



Please title this as a Master Traffic Impact Study

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Falcon Fields
Traffic Impact Study
(LSC #184560)
October 18, 2019

Add PCD File No. CR191

Traffic Engineer's Statement

This 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.



Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report. There are no commitments made on the Developer's behalf in this report. Commitments will be made at the Final Plat stage of development in the form of a Subdivision Improvements Agreement and plat conditions.

Falcon Field LLC

By: [Signature]
James C. Berger

10/21/19



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October 18, 2019

P.J. Anderson
31 N Tejon, Ste 500
Colorado Springs, CO 80903

Please state in the narrative that subsequent Traffic impact studies shall be provided with each phase/site development of the project.

RE: Falcon Fields
El Paso County, CO
Traffic Impact Study
LSC #184560

Dear Mr. Anderson,

LSC Transportation Consultants, Inc. has prepared this Traffic Impact Study for the Falcon Fields rezone/development in the Falcon area of El Paso County, Colorado. Falcon Fields is a proposed commercial development to be located southeast of the intersection of US 24 and Woodmen Road. This report has been prepared to accompany a property rezone submittal to El Paso County and the Colorado Department of Transportation (CDOT).

REPORT CONTENTS

The preparation of this report included the following:

- An inventory of existing roadway and traffic conditions on the adjacent and nearby roadway system, including functional classification, widths, pavement markings, surface conditions, traffic control signs, posted speed limits, intersection and access spacing, roadway and intersection alignments, roadway grades, and auxiliary turn lanes
- Weekday peak-hour turning movement traffic counts at the following intersections:
 - Woodmen Road/US 24
 - Woodmen Road/McLaughlin Road
 - Woodmen Road/Meridian Road
 - Rio Lane/US 24
- Estimated current average weekday traffic (AWT) volumes on the study area streets including US 24, Meridian Road, McLaughlin Road, Rio Lane
- Projections of 20-year background traffic volumes on the study area streets

- The proposed site land use – conceptual only with the rezone application
- Estimates of average weekday and weekday peak-hour trip generation for the proposed Falcon Fields development and the estimated directional distribution of site-generated vehicle-trips on the area street and roadway network
- Projected site-generated and resulting total peak-hour intersection traffic volumes at the study area intersections
- Projected total daily (AWT) volumes on the study area streets
- Intersection level of service analysis at the study area intersections
- Findings and recommendations

LIST OF OTHER TRAFFIC REPORTS USED IN THE PREPARATION OF THIS REPORT

The most recent versions of the following traffic reports were utilized in preparing this report. Falcon Marketplace, Meadowlake Ranch (LSC), The Ranch (LSC), US Highway 24 Planning and Linkage Study (CDOT). This report is generally consistent with these reports. Minor adjustments to background traffic volumes have been made to account for newer traffic counts, and traffic projections in the CDOT PEL study. Also, the background traffic volumes attempt to adjust for some of the pairing of trips between developments (i.e. some trips shown to exit one development may be paired with an arriving trip at another development). Each project's TIS shows the trip ends generated at each trip end. This can result in "double counting" of trips on roadways in intersections between these two developments.

Other known reports completed within the past five years include: Big O tires (Meridian Road/US Highway 24), Falcon Highlands Taco Bell deviation request memo, Meridian Crossing Memo.

LAND USE AND ACCESS

Figure 1 shows the site location relative to the adjacent and nearby roadways. The development is planned to have a home improvement store and other commercial land uses. The site is directly southeast of the intersection of Woodmen Road/US 24 in Parcels 4307000001 and 4307200015. A copy of the site plan is attached in Figure 2.

As shown on the site concept plan, the primary access will be a new southeast leg of the Woodmen Road/US 24 intersection (currently a T-intersection). This entry/access street will be classified as an urban non-residential Collector. The proposed new street connection between this entry drive and existing Rio Lane to the east would also be a non-residential Collector. The intersection of the entry street and the Collector connection to Rio Lane will either be a stop sign-controlled T-intersection or a modern roundabout. It should be noted that the intersection of Rio Lane/US 24 is proposed to be

The conceptual site plan also show additional roads that would connect to the west in the future. Please include these in your narrative and also indicate the anticipated classification of these roads.

closed as shown in the adopted *US Highway 24 Access Management Plan* and the *US 24 Planning and Environmental Linkages Study, October 2017*.


EXISTING ROADWAY AND TRAFFIC VOLUMES

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Woodmen Road** is four-lane east/west Expressway that ends at the intersection with US 24. The intersections of Woodmen Road with Meridian Road, McLaughlin Road, and US 24 are all signalized.
- **US Highway 24** is a two-lane, category EX - Expressway/Major Bypass adjacent to the site that runs northeast/southwest with a 55-mph posted speed limit. The corridor was studied in depth in the US 24 Planning and Environmental Linkages Study. Two alternatives were carried forward in this study for the segment of US 24 adjacent to the site:
 - US 24 as a six-lane corridor
 - US 24 as a four-lane corridor with a peak period shoulder lane in each direction

Because both scenarios result in US 24 operating a six-lane road during peak hours, this has been assumed for the 2040 analysis.

- **Meridian Road** is a four-lane north/south Principal Arterial. Meridian Road currently does not connect with US 24, but is proposed to connect (signal traffic control) in the short-term future. The current US 24/Meridian Road intersection is planned to be converted to a right-in/right-out intersection. 
- **McLaughlin Road** is a two-lane, non-residential Collector road that extends north from Rolling Thunder Avenue to Eastonville Road. The roadway provides retail and residential access both north and south of Woodmen Road.
- **Rio Lane** is a two-lane Rural Local roadway that connects US 24 to Falcon Highway. The roadway is about 24-feet wide. The intersection with US 24 is stop sign-controlled. The intersection with US Highway 24 is planned to be closed and the new internal roads planned as part of this development will serve as the replacement connection to US Highway 24.

Existing Traffic Volumes

Figure 3a shows the results of morning and afternoon peak-hour turning movement traffic counts at the intersections of Woodmen Road/US 24, Woodmen Road/Meridian Road, Woodmen Road/McLaughlin Road, and Rio Lane/US 24. The intersection traffic counts were collected in 2018 and 2019.

Existing Levels of Service

Level of service (LOS) is a quantitative measure of the level of delay at an intersection. Level of service is indicated on a scale from “A” to “F.” LOS A represents control delay of less than 10 seconds for unsignalized and signalized intersections. LOS F represents control delay of more than 50 seconds for unsignalized intersections and more than 80 seconds for signalized intersections. Table 1 shows the level of service delay ranges.

Table 1. Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) ¹
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	≥ 80.1	≥ 50.1

¹ For unsignalized intersections, if V/C is > 1.00, then LOS is LOS F regardless of the projected average control delay per vehicle

Figure 3b presents the results of the existing intersection level of service analysis. The signalized intersections were analyzed using Synchro. While the unsignalized intersection of US 24/Rio Lane was analyzed based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board. The level of service reports are attached.

The southwest-bound through/left at the stop sign-controlled intersection of US 24/Rio Lane currently operates at LOS B or better during the peak hours. The shared northwest-bound left/right turning movement on Rio Lane operates at LOS E during the morning peak hour and LOS F during the evening peak hour. The poor levels of service for this movement are due to both the volume of left-turning vehicles and the high volume of through vehicles on US 24.

TRIP GENERATION

Include in the narrative the LOS of the other intersections in the study area.

Estimates of the vehicle-trips projected to be generated by the proposed development have been made using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 below presents a summary of the estimated site trip generation. The detailed trip generation estimate for the development, including ITE rates for the proposed land use, is presented in Table 3.

Approximately 13,550 total daily trips are projected to enter and exit the site at the access point (“driveway trips”) on the average weekday. During the morning peak hour, approximately 265 vehicles would enter, and 183 vehicles would exit the site. During the evening peak, approximately 590 vehicles would enter, and 631 vehicles would exit. The proposed development is projected to generate approximately 4,900 (new/non-pass-by or diverted) vehicle trips on the average weekday during a 24-hour period.

Table 2: Estimated Falcon Fields Weekday Vehicle-Trip Generation

Analysis Period	Total Trips			Passby Trips			Diverted Trips		
	In	Out	Total	In	Out	Total	In	Out	Total
A.M. Peak Hour	265	183	448	94	94	188	53	53	106
P.M. Peak Hour	590	631	1,221	234	234	468	151	151	302
Daily/24-Hour	6,772	6,772	13,544	2,649	2,649	5,298	1,661	1,661	3,223

A detailed trip generation estimate for the Falcon Fields development including ITE rates for the proposed land use, is presented in Table 3 (attached).

Internal Trips

Internal trips are trips that occur within the site and do not impact the external roadways. Because the site is planned to have multiple retail pads, some of the generated trips will be traveling within the site. Table 3 includes estimates of internal trip capture to account for trips generated within the site.

Pass-by and Diverted Trips

The trips generated by the site have also been aggregated by trip type to account for the pass-by phenomenon. A pass-by trip is one made by a motorist who would already be on an adjacent road regardless of the proposed development, but who stops in at the site while passing by. The pass-by motorist would then continue on his or her way to a final destination in the original direction. For purposes of this report, pass-by trips are trips by motorists already traveling through the intersection of US 24/Woodmen Road.

Because the site is near the intersections of US 24/Falcon Highway and US 24/Meridian Road, vehicles traveling through these intersections, but not through the intersection of US 24/Woodmen Road may still stop at the site on the way to their destination. Because these intersections are not directly adjacent to the site, these trips would be considered “diverted trips” based on ITE terminology and therefore are referred to as such in this report. These trips would result in altered turning movements at the nearby major intersections of US 24/Falcon Highway, US 24/Meridian Road, and Woodmen Road/Meridian Road and new turning movements at the intersection of US 24/Woodmen Road. In addition, it has been assumed that some of these diverted trips coming to and from Falcon Highway to the east will use Rio Lane to access the site.

Passby and diverted trips are shown in Tables 3 and 4 and are based on *Trip Generation Handbook - An ITE Proposed Recommended Practice*, 3rd Edition, 2014 by ITE.

Table 3 is the trip generation estimate and table 4 is recommended improvements. Please revise.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip Directional Distribution

An estimate of the directional distribution of site-generated vehicle trips to the study area roads and intersections is a necessary component in determining the site-generated traffic volumes. Figure 4 shows the directional distribution estimate for the primary site-generated trips. The figure shows the percentages of the site-generated vehicle trips (primary trips) projected to be oriented to and from the site's major approaches. Estimates have been based on the following factors: traffic counts conducted at major intersections adjacent to the proposed development, the proposed land uses, the access plan, the area road system serving the site, the site's geographic location, and previously conducted LSC studies in the vicinity.

The directional distribution estimates for primary trips are based on the anticipated service area. This commercial center will primarily serve the Falcon area. The higher percentages for Meridian north of Woodmen and US Highway 24 east of the site reflect the higher current density of "rooftops" and the anticipated growth areas to the north and northeast. The 10 percent split is associated with current residential development and potential future developments to the east (Falcon Highway corridor) and southeast. The 10 percent split to/from the southwest on US 24 (primary trips, like the other directional splits) is intended to account for some future Banning Lewis Ranch connections to Highway 24 and potentially some trips from the Cimarron Hills area (likely limited by the longer trip length and availability of commercial in the Powers Boulevard corridor).

Additionally, Figure 4 shows what percentage of overall pass-by and diverted trips have been pulled from each turning movement at the affected intersections to be rerouted as part of the site generated traffic.

Please also include in the narrative the other distribution estimates shown in figure 4 with your reasoning for the estimates. Also see comment on figure 4.

Site-Generated Traffic

Site-generated traffic volumes for the development during the weekday morning and evening peak hours are shown in Figure 5 for the following intersections:

- Woodmen Road/US 24
- Woodmen Road/Meridian Road
- Woodmen Road/McLaughlin Road

table 3

Site-generated traffic volumes have been calculated by applying the directional distribution percentages estimated by LSC (from Figure 4) to the trip generation estimates (from Table 4). The pass-by trips and diverted trips were assigned based on the magnitude and direction of the peak hour traffic volumes projected for the area major streets/roads.

Should Meridian Road (old and new) /US 24 intersection be included in the study area per ECM criteria? If not then please state why it is not included in the study area.

BACKGROUND TRAFFIC VOLUMES

Background traffic is traffic on the adjacent roadways that is forecasted to be present without the proposed development. Short-term and 2040 background traffic scenarios were developed.

Figure 6a shows the estimated short-term future background traffic volumes at the study area intersections, while Figure 7a shows the estimated 2040 background traffic volumes. These projected volumes include estimates from planned future Falcon area development and increases in through traffic volumes on the study area roadways. The forecasts also assume that the intersection of US 24/Rio Lane has been closed and the associated traffic has been re-routed.

TOTAL TRAFFIC VOLUMES

Site generated traffic volumes from Figure 5 were added to short-term background traffic volumes from Figure 6a to calculate short-term total traffic volumes provided on Figure 8a. Similarly, 2040 total traffic volumes provided on Figure 9a were calculated by adding the site generated traffic (Figure 5) with the 2040 background traffic volumes (Figure 7a).

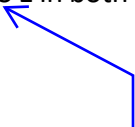
LEVEL OF SERVICE ANALYSIS

Short-Term

Levels of service were calculated for both the short-term background and short-term total traffic volumes, as shown in Figure 6b and Figure 8b, respectively. Traffic lanes are also provided on these figures. In the short-term scenarios, it has been assumed that no baseline capacity improvements will occur on US 24. The improvements assumed at the intersection of US 24/Woodmen Road would include:

- The fourth leg of the intersection with a left-lane, two through-lanes, and right-lane outbound at the site access.
- Auxiliary turn lanes on US Highway 24 to serve the trips/vehicle turning movements associated with the new fourth leg - the development, and the "replacement" Rio Lane connection.
- Raised right turn islands for pedestrian accessibility.
- Any lane alignment and/or median modifications on the Woodmen side of the intersection (to be determined with preliminary design)
- Signal modifications.

The signalized intersections are all forecasted to operate at LOS D or better during both peak hours in both the background and total scenarios. The intersection of Woodmen Road/Meridian Road has multiple turning movements that are projected to operate at LOS E in both the background and total traffic scenarios.



Provide recommendations to bring these turn movements to satisfactory levels.

2040

Levels of service and traffic lanes/traffic control are provided for the 2040 background and 2040 total traffic scenarios in Figure 7b and Figure 9b, respectively. In the 2040 scenarios it has been assumed that US 24 has been widened to six lanes. Additionally, it has been assumed that the southeast-bound laneage on Woodmen Road at the US 24/Woodmen Road intersection reflects the laneage in the US 24 PEL (dual left-turns, single through lane, dual right-turns).

All the signalized intersections are projected to operate at LOS D or better during both peak hours in the 2040 scenarios. The intersection of Woodmen Road/Meridian Road has multiple turning movements that are projected to operate at LOS E in both the background and total traffic scenarios.

QUEUING ANALYSIS

The 95th percentile queues at the intersection of US 24/Woodmen Road along with the queues at the intersection of the proposed Collector and Rio Lane were analyzed to develop laneage on the Collector. Additionally, the maximum queues were analyzed with SimTraffic.

The El Paso County *Engineering Criteria Manual (ECM)* standards were followed to develop turn lane recommendations at the intersections. Figure 10 provides the turn lane conceptual design for the roadway between US 24 and Rio Lane. As shown, it is recommended that the outbound left turn be 250 feet in length, while the outbound right turn should be 200 feet. The southbound left turn onto Rio Lane should be 150 feet in length. Queueing reports are attached.

Although not shown in Figure 10, an alternative design to the intersection with Rio Lane would be a modern roundabout. The southbound left turn lane onto Rio Lane would not be necessary with the roundabout option.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- Falcon Fields is expected to generate about 13,544 new external vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about 265 vehicles would enter and 183 vehicles would exit the site. During the afternoon peak hour approximately 590 vehicles would enter, and 631 vehicles would exit the site.

Required Improvements

- A list of recommended improvements in the study area is presented in Table 4.
- The intersection of US 24/Rio Lane is to be closed and the proposed Collector roads within the site will connect Rio Lane to the US 24/Woodmen intersection.

The short-term improvements assumed at the intersection of US 24/Woodmen Road would include:

- The fourth leg of the intersection with a left-lane, two through-lanes, and right-lane outbound at the site access;
- Raised right-turn islands for pedestrian accessibility;
- Any lane alignment and/or median modifications on the Woodmen side of the intersection (to be determined with preliminary design);
- Signal modifications;
- Auxiliary turn lanes on US Highway 24 to serve the trips/vehicle turning movements associated with the new fourth leg - the development, and the "replacement" Rio Lane connection.

Based on the 2040 total traffic volumes shown in Figure 9a and the criteria contained in the *State of Colorado Highway Access Code*, the following deceleration and acceleration lanes are required on US Highway 24:

- A northeast-bound right-turn deceleration is warranted on US 24 approaching Woodmen Road. Based on a posted speed limit of 55 miles per hour (mph), the prescribed lane length for the deceleration lane is 600 feet long plus a 222-foot taper.
- A southwest-bound left-turn deceleration is warranted on US 24 approaching Woodmen Road. Based on a posted speed limit of 55 miles per hour (mph), the prescribed lane length for the deceleration lane is 600 feet long plus 125 feet of storage and a 222-foot taper.
- A northwest-bound right-turn acceleration is warranted on US 24 east of Woodmen Road. Based on a posted speed limit of 55 miles per hour (mph), the prescribed lane length for the acceleration lane is 960 feet long plus a 222-foot taper.
- Based on the total traffic volumes shown in Figure 9a and the criteria contained in the El Paso County *Engineering Criteria Manual (ECM)*, turn lanes are required on the urban non-residential Collector at the intersection with US 24 and the intersection with Rio Lane. Additional details are provided on Figure 10.

