TRAFFIC IMPACT STUDY

For

Bent Grass Dunkin' Donuts
El Paso County, Colorado
PCD File No. PPR-22-027

April 2022
Revised:
October 2022

Prepared for:

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Project Engineer:
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Engineer in Responsible Charge:
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22-031625

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.

_____ _____

Fred Lantz, P.E. #23410 Date

Developer's Statement

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

_____ 7/11/2023

Brian Zurek 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 entitled Bent Grass Dunkin' Donuts.

This proposed commercial development consists of a Dunkin' Donuts coffee/donut shop with drive-through window. The development is located near the southwest corner of the intersection of Meridian Road with Bent Grass Meadows Drive in El Paso County, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the Bent Grass Meadows Drive intersections with Meridian Road and Meridian Park Drive, and proposed site access.

Figure 1 illustrates location of the site and study intersections.

Site Description

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

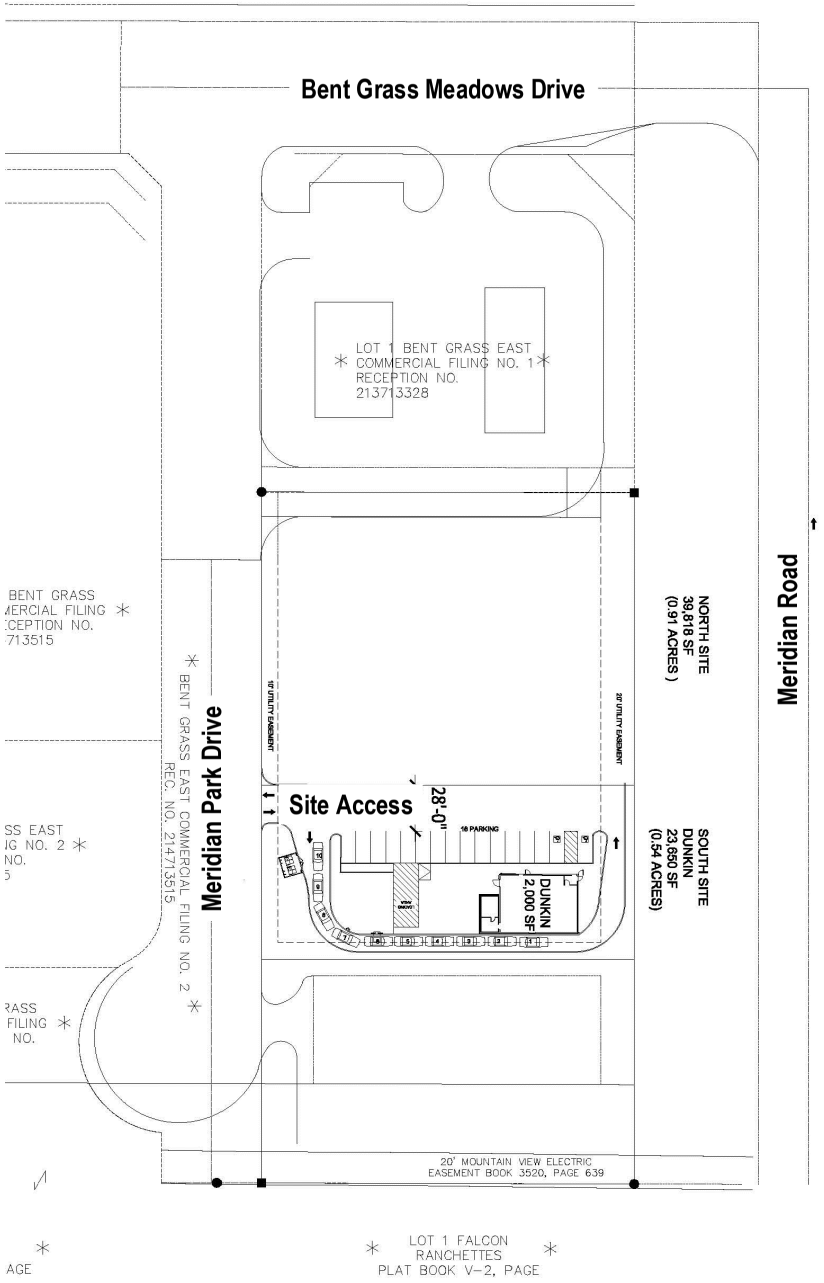
The proposed development is understood to entail the new construction of an approximate 2,000-square foot Dunkin' Donuts coffee/donut shop with drive-through window.

Proposed access to the development is provided at the following locations: one full-movement access onto Meridian Park Drive (referred to as Site Access).

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2024.

A site plan, as prepared by Ethos Architecture Group, is shown on Figure 2. This plan is provided for illustrative purposes.


North
Not to Scale
Bent Grass Meadows Drive
Meridian Park Drive
Meridian Road
Development Site



North
Not to Scale

Existing and Committed Surface Transportation Network

Within the study area, Meridian Road and Bent Grass Meadows Drive are the primary roadways that will accommodate traffic to and from the proposed development. The secondary roadways include Meridian Park Drive. A brief description of each roadway is provided below:

> Meridian Road is a north-south principal arterial roadway having four through lanes (two lanes in each direction) with exclusive turn lanes at the intersection within the study area. Meridian Road provides a posted speed limit of 55 MPH.
>
> Bent Grass Meadows Drive is an east-west collector roadway having two through lanes (one lanes in each direction) with exclusive turn lanes at the intersections within the study area. Bent Grass Meadows Drive provides a posted speed limit of 35 MPH.
>
> Meridian Park Drive is a north-south local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Meridian Park Drive does not provide a posted speed limit, however pursuant to its classification and Section 2.3.2 of the County's Engineering Criteria Manual[1] (ECM), it is assumed to have a posted speed limit of 25 MPH.

The study intersection of Meridian Road with Bent Grass Meadows Drive is signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

Pursuant to ongoing adjacent development plans, it is anticipated that Bent Grass Meadows Drive will be extended further west with ultimate connections to Woodmen Frontage Road to the south. For analysis purposes, it is anticipated that this extension would be completed by Year 2024. In reference to the County's Major Transportation Corridors Plan[2] (MTCP), the remaining study area roadways appear to be built to their ultimate cross-sections.

[1] Engineering Criteria Manual, El Paso County, October 2020.
[2] El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt & Ullevig, December 2016.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of Bent Grass Meadows Drive with Meridian Road and Meridian Park Drive. Average daily (24-hour) traffic volumes were collected on Meridian Road. Counts were collected on Tuesday, March 29, 2022, with AM peak hour counts being collected during the period of 7:00 AM to 9:00 AM, and PM peak hour counts being collected during the period of 4:00 PM to 6:00 PM. These counts are shown on Figure 3.

Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for Meridian Road and Bent Grass Meadows Drive were assumed based on the existing signal head configuration and allowable movements. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

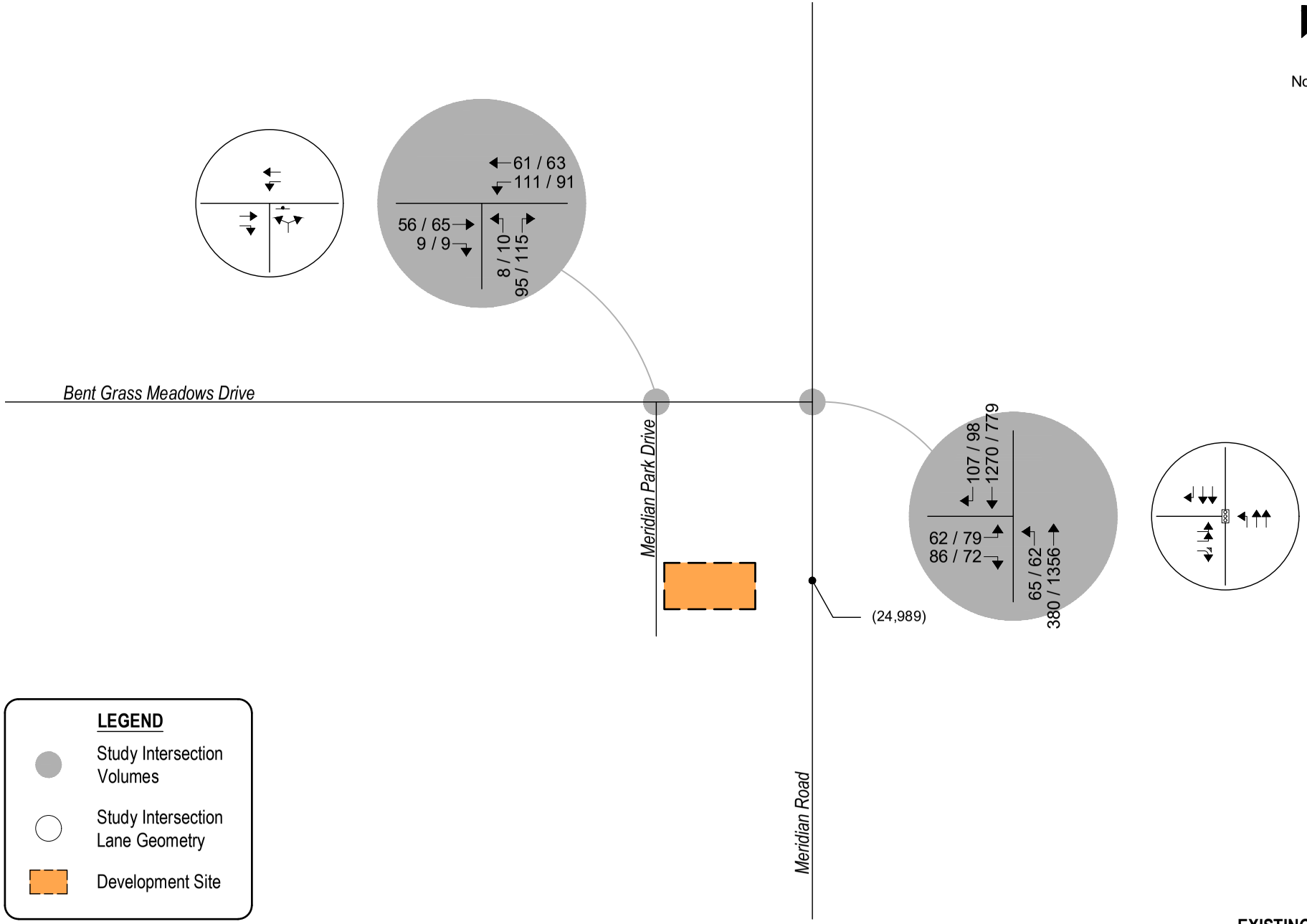


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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

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

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

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

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	A (7.6)	A (6.1)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

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

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS A during both the morning and afternoon peak traffic hours.

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

III. Future Traffic Conditions Without Proposed Development

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

To account for projected increases in background traffic for Years 2024 and 2040, and to incorporate anticipated trip generations from adjacent developments not yet built, traffic volumes were referenced from the approved traffic impact study prepared for Bent Grass East Commercial Filing No. 3[3]. The previously approved traffic impact study includes site trips from other adjacent future developments including Bent Grass East Commercial Filing No. 2, Falcon Meadows at Bent Grass, Banning Lewis Ranch North initial phasing, and Falcon Marketplace.

In order to account for additional undeveloped parcels adjacent to the study site, a compounded annual growth rate of approximately two percent was applied to the Year 2021 total traffic volumes established for the adjacent development, in order to estimate Year 2024 background volumes. This annual growth rate is consistent with regional growth projections and the level of in-fill development expected within the area, and is consistent with the anticipated growth along Meridian Road as defined within the adjacent traffic impact study. Year 2040 background volumes were referenced from Figure 11 – Year 2040 Total Traffic from the previous traffic study.

Pursuant to the proposed and committed area roadway improvements discussed in Section I, Year 2024 and Year 2040 background traffic conditions assume no additional roadway improvements to accommodate regional transportation demands beyond those anticipated with the extension of Bent Grass Meadows Drive. Year 2040 assumes existing signal timing parameters for Meridian Road and Bent Grass Meadows Drive with optimized intersection splits in effort to better long-term intersection performance. This assumption provides for a conservative analysis.

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

[3] Bent Grass East Commercial Filing No. 3 Updated Traffic Impact Analysis, LSC Transportation Consultants, Inc., October 20, 2021.

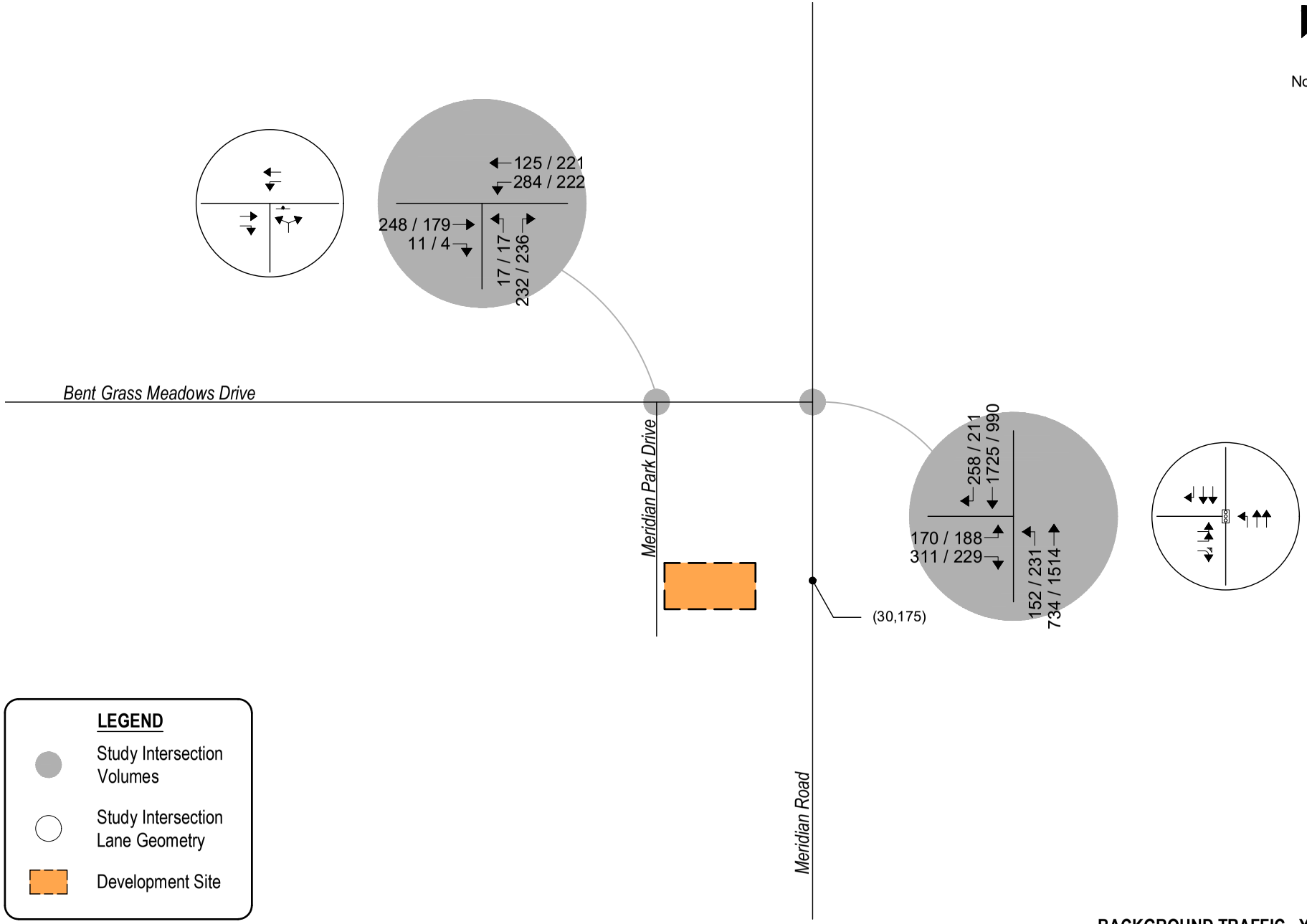


Figure 4
BACKGROUND TRAFFIC - YEAR 2024
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

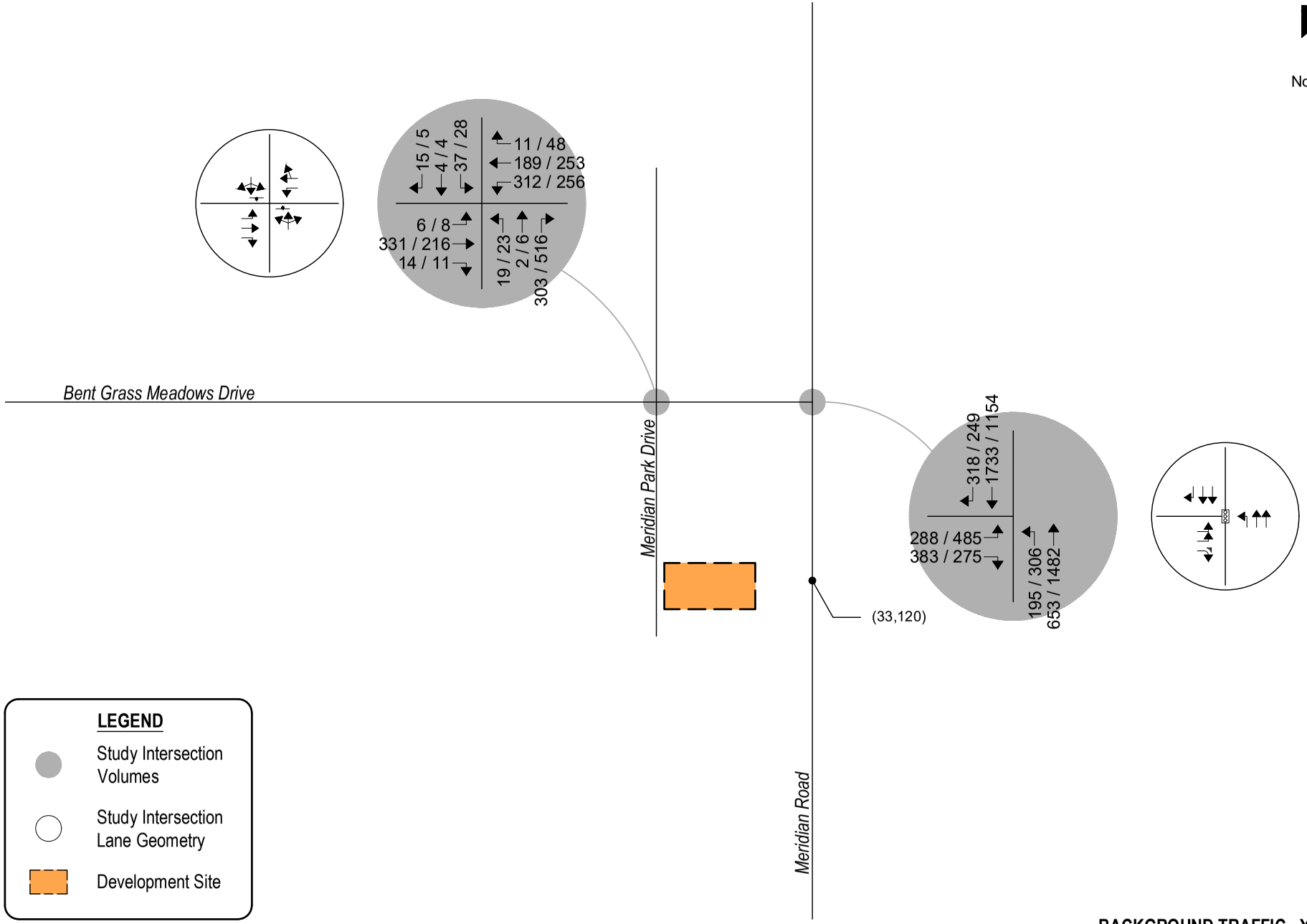


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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

Background traffic level of service analysis results for Year 2024 are listed in Table 2. Year 2040 operational results are summarized in Table 3.

