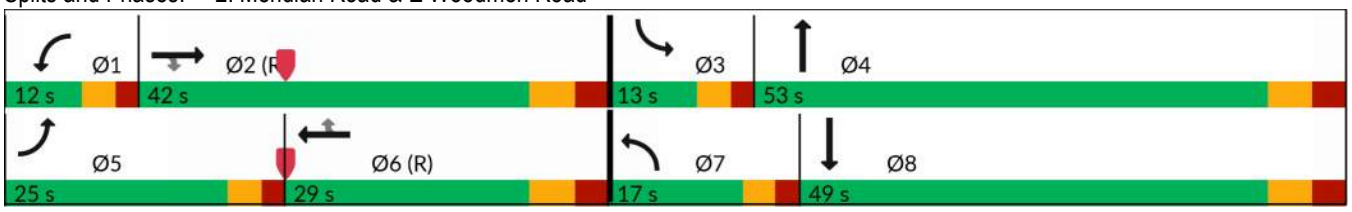
Intersection Signal Delay (s/veh): 54.3	Intersection LOS: D
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	287	192	151	724	2021	374
Future Volume (vph)	287	192	151	724	2021	374
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.047			
Satd. Flow (perm)	3433	1583	88	3539	3539	1583
Satd. Flow (RTOR)		116				407
Lane Group Flow (vph)	312	209	164	787	2197	407
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	13.0	97.5	84.5	84.5
Total Split (%)	18.8%	18.8%	10.8%	81.3%	70.4%	70.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	15.6	15.6	95.4	95.4	80.0	80.0
Actuated g/C Ratio	0.13	0.13	0.80	0.80	0.67	0.67
v/c Ratio	0.70	0.68	0.74	0.28	0.93	0.34
Control Delay (s/veh)	58.4	33.7	54.6	6.2	26.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.4	33.7	54.6	6.2	26.4	1.5
LOS	E	C	D	A	C	A
Approach Delay (s/veh)	48.5			14.5	22.5	
Approach LOS	D			B	C	
Queue Length 50th (ft)	122	68	88	105	732	0
Queue Length 95th (ft)	169	152	m#122	m115	891	32
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	514	336	222	2812	2359	1191
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	0.61	0.62	0.74	0.28	0.93	0.34

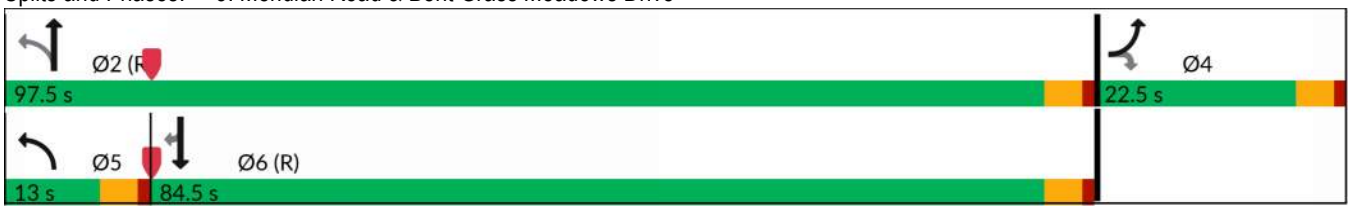
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay (s/veh): 24.0	Intersection LOS: C
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

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

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



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	115	98	0	137	26	0
Future Volume (Veh/h)	115	98	0	137	26	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	107	0	149	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	56	0	226	56	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	56	0	226	56	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	85	90	100	82	98	
cM capacity (veh/h)	821	1085	574	821	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	232	149	28
Volume Left	0	0	28
Volume Right	107	0	0
cSH	925	821	1623
Volume to Capacity	0.25	0.18	0.02
Queue Length 95th (ft)	25	17	1
Control Delay (s/veh)	10.2	10.4	7.3
Lane LOS	B	B	A
Approach Delay (s/veh)	10.2	10.4	7.3
Approach LOS	B	B	

Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	3

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	362	55	80	162	63	52
Future Vol, veh/h	362	55	80	162	63	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	-
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	393	60	87	176	68	57

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	453	0	773	423
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	350	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1107	-	367	631
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	713	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1107	-	338	631
Mov Cap-2 Maneuver	-	-	-	-	455	-
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	657	-