DEVIATIONS TO ECM CRITERIA

The following deviations may be required:

- Intersection spacing along a Non-Residential Collector for the first intersection back from an arterial roadway;
- Access to an Urban Non-Residential Collector;

- Curve Centerline Radius on an Urban, Non-Residential Collector;
- Auxiliary Turn lane length on an Urban Non-Residential Collector.

ROADWAY CLASSIFICATIONS

- The roads proposed for this project would be classified as Urban Non-Residential Collector streets. Please refer to the “Existing Roadways” section above for classification information of existing roads.

MTCP-IDENTIFIED ROADWAY IMPROVEMENT PROJECTS

- The MTCP calls for improvement to US Highway 24 from Garrett Road to Woodmen Road and upgrade to a rural six-lane Principal Arterial.
- Although not in the immediate area, the MTCP calls for an upgrade to Falcon Highway to a two-lane, rural Minor Arterial from US Highway 24 to one mile east of Curtis Road. Also, the MTCP calls for an upgrade to Eastonville Road from McLaughlin to Latigo Blvd. as a rural road upgrade to a two-lane Rural Minor Arterial.

MULTI-MODAL TRANSPORTATION & TDM OPPORTUNITIES

- The project would include urban street sections with sidewalks.
- Figure 10 shows the recommendation for pedestrian crossing of US Highway 24. LSC recommends pedestrian/bicycle trail connections between the US Highway 24 Woodmen intersection to the Rock Island Trail and the existing sidewalks within the existing shopping center areas of Falcon.
- Also, trail connections exist between the Rock Island Trail and the Woodmen Hills neighborhoods to the north of Highway 24.
- A Park & Ride is planned for a site south of US Highway 24 & Woodmen. Future Mountain Metropolitan Transit bus service may be added to/from this Park & Ride location.
- This site is within two miles of Falcon Elementary School. No residential uses are proposed for this development.

COUNTY ROAD IMPROVEMENT FEE PROGRAM

This project would be subject to participation in the County Roadway Improvement Fee Program in the future. However, the site is located within the Woodmen Road Metropolitan District service area.

US HIGHWAY ACCESS MANAGEMENT PLAN

This project will implement part of the US Highway Access Management Plan. There may be available CDOT funds associated with implementing access management plans that could potentially match or at least offset some of the developer infrastructure costs.

* * * * *

Please contact me if you have any questions regarding this report.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.
Principal

JCH:CRG:jas

Enclosures: Tables 3- 4
Figures 1-10
Traffic Count Reports
Level of Service Reports
Queuing Reports

Tables and Figures



Table 3: Detailed Trip Generation Estimate

Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾					Total Trips Generated					Internal Trip %	Internal Trips Generated					External Trips Generated					Pass-By Trips ⁽²⁾	New External Trips Generated Average Weekday Traffic
			Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out		Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out		
Falcon Fields Crossing Trip Generation Estimate																									
820	Shopping Center	233.66 KSF ⁽³⁾	38.32	0.54	0.33	1.81	1.96	8,953	126	77	423	458	4%	358	5	3	17	18	8,595	121	74	406	440	34%	5,673
862	Home Improvement Superstore	175 KSF	30.74	0.89	0.68	1.14	1.19	5,380	157	118	200	208	8%	430	13	9	16	17	4,949	144	109	184	191	48%	2,574
	Total KSF																								
			Total Trip Generation Estimate					14,333	283	196	622	666		788	18	13	33	35	13,544	265	183	590	631		8,247

Notes:
 (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)
 (2) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE
 (3) KSF = one thousand square feet of floor space
 Source: LSC Transportation Consultants, Inc.

The conceptual site plan also shows storage units. Please include this in your trip generation estimate.

This should be with the subdivision (plat)

Table 4: Recommended Improvements

Item #	Improvement	Timing	Responsibility
Roadway Segment Improvements			
1	Construct an Urban Non-Residential Collector street from the Woodmen/US 24 intersection into the site; Construct an Urban Non-Residential Collector street between this "entry" street to existing Rio Lane as per the US Highway 24 Access Management Plan.	With site development	Applicant
2	Upgrade Rio Lane (Falcon Highway to the site) to Urban Local standards; pedestrian facilities would be included in the Urban Local cross section evaluate the roadway for potential traffic calming measures.	Current Traffic Volumes exceed Rural Local Design ADT	Applicant to contribute a proportionate share to El Paso County
3	Widen US Highway 24 to provide three through lanes in each direction.	Shown in 2040 MTCP and the US Highway 24 PEL Study	Master Planned
US 24/Woodmen Road Intersection			
4	Construct a 700 foot-long southwestbound left-turn deceleration lane plus transition taper on US 24 (westbound) approaching Woodmen Road. This requires widening of the box culvert under US 24 just west of the US 24/Rio Lane intersection.	With site development	Applicant
5	Lengthening/extension of the westbound right turn deceleration lane on US Highway 24 at Woodmen Road to CDOT standards (600 feet plus transition taper) with the necessary widening of the box culvert under US 24. The culvert widening should accommodate an extension of the westbound right turn deceleration lane on US Highway 24 to CDOT standards.	With the culvert widening (with the site development)	Should be funded by CDOT. The additional cost associated with the culvert widening for the right turn lane, and the lengthening of the right turn lane itself should not be the responsibility of this applicant. CDOT and/or EPC funds should reimburse the applicant for this improvement if completed as part of this project.
6	Construct a 600 foot-long northeastbound right-turn deceleration lane plus transition taper on US 24 (eastbound) approaching Woodmen Road	With site development	Applicant
7	Construct a 960 foot-long northwestbound left-turn acceleration lane (plus transition taper) on US 24 (eastbound) east of Woodmen Road.	With site development	Applicant
8	Construct the southeast leg of the intersection as an Urban Non-Residential Collector Street with the laneage shown in Figure 10. Lanes need to align across US 24.	With site development	Applicant
9	Modify the northwest leg (Woodmen Road) as needed so lanes align across US 24; Narrow raised median nose to about 6 feet, construct raised/curbed right turn islands for pedestrians and for installing a signal pole on the northeast corner, construct a sidewalk connection to the Rock Island Trail (which connects to the sidewalk along the north side of Woodmen Road adjacent to the Falcon Town Center (Safeway).	With site development	Applicant
10	Traffic signal system modifications, pedestrian accommodations, signing/stripping improvements to convert the existing intersection from a T intersection to a four-leg intersection.	With site development	Applicant
US Highway 24 Right-of-Way Dedication & Preservation			
11	CDOT required Right-of-way Dedication & Preservation along US Highway 24	With the Plat	Applicant
US 24/Rio Lane Intersection			
12	Close intersection and realign Rio Lane	Short-Term	Applicant
Falcon Highway/Rio Lane Intersection			
13	Construct westbound right turn deceleration lane	Once westbound right turning volume exceeds 50 right turning vehicles per hour. (Volume may already exceed this threshold)	Applicant/El Paso County

Source: LSC Transportation Consultants, Inc. (9-20-2019)

This should be just by the applicant.



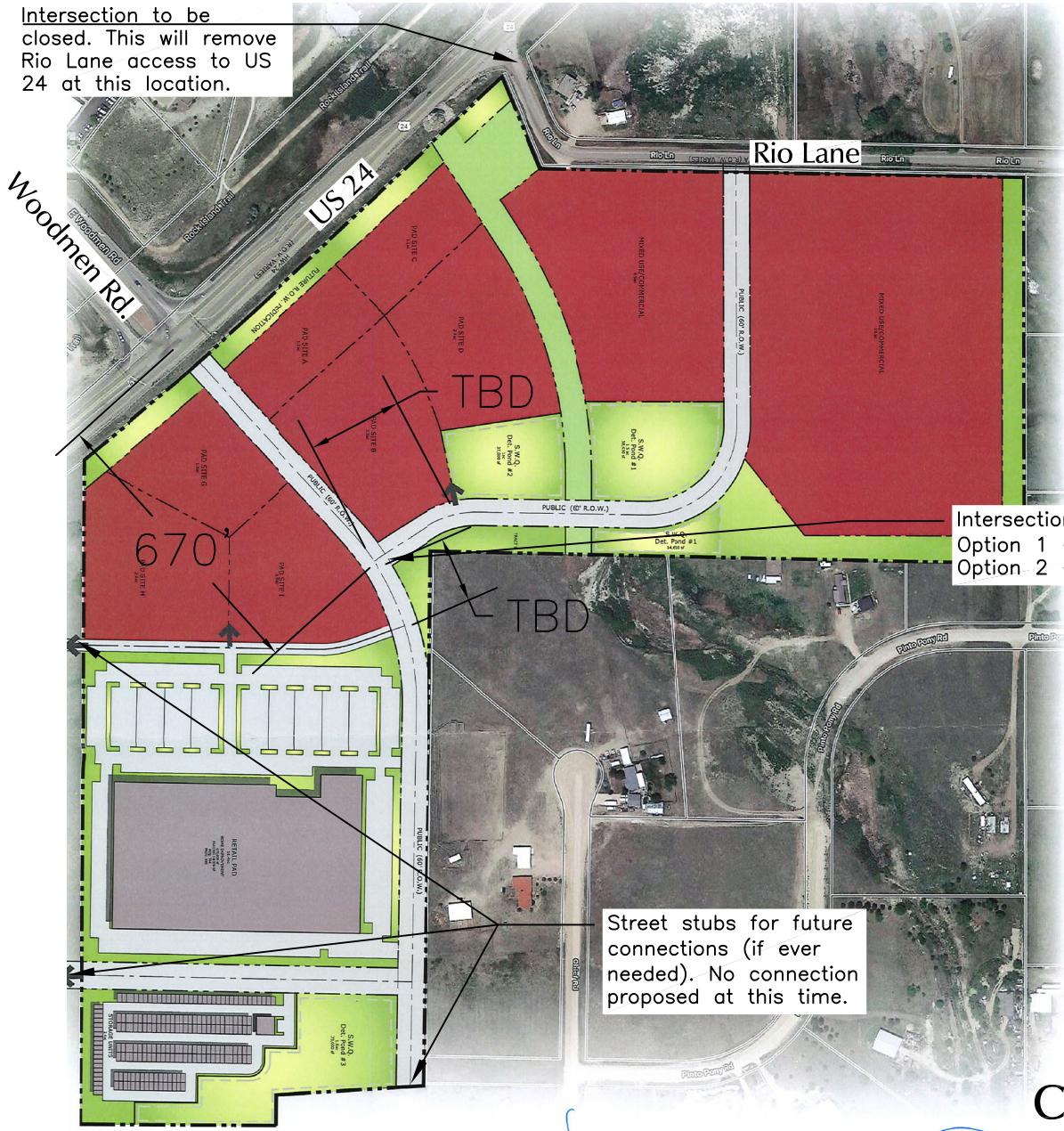
Figure 1

Vicinity Map

Falcon Fields (LSC# 184560)



Intersection to be closed. This will remove Rio Lane access to US 24 at this location.

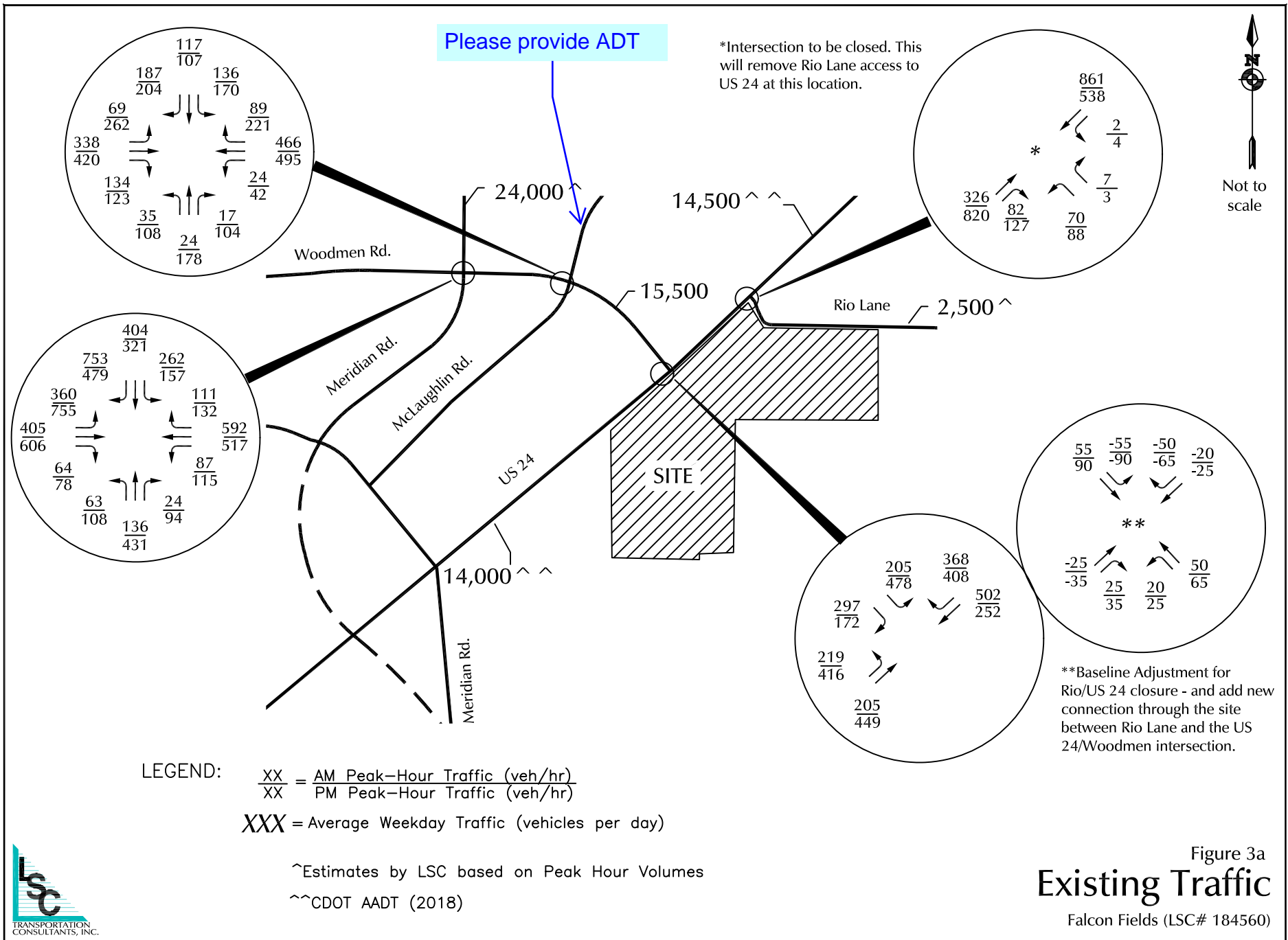


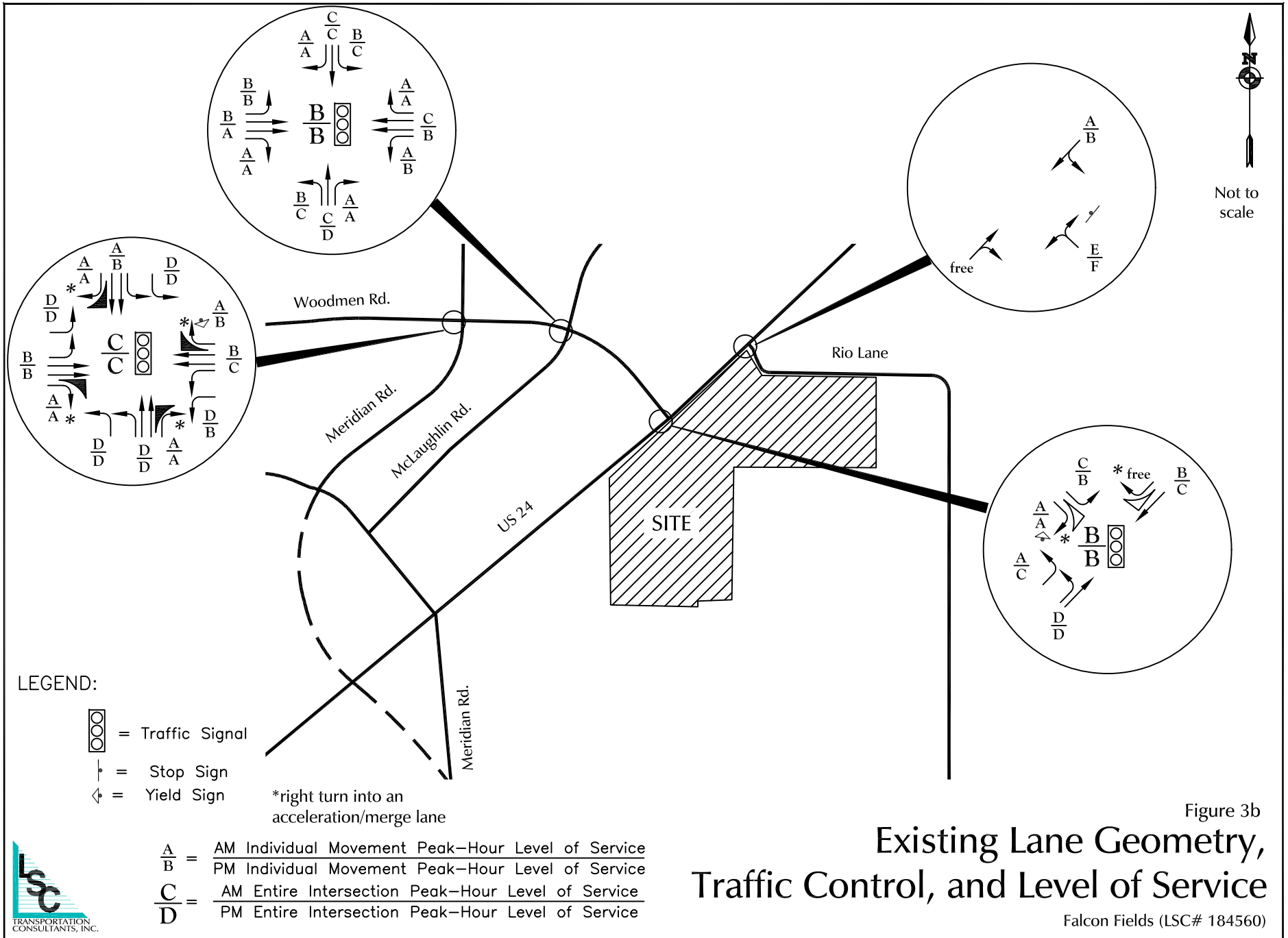
Intersection Alternatives:
Option 1 - T Intersection (depicted)
Option 2 - Modern Roundabout

Street stubs for future connections (if ever needed). No connection proposed at this time.