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

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (21.7)	B (10.9)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	B

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

Background Traffic Analysis Results – Year 2024

Year 2024 background traffic analysis indicates that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS C during the AM peak traffic hour and LOS B during the PM peak traffic hour.

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (31.0)	C (22.3)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Eastbound Left	A	A
Westbound Left	A	A
Northbound Left, Through and Right	D	E
Southbound Left, Through and Right	F	F

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

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the study intersection of Bent Grass Meadows Drive with Meridian Road experiences LOS C operations during both the AM and PM peak traffic hours.

The study intersection of Bent Grass Meadows Drive with Meridian Park Drive experiences turning movement operations at or better than LOS F during both the AM and PM peak traffic hours. It is noted that poor LOS operations include the southbound turning movements which operate at LOS F during both peak traffic hours, and the northbound turning movements operate at LOS E during the PM peak traffic hour only. The LOS E and F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. In order to mitigate the projected long-term poor operations at Bent Grass Meadows Drive and Meridian Park Drive, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. Additionally, an exclusive southbound left turn lane may assist in improving vehicle delays.

IV. Proposed Project Traffic

Trip Generation

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

The ITE land use code 937 (Coffee/Donut Shop with Drive-Through Window) was used for estimating trip generation because of its best fit to the proposed land use description.

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

Table 4 – Trip Generation Rates

			TRIP GENERATION RATES						
ITE			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	UNIT	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
937	Coffee/Donut Shop w/DTW	KSF	533.57	43.80	42.08	85.88	19.50	19.50	38.99

Key: KSF = Thousand Square Feet Gross Floor Area.
Note: All data and calculations above are subject to being rounded to nearest value.

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

Table 5 – Trip Generation Summary

			TOTAL TRIPS GENERATED						
ITE			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	SIZE	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
937	Coffee/Donut Shop w/DTW	2.0 KSF	1,067	88	84	172	39	39	78
		Total:	***1,067***	***88***	***84***	***172***	***39***	***39***	***78***

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

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 1,067 daily trips with 172 of those occurring during the morning peak hour and 78 during the afternoon peak hour.

Adjustments to Trip Generation Rates

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

Pass-by trips are especially common to coffee/donut shop land uses given the convenience provided by these businesses on the way to another primary destination such as a place of work or home. As example, published ITE pass-by and diverted link trip data indicates an average trip generation reduction rate of 83 percent during the AM peak traffic hour and 95 percent during the PM peak traffic hour as typical to coffee/donut shops with drive-through window and no indoor seating (ITE Code 938). Reference to ITE's pass-by reduction rates included in Appendix D.

Upon consideration of the proposed land use, reductions were applied pursuant to ITE average data to the proposed land use in order to account for the high probability of pass-by trip generation. Considering the lowest ITE pass-by trip percentage, and the presence of an indoor seating area, a reduction of 60 percent was applied.

It is noted that given the proposed combination of adjacent office and commercial land uses, potential internal capture may be applicable. However, specific internal capture rates can only be assumed. Therefore, in order to maintain a conservative analysis, no additional reductions due to internal capture were applied.

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

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

ITE			TOTAL NEW TRIPS GENERATED						
			24	AM PEAK HOUR			PM PEAK HOUR		
CODE	LAND USE	SIZE	HOUR	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
	Pass-By Trip Reduction:		*60%*	*60%*	*60%*	*60%*	*60%*	*60%*	*60%*
937	Coffee/Donut Shop w/DTW	2.0 KSF	427	35	34	69	16	16	31
		Total:	***427***	***35***	***34***	***69***	***16***	***16***	***31***

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

Upon build-out and with consideration for pass-by trip reductions, Table 6 illustrates that the proposed development has the potential to generate approximately 427 new daily trips with 69 of those occurring during the morning peak hour and 31 during the afternoon peak hour.

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and pursuant to assumptions made in the approved traffic impact analysis for the adjacent Bent Grass East Commercial Filing No. 3 development.

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

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

Trip Assignment

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

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

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

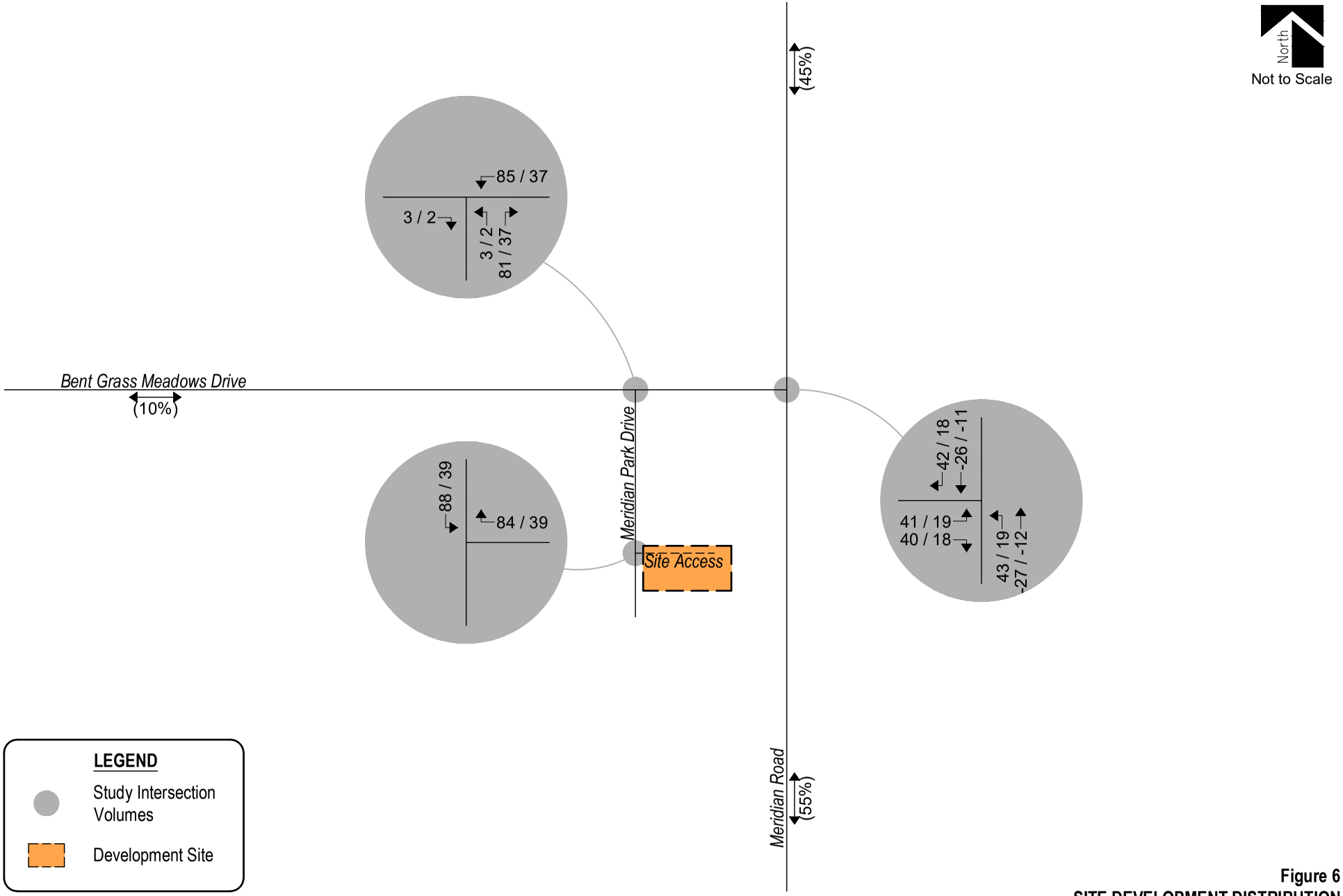


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2024 and 2040 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2024.

Pursuant to area roadway improvement discussions provided in Section III, Year 2024 and Year 2040 total traffic conditions assume no additional roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

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

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

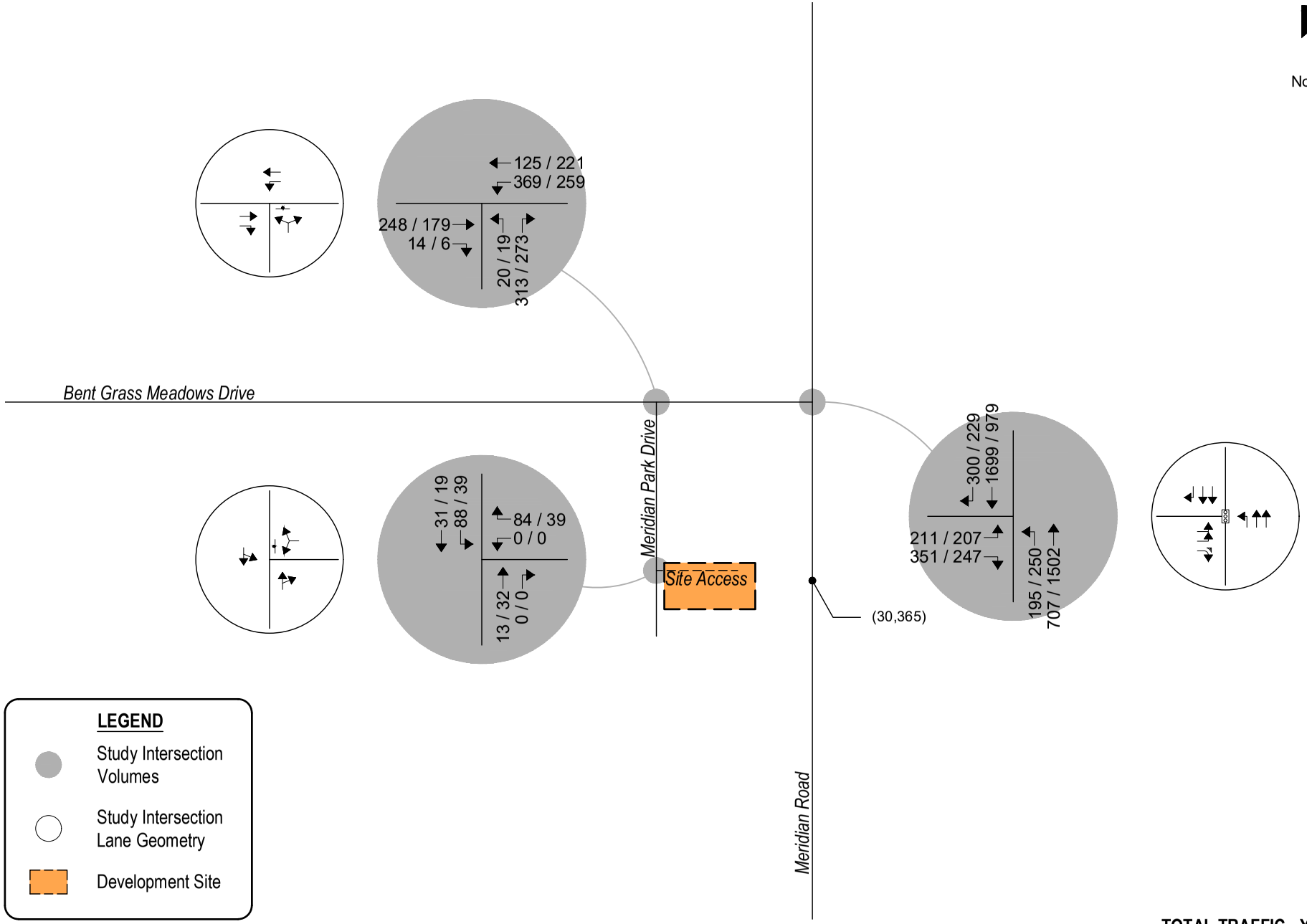


Figure 7
TOTAL TRAFFIC - YEAR 2024
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

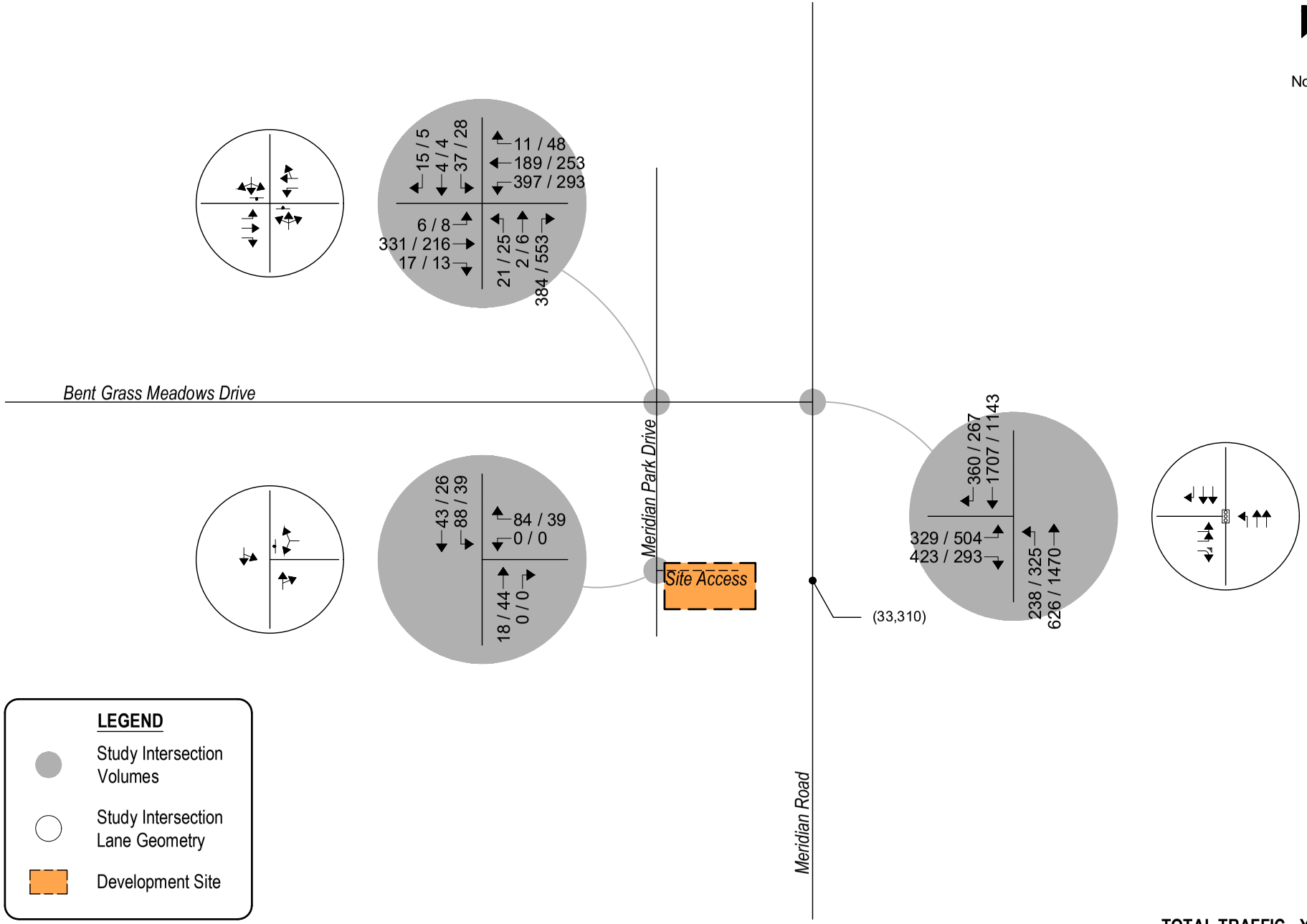


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

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

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2024 and 2040 are summarized in Table 7 and Table 8, respectively.

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (26.0)	B (11.7)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	C	B
Meridian Park Drive / Site Access (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	D (36.0)	C (23.5)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Eastbound Left	A	A
Westbound Left	A	A
Northbound Left, Through and Right	F	F
Southbound Left, Through and Right	F	F
Meridian Park Drive / Site Access (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A

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

Total Traffic Analysis Results Upon Development Build-Out

Table 8 illustrates how, by Year 2040 and upon development build-out, the signalized intersection of Bent Grass Meadows Drive with Meridian Road shows an overall LOS D operation during the morning peak traffic hour and LOS C operation during the afternoon peak traffic hour. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection.

The stop-controlled intersection of Bent Grass Meadows Drive with Meridian Park Drive is projected to have turning movement operations at LOS F for both the morning and afternoon peak traffic hours. It is noted that poor LOS operations still include the northbound and southbound turning movements which operate at LOS F during both peak traffic hours. The LOS F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection.

The stop-controlled intersection of Meridian Park Drive with Site Access is projected to have turning movement operations at LOS A for both the morning and afternoon peak traffic hours.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. As with background traffic conditions, in order to mitigate the projected long-term poor operations at Bent Grass Meadows Drive and Meridian Park Drive, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. Additionally, an exclusive southbound left turn lane may assist in improving vehicle delays.

These intersection operations are similar to background conditions.

Queue Length Analysis

Queue lengths for study intersections were analyzed using Year 2040 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

Some queuing at the intersection of Bent Grass Meadows Drive with Meridian Park Drive was indicated. The greatest queue length anticipated occurs during the afternoon peak hour. The queue length is approximately sixteen vehicles for the northbound turning movements. It is noted that without the proposed development poor intersection operations and vehicle queues continue to be anticipated.

As previously noted, in order to mitigate projected poor intersection operations, and associated vehicle queues, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. It is considered likely that given the available roadway width at the intersection of Bent Grass Meadows Drive with Meridian Park Drive, vehicles may behave as though there were exclusive turn lanes as left-turning vehicles may move adjacent to right-turning traffic in order to minimize delays. Such behavior would naturally decrease projected queues.

It is emphasized that projected long-term queuing and operational delays are attributed to the high through volumes along Bent Grass Meadows Drive as well as high opposing right-turning volumes along Meridian Park Drive, and the stop-controlled nature of the intersection. Projected right-turning volumes are pursuant to anticipated future development to the east and south of Meridian Park Drive as detailed in the Bent Grass East Commercial Filing No. 3 traffic impact study. The addition of proposed coffee/donut shop site generated traffic is not considered to cause a significant increase to projected future volumes. The study intersection should continue to be monitored by County Staff in order to determine when appropriate mitigation measures are necessary.

Auxiliary Lane Analysis

Auxiliary lanes for site development accesses were based on the County's ECM.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 2.3.7 of the County's ECM, reveals that the existing turn lanes along Bent Grass Meadows Drive meet County minimum exclusive turn lane requirements and that no changes are recommended.

Section 2.3.7 of the County's ECM also reveals that a southbound left turn lane along Meridian Park Drive at Site Access is not required considering its local roadway classification described in Section II and acceptable levels of service shown in Table 8.

VII. Conclusion

This traffic impact study was provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Bent Grass Dunkin' Donuts. This proposed commercial development consists of a Dunkin' Donuts coffee/donut shop with drive-through window. The development is located near the southwest corner of the intersection of Meridian Road with Bent Grass Meadows Drive in El Paso County, Colorado.

The study area examined in this analysis encompasses the Bent Grass Meadows Drive intersections with Meridian Road and Meridian Park Drive, and proposed site access.