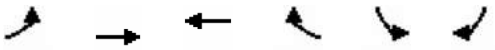
Approach	SE	NW	NE
HCM Ctrl Dly, s/v	0	2.82	14.09
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	521	1107	-	-	-
HCM Lane V/C Ratio	0.24	0.079	-	-	-
HCM Ctrl Dly (s/v)	14.1	8.5	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.9	0.3	-	-	-

Intersection	
Intersection Delay, s/veh	3.6
Intersection LOS	A

Approach	EB	NB	SB	NE
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	1	120	97	141
Demand Flow Rate, veh/h	1	122	99	144
Vehicles Circulating, veh/h	158	144	59	0
Vehicles Exiting, veh/h	0	0	207	159
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.1	3.9	3.4	3.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LR	LT	TR	L
Assumed Moves	LR	LT	TR	L
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	1	122	99	144
Cap Entry Lane, veh/h	1174	1191	1299	1380
Entry HV Adj Factor	1.000	0.980	0.980	0.979
Flow Entry, veh/h	1	120	97	141
Cap Entry, veh/h	1174	1168	1273	1351
V/C Ratio	0.001	0.102	0.076	0.104
Control Delay, s/veh	3.1	3.9	3.4	3.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	446	1366	2193	169	210	527	
Future Volume (vph)	446	1366	2193	169	210	527	
Satd. Flow (prot)	1770	5085	5085	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	5085	5085	1583	3433	1583	
Satd. Flow (RTOR)				95		518	
Lane Group Flow (vph)	485	1485	2384	184	228	573	
Turn Type	Prot	NA	NA	Free	Prot	Free	
Protected Phases	5	2 8!	6		8!		2
Permitted Phases				Free		Free	
Detector Phase	5	2 8	6		8		
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0		5.0
Minimum Split (s)	22.5		22.5		22.5		22.5
Total Split (s)	37.0		60.5		22.5		97.5
Total Split (%)	30.8%		50.4%		18.8%		81%
Yellow Time (s)	3.5		3.5		3.5		3.5
All-Red Time (s)	1.0		1.0		1.0		1.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.5		4.5		4.5		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	Max		C-Max		None		C-Max
Act Effct Green (s)	33.5	120.0	56.0	120.0	17.0	120.0	
Actuated g/C Ratio	0.28	1.00	0.47	1.00	0.14	1.00	
v/c Ratio	0.98	0.29	1.00	0.12	0.47	0.36	
Control Delay (s/veh)	77.2	0.1	51.8	0.1	50.5	0.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	77.2	0.1	51.8	0.1	50.5	0.6	
LOS	E	A	D	A	D	A	
Approach Delay (s/veh)		19.1	48.1		14.8		
Approach LOS		B	D		B		
Queue Length 50th (ft)	~414	0	~679	0	85	0	
Queue Length 95th (ft)	#635	0	#813	0	126	0	
Internal Link Dist (ft)		500	953		339		
Turn Bay Length (ft)	490			350	150	150	
Base Capacity (vph)	494	5052	2373	1583	514	1583	
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	0.98	0.29	1.00	0.12	0.44	0.36	

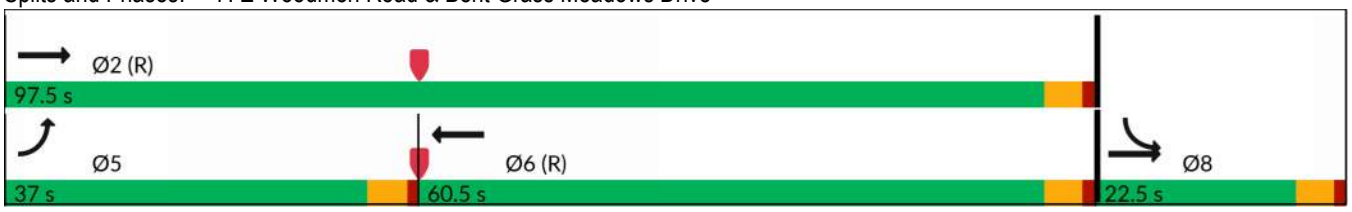
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay (s/veh): 32.4	Intersection LOS: C
Intersection Capacity Utilization 84.3%	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.
! Phase conflict between lane groups.