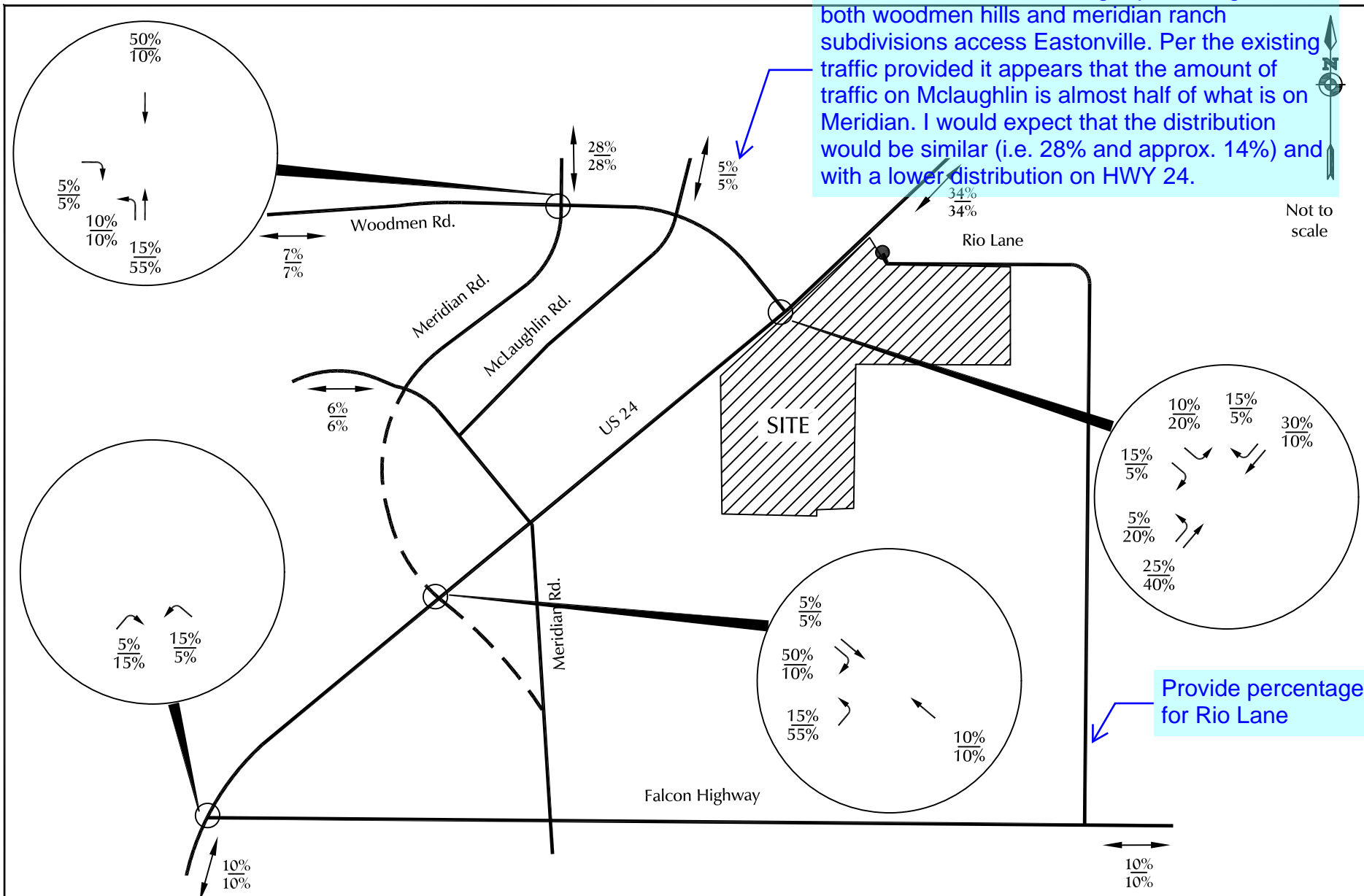
North arrow pointing up.
Not to scale

Figure 2
Conceptual Site Plan
Falcon Fields (LSC# 184560)





McLaughlin Rd connects to Eastonville Rd. I believe this should be a larger percentage as both woodmen hills and meridian ranch subdivisions access Eastonville. Per the existing traffic provided it appears that the amount of traffic on Mclaughlin is almost half of what is on Meridian. I would expect that the distribution would be similar (i.e. 28% and approx. 14%) and with a lower distribution on HWY 24.



Not to scale

Provide percentages for Rio Lane

LEGEND:

$\frac{XX}{XX}$ = AM Percent Directional Distribution
 $\frac{XX}{XX}$ = PM Percent Directional Distribution

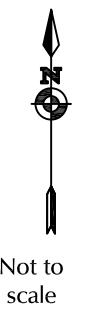
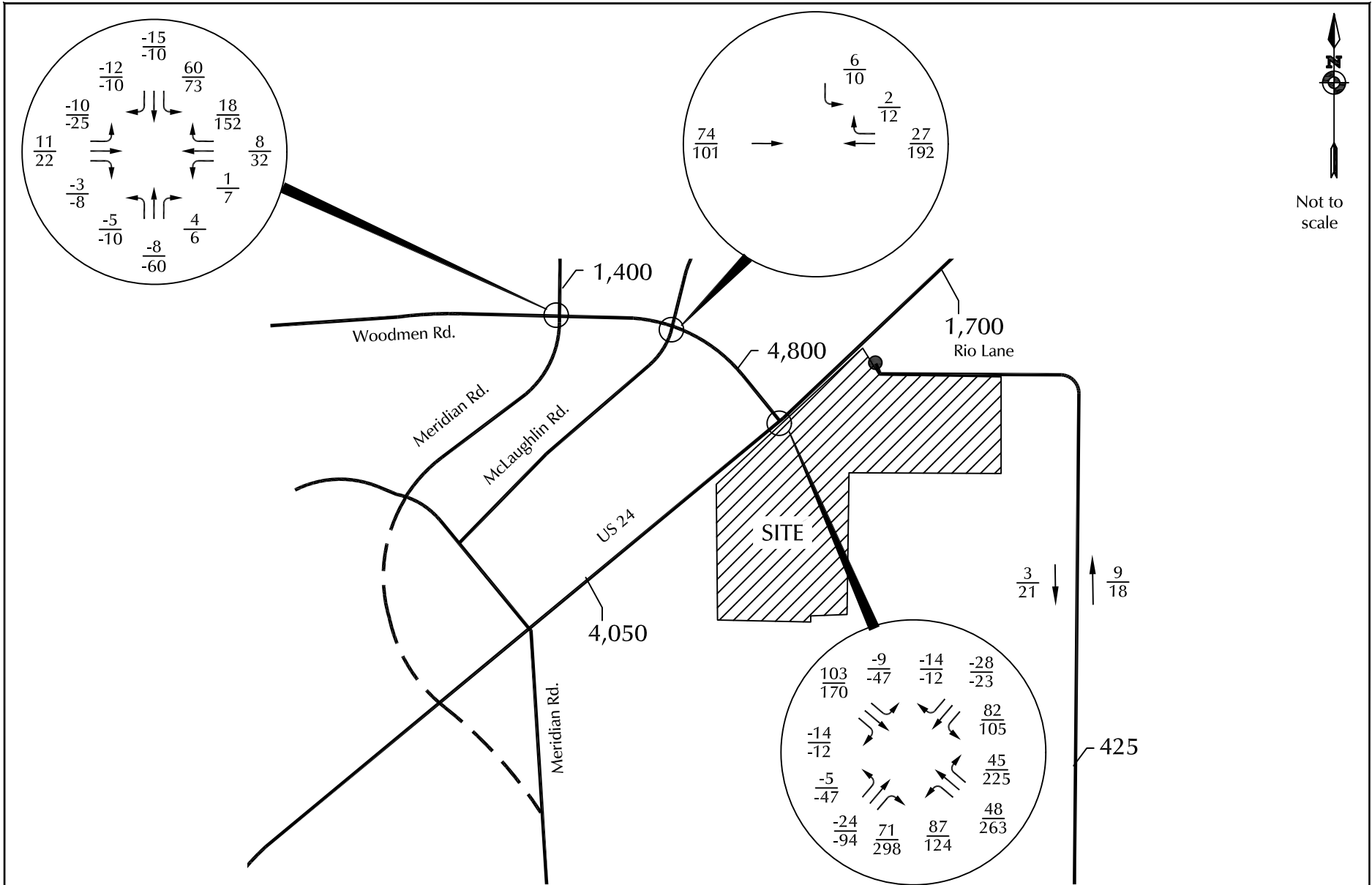
Note: percentages in the circles at the intersections represent the % passby and diverted trip percentages.

Directional Distribution

Figure 4

Falcon Fields (LSC# 184560)





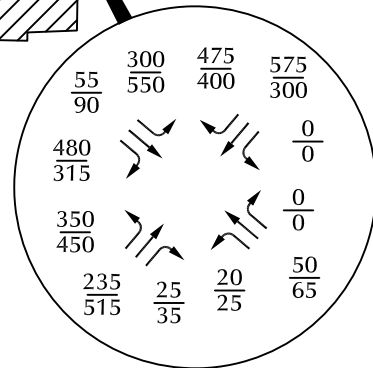
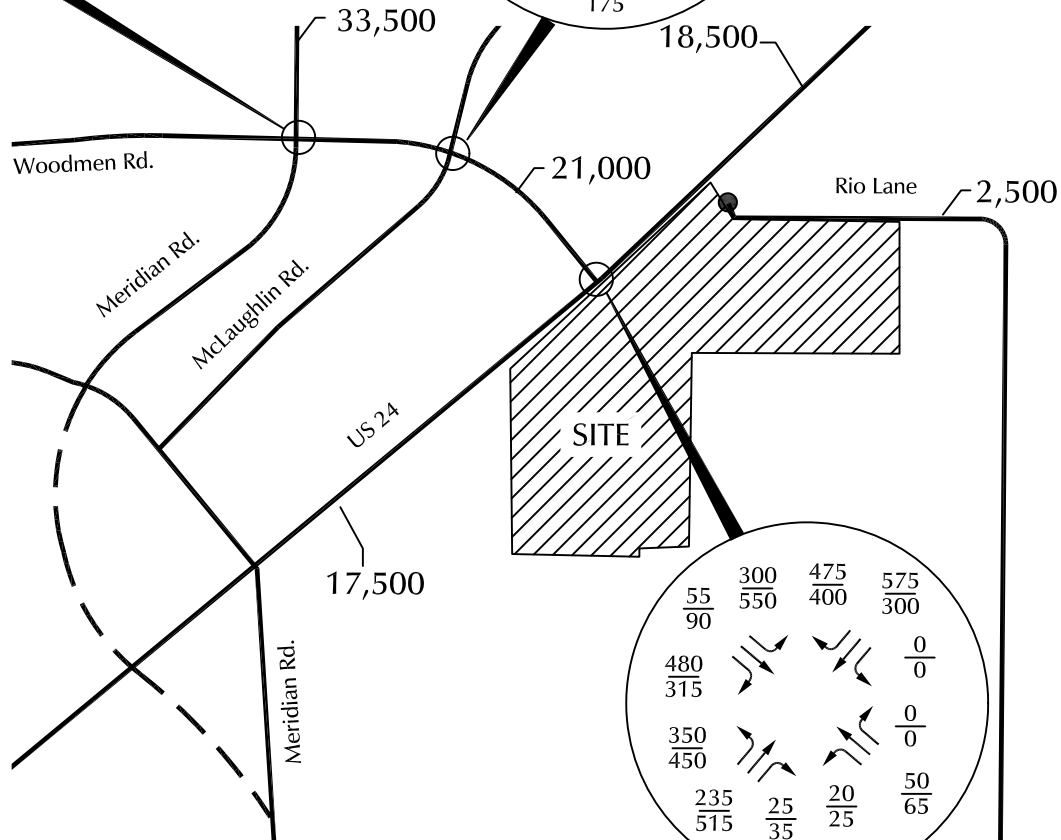
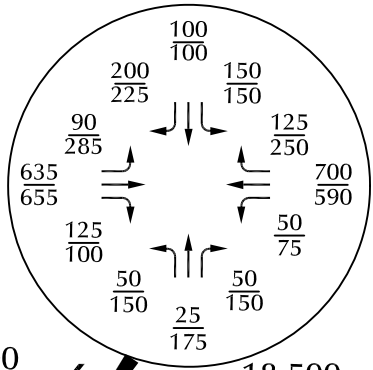
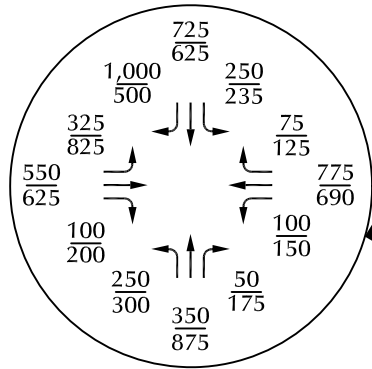
LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)

XXX = Average Weekday Traffic (vehicles per day)

Figure 5
Site-Generated Traffic

Falcon Fields (LSC# 184560)