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

Under existing conditions, operational analysis shows that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS A during both the morning and afternoon peak traffic hours. The unsignalized intersection of Bent Grass Meadows Drive with Meridian Park Drive has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

Year 2024 background traffic analysis indicates that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS C during the AM peak traffic hour and LOS B during the PM peak traffic hour. The unsignalized intersection of Bent Grass Meadows Drive with Meridian Park Drive has turning movement operations at or better than LOS B during both AM and PM peak traffic periods.

By Year 2040 and without the proposed development, the study intersection of Bent Grass Meadows Drive with Meridian Road experiences LOS C operations during both the AM and PM peak traffic hours. The study intersection of Bent Grass Meadows Drive with Meridian Park Drive experiences turning movement operations at or better than LOS F during both the AM and PM peak traffic hours. It is noted that poor LOS operations include the southbound turning movements which operate at LOS F during both peak traffic hours, and the northbound turning movements operate at LOS E during the PM peak traffic hour only. The LOS E and F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon consideration of various roadway and intersection control improvements assumed within this analysis. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2040 background traffic conditions. Proposed site access has long-term operations at LOS A during peak traffic periods and upon build-out.

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

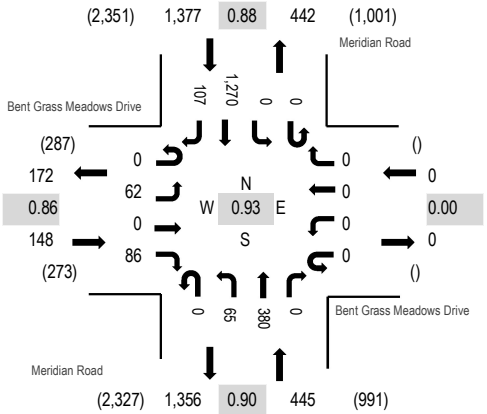
APPENDIX A

Traffic Count Data

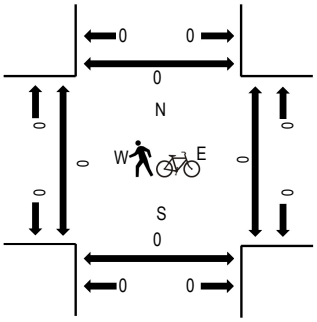
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

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

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

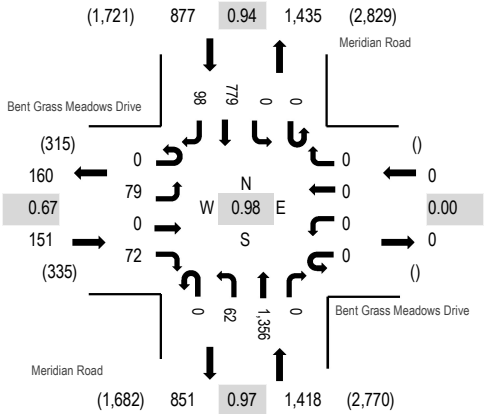
Traffic Counts

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

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

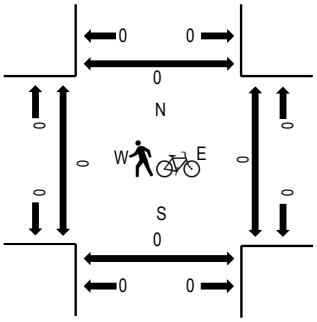
Location: 1 Meridian Road & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



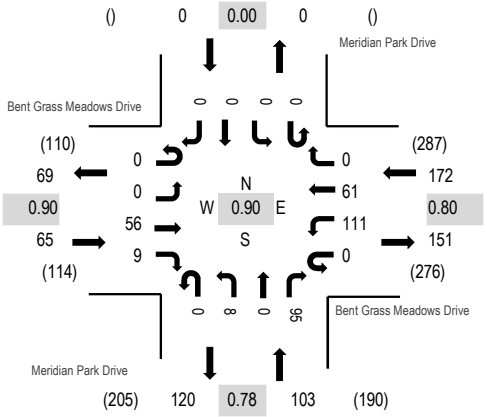
Traffic Counts

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

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

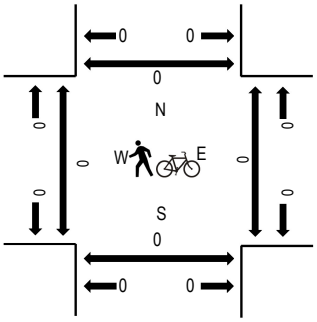
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive AM
Date: Tuesday, March 29, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



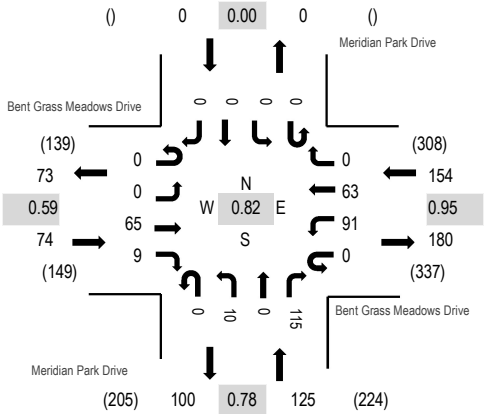
Traffic Counts

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

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

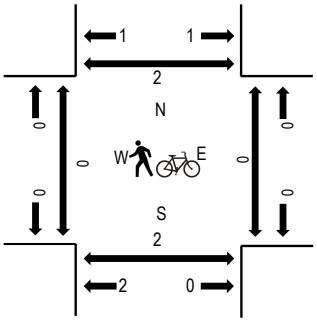
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

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

All Traffic Data Services

www.alltrafficdata.net

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

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

ADT ADT 24,989 AADT 24,989

APPENDIX B

Level of Service Definitions

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

Automobile Level of Service (LOS) for Signalized Intersections

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

LOS A

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

LOS B

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

LOS C

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

LOS D

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

LOS E

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

LOS F

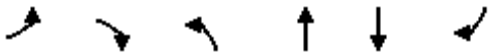
Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

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

APPENDIX C

Capacity Worksheets



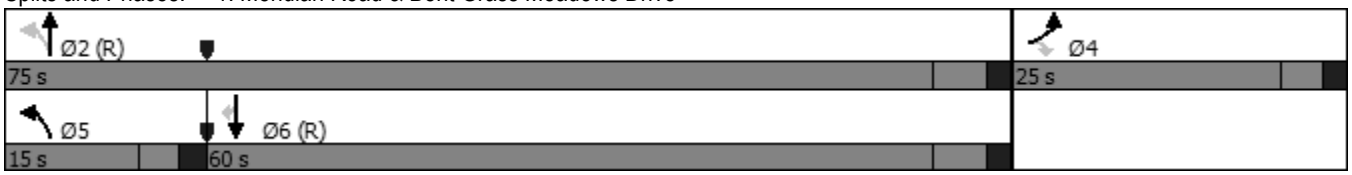
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	86	65	380	1270	107
Future Volume (vph)	62	86	65	380	1270	107
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.151			
Satd. Flow (perm)	3433	1583	281	3539	3539	1583
Satd. Flow (RTOR)		93				116
Lane Group Flow (vph)	67	93	71	413	1380	116
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.6	7.6	84.5	84.7	75.6	75.6
Actuated g/C Ratio	0.08	0.08	0.84	0.85	0.76	0.76
v/c Ratio	0.26	0.45	0.22	0.14	0.52	0.09
Control Delay	45.3	16.6	3.3	2.0	7.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	16.6	3.3	2.0	7.6	1.3
LOS	D	B	A	A	A	A
Approach Delay	28.6			2.2	7.1	
Approach LOS	C			A	A	
Queue Length 50th (ft)	21	0	6	21	194	0
Queue Length 95th (ft)	41	46	15	36	283	17
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	391	386	2999	2675	1225
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.24	0.18	0.14	0.52	0.09

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

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



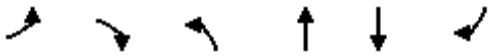
Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	9	111	61	8	95
Future Vol, veh/h	56	9	111	61	8	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	10	121	66	9	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	369	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1529	-	631	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1529	-	581	1004
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	686	-

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

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



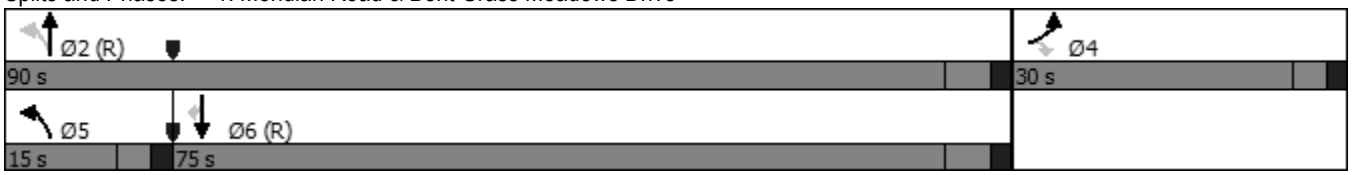
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	72	62	1356	779	98
Future Volume (vph)	79	72	62	1356	779	98
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.303			
Satd. Flow (perm)	3433	1583	564	3539	3539	1583
Satd. Flow (RTOR)		78				107
Lane Group Flow (vph)	86	78	67	1474	847	107
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	8.4	8.4	101.6	100.6	91.5	91.5
Actuated g/C Ratio	0.07	0.07	0.85	0.84	0.76	0.76
v/c Ratio	0.36	0.43	0.12	0.50	0.31	0.09
Control Delay	57.0	18.7	2.1	3.4	5.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	18.7	2.1	3.4	5.3	1.1
LOS	E	B	A	A	A	A
Approach Delay	38.8			3.4	4.8	
Approach LOS	D			A	A	
Queue Length 50th (ft)	33	0	6	124	100	0
Queue Length 95th (ft)	59	48	14	174	140	15
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	391	578	2966	2697	1232
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.20	0.12	0.50	0.31	0.09

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

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 50.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



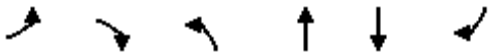
Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	9	91	63	10	115
Future Vol, veh/h	65	9	91	63	10	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	10	99	68	11	125

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	337	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	266	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1517	-	658	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1517	-	615	991
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	728	-

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

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	311	152	734	1725	258
Future Volume (vph)	170	311	152	734	1725	258
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	3433	1583	115	3539	3539	1583
Satd. Flow (RTOR)		178				280
Lane Group Flow (vph)	185	338	165	798	1875	280
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.5	15.5	74.5	73.5	59.8	59.8
Actuated g/C Ratio	0.16	0.16	0.74	0.74	0.60	0.60
v/c Ratio	0.35	0.85	0.72	0.31	0.89	0.26
Control Delay	38.3	39.3	36.7	5.4	25.5	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	39.3	36.7	5.4	25.5	2.1
LOS	D	D	D	A	C	A
Approach Delay	38.9			10.7	22.4	
Approach LOS	D			B	C	
Queue Length 50th (ft)	54	100	51	82	536	0
Queue Length 95th (ft)	82	#208	#139	122	#783	36
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	251	2601	2115	1059
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	0.27	0.74	0.66	0.31	0.89	0.26

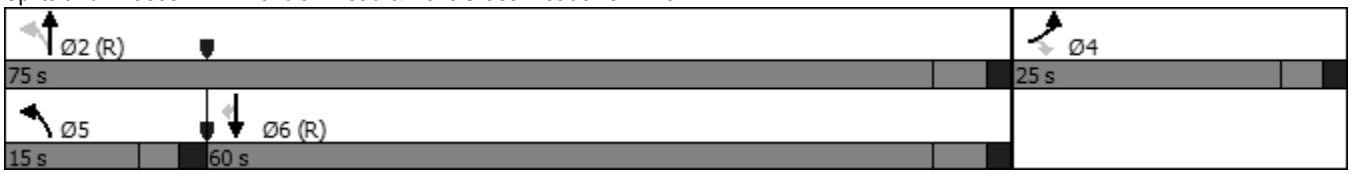
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



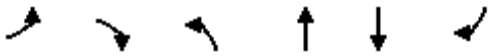
Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	11	284	125	17	232
Future Vol, veh/h	248	11	284	125	17	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	270	12	309	136	18	252

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	1024	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	754	-
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	-	-	1280	-	261	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	465	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	198	769
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	353	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1280	-
HCM Lane V/C Ratio	0.422	-	-	0.241	-
HCM Control Delay (s)	14.6	-	-	8.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0.9	-



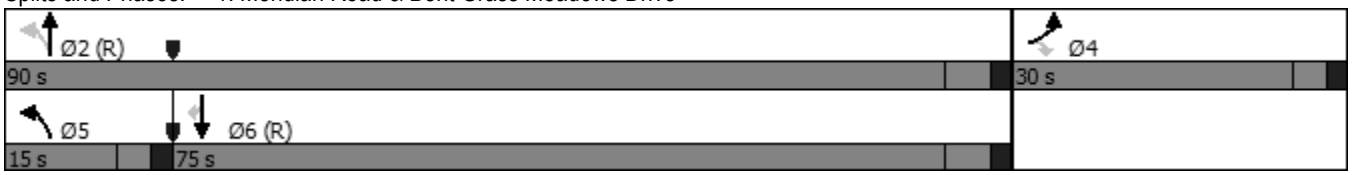
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	229	231	1514	990	211
Future Volume (vph)	188	229	231	1514	990	211
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.214			
Satd. Flow (perm)	3433	1583	399	3539	3539	1583
Satd. Flow (RTOR)		217				229
Lane Group Flow (vph)	204	249	251	1646	1076	229
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.0	13.0	97.0	96.0	81.3	81.3
Actuated g/C Ratio	0.11	0.11	0.81	0.80	0.68	0.68
v/c Ratio	0.55	0.68	0.58	0.58	0.45	0.20
Control Delay	55.8	19.7	8.5	5.8	10.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	19.7	8.5	5.8	10.5	1.6
LOS	E	B	A	A	B	A
Approach Delay	36.0			6.2	8.9	
Approach LOS	D			A	A	
Queue Length 50th (ft)	78	23	34	197	178	0
Queue Length 95th (ft)	111	103	70	322	294	32
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	501	446	2830	2396	1145
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	0.29	0.50	0.56	0.58	0.45	0.20

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: 0.68

Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



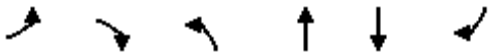
Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	179	4	222	221	17	236
Future Vol, veh/h	179	4	222	221	17	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	195	4	241	240	18	257

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	917	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	722	-
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	-	302	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	249	846
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	729	-	-	1373	-
HCM Lane V/C Ratio	0.377	-	-	0.176	-
HCM Control Delay (s)	12.9	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.6	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	288	383	195	653	1733	318
Future Volume (vph)	288	383	195	653	1733	318
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.065			
Satd. Flow (perm)	3433	1583	121	3539	3539	1583
Satd. Flow (RTOR)		145				346
Lane Group Flow (vph)	313	416	212	710	1884	346
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	13.0	76.0	63.0	63.0
Total Split (%)	24.0%	24.0%	13.0%	76.0%	63.0%	63.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.0	19.0	71.0	70.0	57.0	57.0
Actuated g/C Ratio	0.19	0.19	0.71	0.70	0.57	0.57
v/c Ratio	0.48	1.00	0.98	0.29	0.93	0.33
Control Delay	38.9	70.8	80.8	6.0	30.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	70.8	80.8	6.0	30.1	2.0
LOS	D	E	F	A	C	A
Approach Delay	57.1			23.2	25.8	
Approach LOS	E			C	C	
Queue Length 50th (ft)	92	184	84	77	545	0
Queue Length 95th (ft)	135	#384	#231	102	#753	37
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	652	418	217	2477	2017	1051
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	0.48	1.00	0.98	0.29	0.93	0.33

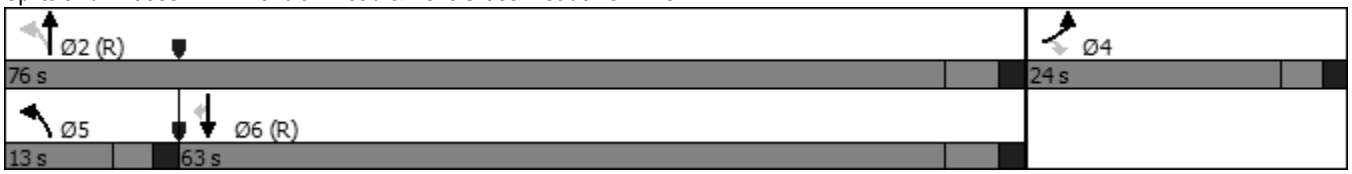
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 80.8%	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.

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



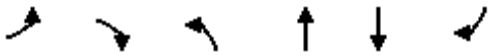
Intersection	
Int Delay, s/veh	18.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	331	14	312	189	11	19	2	303	37	4	15
Future Vol, veh/h	6	331	14	312	189	11	19	2	303	37	4	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	360	15	339	205	12	21	2	329	40	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	375	0	0	1273	1269	360	1436	1278	211
Stage 1	-	-	-	-	-	-	374	374	-	889	889	-
Stage 2	-	-	-	-	-	-	899	895	-	547	389	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1353	-	-	1183	-	-	144	168	684	111	166	829
Stage 1	-	-	-	-	-	-	647	618	-	338	361	-
Stage 2	-	-	-	-	-	-	334	359	-	521	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1183	-	-	107	119	684	44	118	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	119	-	44	118	-
Stage 1	-	-	-	-	-	-	644	615	-	336	257	-
Stage 2	-	-	-	-	-	-	230	256	-	268	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	26.6	212.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	508	1353	-	-	1183	-	-	63
HCM Lane V/C Ratio	0.693	0.005	-	-	0.287	-	-	0.966
HCM Control Delay (s)	26.6	7.7	-	-	9.3	-	-	212.3
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	5.3	0	-	-	1.2	-	-	4.6



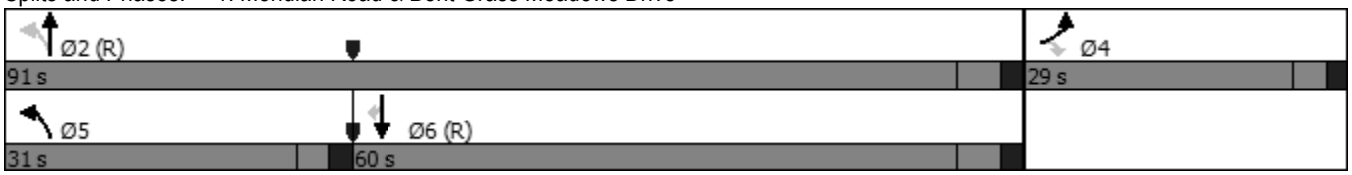
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	485	275	306	1482	1154	249
Future Volume (vph)	485	275	306	1482	1154	249
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.111			
Satd. Flow (perm)	3433	1583	207	3539	3539	1583
Satd. Flow (RTOR)		299				271
Lane Group Flow (vph)	527	299	333	1611	1254	271
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	29.0	29.0	31.0	91.0	60.0	60.0
Total Split (%)	24.2%	24.2%	25.8%	75.8%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	22.4	22.4	87.6	86.6	61.0	61.0
Actuated g/C Ratio	0.19	0.19	0.73	0.72	0.51	0.51
v/c Ratio	0.82	0.56	0.79	0.63	0.70	0.29
Control Delay	58.2	8.9	35.6	10.2	26.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	8.9	35.6	10.2	26.5	3.1
LOS	E	A	D	B	C	A
Approach Delay	40.4			14.5	22.4	
Approach LOS	D			B	C	
Queue Length 50th (ft)	200	0	149	313	396	0
Queue Length 95th (ft)	263	77	250	377	517	47
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	555	490	2553	1798	937
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	0.77	0.54	0.68	0.63	0.70	0.29