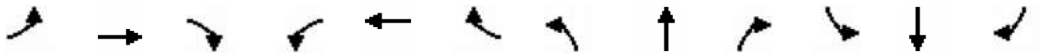
Splits and Phases: 7: E Woodmen Road & Bent Grass Meadows Drive



Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	445	232	668	201
Demand Flow Rate, veh/h	454	237	682	205
Vehicles Circulating, veh/h	371	542	8	435
Vehicles Exiting, veh/h	269	8	817	344
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.5	6.9	4.9	5.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.535	2.535	2.535		2.535
Critical Headway, s	4.328	4.328	4.328		4.328
A (Intercept)	1420	1420	1420		1420
B (Slope)	8.501e-4	8.501e-4	8.501e-4		8.501e-4
Entry Flow, veh/h	454	237	542	140	205
Cap Entry Lane, veh/h	1036	896	1410	1938	981
Entry HV Adj Factor	0.980	0.978	0.980	0.980	0.978
Flow Entry, veh/h	445	232	531	137	201
Cap Entry, veh/h	1015	876	1382	1900	960
V/C Ratio	0.438	0.265	0.384	0.072	0.209
Control Delay, s/veh	8.5	6.9	6.1	0.0	5.8
LOS	A	A	A	A	A
95th %tile Queue, veh	2	1	2	0	1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2670	175	155	1900	47	200	0	133	0	0	96
Future Volume (vph)	0	2670	175	155	1900	47	200	0	133	0	0	96
Satd. Flow (prot)	0	5085	1583	1770	5085	1583	1770	0	1583	0	0	1611
Flt Permitted				0.950			0.950					
Satd. Flow (perm)	0	5085	1583	1770	5085	1583	1770	0	1583	0	0	1611
Satd. Flow (RTOR)			190			127			145			
Lane Group Flow (vph)	0	2902	190	168	2065	51	217	0	145	0	0	104
Turn Type		NA	Perm	Prot	NA	Free	Prot		Free			Perm
Protected Phases		2		1	4 6!		4!					
Permitted Phases			2			Free			Free			4 6
Detector Phase		2	2	1	4 6		4					4 6
Switch Phase												
Minimum Initial (s)		5.0	5.0	5.0			5.0					
Minimum Split (s)		25.0	25.0	10.5			23.5					
Total Split (s)		78.2	78.2	18.0			23.8					
Total Split (%)		65.2%	65.2%	15.0%			19.8%					
Yellow Time (s)		4.0	4.0	3.0			3.0					
All-Red Time (s)		3.0	3.0	2.0			2.0					
Lost Time Adjust (s)		0.0	0.0	0.0			0.0					
Total Lost Time (s)		7.0	7.0	5.0			5.0					
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode		C-Max	C-Max	None			None					
Act Effct Green (s)		71.3	71.3	12.9	120.0	120.0	18.8		120.0			120.0
Actuated g/C Ratio		0.59	0.59	0.11	1.00	1.00	0.16		1.00			1.00
v/c Ratio		0.96	0.19	0.88	0.41	0.03	0.78		0.09			0.06
Control Delay (s/veh)		32.9	1.9	75.4	1.5	0.0	68.9		0.1			0.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0
Total Delay (s/veh)		32.9	1.9	75.4	1.5	0.0	68.9		0.1			0.1
LOS		C	A	E	A	A	E		A			A
Approach Delay (s/veh)		31.0			6.9			41.4			0.1	
Approach LOS		C			A			D			A	
Queue Length 50th (ft)		747	0	140	26	0	166		0			0
Queue Length 95th (ft)		#864	30	m148	m0	m0	#289		0			0
Internal Link Dist (ft)		740			818			578			195	
Turn Bay Length (ft)			385	340		355	140					
Base Capacity (vph)		3021	1017	191	5085	1583	277		1583			1611
Starvation Cap Reductn		0	0	0	0	0	0		0			0
Spillback Cap Reductn		0	0	0	0	0	0		0			0
Storage Cap Reductn		0	0	0	0	0	0		0			0
Reduced v/c Ratio		0.96	0.19	0.88	0.41	0.03	0.78		0.09			0.06