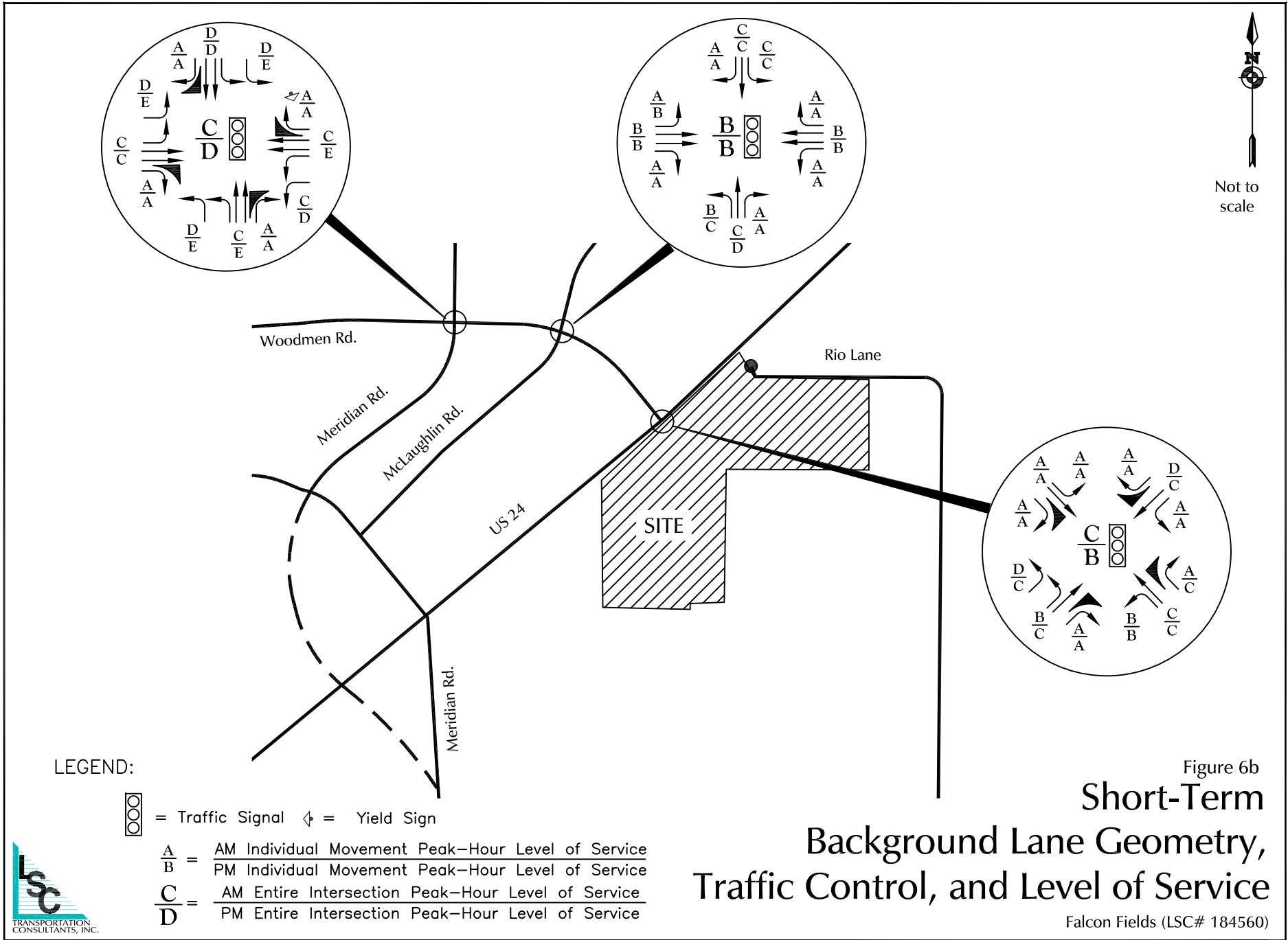


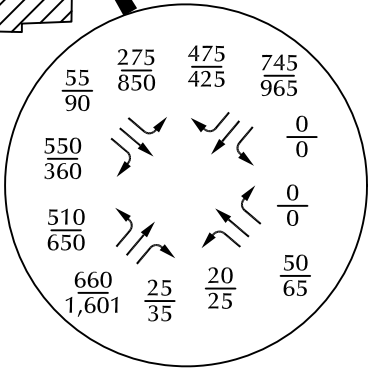
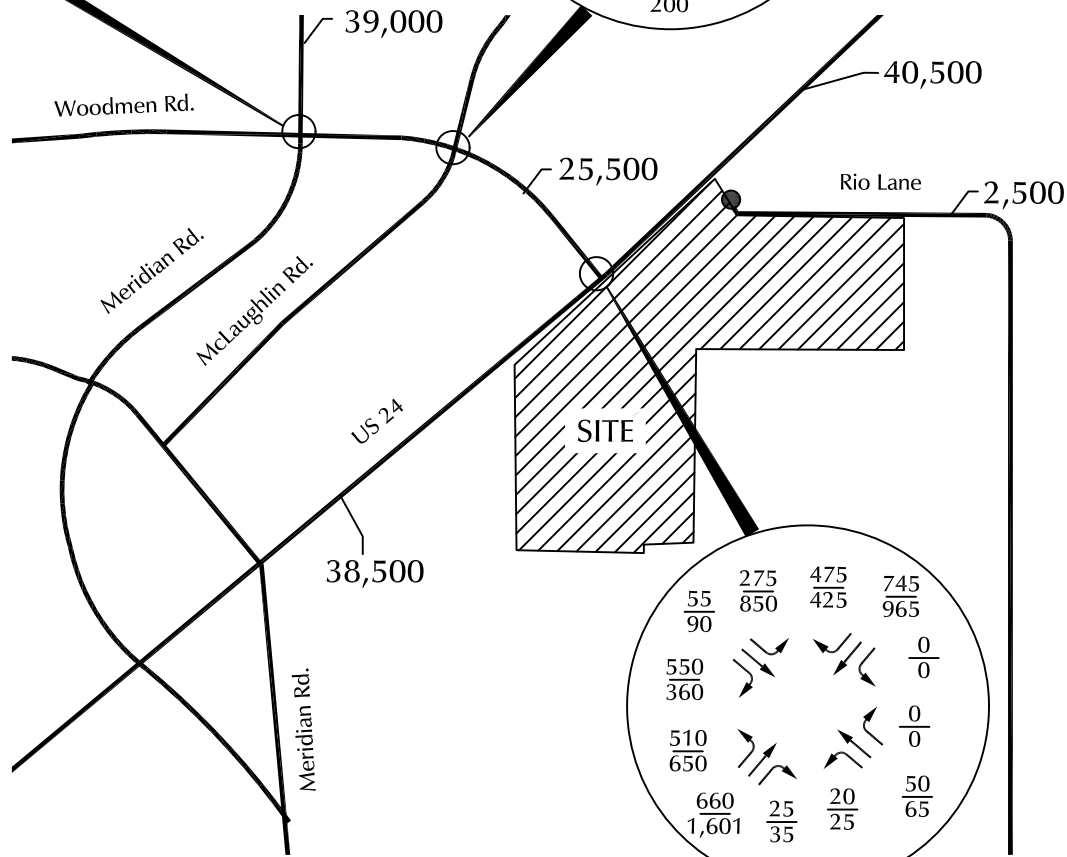
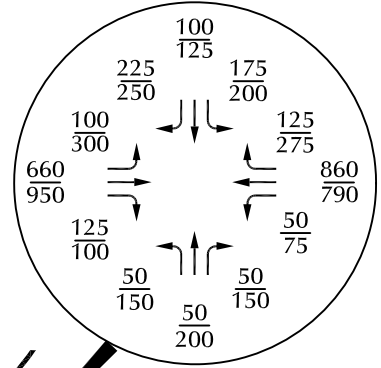
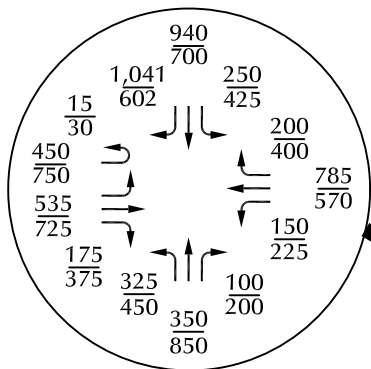
Not to scale

LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)
 XXX = Average Weekday Traffic (veh/hr)

Figure 6a
Short-Term Background Traffic

Falcon Fields (LSC# 184560)

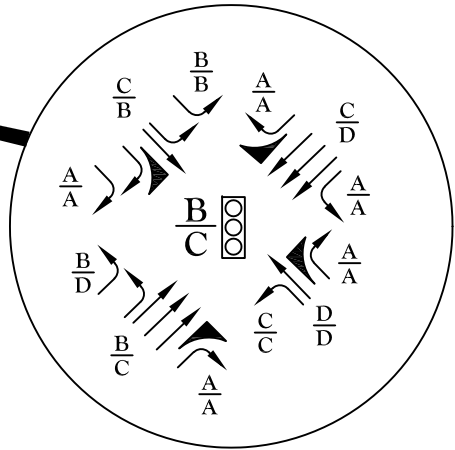
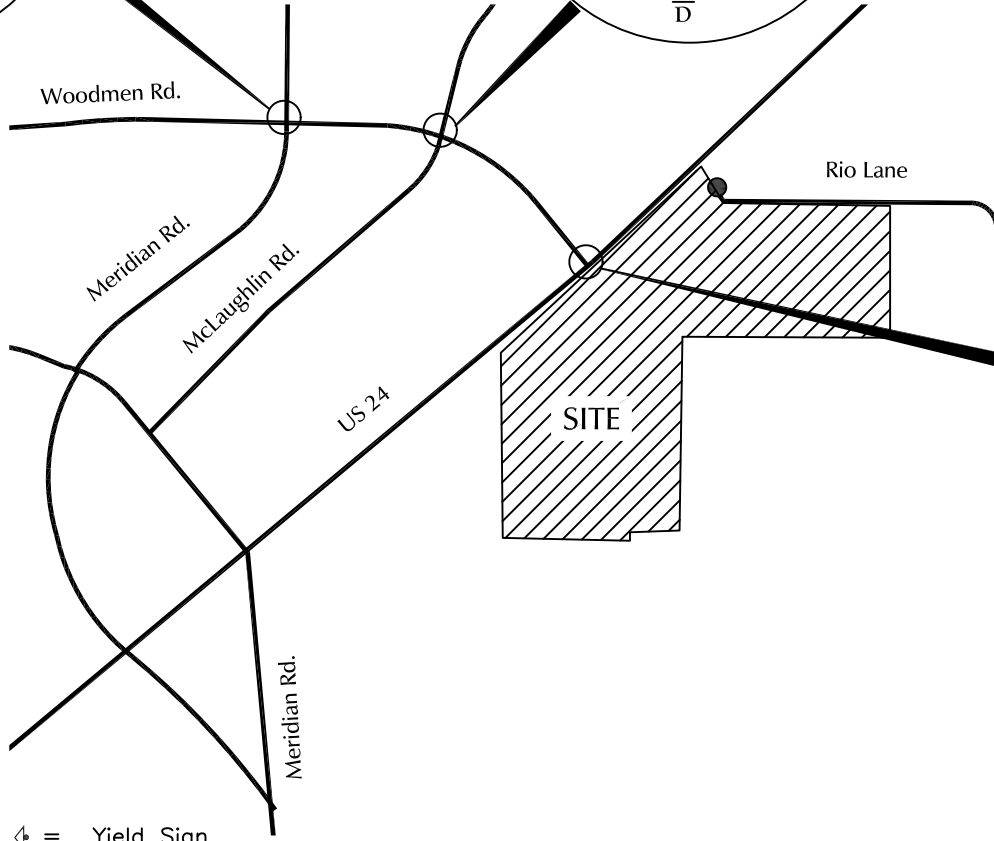
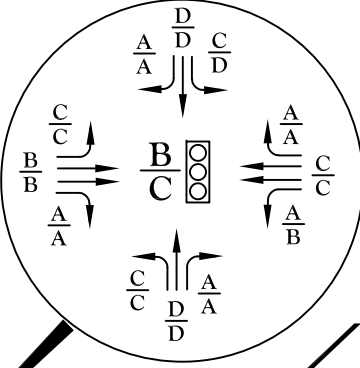
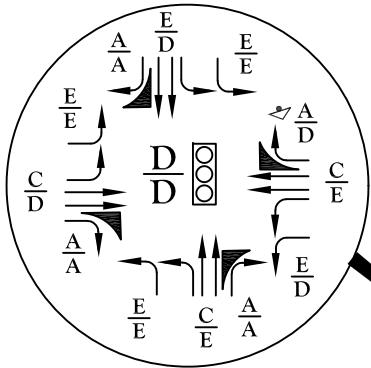
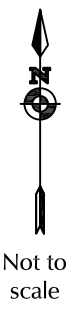




LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)
 XXX = Average Weekday Traffic (veh/hr)

Figure 7a
2040 Background Traffic
 Falcon Fields (LSC# 184560)





LEGEND:

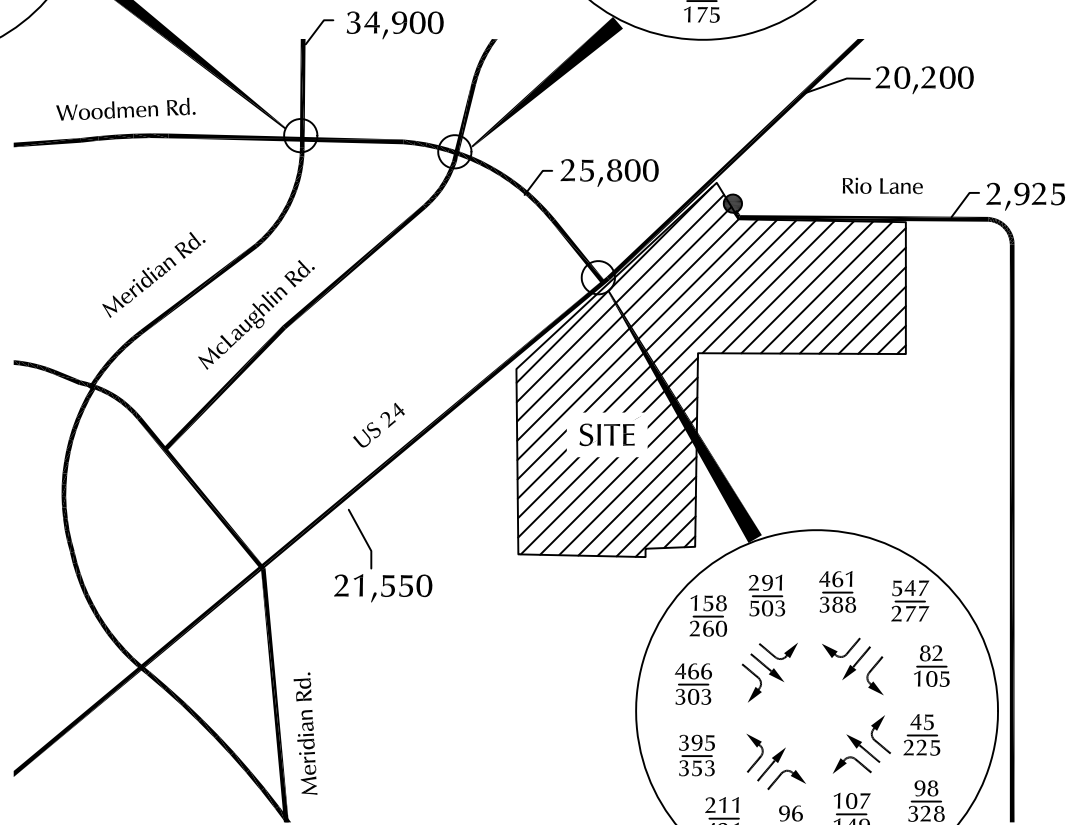
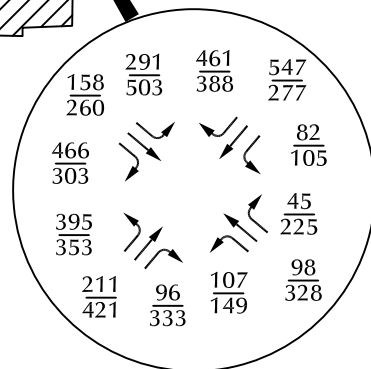
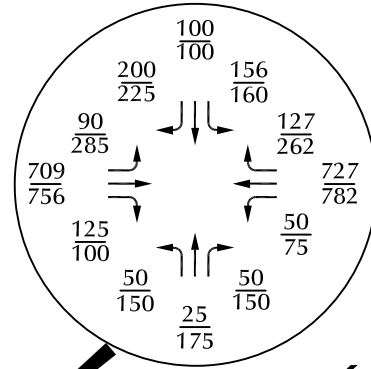
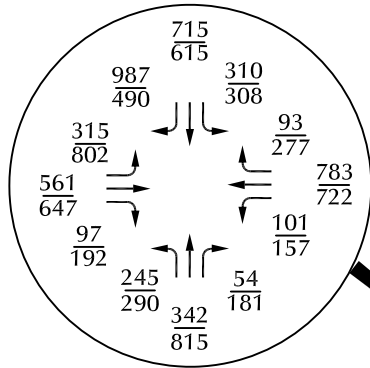


- $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
PM Individual Movement Peak-Hour Level of Service
- $\frac{C}{D}$ = AM Entire Intersection Peak-Hour Level of Service
PM Entire Intersection Peak-Hour Level of Service

Figure 7b
**2040 Background
 Lane Geometry, Traffic
 Control, and Level of Service**

Falcon Fields (LSC# 184560)





LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)
 XXX = Average Weekday Traffic (veh/hr)

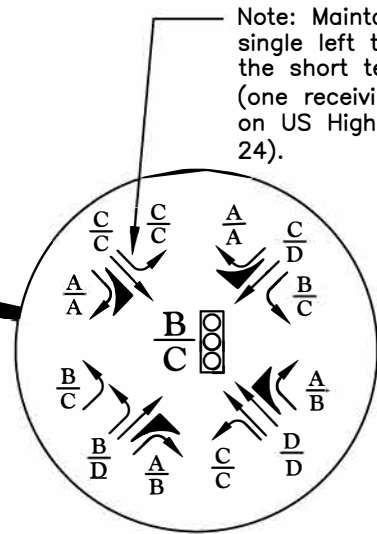
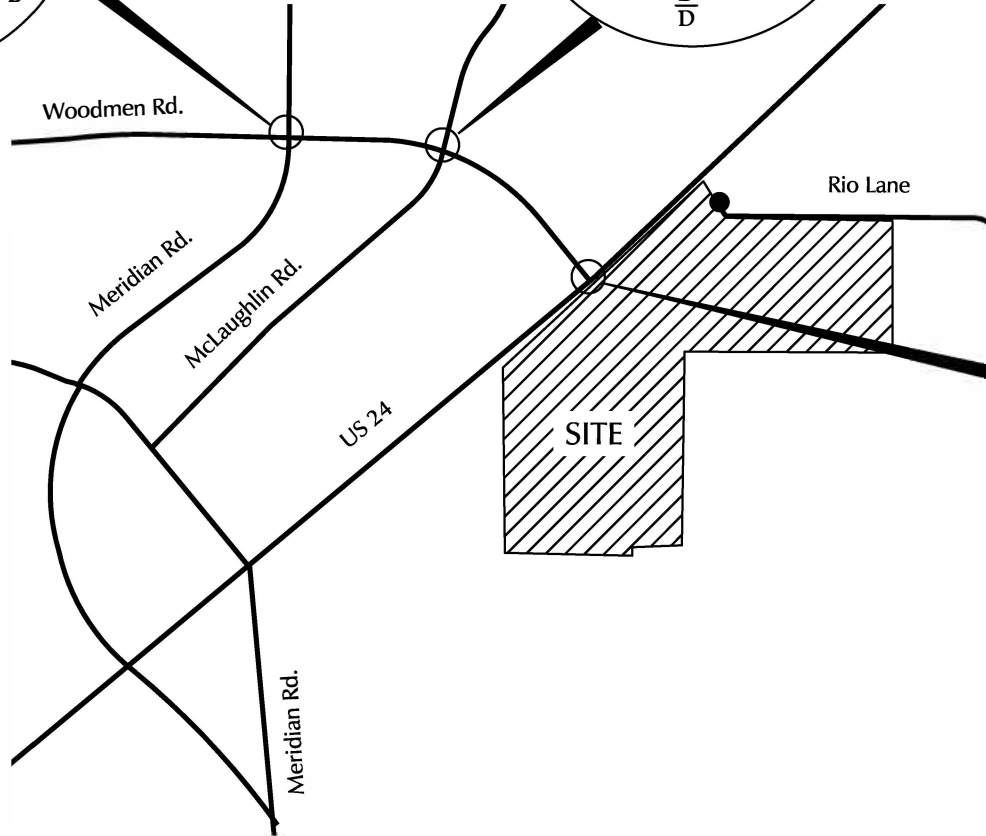
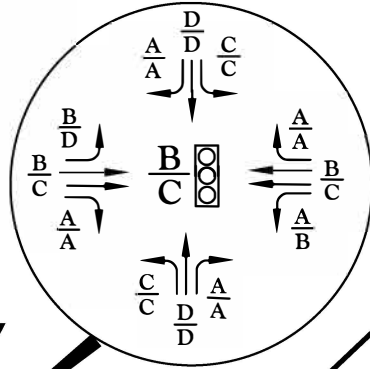
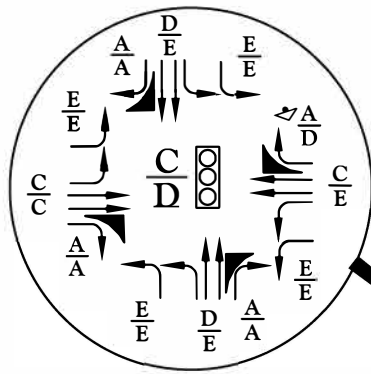
Figure 8a
Short-Term Total Traffic

Falcon Fields (LSC# 184560)





Not to scale



Note: Maintain single left turn in the short term (one receiving lane on US Highway 24).