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: 0.82

Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	27.2

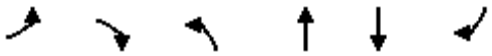
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	216	11	256	253	48	23	6	516	28	4	5
Future Vol, veh/h	8	216	11	256	253	48	23	6	516	28	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	235	12	278	275	52	25	7	561	30	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	247	0	0	1115	1136	235	1400	1122	301
Stage 1	-	-	-	-	-	-	253	253	-	857	857	-
Stage 2	-	-	-	-	-	-	862	883	-	543	265	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1319	-	-	185	202	804	118	206	739
Stage 1	-	-	-	-	-	-	751	698	-	352	374	-
Stage 2	-	-	-	-	-	-	350	364	-	524	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1319	-	-	150	158	804	~ 29	161	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	158	-	~ 29	161	-
Stage 1	-	-	-	-	-	-	746	693	-	350	295	-
Stage 2	-	-	-	-	-	-	270	287	-	156	684	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.9	41.2	$ 340.9
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1233	-	-	1319	-	-	37
HCM Lane V/C Ratio	0.906	0.007	-	-	0.211	-	-	1.087
HCM Control Delay (s)	41.2	7.9	-	-	8.5	-	-	$ 340.9
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	11.5	0	-	-	0.8	-	-	4.1

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	211	351	195	707	1699	300
Future Volume (vph)	211	351	195	707	1699	300
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.065			
Satd. Flow (perm)	3433	1583	121	3539	3539	1583
Satd. Flow (RTOR)		179				326
Lane Group Flow (vph)	229	382	212	768	1847	326
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	17.4	17.4	72.6	71.6	56.7	56.7
Actuated g/C Ratio	0.17	0.17	0.73	0.72	0.57	0.57
v/c Ratio	0.38	0.90	0.84	0.30	0.92	0.31
Control Delay	37.7	46.8	51.8	5.9	29.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	46.8	51.8	5.9	29.8	2.2
LOS	D	D	D	A	C	A
Approach Delay	43.4			15.8	25.7	
Approach LOS	D			B	C	
Queue Length 50th (ft)	64	128	83	89	565	0
Queue Length 95th (ft)	100	#287	#212	116	#764	39
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	257	2533	2005	1037
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	0.83	0.82	0.30	0.92	0.31

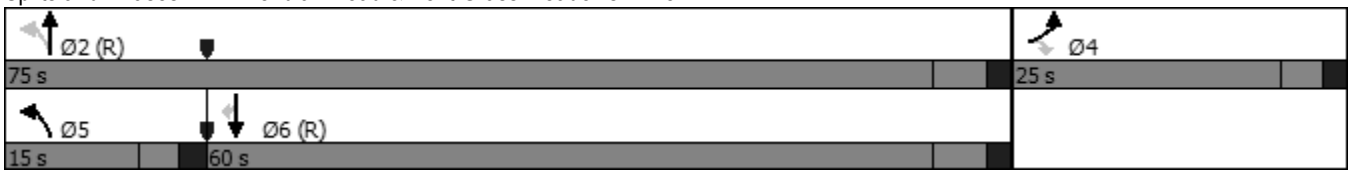
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	14	369	125	20	313
Future Vol, veh/h	248	14	369	125	20	313
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	270	15	401	136	22	340

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	285	0	1208	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	938	-
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	-	-	1277	-	202	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	381	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1277	-	139	769
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	261	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.8	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	604	-	-	1277	-
HCM Lane V/C Ratio	0.599	-	-	0.314	-
HCM Control Delay (s)	19.5	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	4	-	-	1.4	-

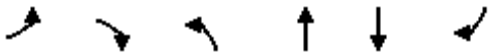
Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	13	0	88	31
Future Vol, veh/h	0	84	13	0	88	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	14	0	96	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	240	14	0	0	14	0
Stage 1	14	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	748	1066	-	-	1604	-
Stage 1	1009	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	1066	-	-	1604	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	762	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	5.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1066	1604	-
HCM Lane V/C Ratio	-	-	0.086	0.06	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-



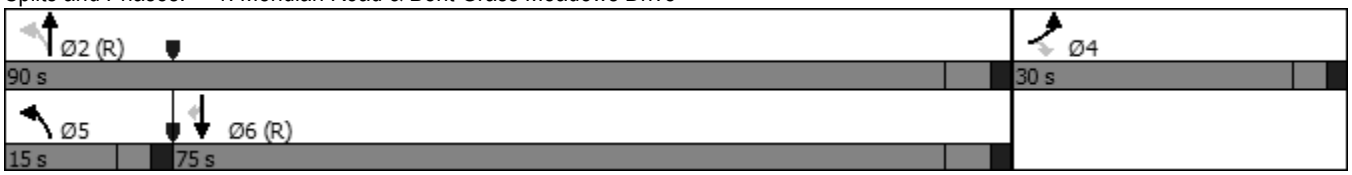
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	207	247	250	1502	979	229
Future Volume (vph)	207	247	250	1502	979	229
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.214			
Satd. Flow (perm)	3433	1583	399	3539	3539	1583
Satd. Flow (RTOR)		220				249
Lane Group Flow (vph)	225	268	272	1633	1064	249
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.9	13.9	96.1	95.1	79.5	79.5
Actuated g/C Ratio	0.12	0.12	0.80	0.79	0.66	0.66
v/c Ratio	0.57	0.71	0.62	0.58	0.45	0.22
Control Delay	55.2	21.8	9.7	6.2	11.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	21.8	9.7	6.2	11.4	1.8
LOS	E	C	A	A	B	A
Approach Delay	37.0			6.7	9.5	
Approach LOS	D			A	A	
Queue Length 50th (ft)	87	35	38	202	185	0
Queue Length 95th (ft)	120	119	82	338	306	34
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	503	447	2804	2345	1133
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	0.31	0.53	0.61	0.58	0.45	0.22

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

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	179	6	259	221	19	273
Future Vol, veh/h	179	6	259	221	19	273
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	195	7	282	240	21	297

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	202	0	999	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	804	-
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	-	-	1370	-	270	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	214	846
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1370	-
HCM Lane V/C Ratio	0.447	-	-	0.205	-
HCM Control Delay (s)	14.1	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	-	-	0.8	-

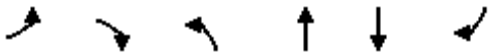
Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	32	0	39	19
Future Vol, veh/h	0	39	32	0	39	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	35	0	42	21

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	140	35	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	853	1038	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	830	1038	-	-	1576	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1038	1576	-
HCM Lane V/C Ratio	-	-	0.041	0.027	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	329	423	238	626	1707	360
Future Volume (vph)	329	423	238	626	1707	360
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.068			
Satd. Flow (perm)	3433	1583	127	3539	3539	1583
Satd. Flow (RTOR)		179				391
Lane Group Flow (vph)	358	460	259	680	1855	391
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.0	20.0	70.0	69.0	54.0	54.0
Actuated g/C Ratio	0.20	0.20	0.70	0.69	0.54	0.54
v/c Ratio	0.52	1.00	1.02	0.28	0.97	0.38
Control Delay	38.9	68.5	90.0	6.3	37.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	68.5	90.0	6.3	37.8	2.4
LOS	D	E	F	A	D	A
Approach Delay	55.5			29.4	31.6	
Approach LOS	E			C	C	
Queue Length 50th (ft)	105	~193	~120	76	570	0
Queue Length 95th (ft)	151	#405	#283	101	#770	41
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	253	2441	1911	1034
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.00	1.02	0.28	0.97	0.38

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

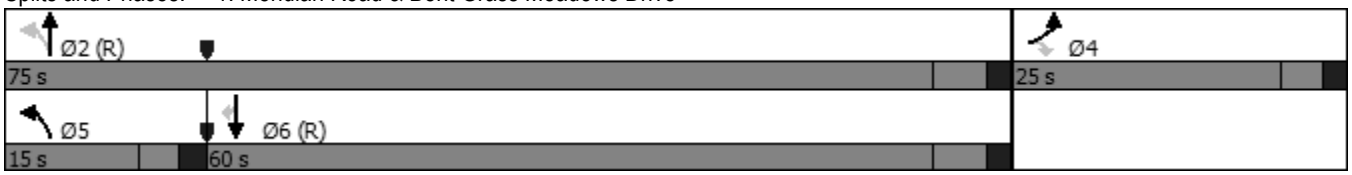
Maximum v/c Ratio: 1.02

Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 83.1%	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: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	49

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	331	17	397	189	11	21	2	384	37	4	15
Future Vol, veh/h	6	331	17	397	189	11	21	2	384	37	4	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	360	18	432	205	12	23	2	417	40	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	378	0	0	1459	1455	360	1668	1467	211
Stage 1	-	-	-	-	-	-	374	374	-	1075	1075	-
Stage 2	-	-	-	-	-	-	1085	1081	-	593	392	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1353	-	-	1180	-	-	107	130	684	77	128	829
Stage 1	-	-	-	-	-	-	647	618	-	266	296	-
Stage 2	-	-	-	-	-	-	262	294	-	492	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1180	-	-	72	82	684	~ 21	81	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	82	-	~ 21	81	-
Stage 1	-	-	-	-	-	-	644	615	-	265	188	-
Stage 2	-	-	-	-	-	-	159	186	-	190	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	6.5	60.9	$ 724.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	464	1353	-	-	1180	-	-	31
HCM Lane V/C Ratio	0.953	0.005	-	-	0.366	-	-	1.964
HCM Control Delay (s)	60.9	7.7	-	-	9.8	-	-	$ 724.7
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	11.6	0	-	-	1.7	-	-	7

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

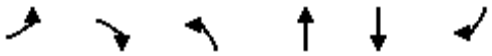
Intersection	
Int Delay, s/veh	5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	18	0	88	43
Future Vol, veh/h	0	84	18	0	88	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	20	0	96	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	259	20	0	0	20	0
Stage 1	20	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	1058	-	-	1596	-
Stage 1	1003	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	685	1058	-	-	1596	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1058	1596	-
HCM Lane V/C Ratio	-	-	0.086	0.06	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-



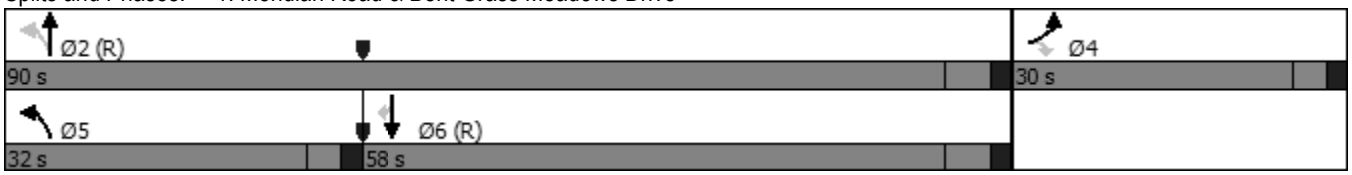
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	504	293	325	1470	1143	267
Future Volume (vph)	504	293	325	1470	1143	267
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.103			
Satd. Flow (perm)	3433	1583	192	3539	3539	1583
Satd. Flow (RTOR)		318				290
Lane Group Flow (vph)	548	318	353	1598	1242	290
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	32.0	90.0	58.0	58.0
Total Split (%)	25.0%	25.0%	26.7%	75.0%	48.3%	48.3%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	86.7	85.7	58.3	58.3
Actuated g/C Ratio	0.19	0.19	0.72	0.71	0.49	0.49
v/c Ratio	0.82	0.56	0.82	0.63	0.72	0.32
Control Delay	57.4	8.6	39.9	10.6	28.9	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	8.6	39.9	10.6	28.9	3.3
LOS	E	A	D	B	C	A
Approach Delay	39.5			15.9	24.0	
Approach LOS	D			B	C	
Queue Length 50th (ft)	207	0	174	320	413	0
Queue Length 95th (ft)	271	78	282	384	527	50
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	581	494	2528	1719	918
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	0.77	0.55	0.71	0.63	0.72	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: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	42.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	216	13	293	253	48	25	6	553	28	4	5
Future Vol, veh/h	8	216	13	293	253	48	25	6	553	28	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	235	14	318	275	52	27	7	601	30	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	249	0	0	1195	1216	235	1501	1204	301
Stage 1	-	-	-	-	-	-	253	253	-	937	937	-
Stage 2	-	-	-	-	-	-	942	963	-	564	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1317	-	-	163	181	804	100	184	739
Stage 1	-	-	-	-	-	-	751	698	-	318	343	-
Stage 2	-	-	-	-	-	-	316	334	-	510	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1317	-	-	128	136	804	~ 20	139	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	136	-	~ 20	139	-
Stage 1	-	-	-	-	-	-	746	693	-	316	260	-
Stage 2	-	-	-	-	-	-	234	254	-	127	683	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	4.2	63.4	$ 600.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	630	1233	-	-	1317	-	-	26
HCM Lane V/C Ratio	1.008	0.007	-	-	0.242	-	-	1.547
HCM Control Delay (s)	63.4	7.9	-	-	8.6	-	-	$ 600.4
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	15.7	0	-	-	0.9	-	-	4.9

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

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	44	0	39	26
Future Vol, veh/h	0	39	44	0	39	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	48	0	42	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	48	0	0	48	0
Stage 1	48	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	831	1021	-	-	1559	-
Stage 1	974	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	809	1021	-	-	1559	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1021	1559	-
HCM Lane V/C Ratio	-	-	0.042	0.027	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

APPENDIX D

ITE's Pass-By Trip Reduction Rates

Table E.33 Pass-By and Non-Pass-By Trips Weekday
Land Use Code 938—Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (Coffee/Espresso Stand)

SIZE (1,000 SQ. FT. GFA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			SOURCE
						PRIMARY	DIVERTED	TOTAL	
0.1	Vancouver, WA	Nov. 1997	69	6:00 a.m.–6:00 p.m.	83	—	—	17	Kittelson & Associates Inc.

"—" means no data were provided

Table E.34 Pass-By and Non-Pass-By Trips Weekday
Land Use Code 938—Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (Coffee/Espresso Stand)

EMPLOYEES	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			SOURCE
						PRIMARY	DIVERTED	TOTAL	
1	Vancouver, WA	Nov. 1997	70	6:00 a.m.–6:00 p.m.	83	—	—	17	Kittelson & Associates Inc.
1	Woodburn, OR	Feb. 1998	109	6:00 a.m.–6:00 p.m.	95	—	—	5	Kittelson & Associates Inc.
1	Vancouver, WA	Feb. 1998	83	6:00 a.m.–1:00 p.m.	89	—	—	11	Kittelson & Associates Inc.

Average Pass-By Trip Percentage: 89
"—" means no data were provided

Table E.35 Pass-By and Non-Pass-By Trips Weekday, AM Peak Period
Land Use Code 944—Gasoline/Service Station

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
							PRIMARY	DIVERTED	TOTAL		
2.3	6	Gaithersburg, MD	1992	37	7:00–9:00 a.m.	32	41	27	68	2,080	RBA
2.1	6	Bethesda, MD	1992	26	7:00–9:00 a.m.	58	23	19	42	2,080	RBA
1.7	6	Wheaton, MD	1992	21	7:00–9:00 a.m.	67	14	19	33	900	RBA
2.0	8	Gaithersburg, MD	1992	46	7:00–9:00 a.m.	87	13	0	13	2,235	RBA
1.2	6	Damascus, MD	1992	21	7:00–9:00 a.m.	43	28	29	57	870	RBA
0.3	12	Wheaton, MD	1992	36	7:00–9:00 a.m.	61	8	31	39	3,460	RBA

Average Pass-By Trip Percentage: 58
"—" means no data were provided

SMR Response

Traffic Impact Study_V1.PDF Markup Summary

eschoenheit (13)

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Certification page added.
In order to avoid duplicating efforts, SM Rocha plans to seek signatures upon County acceptance/approval of TIS

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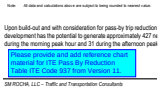

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Author: eschoenheit
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Please provide and add reference chart material for ITE Pass By Reduction Table ITE Code 937 from Version 11.

Pass-by reference from ITE's Trip Generation Handbook, 3rd Edition, included in appendix of revised study.

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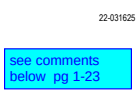

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see comments below pg 1-23

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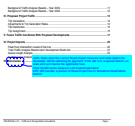

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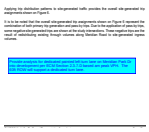
ADD: State what the current Road Impact Fees are and what option the developer will be selecting for payment. If the site is in a special district, so state and summarize the applicable fees.
https://publicworks.elpasoco.com/road-impact-fees/
EPC Will transfer a portion of Road Impact fee to Woodmen Road Metro District.

Road Impact Fees statement added



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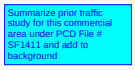
Provide analysis for dedicated painted left turn lane on Meridian Park Dr into development per ECM Section 2.3.7.D based am peak VPH. The 60ft ROW will support a dedicated turn lane.

Left turn lane on Meridian Park Drive at Site Access included within auxiliary lane analysis section of the study.



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Summarize prior traffic study for this commercial area under PCD File # SF1411 and add to background

Site trips from referenced TIS already included in background traffic volumes. Discussion of previous Bent Grass East Commercial F-2 TIS and other future developments added for clarification.

Subject: File Attachment
Page Label: 17
Author: eschoenheit
Date: 6/14/2022 9:20:53 AM
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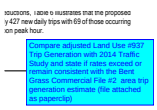

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Compare adjusted Land Use #937 Trip Generation with 2014 Traffic Study and state if rates exceed or remain consistent with the Bent Grass Commercial File #2 area trip generation estimate (file attached as paperclip)

Reference study from 2014 did not include coffee/donut shop land use within the analysis. Moreover, the reference study included pass-by information from ITE's Trip Generation Handbook, 2nd Edition. This study used the 3rd Edition of ITE's Trip Generation Handbook which is understood to provide for more recent and accurate data. Therefore, comparison will not be provided as land uses from the 2014 study are not the same as that proposed, and reduction rates are outdated.

SMR Response

TRAFFIC IMPACT STUDY

For

Bent Grass Dunkin' Donuts
El Paso County, Colorado

April 2022

Add PCD File # PPR-22-027

Added

Prepared for:

Ethos Architecture Group
8025 W 25th Place
Lakewood, CO 80214

Prepared by:

SM ROCHA, LLC
TRAFFIC AND TRANSPORTATION CONSULTANTS

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

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

Project Engineer:
Stephen Simon, EIT

Engineer in Responsible Charge:
Fred Lantz, PE

22-031625

see comments below pg 1-23

Comment ackowledged

Table of Contents **Page**

ADD: State what the current Road Impact Fees are and what option the developer will be selecting for payment. If the site is in a special district, so state and summarize the applicable fees.
https://publicworks.elpasoco.com/road-impact-fees/
EPC Will transfer a portion of Road Impact fee to Woodmen Road Metro District.

Add standard signature blocks per ECM B.8

Certification page added.
In order to avoid duplicating efforts, SM Rocha plans to seek signatures upon County acceptance/approval of TIS

Traffic Engineer's Statement

Road Impact Fees statement added

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.