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Lane Group	Ø6
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	6
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.0
Total Split (s)	96.2
Total Split (%)	80%
Yellow Time (s)	4.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	C-Max
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Maximum v/c Ratio: 0.96

Intersection Signal Delay (s/veh): 21.7	Intersection LOS: C
Intersection Capacity Utilization 84.6%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Golden Sage Drive/Golden Sage Road & E Woodmen Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1003	956	192	96	905	185	454	922	114	194	570	685
Future Volume (vph)	1003	956	192	96	905	185	454	922	114	194	570	685
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Satd. Flow (RTOR)			209			218			282			699
Lane Group Flow (vph)	1090	1039	209	104	984	201	493	1002	124	211	620	745
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			Free			Free
Detector Phase	5	2	2	1	6	6	7	4		3	8	
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	
Minimum Split (s)	11.0	25.0	25.0	11.0	25.0	25.0	11.0	25.0		11.0	25.0	
Total Split (s)	40.0	55.0	55.0	12.0	27.0	27.0	21.0	40.0		13.0	32.0	
Total Split (%)	33.3%	45.8%	45.8%	10.0%	22.5%	22.5%	17.5%	33.3%		10.8%	26.7%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0		2.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0		5.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min		None	Min	
Act Effct Green (s)	35.0	48.1	48.1	6.9	20.0	20.0	16.0	33.0	120.0	8.0	25.0	120.0
Actuated g/C Ratio	0.29	0.40	0.40	0.06	0.17	0.17	0.13	0.28	1.00	0.07	0.21	1.00
v/c Ratio	1.09	0.51	0.28	0.53	1.16	0.45	1.08	1.03	0.08	0.93	0.84	0.47
Control Delay (s/veh)	96.2	28.2	4.1	65.0	130.0	8.0	113.7	79.6	0.1	112.9	43.7	2.5
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 (s/veh)	96.2	28.2	4.1	65.0	130.0	8.0	113.7	79.6	0.1	112.9	43.7	2.5
LOS	F	C	A	E	F	A	F	E	A	F	D	A
Approach Delay (s/veh)		57.7			105.7			83.9			33.5	
Approach LOS		E			F			F			C	
Queue Length 50th (ft)	~497	222	0	41	~336	0	~223	~444	0	91	183	42
Queue Length 95th (ft)	#630	267	48	72	#429	54	#333	#578	0	#167	#305	57
Internal Link Dist (ft)		663			528			1133			3247	
Turn Bay Length (ft)	680			450			480		430	490		
Base Capacity (vph)	1001	2038	759	200	847	445	457	973	1583	228	737	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.51	0.28	0.52	1.16	0.45	1.08	1.03	0.08	0.93	0.84	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection
Natural Cycle: 140
Control Type: Actuated-Coordinated

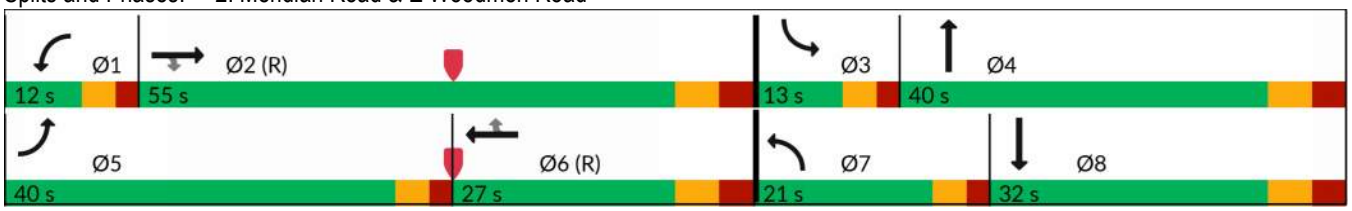
Maximum v/c Ratio: 1.16

Intersection Signal Delay (s/veh): 67.4	Intersection LOS: E
Intersection Capacity Utilization 97.1%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 2: Meridian Road & E Woodmen Road