LEGEND:



= Traffic Signal



= Yield Sign

$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service

PM Individual Movement Peak-Hour Level of Service

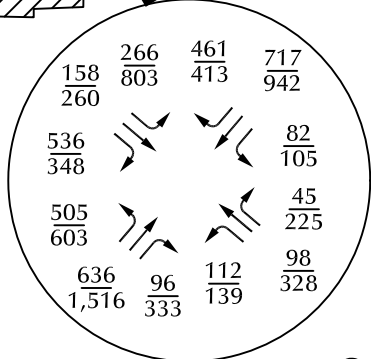
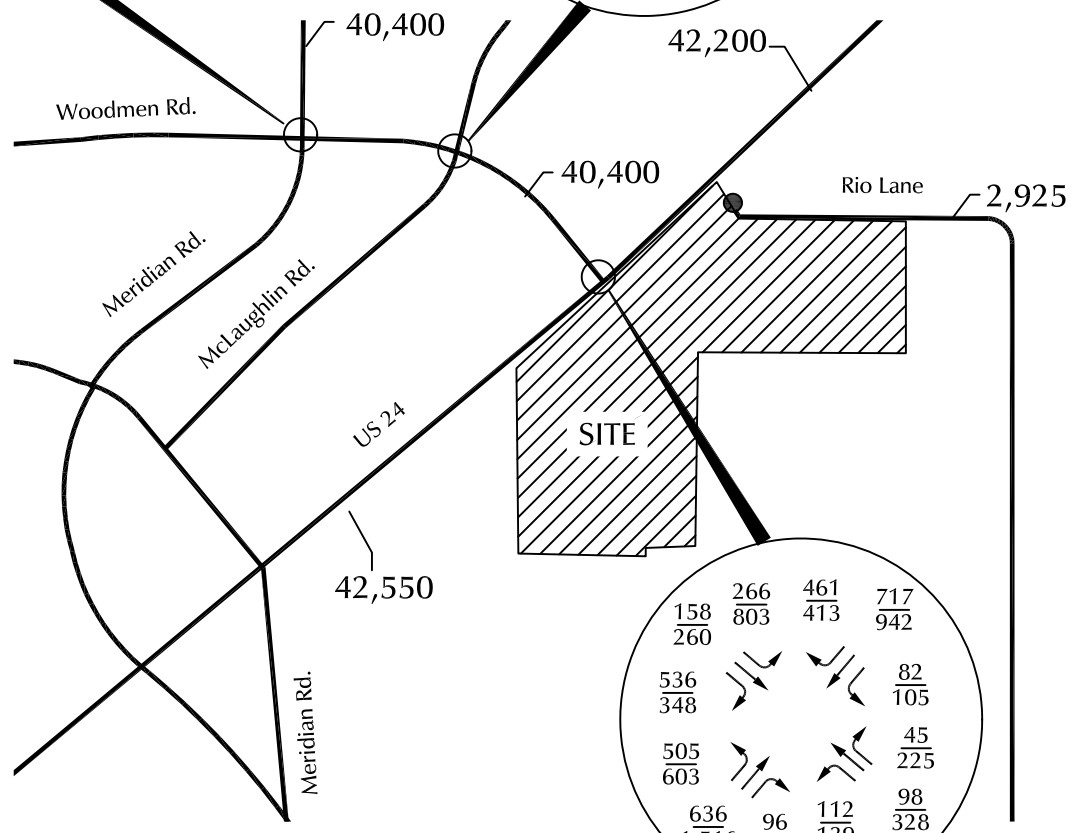
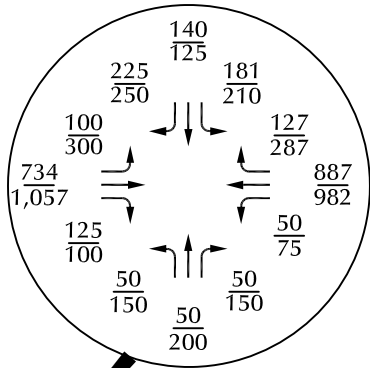
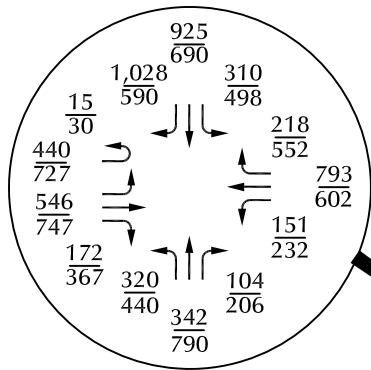
$\frac{C}{D}$ = AM Entire Intersection Peak-Hour Level of Service

PM Entire Intersection Peak-Hour Level of Service



Figure 8b
Short-Term Total Lane Geometry, Traffic Control, and Level of Service

Falcon Fields (LSC# 184560)



Not to scale

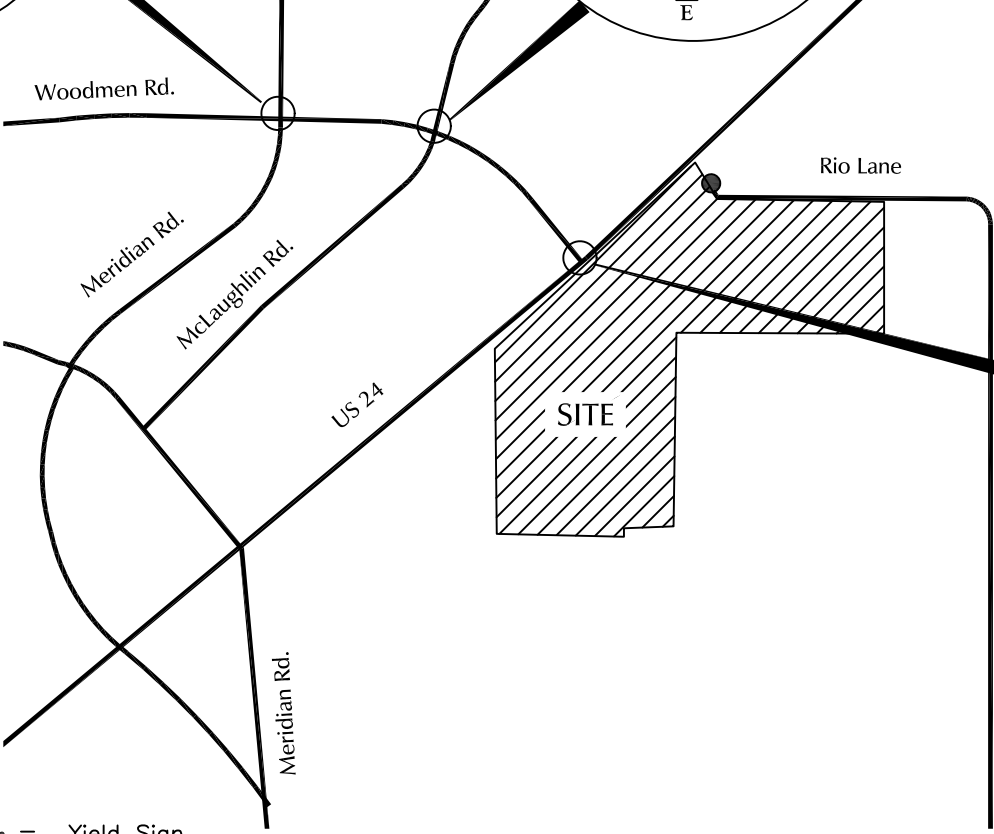
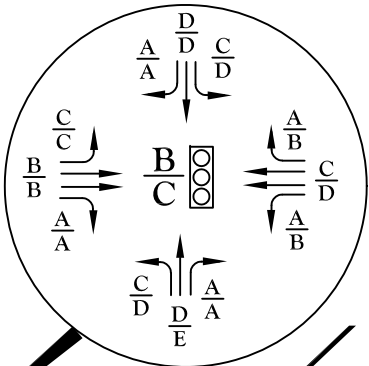
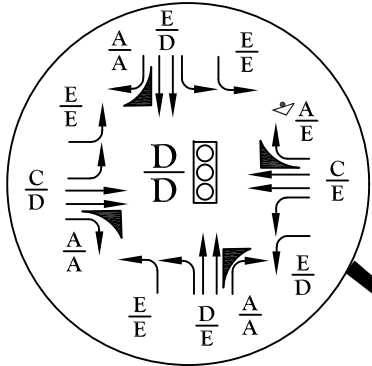
LEGEND: $\frac{XX}{XX}$ = AM Peak-Hour Traffic (veh/hr)
 $\frac{XX}{XX}$ = PM Peak-Hour Traffic (veh/hr)
 XXX = Average Weekday Traffic (veh/hr)

Figure 9a
2040 Total Traffic
 Falcon Fields (LSC# 184560)

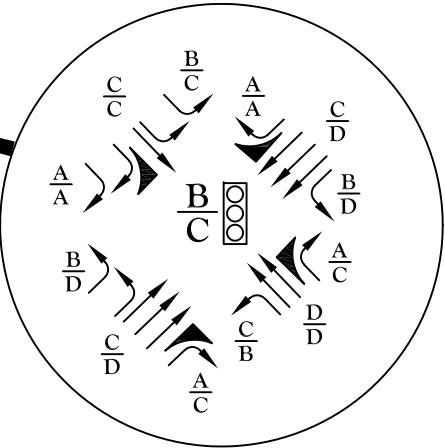




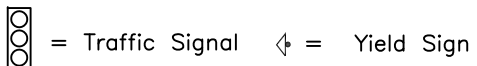
Not to scale



Note: please refer to Figure 10 for a more detailed laneage exhibit.



LEGEND:

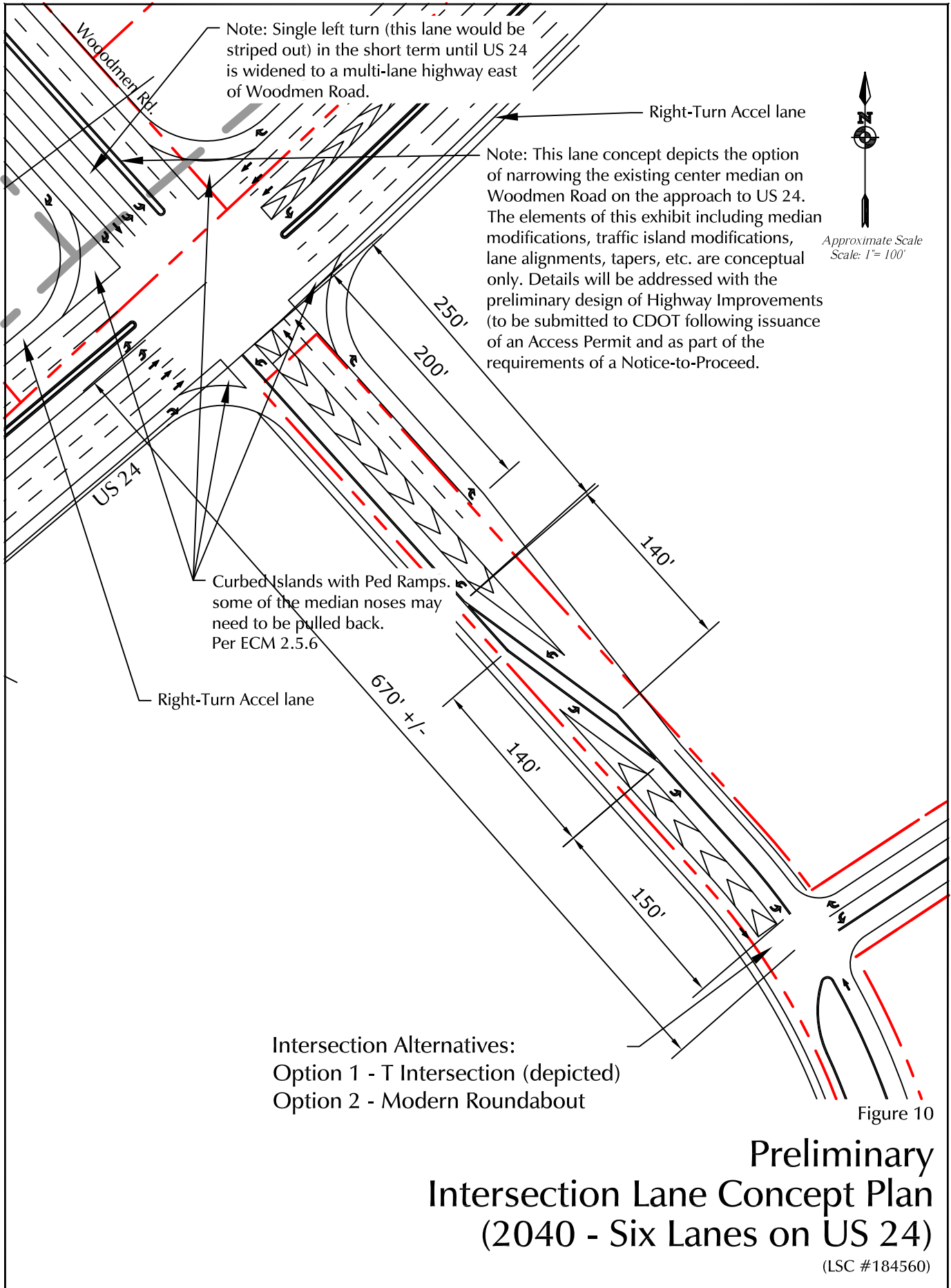


- $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
PM Individual Movement Peak-Hour Level of Service
- $\frac{C}{D}$ = AM Entire Intersection Peak-Hour Level of Service
PM Entire Intersection Peak-Hour Level of Service

Figure 9b
2040 Total Lane Geometry, Traffic Control, and Level of Service

Falcon Fields (LSC# 184560)





Traffic Counts



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd - Woodmen Rd AM

Site Code : 184390

Start Date : 05/24/2018

Page No : 1

Groups Printed- Unshifted

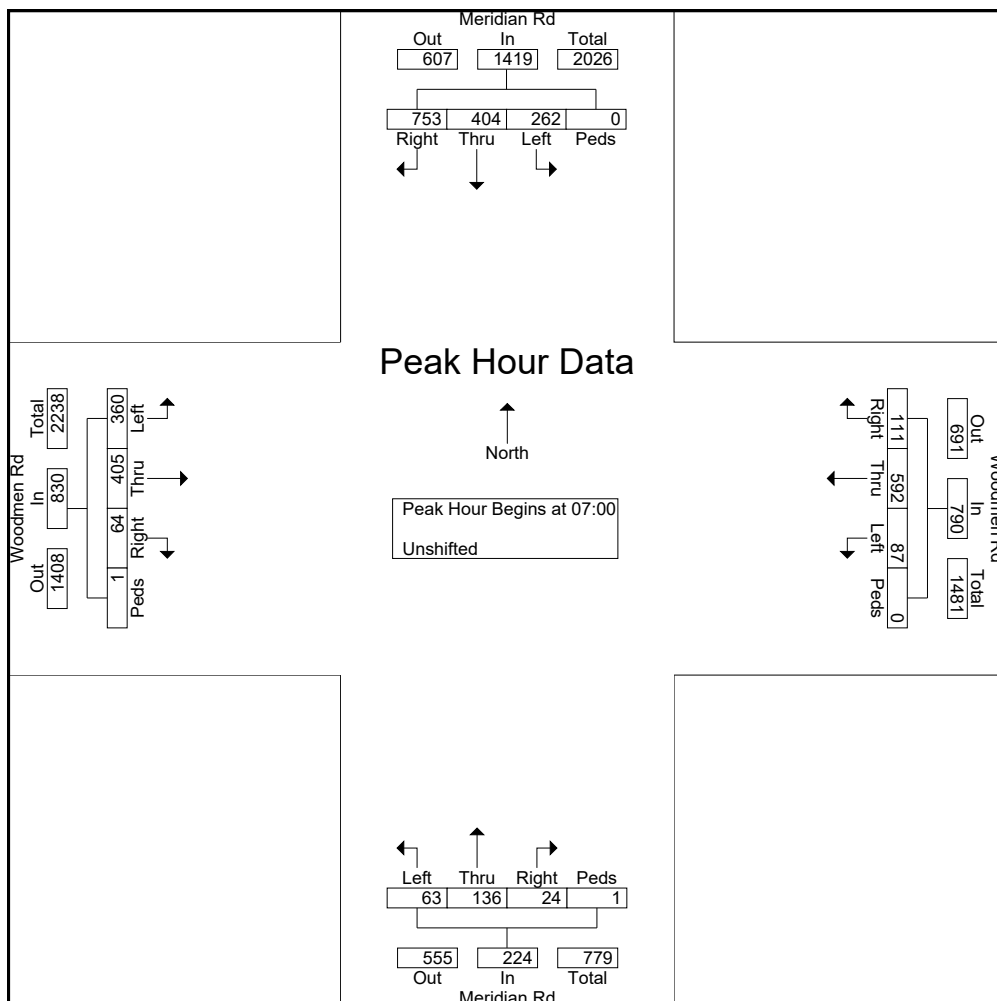
Start Time	Meridian Rd Southbound					Woodmen Rd Westbound					Meridian Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:30	16	38	84	0	138	1	69	9	0	79	7	8	1	0	16	37	35	4	0	76	309
06:45	61	95	139	1	296	12	135	30	0	177	13	26	3	0	42	58	92	18	0	168	683
Total	77	133	223	1	434	13	204	39	0	256	20	34	4	0	58	95	127	22	0	244	992
07:00	72	98	174	0	344	30	137	32	0	199	12	22	6	0	40	87	121	18	1	227	810
07:15	81	100	232	0	413	21	164	31	0	216	15	30	4	0	49	92	90	19	0	201	879
07:30	51	104	216	0	371	17	196	20	0	233	18	34	4	1	57	84	104	17	0	205	866
07:45	58	102	131	0	291	19	95	28	0	142	18	50	10	0	78	97	90	10	0	197	708
Total	262	404	753	0	1419	87	592	111	0	790	63	136	24	1	224	360	405	64	1	830	3263
08:00	43	75	150	0	268	13	109	27	0	149	15	24	7	0	46	103	90	24	0	217	680
08:15	40	60	143	0	243	17	139	22	0	178	19	27	7	2	55	94	56	17	0	167	643