_____ _____
[Name, P.E. #_____] Date

Developer's Statement

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

_____ _____
[Name, Title] Date
[Business Name]
[Address]

List of Figures

Page

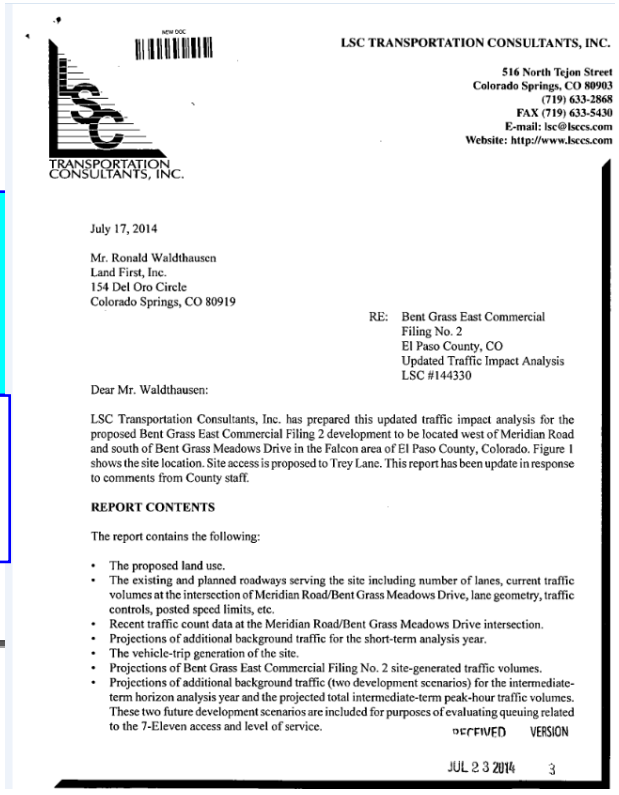
List of Tables

Page

Appendices

Summarize prior traffic study for this commercial area under PCD File # SF1411 and add to background

Site trips from referenced TIS already included in background traffic volumes. Discussion of previous Bent Grass East Commercial F-2 TIS and other future developments added for clarification.



LSC TRANSPORTATION CONSULTANTS, INC.

516 North Tejon Street
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsccs.com
Website: http://www.lsccs.com

July 17, 2014

Mr. Ronald Waldthausen
Land First, Inc.
154 Del Oro Circle
Colorado Springs, CO 80919

RE: Bent Grass East Commercial
Filing No. 2
El Paso County, CO
Updated Traffic Impact Analysis
LSC #144330

Dear Mr. Waldthausen:

LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Bent Grass East Commercial Filing 2 development to be located west of Meridian Road and south of Bent Grass Meadows Drive in the Falcon area of El Paso County, Colorado. Figure 1 shows the site location. Site access is proposed to Trey Lane. This report has been update in response to comments from County staff.

REPORT CONTENTS

The report contains the following:

- The proposed land use.
- The existing and planned roadways serving the site including number of lanes, current traffic volumes at the intersection of Meridian Road/Bent Grass Meadows Drive, lane geometry, traffic controls, posted speed limits, etc.
- Recent traffic count data at the Meridian Road/Bent Grass Meadows Drive intersection.
- Projections of additional background traffic for the short-term analysis year.
- The vehicle-trip generation of the site.
- Projections of Bent Grass East Commercial Filing No. 2 site-generated traffic volumes.
- Projections of additional background traffic (two development scenarios) for the intermediate-term horizon analysis year and the projected total intermediate-term peak-hour traffic volumes. These two future development scenarios are included for purposes of evaluating queuing related to the 7-Eleven access and level of service.

RECEIVED VERSION
JUL 23 2014 3

I. Introduction

Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Bent Grass Dunkin' Donuts.

This proposed commercial development consists of a Dunkin' Donuts coffee/donut shop with drive-through window. The development is located near the southwest corner of the intersection of Meridian Road with Bent Grass Meadows Drive in El Paso County, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the Bent Grass Meadows Drive intersections with Meridian Road and Meridian Park Drive, and proposed site access.

Figure 1 illustrates location of the site and study intersections.

Site Description

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

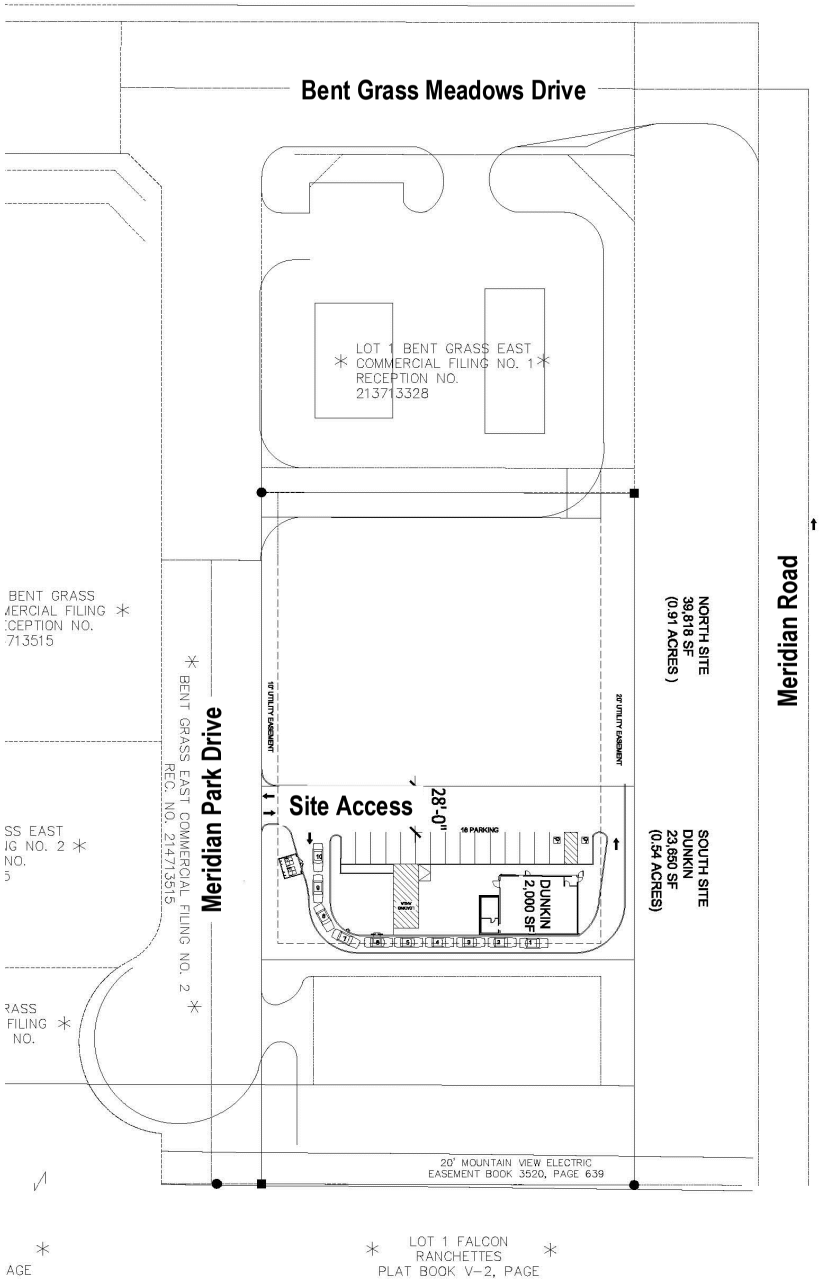
The proposed development is understood to entail the new construction of an approximate 2,000-square foot Dunkin' Donuts coffee/donut shop with drive-through window.

Proposed access to the development is provided at the following locations: one full-movement access onto Meridian Park Drive (referred to as Site Access).

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2024.

A site plan, as prepared by Ethos Architecture Group, is shown on Figure 2. This plan is provided for illustrative purposes.


North
Not to Scale
Bent Grass Meadows Drive
Meridian Park Drive
Meridian Road
Development Site



North
Not to Scale

Existing and Committed Surface Transportation Network

Within the study area, Meridian Road and Bent Grass Meadows Drive are the primary roadways that will accommodate traffic to and from the proposed development. The secondary roadways include Meridian Park Drive. A brief description of each roadway is provided below:

> Meridian Road is a north-south principal arterial roadway having four through lanes (two lanes in each direction) with exclusive turn lanes at the intersection within the study area. Meridian Road provides a posted speed limit of 55 MPH.
>
> Bent Grass Meadows Drive is an east-west collector roadway having two through lanes (one lanes in each direction) with exclusive turn lanes at the intersections within the study area. Bent Grass Meadows Drive provides a posted speed limit of 35 MPH.
>
> Meridian Park Drive is a north-south local roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Meridian Park Drive does not provide a posted speed limit, however pursuant to its classification and Section 2.3.2 of the County's Engineering Criteria Manual[1] (ECM), it is assumed to have a posted speed limit of 25 MPH.

The study intersection of Meridian Road with Bent Grass Meadows Drive is signalized. All other study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

Pursuant to ongoing adjacent development plans, it is anticipated that Bent Grass Meadows Drive will be extended further west with ultimate connections to Woodmen Frontage Road to the south. For analysis purposes, it is anticipated that this extension would be completed by Year 2024. In reference to the County's Major Transportation Corridors Plan[2] (MTCP), the remaining study area roadways appear to be built to their ultimate cross-sections.

[1] Engineering Criteria Manual, El Paso County, October 2020.
[2] El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt & Ullevig, December 2016.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of Bent Grass Meadows Drive with Meridian Road and Meridian Park Drive. Average daily (24-hour) traffic volumes were collected on Meridian Road. Counts were collected on Tuesday, March 29, 2022, with AM peak hour counts being collected during the period of 7:00 AM to 9:00 AM, and PM peak hour counts being collected during the period of 4:00 PM to 6:00 PM. These counts are shown on Figure 3.

Traffic count data is included for reference in Appendix A.

Existing signal timing parameters for Meridian Road and Bent Grass Meadows Drive were assumed based on the existing signal head configuration and allowable movements. Timings were used throughout this study to the best extent possible in order to remain consistent with typical County signal coordination plans.

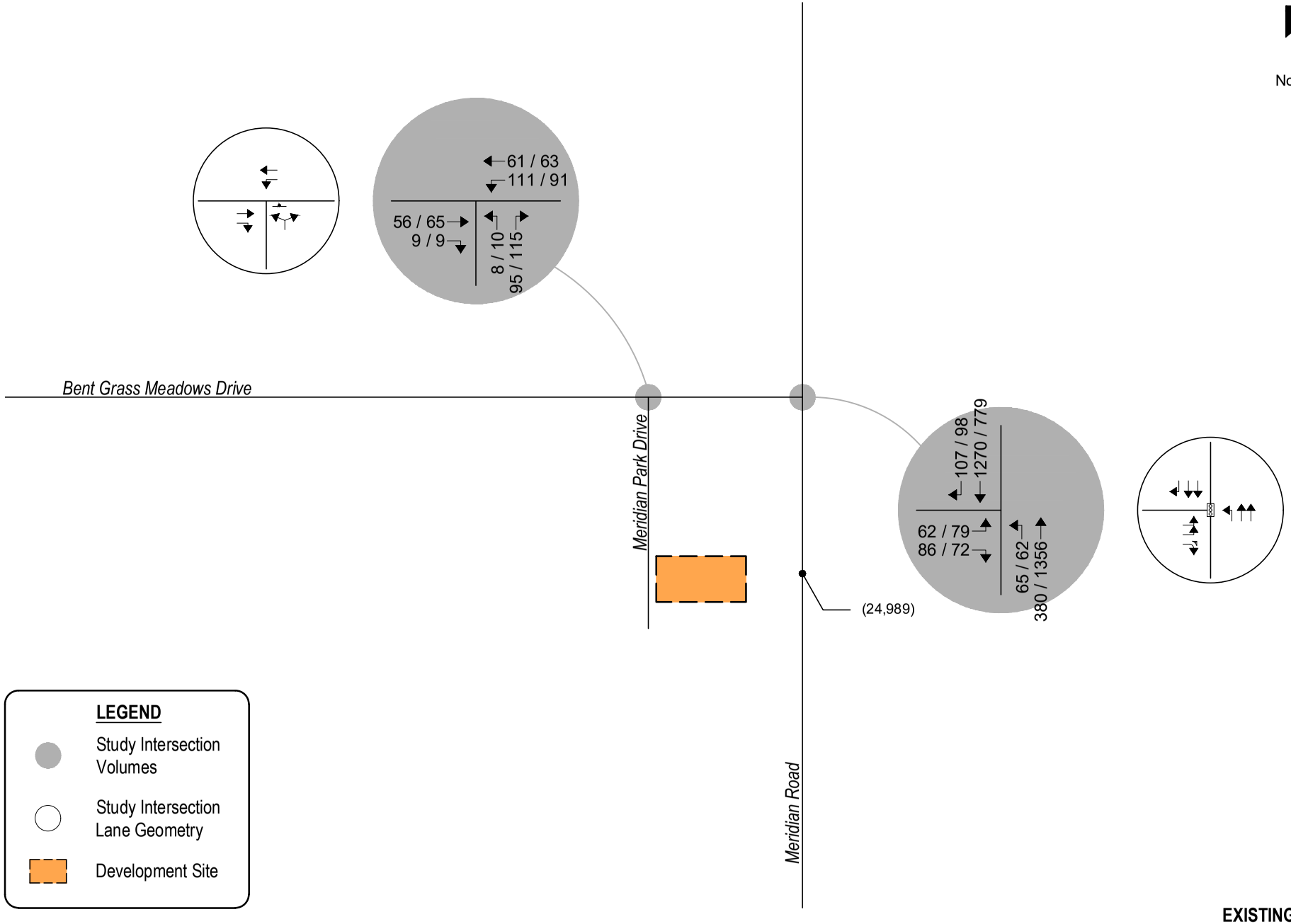


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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

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

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

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

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION	LEVEL OF SERVICE	
LANE GROUPS	AM PEAK HOUR	PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	A (7.6)	A (6.1)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	A	A

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

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS A during both the morning and afternoon peak traffic hours.

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

III. Future Traffic Conditions Without Proposed Development

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

To account for projected increases in background traffic for Years 2024 and 2040, and to incorporate anticipate trip generations from adjacent developments not yet built, traffic volumes were referenced from the approved traffic impact study prepared for Bent Grass East Commercial Filing No. 3[3]. Projected short-term Year 2021 and long-term Year 2040 total traffic volumes from this analysis include expected volumes generated by the adjacent commercial development as well as ongoing residential development located to the west and other studies performed within the overall area.

In order to account for additional undeveloped parcels adjacent to the study site, a compounded annual growth rate of approximately two percent was applied to the Year 2021 total traffic volumes established for the adjacent development, in order to estimate Year 2024 background volumes. This annual growth rate is consistent with regional growth projections and the level of in-fill development expected within the area and is consistent with the anticipated growth along Meridian Road as defined within the adjacent traffic impact study. Year 2040 background volumes were referenced from Figure 11 – Year 2040 Total Traffic from the previous traffic study.

Pursuant to the proposed and committed area roadway improvements discussed in Section I, Year 2024 and Year 2040 background traffic conditions assume no additional roadway improvements to accommodate regional transportation demands beyond those anticipated with the extension of Bent Grass Meadows Drive. Year 2040 assumes existing signal timing parameters for Meridian Road and Bent Grass Meadows Drive with optimized intersection splits in effort to better long-term intersection performance. This assumption provides for a conservative analysis.

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

[3] Bent Grass East Commercial Filing No. 3 Updated Traffic Impact Analysis, LSC Transportation Consultants, Inc., October 20, 2021.

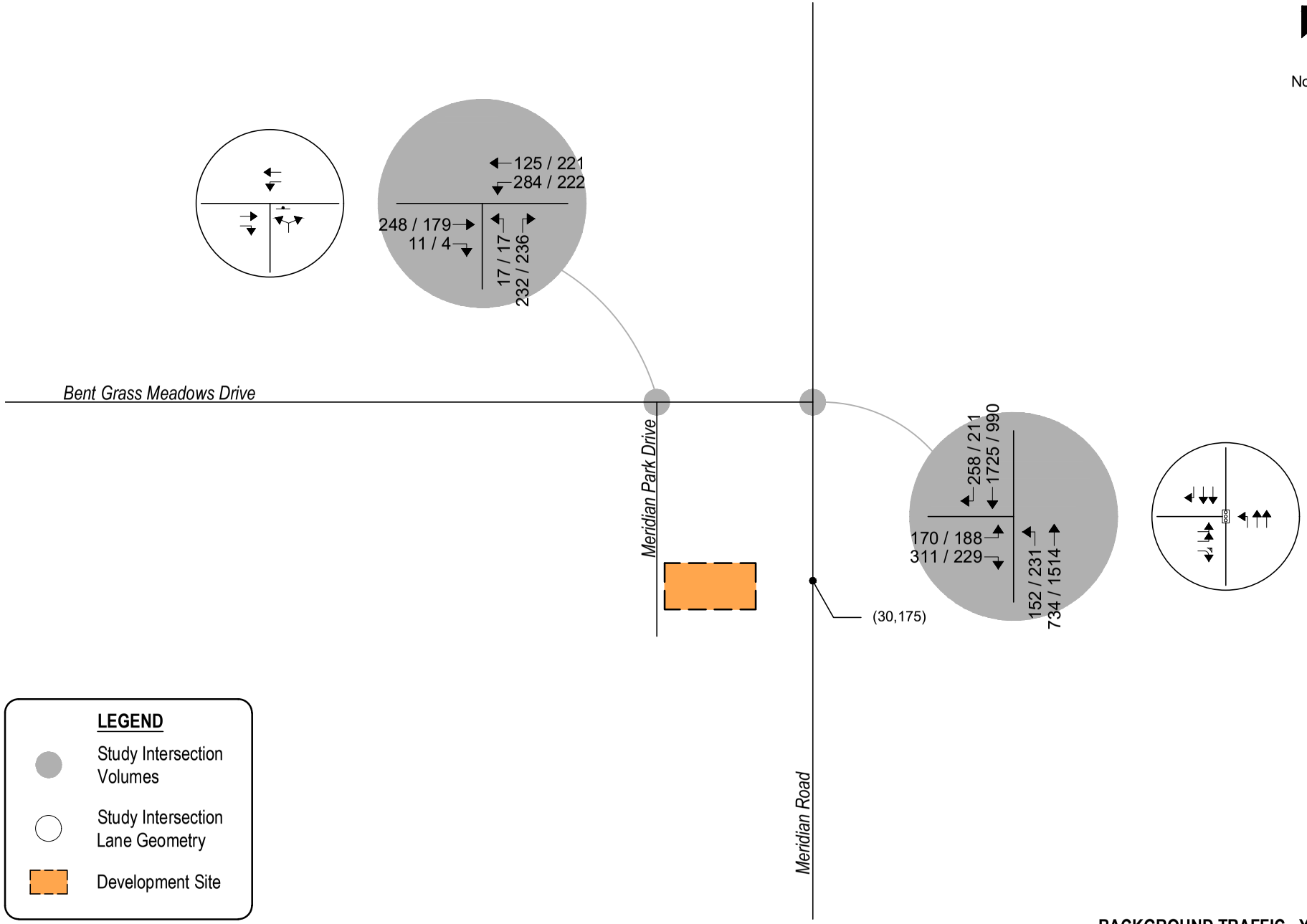


Figure 4
BACKGROUND TRAFFIC - YEAR 2024
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