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	377	186	194	1863	1236	350
Future Volume (vph)	377	186	194	1863	1236	350
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.111			
Satd. Flow (perm)	3433	1583	207	3539	3539	1583
Satd. Flow (RTOR)		202				380
Lane Group Flow (vph)	410	202	211	2025	1343	380
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)	22.5	22.5	9.5	22.5	22.5	22.5
Total Split (s)	24.0	24.0	23.0	96.0	73.0	73.0
Total Split (%)	20.0%	20.0%	19.2%	80.0%	60.8%	60.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.1	18.1	92.9	92.9	68.5	68.5
Actuated g/C Ratio	0.15	0.15	0.77	0.77	0.57	0.57
v/c Ratio	0.79	0.49	0.50	0.74	0.66	0.36
Control Delay (s/veh)	60.9	10.4	13.4	11.5	19.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.9	10.4	13.4	11.5	19.8	2.2
LOS	E	B	B	B	B	A
Approach Delay (s/veh)	44.3			11.7	16.0	
Approach LOS	D			B	B	
Queue Length 50th (ft)	160	0	35	882	365	0
Queue Length 95th (ft)	217	67	m33	m462	443	42
Internal Link Dist (ft)	827			3247	788	
Turn Bay Length (ft)	150		710			330
Base Capacity (vph)	557	426	419	2739	2020	1066
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	0.74	0.47	0.50	0.74	0.66	0.36

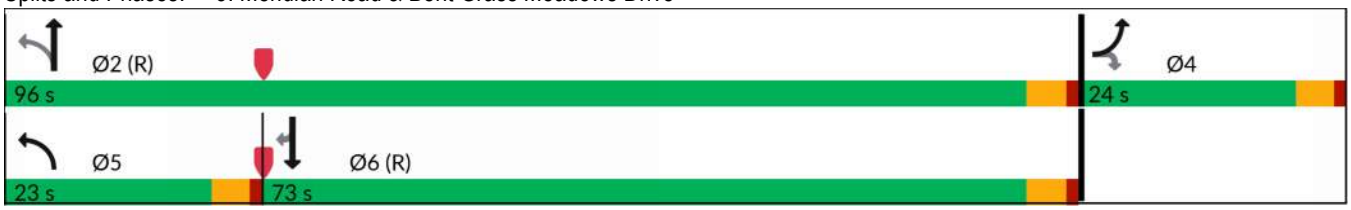
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 17.6	Intersection LOS: B
Intersection Capacity Utilization 69.8%	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 & Bent Grass Meadows Drive



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	153	96	0	245	47	0
Future Volume (Veh/h)	153	96	0	245	47	0
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	166	104	0	266	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)					275	
pX, platoon unblocked						
vC, conflicting volume	102	0	289	102	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	102	0	289	102	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	78	90	100	65	97	
cM capacity (veh/h)	763	1085	488	763	1623	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	270	266	51
Volume Left	0	0	51
Volume Right	104	0	0
cSH	862	763	1623
Volume to Capacity	0.31	0.35	0.03
Queue Length 95th (ft)	34	39	2
Control Delay (s/veh)	11.1	12.2	7.3
Lane LOS	B	B	A
Approach Delay (s/veh)	11.1	12.2	7.3
Approach LOS	B	B	

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	4.4

Movement	SET	SER	NWL	NWT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	350	85	170	246	81	71
Future Vol, veh/h	350	85	170	246	81	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	-	-
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	380	92	185	267	88	77

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	473	0	1064	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	637	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1089	-	247	628
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	527	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1089	-	205	628
Mov Cap-2 Maneuver	-	-	-	-	327	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	437	-

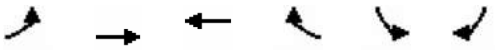
Approach	SE	NW	NE
HCM Ctrl Dly, s/v	0	3.67	18.93
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	422	1089	-	-	-
HCM Lane V/C Ratio	0.392	0.17	-	-	-
HCM Ctrl Dly (s/v)	18.9	9	-	-	-
HCM Lane LOS	C	A	-	-	-
HCM 95th %tile Q(veh)	1.8	0.6	-	-	-