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Meridian Rd - Woodmen Rd AM
 Site Code : 184390
 Start Date : 05/24/2018
 Page No : 3

Start Time	Meridian Rd Southbound					Woodmen Rd Westbound					Meridian Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	72	98	174	0	344	30	137	32	0	199	12	22	6	0	40	87	121	18	1	227	810
07:15	81	100	232	0	413	21	164	31	0	216	15	30	4	0	49	92	90	19	0	201	879
07:30	51	104	216	0	371	17	196	20	0	233	18	34	4	1	57	84	104	17	0	205	866
07:45	58	102	131	0	291	19	95	28	0	142	18	50	10	0	78	97	90	10	0	197	708
Total Volume	262	404	753	0	1419	87	592	111	0	790	63	136	24	1	224	360	405	64	1	830	3263
% App. Total	18.5	28.5	53.1	0		11	74.9	14.1	0		28.1	60.7	10.7	0.4		43.4	48.8	7.7	0.1		
PHF	.809	.971	.811	.000	.859	.725	.755	.867	.000	.848	.875	.680	.600	.250	.718	.928	.837	.842	.250	.914	.928



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd - Woodmen Rd PM

Site Code : 184390

Start Date : 05/24/2018

Page No : 1

Groups Printed- Unshifted

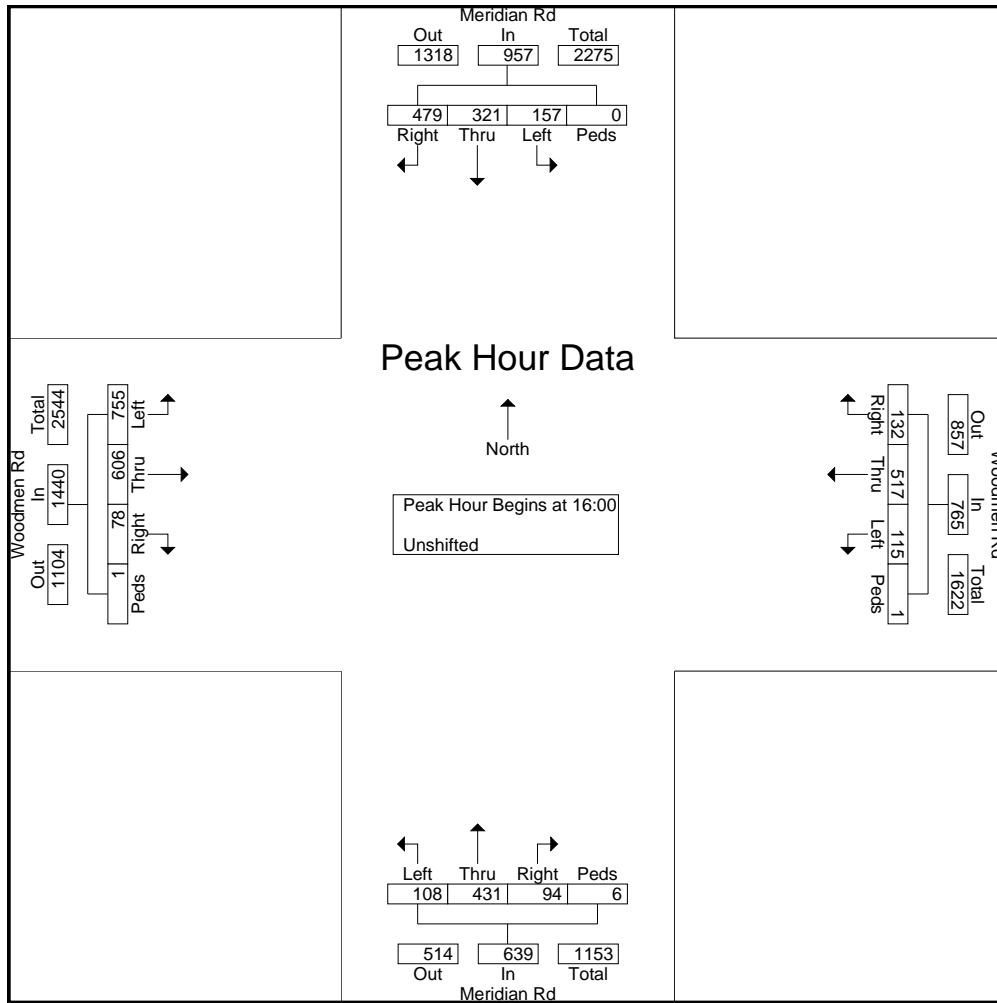
Start Time	Meridian Rd Southbound					Woodmen Rd Westbound					Meridian Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
16:00	41	86	117	0	244	14	131	29	0	174	23	111	26	2	162	187	127	8	1	323	903
16:15	37	86	115	0	238	34	105	37	0	176	30	112	23	0	165	187	169	21	0	377	956
16:30	38	70	111	0	219	38	170	22	0	230	23	111	17	2	153	191	164	19	0	374	976
16:45	41	79	136	0	256	29	111	44	1	185	32	97	28	2	159	190	146	30	0	366	966
Total	157	321	479	0	957	115	517	132	1	765	108	431	94	6	639	755	606	78	1	1440	3801
17:00	29	72	113	0	214	30	133	52	0	215	21	89	30	2	142	147	140	23	0	310	881
17:15	47	78	95	0	220	60	84	34	0	178	25	121	22	3	171	185	150	32	0	367	936
17:30	34	68	104	0	206	47	79	32	0	158	18	102	26	2	148	222	166	26	0	414	926
17:45	34	58	94	0	186	37	106	40	0	183	20	81	15	2	118	157	151	18	0	326	813
Total	144	276	406	0	826	174	402	158	0	734	84	393	93	9	579	711	607	99	0	1417	3556

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Meridian Rd - Woodmen Rd PM
 Site Code : 184390
 Start Date : 05/24/2018
 Page No : 3

Start Time	Meridian Rd Southbound					Woodmen Rd Westbound					Meridian Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	41	86	117	0	244	14	131	29	0	174	23	111	26	2	162	187	127	8	1	323	903
16:15	37	86	115	0	238	34	105	37	0	176	30	112	23	0	165	187	169	21	0	377	956
16:30	38	70	111	0	219	38	170	22	0	230	23	111	17	2	153	191	164	19	0	374	976
16:45	41	79	136	0	256	29	111	44	1	185	32	97	28	2	159	190	146	30	0	366	966
Total Volume	157	321	479	0	957	115	517	132	1	765	108	431	94	6	639	755	606	78	1	1440	3801
% App. Total	16.4	33.5	50.1	0		15	67.6	17.3	0.1		16.9	67.4	14.7	0.9		52.4	42.1	5.4	0.1		
PHF	.957	.933	.881	.000	.935	.757	.760	.750	.250	.832	.844	.962	.839	.750	.968	.988	.896	.650	.250	.955	.974





LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd AM

Site Code : 184560

Start Date : 7/17/2019

Page No : 1

Groups Printed- Unshifted

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
06:30 AM	24	26	21	0	71	3	64	10	0	77	3	5	3	0	11	7	74	28	0	109	268
06:45 AM	23	23	15	0	61	3	69	11	0	83	4	6	3	0	13	8	76	26	0	110	267
Total	47	49	36	0	132	6	133	21	0	160	7	11	6	0	24	15	150	54	0	219	535
07:00 AM	32	30	44	0	106	3	103	14	0	120	7	6	4	0	17	9	98	36	0	143	386
07:15 AM	43	29	57	0	129	4	119	20	1	144	12	5	2	0	19	15	78	40	0	133	425
07:30 AM	39	33	45	0	117	8	143	23	0	174	5	5	3	0	13	19	94	28	0	141	445
07:45 AM	22	25	41	0	88	9	101	32	0	142	11	8	8	0	27	26	68	30	0	124	381
Total	136	117	187	0	440	24	466	89	1	580	35	24	17	0	76	69	338	134	0	541	1637
08:00 AM	29	24	43	0	96	7	94	24	0	125	6	9	6	0	21	24	81	15	0	120	362
08:15 AM	28	20	38	0	86	5	89	19	0	113	12	14	6	0	32	17	74	23	0	114	345
Grand Total	240	210	304	0	754	42	782	153	1	978	60	58	35	0	153	125	643	226	0	994	2879
Apprch %	31.8	27.9	40.3	0		4.3	80	15.6	0.1		39.2	37.9	22.9	0		12.6	64.7	22.7	0		
Total %	8.3	7.3	10.6	0	26.2	1.5	27.2	5.3	0	34	2.1	2	1.2	0	5.3	4.3	22.3	7.8	0	34.5	

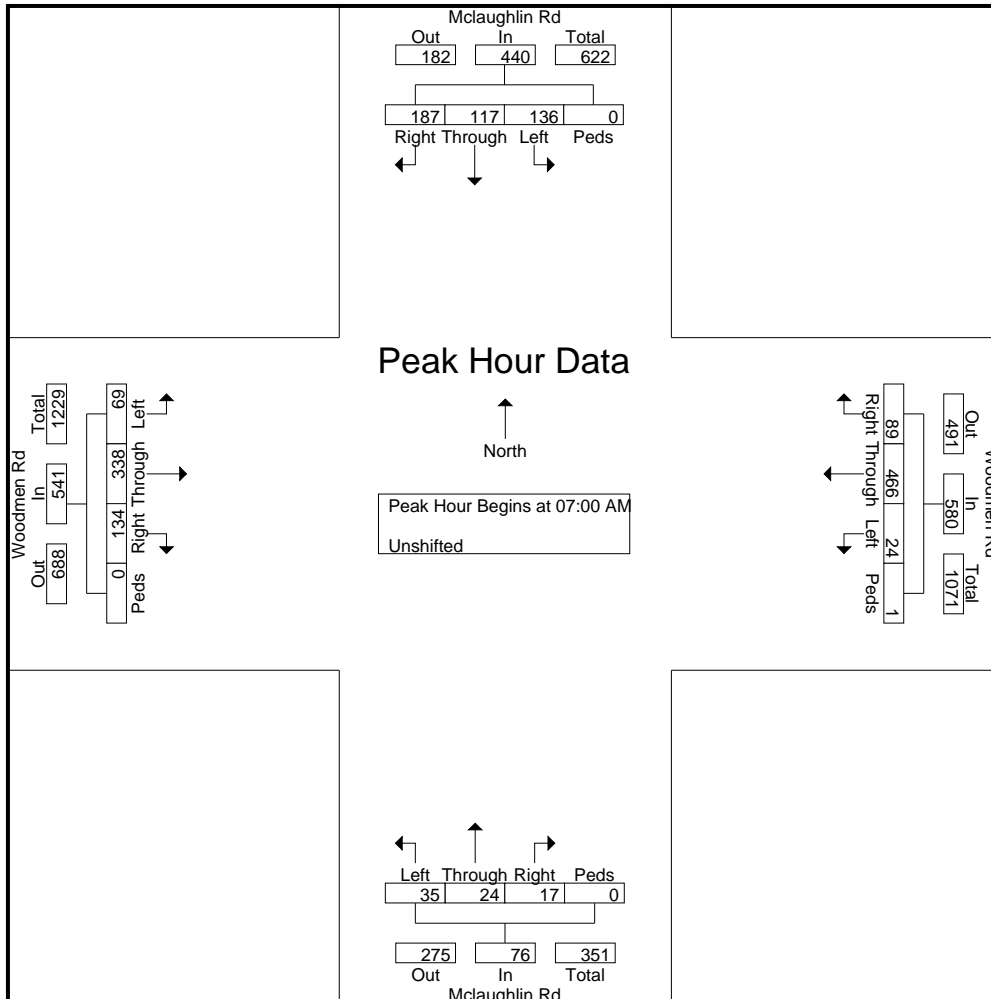


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545 E Pikes Peak Ave, Suite 210
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 719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd AM
 Site Code : 184560
 Start Date : 7/17/2019
 Page No : 2

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	32	30	44	0	106	3	103	14	0	120	7	6	4	0	17	9	98	36	0	143	386
07:15 AM	43	29	57	0	129	4	119	20	1	144	12	5	2	0	19	15	78	40	0	133	425
07:30 AM	39	33	45	0	117	8	143	23	0	174	5	5	3	0	13	19	94	28	0	141	445
07:45 AM	22	25	41	0	88	9	101	32	0	142	11	8	8	0	27	26	68	30	0	124	381
Total Volume	136	117	187	0	440	24	466	89	1	580	35	24	17	0	76	69	338	134	0	541	1637
% App. Total	30.9	26.6	42.5	0		4.1	80.3	15.3	0.2		46.1	31.6	22.4	0		12.8	62.5	24.8	0		
PHF	.791	.886	.820	.000	.853	.667	.815	.695	.250	.833	.729	.750	.531	.000	.704	.663	.862	.838	.000	.946	.920



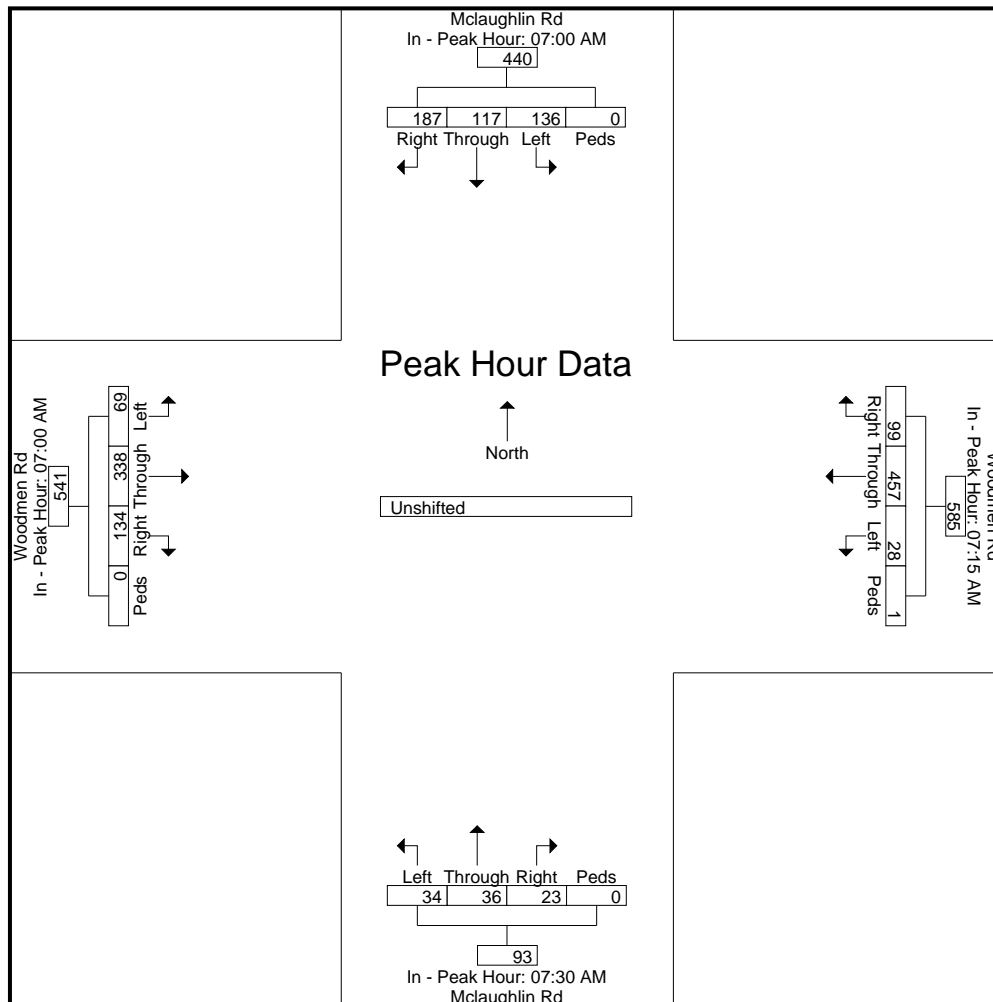


LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd AM
 Site Code : 184560
 Start Date : 7/17/2019
 Page No : 3

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00 AM					07:15 AM					07:30 AM					07:00 AM					
+0 mins.	32	30	44	0	106	4	119	20	1	144	5	5	3	0	13	9	98	36	0	143	
+15 mins.	43	29	57	0	129	8	143	23	0	174	11	8	8	0	27	15	78	40	0	133	
+30 mins.	39	33	45	0	117	9	101	32	0	142	6	9	6	0	21	19	94	28	0	141	
+45 mins.	22	25	41	0	88	7	94	24	0	125	12	14	6	0	32	26	68	30	0	124	
Total Volume	136	117	187	0	440	28	457	99	1	585	34	36	23	0	93	69	338	134	0	541	
% App. Total	30.9	26.6	42.5	0		4.8	78.1	16.9	0.2		36.6	38.7	24.7	0		12.8	62.5	24.8	0		
PHF	.791	.886	.820	.000	.853	.778	.799	.773	.250	.841	.708	.643	.719	.000	.727	.663	.862	.838	.000	.946	





LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd PM
 Site Code : 184560
 Start Date : 7/16/2019
 Page No : 1