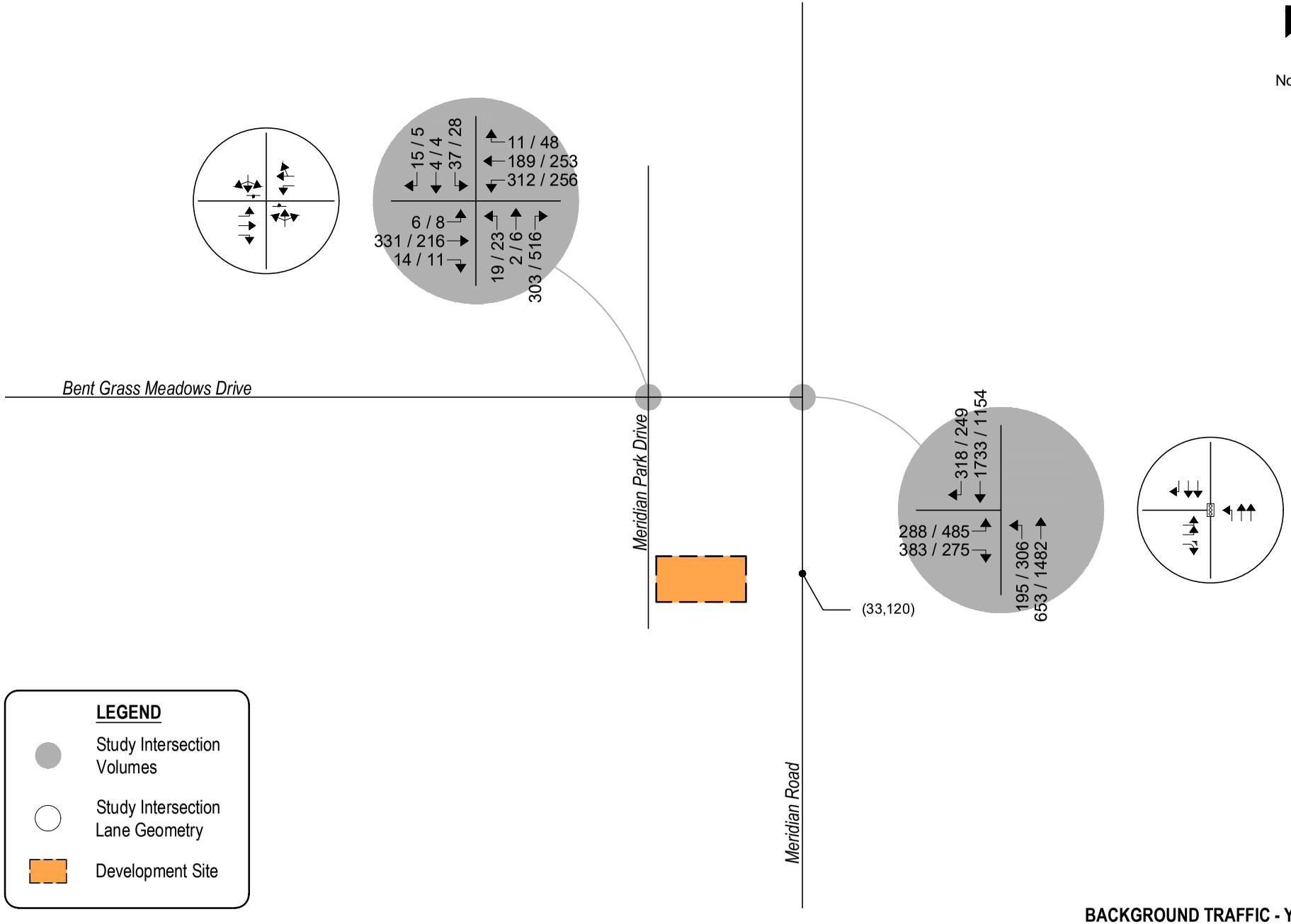


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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

Background traffic level of service analysis results for Year 2024 are listed in Table 2. Year 2040 operational results are summarized in Table 3.

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

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (21.7)	B (10.9)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	B	B

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

Background Traffic Analysis Results – Year 2024

Year 2024 background traffic analysis indicates that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS C during the AM peak traffic hour and LOS B during the PM peak traffic hour.

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (31.0)	C (22.3)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Eastbound Left	A	A
Westbound Left	A	A
Northbound Left, Through and Right	D	E
Southbound Left, Through and Right	F	F

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

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the study intersection of Bent Grass Meadows Drive with Meridian Road experiences LOS C operations during both the AM and PM peak traffic hours.

The study intersection of Bent Grass Meadows Drive with Meridian Park Drive experiences turning movement operations at or better than LOS F during both the AM and PM peak traffic hours. It is noted that poor LOS operations include the southbound turning movements which operate at LOS F during both peak traffic hours, and the northbound turning movements operate at LOS E during the PM peak traffic hour only. The LOS E and F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. In order to mitigate the projected long-term poor operations at Bent Grass Meadows Drive and Meridian Park Drive, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. Additionally, an exclusive southbound left turn lane may assist in improving vehicle delays.

IV. Proposed Project Traffic

Trip Generation

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

The ITE land use code 937 (Coffee/Donut Shop with Drive-Through Window) was used for estimating trip generation because of its best fit to the proposed land use description.

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
937	Coffee/Donut Shop w/DTW	KSF	533.57	43.80	42.08	85.88	19.50	19.50	38.99

Key: KSF = Thousand Square Feet Gross Floor Area.
Note: All data and calculations above are subject to being rounded to nearest value.

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

Table 5 – Trip Generation Summary

ITE CODE	LAND USE	SIZE	TOTAL TRIPS GENERATED						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
937	Coffee/Donut Shop w/DTW	2.0 KSF	1,067	88	84	172	39	39	78
		Total:	***1,067***	***88***	***84***	***172***	***39***	***39***	***78***

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

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 1,067 daily trips with 172 of those occurring during the morning peak hour and 78 during the afternoon peak hour.

Adjustments to Trip Generation Rates

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

Pass-by trips are especially common to coffee/donut shop land uses given the convenience provided by these businesses on the way to another primary destination such as a place of work or home. As example, published ITE pass-by and diverted link trip data indicates an average trip generation reduction rate of 83 percent during the AM peak traffic hour and 95 percent during the PM peak traffic hour as typical to coffee/donut shops with drive-through window and no indoor seating (ITE Code 938).

Upon consideration of the proposed land use, reductions were applied pursuant to ITE average data to the proposed land use in order to account for the high probability of pass-by trip generation. Considering the lowest ITE pass-by trip percentage, and the presence of an indoor seating area, a reduction of 60 percent was applied.

It is noted that given the proposed combination of adjacent office and commercial land uses, potential internal capture may be applicable. However, specific internal capture rates can only be assumed. Therefore, in order to maintain a conservative analysis, no additional reductions due to internal capture were applied.

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

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

ITE CODE	LAND USE	SIZE	TOTAL NEW TRIPS GENERATED					
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR	
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
		Pass-By Trip Reduction:	*60%*	*60%*				
937	Coffee/Donut Shop w/DTW	2.0 KSF	427	35				
		Total:	***427***	***35***				

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

Upon build-out and with consideration for pass-by trip reductio
development has the potential to generate approximately 427 n
during the morning peak hour and 31 during the afternoon pea

Reference study from 2014 did not include coffee/donut shop land use within the analysis. Moreover, the reference study included pass-by information from ITE's Trip Generation Handbook, 2nd Edition. This study used the 3rd Edition of ITE's Trip Generation Handbook which is understood to provide for more recent and accurate data. Therefore, comparison will not be provided as land uses from the 2014 study are not the same as that proposed, and reduction rates are outdated.

Please provide and add reference chart material for ITE Pass By Reduction Table ITE Code 937 from Version 11.

Pass-by reference from ITE's Trip Generation Handbook, 3rd Edition, included in appendix of revised study.

Compare adjusted Land Use #937 Trip Generation with 2014 Traffic Study and state if rates exceed or remain consistent with the Bent Grass Commercial File #2 area trip generation estimate (file attached as paperclip)

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and pursuant to assumptions made in the approved traffic impact analysis for the adjacent Bent Grass East Commercial Filing No. 3 development.

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

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

Trip Assignment

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

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

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

Provide analysis for dedicated painted left turn lane on Meridian Park Dr into development per ECM Section 2.3.7.D based am peak VPH. The 60ft ROW will support a dedicated turn lane.

Left turn lane on Meridian Park Drive at Site Access included within auxiliary lane analysis section of the study.

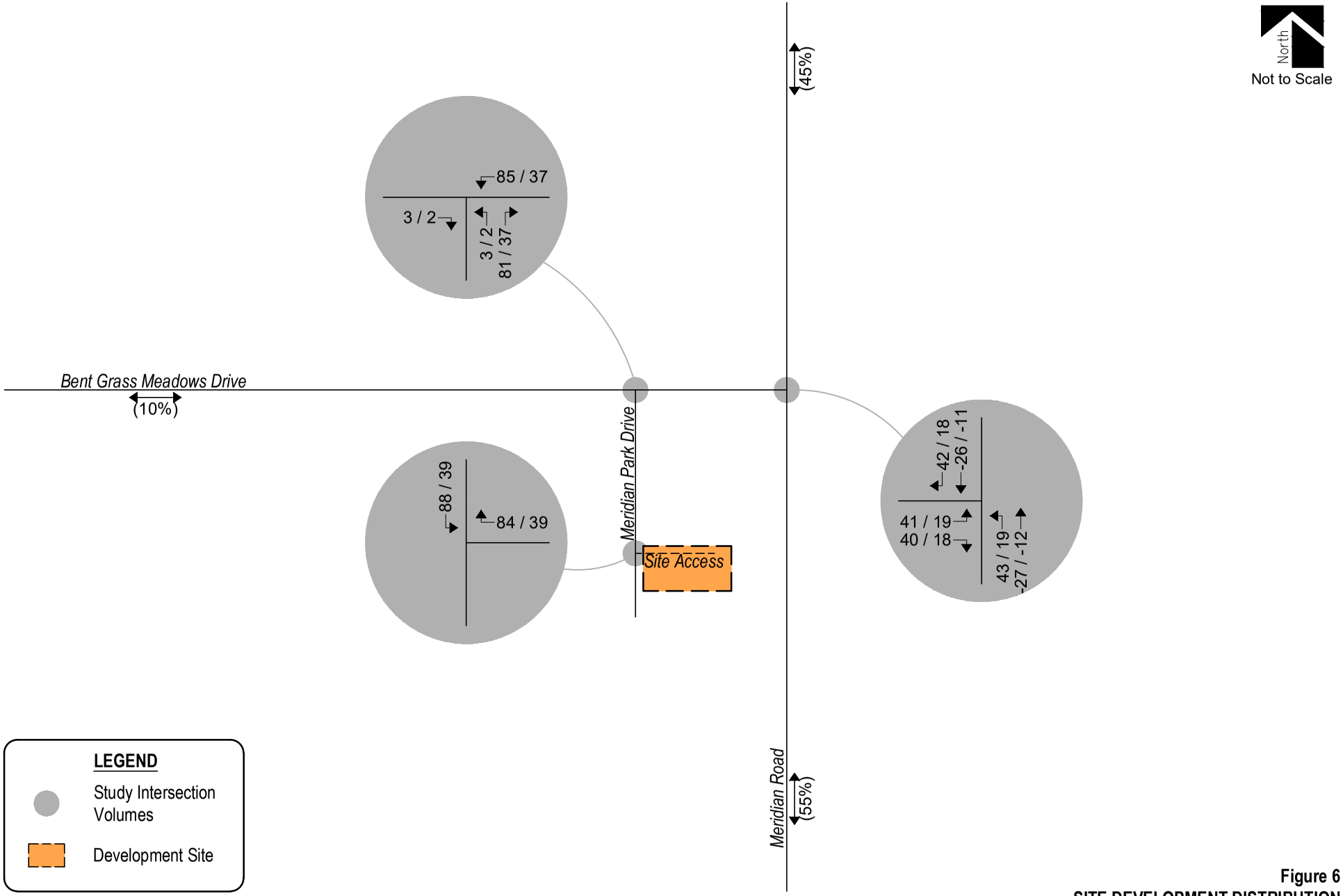


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2024 and 2040 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2024.

Pursuant to area roadway improvement discussions provided in Section III, Year 2024 and Year 2040 total traffic conditions assume no additional roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

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

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

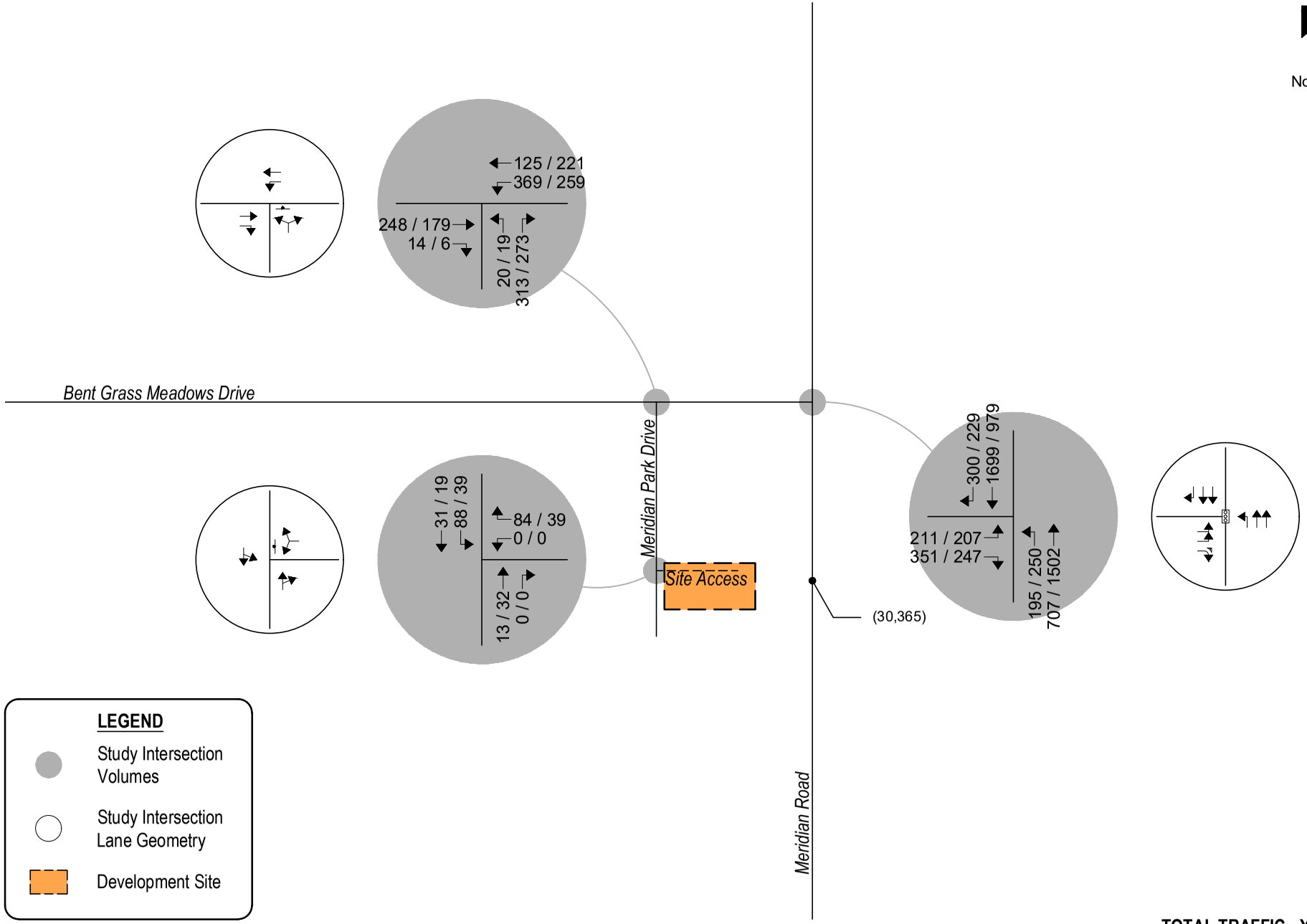


Figure 7
TOTAL TRAFFIC - YEAR 2024
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

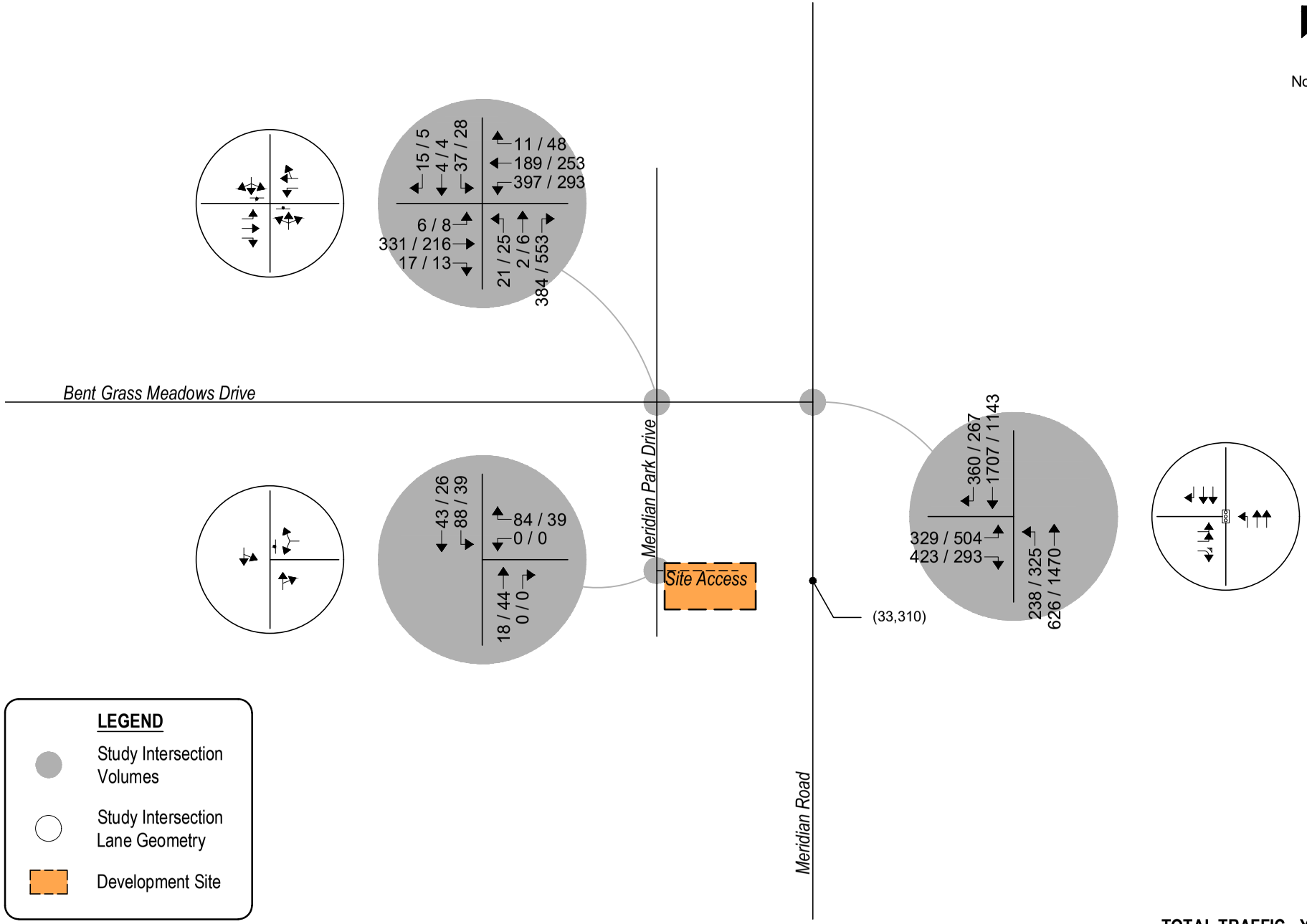


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

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

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2024 and 2040 are summarized in Table 7 and Table 8, respectively.