Intersection	
Intersection Delay, s/veh	4.5
Intersection LOS	A

Approach	EB	NB	SB	NE
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	0	192	163	267
Demand Flow Rate, veh/h	0	196	166	272
Vehicles Circulating, veh/h	248	272	82	0
Vehicles Exiting, veh/h	0	0	386	248
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	0.0	5.3	4.0	4.3
Approach LOS	-	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LR	LT	TR	L
Assumed Moves	LR	LT	TR	L
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	0	196	166	272
Cap Entry Lane, veh/h	1071	1046	1269	1380
Entry HV Adj Factor	1.000	0.980	0.982	0.982
Flow Entry, veh/h	0	192	163	267
Cap Entry, veh/h	1071	1025	1246	1354
V/C Ratio	0.000	0.187	0.131	0.197
Control Delay, s/veh	3.4	5.3	4.0	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	0	1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø2
Lane Configurations							
Traffic Volume (vph)	792	2011	1670	253	287	579	
Future Volume (vph)	792	2011	1670	253	287	579	
Satd. Flow (prot)	1770	5085	5085	1583	3433	1583	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1770	5085	5085	1583	3433	1583	
Satd. Flow (RTOR)				186		629	
Lane Group Flow (vph)	861	2186	1815	275	312	629	
Turn Type	Prot	NA	NA	Free	Prot	Free	
Protected Phases	5	2 8!	6		8!		2
Permitted Phases				Free		Free	
Detector Phase	5	2 8	6		8		
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0		5.0
Minimum Split (s)	22.5		22.5		22.5		22.5
Total Split (s)	55.0		42.5		22.5		97.5
Total Split (%)	45.8%		35.4%		18.8%		81%
Yellow Time (s)	3.5		3.5		3.5		3.5
All-Red Time (s)	1.0		1.0		1.0		1.0
Lost Time Adjust (s)	0.0		0.0		0.0		
Total Lost Time (s)	4.5		4.5		4.5		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?	Yes		Yes				
Recall Mode	Max		C-Max		None		C-Max
Act Effct Green (s)	50.5	120.0	38.0	120.0	18.0	120.0	
Actuated g/C Ratio	0.42	1.00	0.32	1.00	0.15	1.00	
v/c Ratio	1.16	0.43	1.13	0.17	0.61	0.40	
Control Delay (s/veh)	103.5	0.1	104.2	0.2	53.3	0.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	103.5	0.1	104.2	0.2	53.3	0.7	
LOS	F	A	F	A	D	A	
Approach Delay (s/veh)		29.3	90.5		18.2		
Approach LOS		C	F		B		
Queue Length 50th (ft)	~827	0	~605	0	119	0	
Queue Length 95th (ft)	m#896	m0	#704	0	169	0	
Internal Link Dist (ft)		500	953		339		
Turn Bay Length (ft)	490			350	150	150	
Base Capacity (vph)	744	5085	1610	1583	514	1583	
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	1.16	0.43	1.13	0.17	0.61	0.40	

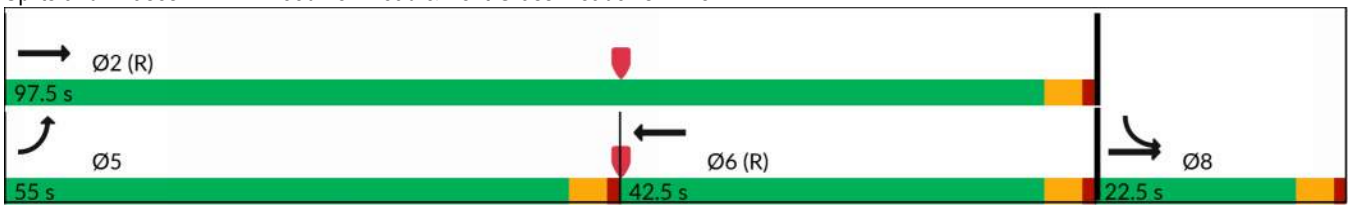
Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay (s/veh): 48.6	Intersection LOS: D
Intersection Capacity Utilization 95.6%	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.
! Phase conflict between lane groups.