Groups Printed- Unshifted

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
04:00 PM	32	22	26	0	80	6	110	38	0	154	12	40	12	0	64	32	86	15	0	133	431
04:15 PM	47	29	49	0	125	16	118	50	0	184	24	37	25	0	86	62	102	16	0	180	575
04:30 PM	56	36	50	0	142	10	131	37	0	178	20	52	24	0	96	71	110	27	0	208	624
04:45 PM	46	25	50	0	121	6	136	46	0	188	23	34	20	0	77	69	113	34	0	216	602
Total	181	112	175	0	468	38	495	171	0	704	79	163	81	0	323	234	411	92	0	737	2232
05:00 PM	34	32	55	1	122	16	128	68	0	212	22	39	36	0	97	62	87	24	1	174	605
05:15 PM	47	25	50	0	122	12	107	53	0	172	25	50	27	0	102	63	99	30	0	192	588
05:30 PM	43	25	49	0	117	8	124	54	0	186	38	55	21	0	114	68	121	35	0	224	641
05:45 PM	57	37	44	1	139	10	80	57	3	150	26	39	20	0	85	69	119	19	0	207	581
Total	181	119	198	2	500	46	439	232	3	720	111	183	104	0	398	262	426	108	1	797	2415
Grand Total	362	231	373	2	968	84	934	403	3	1424	190	346	185	0	721	496	837	200	1	1534	4647
Apprch %	37.4	23.9	38.5	0.2		5.9	65.6	28.3	0.2		26.4	48	25.7	0		32.3	54.6	13	0.1		
Total %	7.8	5	8	0	20.8	1.8	20.1	8.7	0.1	30.6	4.1	7.4	4	0	15.5	10.7	18	4.3	0	33	

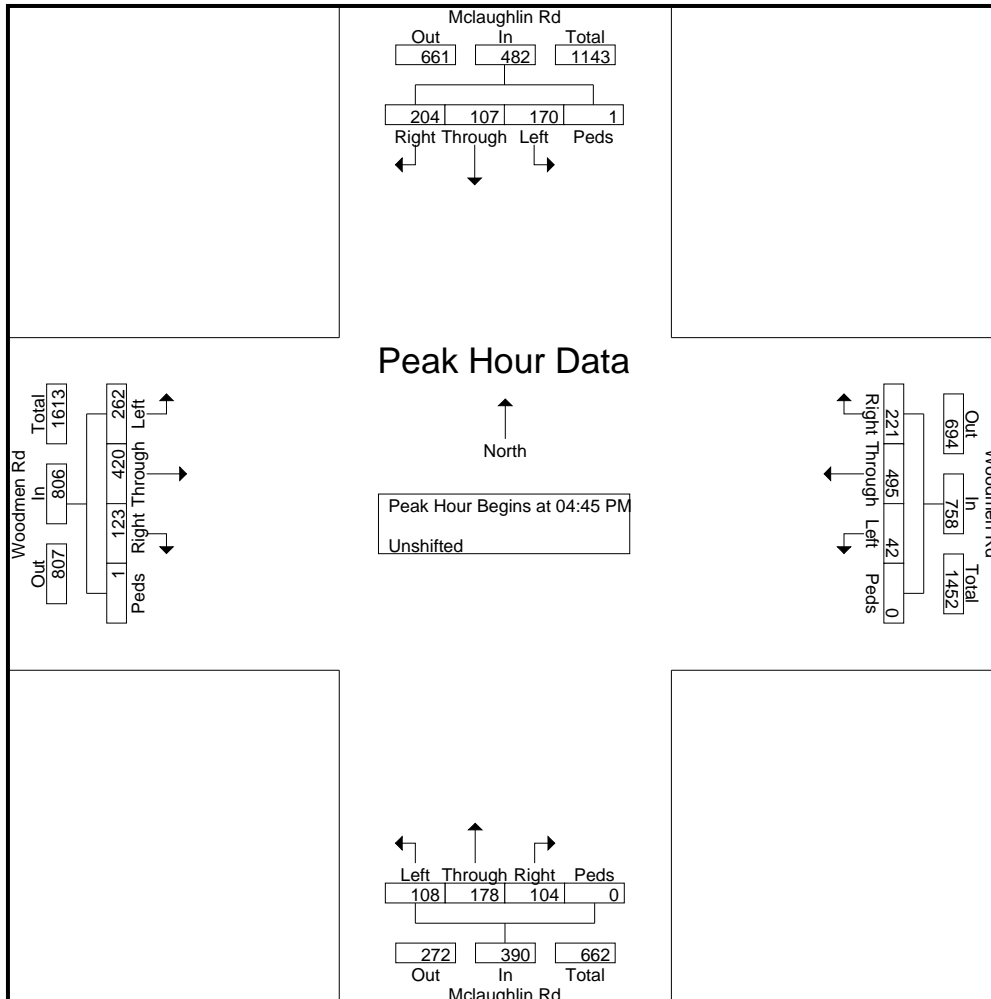


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545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd PM
 Site Code : 184560
 Start Date : 7/16/2019
 Page No : 2

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	46	25	50	0	121	6	136	46	0	188	23	34	20	0	77	69	113	34	0	216	602
05:00 PM	34	32	55	1	122	16	128	68	0	212	22	39	36	0	97	62	87	24	1	174	605
05:15 PM	47	25	50	0	122	12	107	53	0	172	25	50	27	0	102	63	99	30	0	192	588
05:30 PM	43	25	49	0	117	8	124	54	0	186	38	55	21	0	114	68	121	35	0	224	641
Total Volume	170	107	204	1	482	42	495	221	0	758	108	178	104	0	390	262	420	123	1	806	2436
% App. Total	35.3	22.2	42.3	0.2		5.5	65.3	29.2	0		27.7	45.6	26.7	0		32.5	52.1	15.3	0.1		
PHF	.904	.836	.927	.250	.988	.656	.910	.813	.000	.894	.711	.809	.722	.000	.855	.949	.868	.879	.250	.900	.950



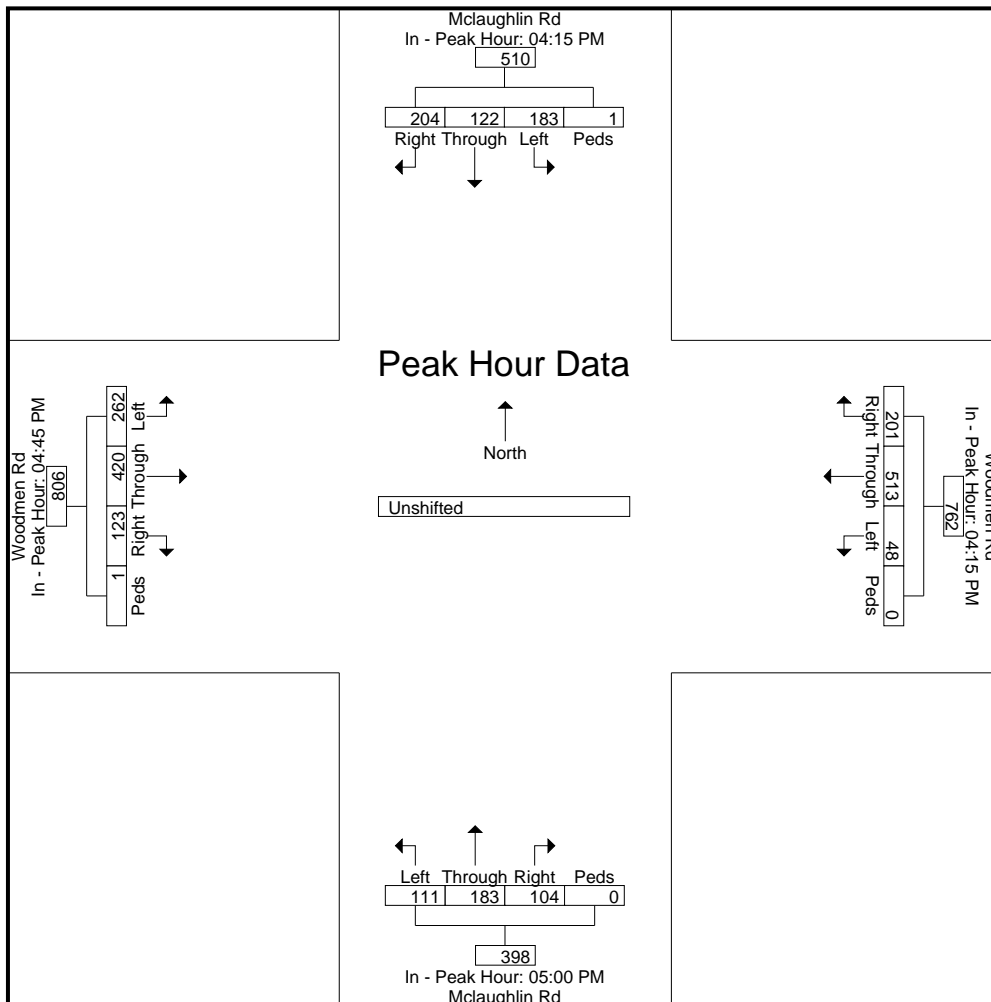


LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
 Colorado Springs, CO 80905
 719-633-2868

File Name : Mclaughlin Rd - Woodmen Rd PM
 Site Code : 184560
 Start Date : 7/16/2019
 Page No : 3

Start Time	Mclaughlin Rd Southbound					Woodmen Rd Westbound					Mclaughlin Rd Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:15 PM					04:15 PM					05:00 PM					04:45 PM					
+0 mins.	47	29	49	0	125	16	118	50	0	184	22	39	36	0	97	69	113	34	0	216	
+15 mins.	56	36	50	0	142	10	131	37	0	178	25	50	27	0	102	62	87	24	1	174	
+30 mins.	46	25	50	0	121	6	136	46	0	188	38	55	21	0	114	63	99	30	0	192	
+45 mins.	34	32	55	1	122	16	128	68	0	212	26	39	20	0	85	68	121	35	0	224	
Total Volume	183	122	204	1	510	48	513	201	0	762	111	183	104	0	398	262	420	123	1	806	
% App. Total	35.9	23.9	40	0.2		6.3	67.3	26.4	0		27.9	46	26.1	0		32.5	52.1	15.3	0.1		
PHF	.817	.847	.927	.250	.898	.750	.943	.739	.000	.899	.730	.832	.722	.000	.873	.949	.868	.879	.250	.900	

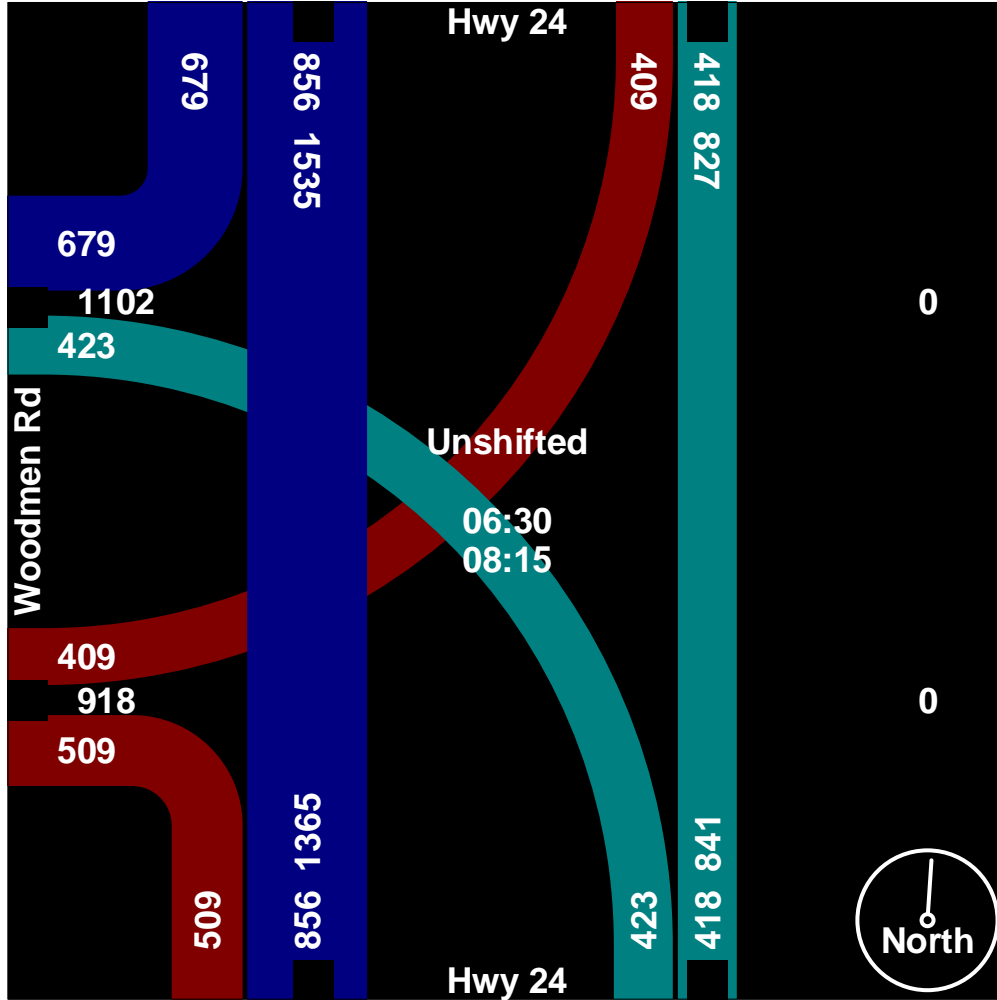


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Default Comments
 Change These in The Preferences Window
 Select File/Preference in the Main Scree
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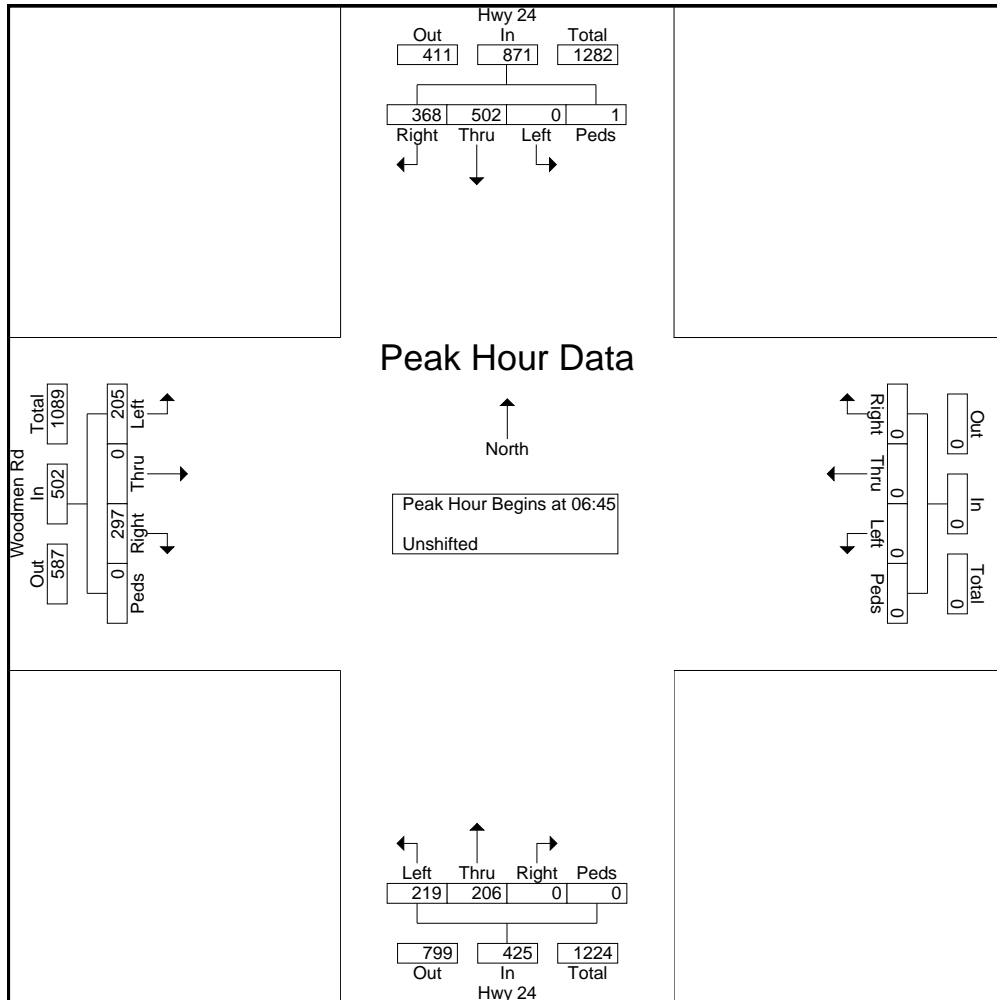
Groups Printed- Unshifted

Start Time	Hwy 24 Southbound					Westbound					Hwy 24 Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
06:30	0	106	49	0	155	0	0	0	0	0	61	33	0	0	94	32	0	48	1	81	330
06:45	0	145	90	0	235	0	0	0	0	0	59	37	0	0	96	46	0	83	0	129	460
Total	0	251	139	0	390	0	0	0	0	0	120	70	0	0	190	78	0	131	1	210	790
07:00	0	135	98	0	233	0	0	0	0	0	40	41	0	0	81	44	0	87	0	131	445
07:15	0	112	104	0	216	0	0	0	0	0	60	58	0	0	118	52	0	64	0	116	450
07:30	0	110	76	1	187	0	0	0	0	0	60	70	0	0	130	63	0	63	0	126	443
07:45	0	99	94	0	193	0	0	0	0	0	37	68	0	0	105	62	0	55	1	118	416
Total	0	456	372	1	829	0	0	0	0	0	197	237	0	0	434	221	0	269	1	491	1754
08:00	0	73	70	0	143	0	0	0	0	0	56	66	0	0	122	60	0	47	0	107	372
08:15	0	76	98	0	174	0	0	0	0	0	50	45	0	0	95	50	0	62	0	112	381