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	C (26.0)	B (11.7)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Westbound Left	A	A
Northbound Left and Right	C	B
Meridian Park Drive / Site Access (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A

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

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

INTERSECTION LANE GROUPS	LEVEL OF SERVICE AM PEAK HOUR	 PM PEAK HOUR
Bent Grass Meadows Drive / Meridian Road (Signalized)	D (36.0)	C (23.5)
Bent Grass Meadows Drive / Meridian Park Drive (Stop-Controlled)		
Eastbound Left	A	A
Westbound Left	A	A
Northbound Left, Through and Right	F	F
Southbound Left, Through and Right	F	F
Meridian Park Drive / Site Access (Stop-Controlled)		
Westbound Left and Right	A	A
Southbound Left and Through	A	A

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

Total Traffic Analysis Results Upon Development Build-Out

Table 8 illustrates how, by Year 2040 and upon development build-out, the signalized intersection of Bent Grass Meadows Drive with Meridian Road shows an overall LOS D operation during the morning peak traffic hour and LOS C operation during the afternoon peak traffic hour. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection.

The stop-controlled intersection of Bent Grass Meadows Drive with Meridian Park Drive is projected to have turning movement operations at LOS F for both the morning and afternoon peak traffic hours. It is noted that poor LOS operations still include the northbound and southbound turning movements which operate at LOS F during both peak traffic hours. The LOS F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection.

The stop-controlled intersection of Meridian Park Drive with Site Access is projected to have turning movement operations at LOS A for both the morning and afternoon peak traffic hours.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. As with background traffic conditions, in order to mitigate the projected long-term poor operations at Bent Grass Meadows Drive and Meridian Park Drive, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. Additionally, an exclusive southbound left turn lane may assist in improving vehicle delays.

These intersection operations are similar to background conditions.

Queue Length Analysis

Queue lengths for study intersections were analyzed using Year 2040 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

Some queuing at the intersection of Bent Grass Meadows Drive with Meridian Park Drive was indicated. The greatest queue length anticipated occurs during the afternoon peak hour. The queue length is approximately sixteen vehicles for the northbound turning movements. It is noted that without the proposed development poor intersection operations and vehicle queues continue to be anticipated.

As previously noted, in order to mitigate projected poor intersection operations, and associated vehicle queues, it is recommended that an exclusive northbound right turn lane be provided to accommodate the high volume of right-turning vehicles. It is however noted that due to access spacing limitations with the existing northern gas station access at the southeast corner of the study intersection, implementation of an exclusive turn lane may not be feasible. It is considered likely that given the available roadway width at the intersection of Bent Grass Meadows Drive with Meridian Park Drive, vehicles may behave as though there were exclusive turn lanes as left-turning vehicles may move adjacent to right-turning traffic in order to minimize delays. Such behavior would naturally decrease projected queues.

It is emphasized that projected long-term queuing and operational delays are attributed to the high through volumes along Bent Grass Meadows Drive as well as high opposing right-turning volumes along Meridian Park Drive, and the stop-controlled nature of the intersection. Projected right-turning volumes are pursuant to anticipated future development to the east and south of Meridian Park Drive as detailed in the Bent Grass East Commercial Filing No. 3 traffic impact study. The addition of proposed coffee/donut shop site generated traffic is not considered to cause a significant increase to projected future volumes. The study intersection should continue to be monitored by County Staff in order to determine when appropriate mitigation measures are necessary.

Auxiliary Lane Analysis

Auxiliary lanes for site development accesses were based on the County's ECM.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 2.3.7 of the County's ECM, reveals that the existing turn lanes along Bent Grass Meadows Drive meet County minimum exclusive turn lane requirements and that no changes are recommended.

VII. Conclusion

This traffic impact study was provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Bent Grass Dunkin' Donuts. This proposed commercial development consists of a Dunkin' Donuts coffee/donut shop with drive-through window. The development is located near the southwest corner of the intersection of Meridian Road with Bent Grass Meadows Drive in El Paso County, Colorado.

The study area examined in this analysis encompasses the Bent Grass Meadows Drive intersections with Meridian Road and Meridian Park Drive, and proposed site access.

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

Under existing conditions, operational analysis shows that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS A during both the morning and afternoon peak traffic hours. The unsignalized intersection of Bent Grass Meadows Drive with Meridian Park Drive has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

Year 2024 background traffic analysis indicates that the signalized intersection of Bent Grass Meadows Drive with Meridian Road has overall operations at LOS C during the AM peak traffic hour and LOS B during the PM peak traffic hour. The unsignalized intersection of Bent Grass Meadows Drive with Meridian Park Drive has turning movement operations at or better than LOS B during both AM and PM peak traffic periods.

By Year 2040 and without the proposed development, the study intersection of Bent Grass Meadows Drive with Meridian Road experiences LOS C operations during both the AM and PM peak traffic hours. The study intersection of Bent Grass Meadows Drive with Meridian Park Drive experiences turning movement operations at or better than LOS F during both the AM and PM peak traffic hours. It is noted that poor LOS operations include the southbound turning movements which operate at LOS F during both peak traffic hours, and the northbound turning movements operate at LOS E during the PM peak traffic hour only. The LOS E and F operations are attributed to the high through traffic volumes along Bent Grass Meadows Drive and the stop-controlled nature of the intersection. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon consideration of the various roadway and intersection control improvements assumed within this analysis. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2040 background traffic conditions. Proposed site access has long-term operations at LOS A during peak traffic periods and upon build-out.

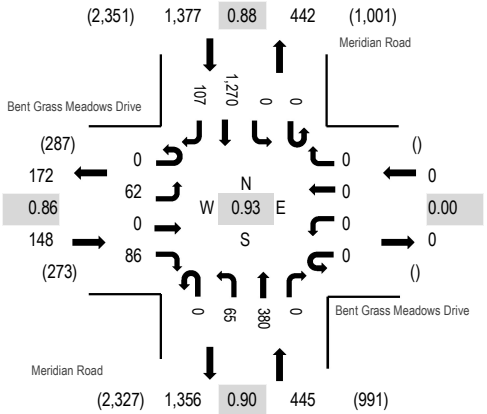
APPENDIX A

Traffic Count Data

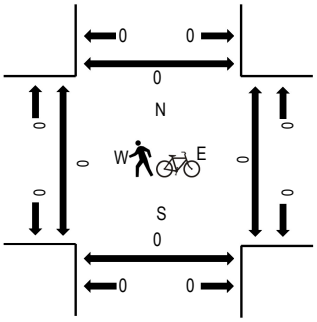
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

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

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

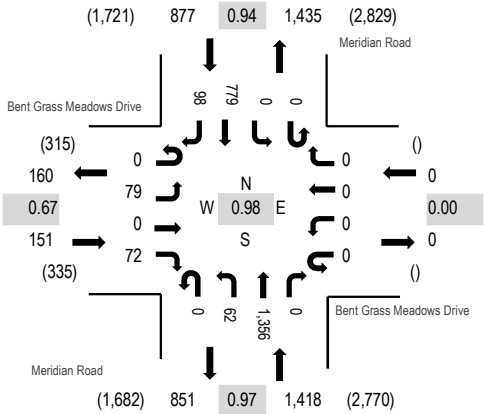
Traffic Counts

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

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

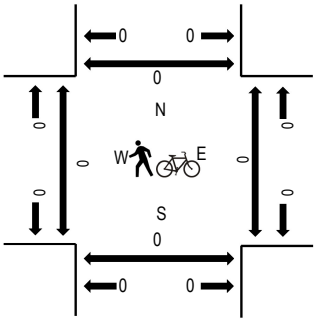
Location: 1 Meridian Road & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



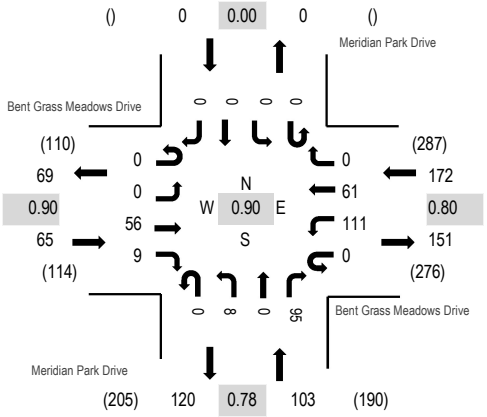
Traffic Counts

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

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

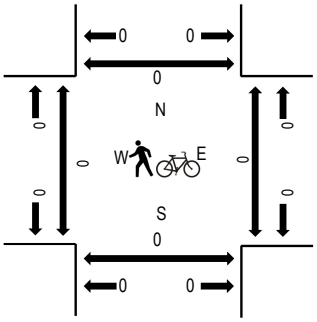
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive AM
Date: Tuesday, March 29, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



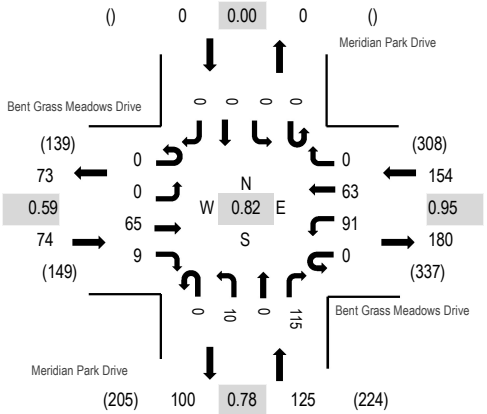
Traffic Counts

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

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

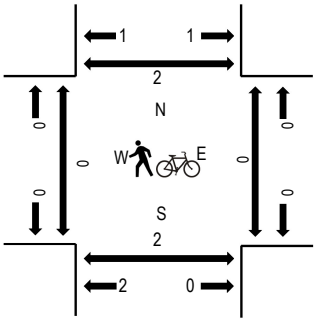
Location: 2 Meridian Park Drive & Bent Grass Meadows Drive PM
Date: Tuesday, March 29, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

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

All Traffic Data Services

www.alltrafficdata.net

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

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

ADT ADT 24,989 AADT 24,989

APPENDIX B

Level of Service Definitions

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

Automobile Level of Service (LOS) for Signalized Intersections

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

LOS A

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

LOS B

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

LOS C

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

LOS D

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

LOS E

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

LOS F

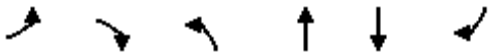
Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

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

APPENDIX C

Capacity Worksheets



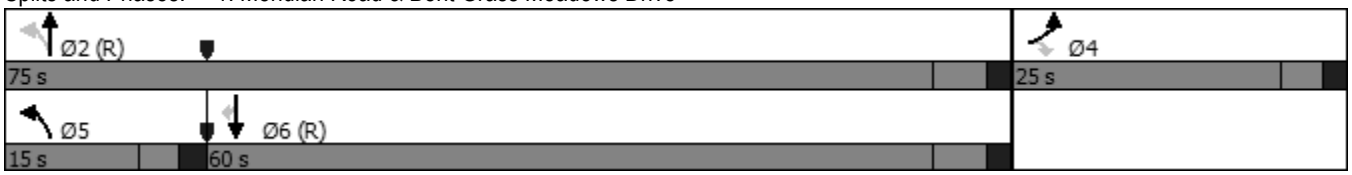
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	86	65	380	1270	107
Future Volume (vph)	62	86	65	380	1270	107
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.151			
Satd. Flow (perm)	3433	1583	281	3539	3539	1583
Satd. Flow (RTOR)		93				116
Lane Group Flow (vph)	67	93	71	413	1380	116
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.6	7.6	84.5	84.7	75.6	75.6
Actuated g/C Ratio	0.08	0.08	0.84	0.85	0.76	0.76
v/c Ratio	0.26	0.45	0.22	0.14	0.52	0.09
Control Delay	45.3	16.6	3.3	2.0	7.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	16.6	3.3	2.0	7.6	1.3
LOS	D	B	A	A	A	A
Approach Delay	28.6			2.2	7.1	
Approach LOS	C			A	A	
Queue Length 50th (ft)	21	0	6	21	194	0
Queue Length 95th (ft)	41	46	15	36	283	17
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	391	386	2999	2675	1225
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.24	0.18	0.14	0.52	0.09

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

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 56.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



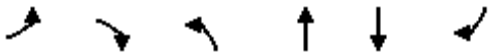
Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	56	9	111	61	8	95
Future Vol, veh/h	56	9	111	61	8	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	10	121	66	9	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	71	0	369	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1529	-	631	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1529	-	581	1004
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	686	-

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

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



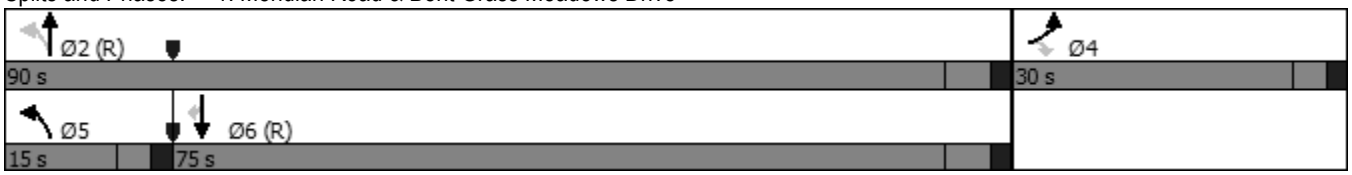
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	72	62	1356	779	98
Future Volume (vph)	79	72	62	1356	779	98
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.303			
Satd. Flow (perm)	3433	1583	564	3539	3539	1583
Satd. Flow (RTOR)		78				107
Lane Group Flow (vph)	86	78	67	1474	847	107
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	8.4	8.4	101.6	100.6	91.5	91.5
Actuated g/C Ratio	0.07	0.07	0.85	0.84	0.76	0.76
v/c Ratio	0.36	0.43	0.12	0.50	0.31	0.09
Control Delay	57.0	18.7	2.1	3.4	5.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	18.7	2.1	3.4	5.3	1.1
LOS	E	B	A	A	A	A
Approach Delay	38.8			3.4	4.8	
Approach LOS	D			A	A	
Queue Length 50th (ft)	33	0	6	124	100	0
Queue Length 95th (ft)	59	48	14	174	140	15
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	391	578	2966	2697	1232
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.20	0.12	0.50	0.31	0.09

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

Maximum v/c Ratio: 0.50

Intersection Signal Delay: 6.1	Intersection LOS: A
Intersection Capacity Utilization 50.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



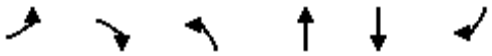
Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	9	91	63	10	115
Future Vol, veh/h	65	9	91	63	10	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	10	99	68	11	125

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	81	0	337	71
Stage 1	-	-	-	-	71	-
Stage 2	-	-	-	-	266	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1517	-	658	991
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1517	-	615	991
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	952	-
Stage 2	-	-	-	-	728	-

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

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	311	152	734	1725	258
Future Volume (vph)	170	311	152	734	1725	258
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	3433	1583	115	3539	3539	1583
Satd. Flow (RTOR)		178				280
Lane Group Flow (vph)	185	338	165	798	1875	280
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.5	15.5	74.5	73.5	59.8	59.8
Actuated g/C Ratio	0.16	0.16	0.74	0.74	0.60	0.60
v/c Ratio	0.35	0.85	0.72	0.31	0.89	0.26
Control Delay	38.3	39.3	36.7	5.4	25.5	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	39.3	36.7	5.4	25.5	2.1
LOS	D	D	D	A	C	A
Approach Delay	38.9			10.7	22.4	
Approach LOS	D			B	C	
Queue Length 50th (ft)	54	100	51	82	536	0
Queue Length 95th (ft)	82	#208	#139	122	#783	36
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	251	2601	2115	1059
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	0.27	0.74	0.66	0.31	0.89	0.26

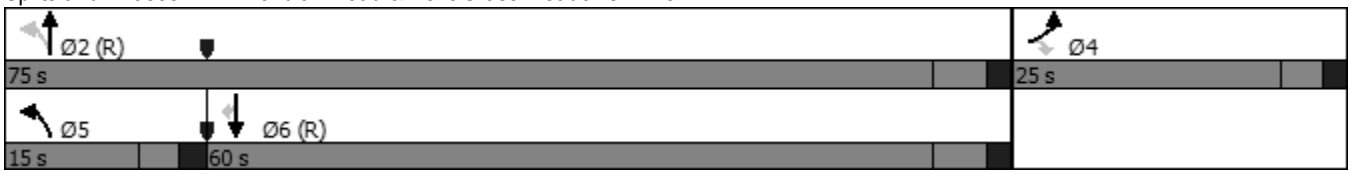
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 21.7	Intersection LOS: C
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



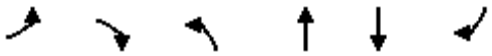
Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	11	284	125	17	232
Future Vol, veh/h	248	11	284	125	17	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	270	12	309	136	18	252

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	1024	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	754	-
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	-	-	1280	-	261	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	465	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1280	-	198	769
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	353	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1280	-
HCM Lane V/C Ratio	0.422	-	-	0.241	-
HCM Control Delay (s)	14.6	-	-	8.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.1	-	-	0.9	-



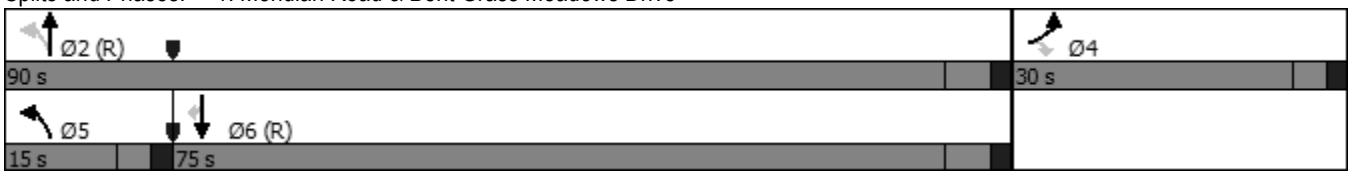
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	229	231	1514	990	211
Future Volume (vph)	188	229	231	1514	990	211
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.214			
Satd. Flow (perm)	3433	1583	399	3539	3539	1583
Satd. Flow (RTOR)		217				229
Lane Group Flow (vph)	204	249	251	1646	1076	229
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.0	13.0	97.0	96.0	81.3	81.3
Actuated g/C Ratio	0.11	0.11	0.81	0.80	0.68	0.68
v/c Ratio	0.55	0.68	0.58	0.58	0.45	0.20
Control Delay	55.8	19.7	8.5	5.8	10.5	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	19.7	8.5	5.8	10.5	1.6
LOS	E	B	A	A	B	A
Approach Delay	36.0			6.2	8.9	
Approach LOS	D			A	A	
Queue Length 50th (ft)	78	23	34	197	178	0
Queue Length 95th (ft)	111	103	70	322	294	32
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	501	446	2830	2396	1145
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	0.29	0.50	0.56	0.58	0.45	0.20

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: 0.68

Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



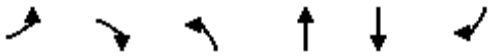
Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	179	4	222	221	17	236
Future Vol, veh/h	179	4	222	221	17	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	195	4	241	240	18	257

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	917	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	722	-
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	-	302	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	481	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	249	846
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	396	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	729	-	-	1373	-
HCM Lane V/C Ratio	0.377	-	-	0.176	-
HCM Control Delay (s)	12.9	-	-	8.2	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	0.6	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	288	383	195	653	1733	318
Future Volume (vph)	288	383	195	653	1733	318
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.065			
Satd. Flow (perm)	3433	1583	121	3539	3539	1583
Satd. Flow (RTOR)		145				346
Lane Group Flow (vph)	313	416	212	710	1884	346
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	13.0	76.0	63.0	63.0
Total Split (%)	24.0%	24.0%	13.0%	76.0%	63.0%	63.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.0	19.0	71.0	70.0	57.0	57.0
Actuated g/C Ratio	0.19	0.19	0.71	0.70	0.57	0.57
v/c Ratio	0.48	1.00	0.98	0.29	0.93	0.33
Control Delay	38.9	70.8	80.8	6.0	30.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	70.8	80.8	6.0	30.1	2.0
LOS	D	E	F	A	C	A
Approach Delay	57.1			23.2	25.8	
Approach LOS	E			C	C	
Queue Length 50th (ft)	92	184	84	77	545	0
Queue Length 95th (ft)	135	#384	#231	102	#753	37
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	652	418	217	2477	2017	1051
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	0.48	1.00	0.98	0.29	0.93	0.33

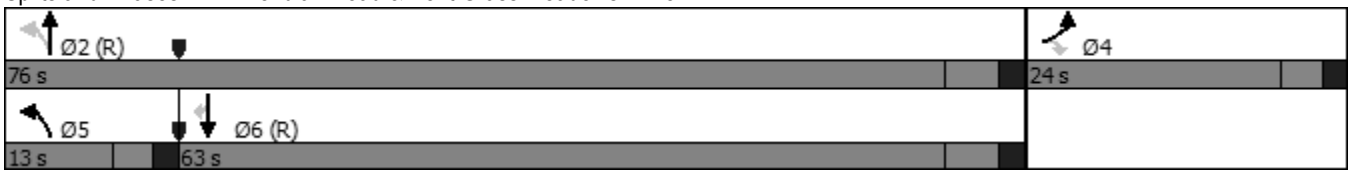
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 80.8%	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.