Splits and Phases: 7: E Woodmen Road & Bent Grass Meadows Drive



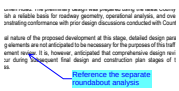
Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	460	287	1136	315
Demand Flow Rate, veh/h	469	292	1159	321
Vehicles Circulating, veh/h	500	755	9	641
Vehicles Exiting, veh/h	462	9	960	406
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.4	10.0	5.4	9.2
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Free	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.535	2.535	2.535		2.535
Critical Headway, s	4.328	4.328	4.328		4.328
A (Intercept)	1420	1420	1420		1420
B (Slope)	8.501e-4	8.501e-4	8.501e-4		8.501e-4
Entry Flow, veh/h	469	292	755	404	321
Cap Entry Lane, veh/h	928	747	1409	1938	823
Entry HV Adj Factor	0.980	0.981	0.980	0.980	0.980
Flow Entry, veh/h	460	287	740	396	315
Cap Entry, veh/h	910	733	1381	1900	807
V/C Ratio	0.505	0.391	0.536	0.208	0.390
Control Delay, s/veh	10.4	10.0	8.3	0.0	9.2
LOS	B	A	A	A	A
95th %tile Queue, veh	3	2	3	1	2

V2_Traffic Impact Study.pdf Markup Summary

Callout (2)



Subject: Callout
Page Label: 39
Author: Jeff Rice - EPC Engineering Review
Date: 6/4/2026 11:24:57 AM
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Space:

Reference the separate roundabout analysis

Subject: Callout
Page Label: 40
Author: Jeff Rice - EPC Engineering Review
Date: 6/12/2026 9:44:17 AM
Status:
Color:
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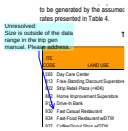
This study shall be based on the potential highest and best uses because it's not likely that an individual business with higher than anticipated traffic is going to reconstruct any public improvements

Engineer (1)



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Page Label: 26
Author: CDurham
Date: 6/12/2026 9:14:03 AM
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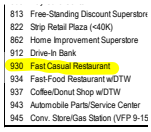
Unresolved:
Size is outside of the data range in the trip gen manual. Please address.

Highlight (4)



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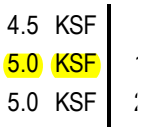

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Author: CDurham
Date: 6/12/2026 9:14:18 AM
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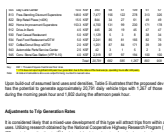
5.0 KSF



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Author: CDurham
Date: 6/12/2026 9:15:33 AM
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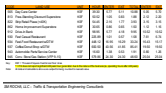
* = ITE does not report significant AM peak hour generation due to the nature of the business (ie, operating hours after AM peak).



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Author: CDurham
Date: 6/12/2026 9:17:46 AM
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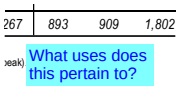
* = ITE does not report significant AM peak hour generation due to the nature of the business (ie, operating hours after AM peak).

Text Box (10)



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Author: CDurham
Date: 6/12/2026 9:16:16 AM
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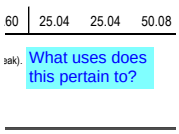
What uses does this pertain to?



Subject: Text Box
Page Label: 25
Author: CDurham
Date: 6/12/2026 9:18:00 AM
Status:
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What uses does this pertain to?

Subject: Text Box
Page Label: 38
Author: CDurham
Date: 6/12/2026 9:29:18 AM
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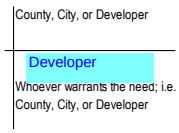
This development



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Page Label: 38
Author: CDurham
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Developer

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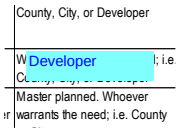
This development



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Developer

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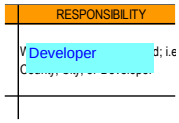
This development



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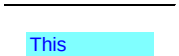
Developer



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Author: Jeff Rice - EPC Engineering Review
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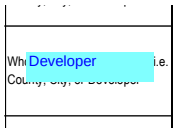

Subject: Text Box
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Author: Jeff Rice - EPC Engineering Review
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Developer

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(2)

Subject:
Page Label: 39
Author: Jeff Rice - EPC Engineering Review
Date: 6/4/2026 9:04:02 AM
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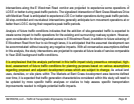
Given the conceptual nature of the proposed development at this stage, detailed design parameters
and final engineering elements are not anticipated to be necessary for the purposes of this traffic study
or preliminary entitlement review.



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Page Label: 40
Author: Jeff Rice - EPC Engineering Review
Date: 6/12/2026 9:41:31 AM
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It is emphasized that the analysis performed in this traffic impact study presents a conceptual, high-level,
assessment of future traffic conditions for planning purposes based on various assumptions regarding proposed and adjacent development areas which are subject to change.