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



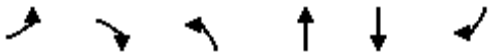
Intersection	
Int Delay, s/veh	18.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	331	14	312	189	11	19	2	303	37	4	15
Future Vol, veh/h	6	331	14	312	189	11	19	2	303	37	4	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	360	15	339	205	12	21	2	329	40	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	375	0	0	1273	1269	360	1436	1278	211
Stage 1	-	-	-	-	-	-	374	374	-	889	889	-
Stage 2	-	-	-	-	-	-	899	895	-	547	389	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1353	-	-	1183	-	-	144	168	684	111	166	829
Stage 1	-	-	-	-	-	-	647	618	-	338	361	-
Stage 2	-	-	-	-	-	-	334	359	-	521	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1183	-	-	107	119	684	44	118	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	119	-	44	118	-
Stage 1	-	-	-	-	-	-	644	615	-	336	257	-
Stage 2	-	-	-	-	-	-	230	256	-	268	605	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	26.6	212.3
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	508	1353	-	-	1183	-	-	63
HCM Lane V/C Ratio	0.693	0.005	-	-	0.287	-	-	0.966
HCM Control Delay (s)	26.6	7.7	-	-	9.3	-	-	212.3
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	5.3	0	-	-	1.2	-	-	4.6



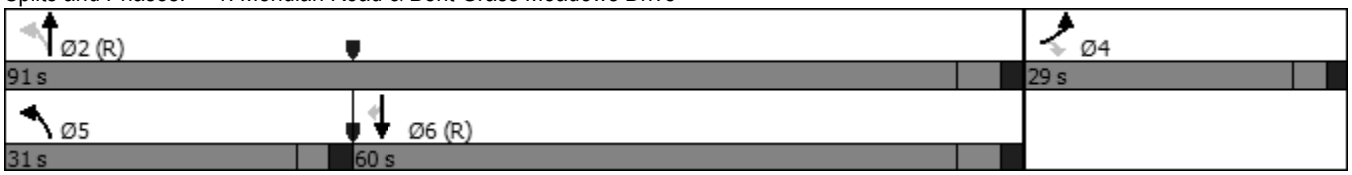
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	485	275	306	1482	1154	249
Future Volume (vph)	485	275	306	1482	1154	249
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.111			
Satd. Flow (perm)	3433	1583	207	3539	3539	1583
Satd. Flow (RTOR)		299				271
Lane Group Flow (vph)	527	299	333	1611	1254	271
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	29.0	29.0	31.0	91.0	60.0	60.0
Total Split (%)	24.2%	24.2%	25.8%	75.8%	50.0%	50.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	22.4	22.4	87.6	86.6	61.0	61.0
Actuated g/C Ratio	0.19	0.19	0.73	0.72	0.51	0.51
v/c Ratio	0.82	0.56	0.79	0.63	0.70	0.29
Control Delay	58.2	8.9	35.6	10.2	26.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.2	8.9	35.6	10.2	26.5	3.1
LOS	E	A	D	B	C	A
Approach Delay	40.4			14.5	22.4	
Approach LOS	D			B	C	
Queue Length 50th (ft)	200	0	149	313	396	0
Queue Length 95th (ft)	263	77	250	377	517	47
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	555	490	2553	1798	937
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	0.77	0.54	0.68	0.63	0.70	0.29

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: 0.82

Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	27.2

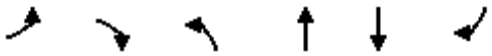
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	216	11	256	253	48	23	6	516	28	4	5
Future Vol, veh/h	8	216	11	256	253	48	23	6	516	28	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	235	12	278	275	52	25	7	561	30	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	247	0	0	1115	1136	235	1400	1122	301
Stage 1	-	-	-	-	-	-	253	253	-	857	857	-
Stage 2	-	-	-	-	-	-	862	883	-	543	265	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1319	-	-	185	202	804	118	206	739
Stage 1	-	-	-	-	-	-	751	698	-	352	374	-
Stage 2	-	-	-	-	-	-	350	364	-	524	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1319	-	-	150	158	804	~ 29	161	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	158	-	~ 29	161	-
Stage 1	-	-	-	-	-	-	746	693	-	350	295	-
Stage 2	-	-	-	-	-	-	270	287	-	156	684	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.9	41.2	$ 340.9
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	654	1233	-	-	1319	-	-	37
HCM Lane V/C Ratio	0.906	0.007	-	-	0.211	-	-	1.087
HCM Control Delay (s)	41.2	7.9	-	-	8.5	-	-	$ 340.9
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	11.5	0	-	-	0.8	-	-	4.1

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



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	211	351	195	707	1699	300
Future Volume (vph)	211	351	195	707	1699	300
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.065			
Satd. Flow (perm)	3433	1583	121	3539	3539	1583
Satd. Flow (RTOR)		179				326
Lane Group Flow (vph)	229	382	212	768	1847	326
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	17.4	17.4	72.6	71.6	56.7	56.7
Actuated g/C Ratio	0.17	0.17	0.73	0.72	0.57	0.57
v/c Ratio	0.38	0.90	0.84	0.30	0.92	0.31
Control Delay	37.7	46.8	51.8	5.9	29.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	46.8	51.8	5.9	29.8	2.2
LOS	D	D	D	A	C	A
Approach Delay	43.4			15.8	25.7	
Approach LOS	D			B	C	
Queue Length 50th (ft)	64	128	83	89	565	0
Queue Length 95th (ft)	100	#287	#212	116	#764	39
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	257	2533	2005	1037
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	0.83	0.82	0.30	0.92	0.31

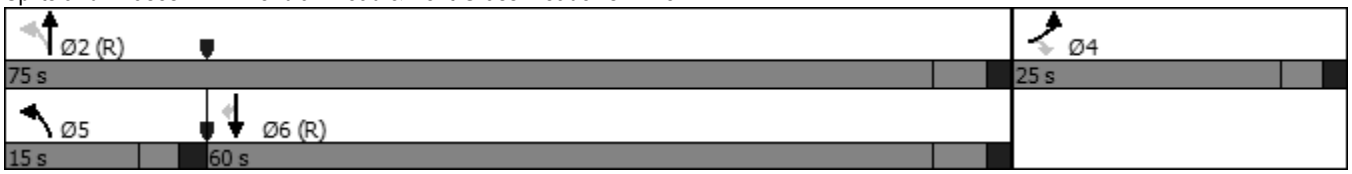
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 26.0	Intersection LOS: C
Intersection Capacity Utilization 77.9%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	14	369	125	20	313
Future Vol, veh/h	248	14	369	125	20	313
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	270	15	401	136	22	340

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	285	0	1208	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	938	-
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	-	-	1277	-	202	769
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	381	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1277	-	139	769
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	261	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.8	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	604	-	-	1277	-
HCM Lane V/C Ratio	0.599	-	-	0.314	-
HCM Control Delay (s)	19.5	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	4	-	-	1.4	-

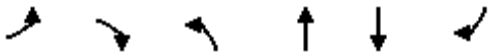
Intersection	
Int Delay, s/veh	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	13	0	88	31
Future Vol, veh/h	0	84	13	0	88	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	14	0	96	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	240	14	0	0	14	0
Stage 1	14	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	748	1066	-	-	1604	-
Stage 1	1009	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	1066	-	-	1604	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	762	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	5.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1066	1604	-
HCM Lane V/C Ratio	-	-	0.086	0.06	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-



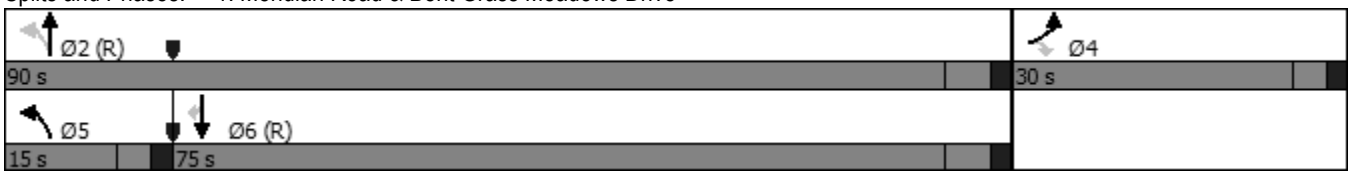
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	207	247	250	1502	979	229
Future Volume (vph)	207	247	250	1502	979	229
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.214			
Satd. Flow (perm)	3433	1583	399	3539	3539	1583
Satd. Flow (RTOR)		220				249
Lane Group Flow (vph)	225	268	272	1633	1064	249
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.9	13.9	96.1	95.1	79.5	79.5
Actuated g/C Ratio	0.12	0.12	0.80	0.79	0.66	0.66
v/c Ratio	0.57	0.71	0.62	0.58	0.45	0.22
Control Delay	55.2	21.8	9.7	6.2	11.4	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	21.8	9.7	6.2	11.4	1.8
LOS	E	C	A	A	B	A
Approach Delay	37.0			6.7	9.5	
Approach LOS	D			A	A	
Queue Length 50th (ft)	87	35	38	202	185	0
Queue Length 95th (ft)	120	119	82	338	306	34
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	503	447	2804	2345	1133
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	0.31	0.53	0.61	0.58	0.45	0.22

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

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 11.7	Intersection LOS: B
Intersection Capacity Utilization 60.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	6.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	179	6	259	221	19	273
Future Vol, veh/h	179	6	259	221	19	273
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	150	150	-	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	195	7	282	240	21	297

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	202	0	999	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	804	-
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	-	-	1370	-	270	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	214	846
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	710	-	-	1370	-
HCM Lane V/C Ratio	0.447	-	-	0.205	-
HCM Control Delay (s)	14.1	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	-	-	0.8	-

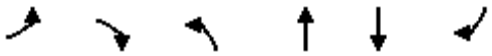
Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	32	0	39	19
Future Vol, veh/h	0	39	32	0	39	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	35	0	42	21

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	140	35	0	0	35	0
Stage 1	35	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	853	1038	-	-	1576	-
Stage 1	987	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	830	1038	-	-	1576	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	4.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1038	1576	-
HCM Lane V/C Ratio	-	-	0.041	0.027	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	329	423	238	626	1707	360
Future Volume (vph)	329	423	238	626	1707	360
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.068			
Satd. Flow (perm)	3433	1583	127	3539	3539	1583
Satd. Flow (RTOR)		179				391
Lane Group Flow (vph)	358	460	259	680	1855	391
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	25.0	25.0	15.0	75.0	60.0	60.0
Total Split (%)	25.0%	25.0%	15.0%	75.0%	60.0%	60.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.0	20.0	70.0	69.0	54.0	54.0
Actuated g/C Ratio	0.20	0.20	0.70	0.69	0.54	0.54
v/c Ratio	0.52	1.00	1.02	0.28	0.97	0.38
Control Delay	38.9	68.5	90.0	6.3	37.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	68.5	90.0	6.3	37.8	2.4
LOS	D	E	F	A	D	A
Approach Delay	55.5			29.4	31.6	
Approach LOS	E			C	C	
Queue Length 50th (ft)	105	~193	~120	76	570	0
Queue Length 95th (ft)	151	#405	#283	101	#770	41
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	686	459	253	2441	1911	1034
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.00	1.02	0.28	0.97	0.38

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

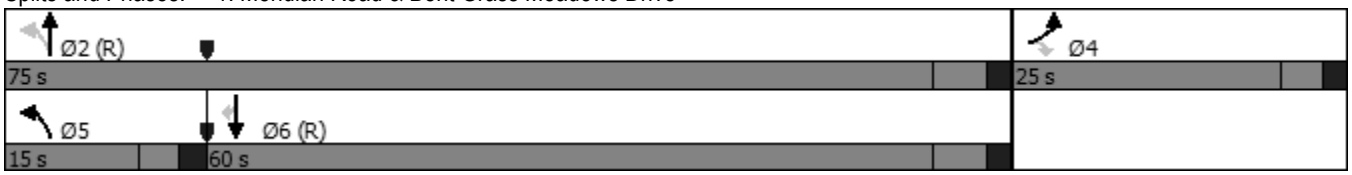
Maximum v/c Ratio: 1.02

Intersection Signal Delay: 36.0	Intersection LOS: D
Intersection Capacity Utilization 83.1%	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: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	49

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	331	17	397	189	11	21	2	384	37	4	15
Future Vol, veh/h	6	331	17	397	189	11	21	2	384	37	4	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	360	18	432	205	12	23	2	417	40	4	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	378	0	0	1459	1455	360	1668	1467	211
Stage 1	-	-	-	-	-	-	374	374	-	1075	1075	-
Stage 2	-	-	-	-	-	-	1085	1081	-	593	392	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1353	-	-	1180	-	-	107	130	684	77	128	829
Stage 1	-	-	-	-	-	-	647	618	-	266	296	-
Stage 2	-	-	-	-	-	-	262	294	-	492	606	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1180	-	-	72	82	684	~ 21	81	829
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	82	-	~ 21	81	-
Stage 1	-	-	-	-	-	-	644	615	-	265	188	-
Stage 2	-	-	-	-	-	-	159	186	-	190	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	6.5	60.9	$ 724.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	464	1353	-	-	1180	-	-	31
HCM Lane V/C Ratio	0.953	0.005	-	-	0.366	-	-	1.964
HCM Control Delay (s)	60.9	7.7	-	-	9.8	-	-	$ 724.7
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	11.6	0	-	-	1.7	-	-	7

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

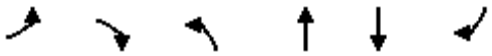
Intersection	
Int Delay, s/veh	5.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	18	0	88	43
Future Vol, veh/h	0	84	18	0	88	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	20	0	96	47

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	259	20	0	0	20	0
Stage 1	20	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	730	1058	-	-	1596	-
Stage 1	1003	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	685	1058	-	-	1596	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1058	1596	-
HCM Lane V/C Ratio	-	-	0.086	0.06	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-



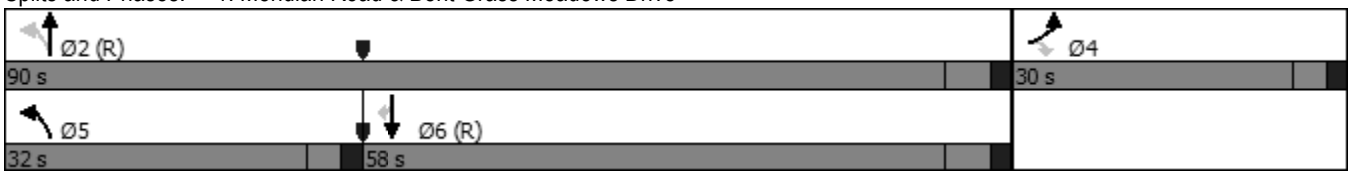
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	504	293	325	1470	1143	267
Future Volume (vph)	504	293	325	1470	1143	267
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.950		0.103			
Satd. Flow (perm)	3433	1583	192	3539	3539	1583
Satd. Flow (RTOR)		318				290
Lane Group Flow (vph)	548	318	353	1598	1242	290
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0	32.0	90.0	58.0	58.0
Total Split (%)	25.0%	25.0%	26.7%	75.0%	48.3%	48.3%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	86.7	85.7	58.3	58.3
Actuated g/C Ratio	0.19	0.19	0.72	0.71	0.49	0.49
v/c Ratio	0.82	0.56	0.82	0.63	0.72	0.32
Control Delay	57.4	8.6	39.9	10.6	28.9	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	8.6	39.9	10.6	28.9	3.3
LOS	E	A	D	B	C	A
Approach Delay	39.5			15.9	24.0	
Approach LOS	D			B	C	
Queue Length 50th (ft)	207	0	174	320	413	0
Queue Length 95th (ft)	271	78	282	384	527	50
Internal Link Dist (ft)	315			657	595	
Turn Bay Length (ft)	160		700			330
Base Capacity (vph)	715	581	494	2528	1719	918
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	0.77	0.55	0.71	0.63	0.72	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: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 77.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Meridian Road & Bent Grass Meadows Drive



Intersection	
Int Delay, s/veh	42.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	216	13	293	253	48	25	6	553	28	4	5
Future Vol, veh/h	8	216	13	293	253	48	25	6	553	28	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	235	14	318	275	52	27	7	601	30	4	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	249	0	0	1195	1216	235	1501	1204	301
Stage 1	-	-	-	-	-	-	253	253	-	937	937	-
Stage 2	-	-	-	-	-	-	942	963	-	564	267	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1317	-	-	163	181	804	100	184	739
Stage 1	-	-	-	-	-	-	751	698	-	318	343	-
Stage 2	-	-	-	-	-	-	316	334	-	510	688	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1317	-	-	128	136	804	~ 20	139	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	136	-	~ 20	139	-
Stage 1	-	-	-	-	-	-	746	693	-	316	260	-
Stage 2	-	-	-	-	-	-	234	254	-	127	683	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	4.2	63.4	$ 600.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	630	1233	-	-	1317	-	-	26
HCM Lane V/C Ratio	1.008	0.007	-	-	0.242	-	-	1.547
HCM Control Delay (s)	63.4	7.9	-	-	8.6	-	-	$ 600.4
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	15.7	0	-	-	0.9	-	-	4.9

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

Intersection	
Int Delay, s/veh	4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	39	44	0	39	26
Future Vol, veh/h	0	39	44	0	39	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	48	0	42	28

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	160	48	0	0	48	0
Stage 1	48	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	831	1021	-	-	1559	-
Stage 1	974	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	809	1021	-	-	1559	-
Mov Cap-2 Maneuver	809	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	4.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1021	1559	-
HCM Lane V/C Ratio	-	-	0.042	0.027	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-