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Start Time	Hwy 24 Southbound					Westbound					Hwy 24 Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45																					
06:45	0	145	90	0	235	0	0	0	0	0	59	37	0	0	96	46	0	83	0	129	460
07:00	0	135	98	0	233	0	0	0	0	0	40	41	0	0	81	44	0	87	0	131	445
07:15	0	112	104	0	216	0	0	0	0	0	60	58	0	0	118	52	0	64	0	116	450
07:30	0	110	76	1	187	0	0	0	0	0	60	70	0	0	130	63	0	63	0	126	443
Total Volume	0	502	368	1	871	0	0	0	0	0	219	206	0	0	425	205	0	297	0	502	1798
% App. Total	0	57.6	42.3	0.1		0	0	0	0		51.5	48.5	0	0		40.8	0	59.2	0		
PHF	.000	.866	.885	.250	.927	.000	.000	.000	.000	.000	.913	.736	.000	.000	.817	.813	.000	.853	.000	.958	.977

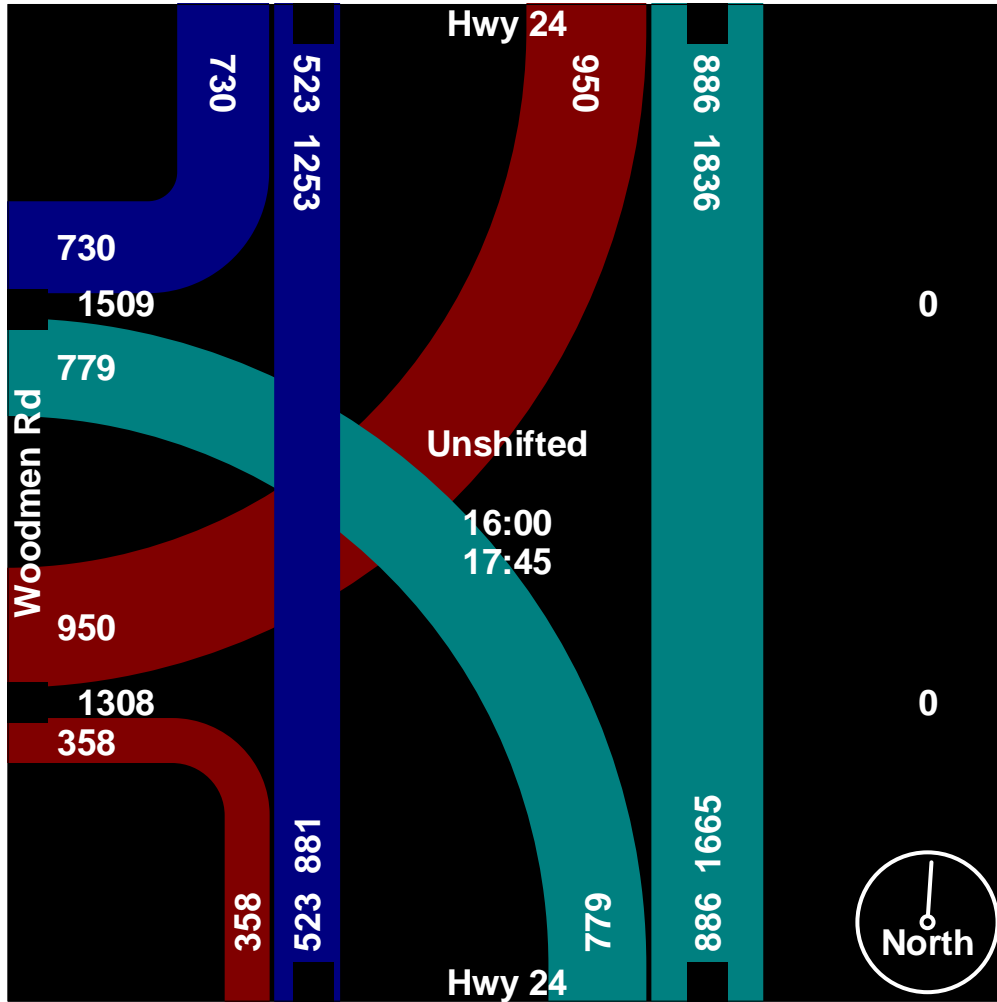


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 Select File/Preference in the Main Scree
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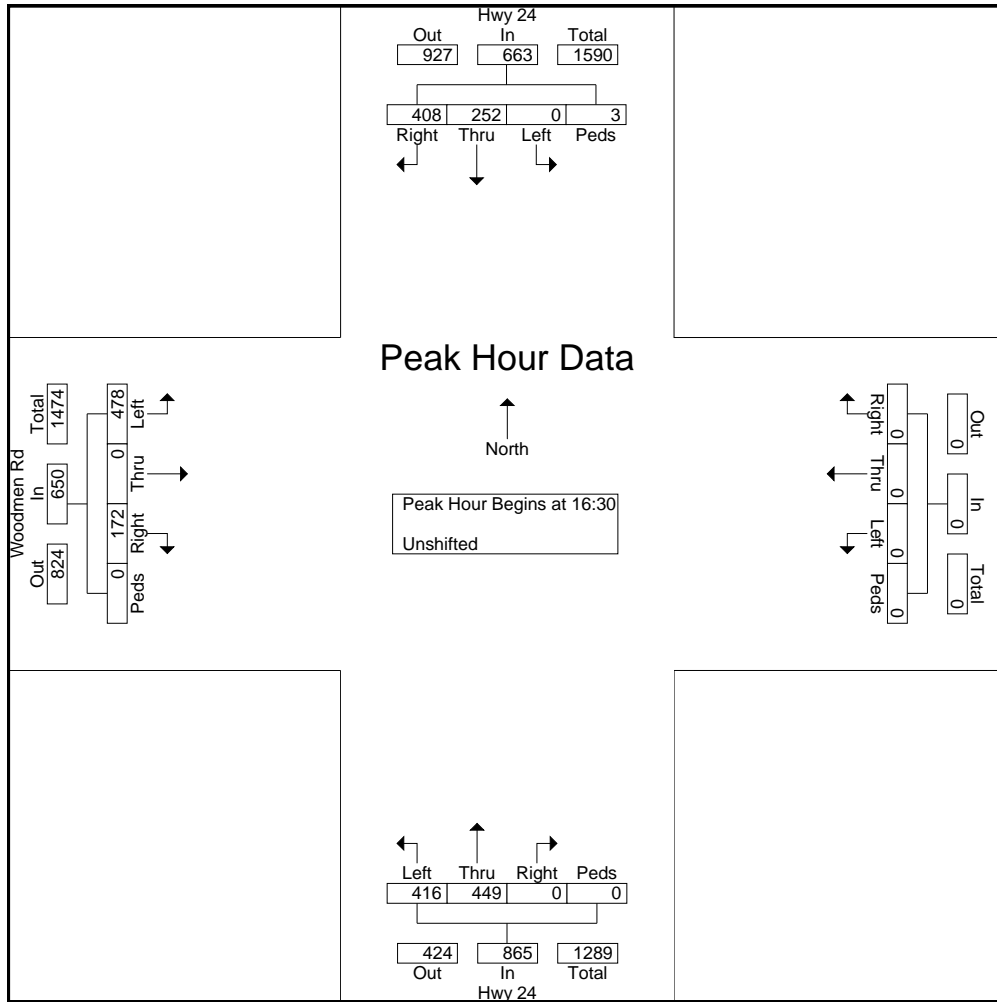
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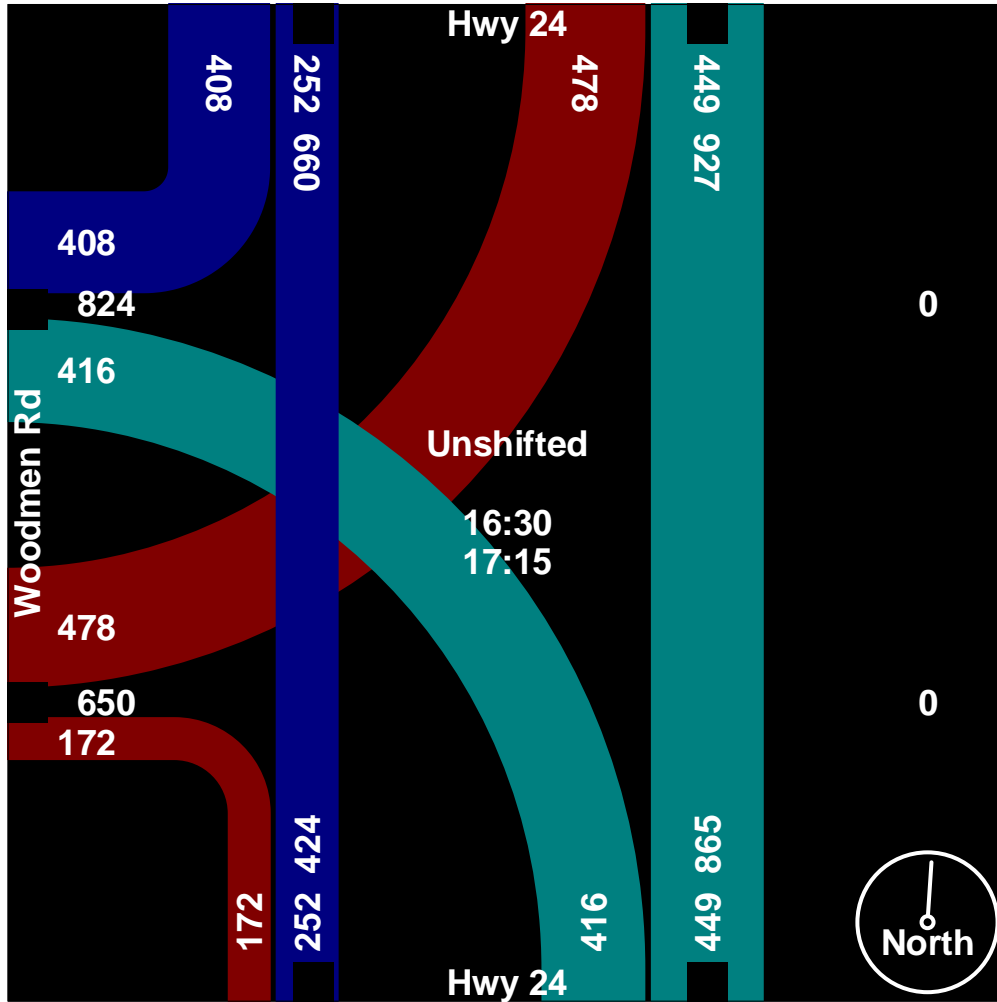
Start Time	Hwy 24 Southbound					Westbound					Hwy 24 Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
16:00	0	52	73	0	125	0	0	0	0	0	91	94	0	0	185	122	0	38	0	160	470
16:15	0	72	95	0	167	0	0	0	0	0	88	120	0	0	208	99	0	47	0	146	521
16:30	0	63	113	0	176	0	0	0	0	0	111	111	0	0	222	119	0	52	0	171	569
16:45	0	60	106	3	169	0	0	0	0	0	93	117	0	0	210	110	0	38	0	148	527
Total	0	247	387	3	637	0	0	0	0	0	383	442	0	0	825	450	0	175	0	625	2087
17:00	0	65	94	0	159	0	0	0	0	0	106	117	0	0	223	135	0	35	0	170	552
17:15	0	64	95	0	159	0	0	0	0	0	106	104	0	0	210	114	0	47	0	161	530
17:30	0	71	79	0	150	0	0	0	0	0	93	104	0	0	197	142	0	49	0	191	538
17:45	0	76	75	0	151	0	0	0	0	0	91	119	0	0	210	109	0	52	0	161	522
Total	0	276	343	0	619	0	0	0	0	0	396	444	0	0	840	500	0	183	0	683	2142

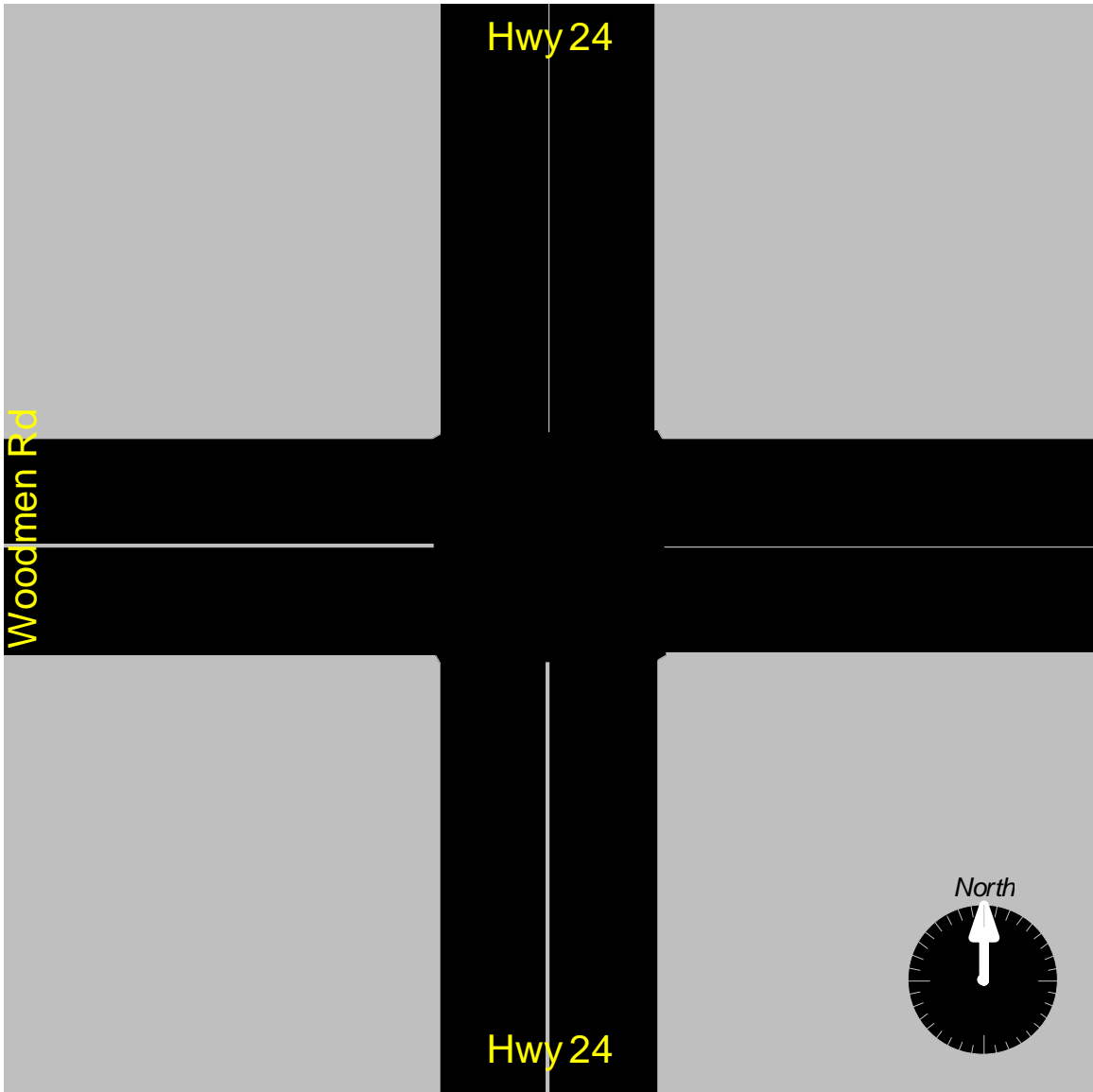


LSC Transportation Consultants, Inc.
 Colorado Springs, CO 80905
 719-633-2868

Start Time	Hwy 24 Southbound					Westbound					Hwy 24 Northbound					Woodmen Rd Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	0	63	113	0	176	0	0	0	0	0	111	111	0	0	222	119	0	52	0	171	569
16:45	0	60	106	3	169	0	0	0	0	0	93	117	0	0	210	110	0	38	0	148	527
17:00	0	65	94	0	159	0	0	0	0	0	106	117	0	0	223	135	0	35	0	170	552
17:15	0	64	95	0	159	0	0	0	0	0	106	104	0	0	210	114	0	47	0	161	530
Total Volume	0	252	408	3	663	0	0	0	0	0	416	449	0	0	865	478	0	172	0	650	2178
% App. Total	0	38	61.5	0.5		0	0	0	0		48.1	51.9	0	0		73.5	0	26.5	0		
PHF	.000	.969	.903	.250	.942	.000	.000	.000	.000	.000	.937	.959	.000	.000	.970	.885	.000	.827	.000	.950	.957







LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Hwy 24 - Rio Ln AM

Site Code : 184560

Start Date : 1/16/2019

Page No : 1

Groups Printed- Unshifted

Start Time	Hwy 24 Southbound				Rio Ln Westbound				Hwy 24 Northbound				Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:30	1	217	0	0	16	0	2	0	0	91	16	0	0	0	0	0	343
06:45	0	236	0	0	15	0	0	0	0	84	24	0	0	0	0	0	359
Total	1	453	0	0	31	0	2	0	0	175	40	0	0	0	0	0	702
07:00	0	201	0	0	20	0	3	0	0	83	16	0	0	0	0	0	323
07:15	1	207	0	0	19	0	2	0	0	68	26	0	0	0	0	0	323
07:30	1	209	0	0	21	0	1	0	0	69	21	0	0	0	0	0	322
07:45	0	137	0	0	18	0	0	0	0	82	24	0	0	0	0	0	261
Total	2	754	0	0	78	0	6	0	0	302	87	0	0	0	0	0	1229
08:00	0	158	0	0	17	0	0	0	0	69	18	0	0	0	0	0	262
08:15	0	142	0	0	15	0	0	0	0	101	9	0	0	0	0	0	267
Grand Total	3	1507	0	0	141	0	8	0	0	647	154	0	0	0	0	0	2460
Apprch %	0.2	99.8	0	0	94.6	0	5.4	0	0	80.8	19.2	0	0	0	0	0	
Total %	0.1	61.3	0	0	5.7	0	0.3	0	0	26.3	6.3	0	0	0	0	0	

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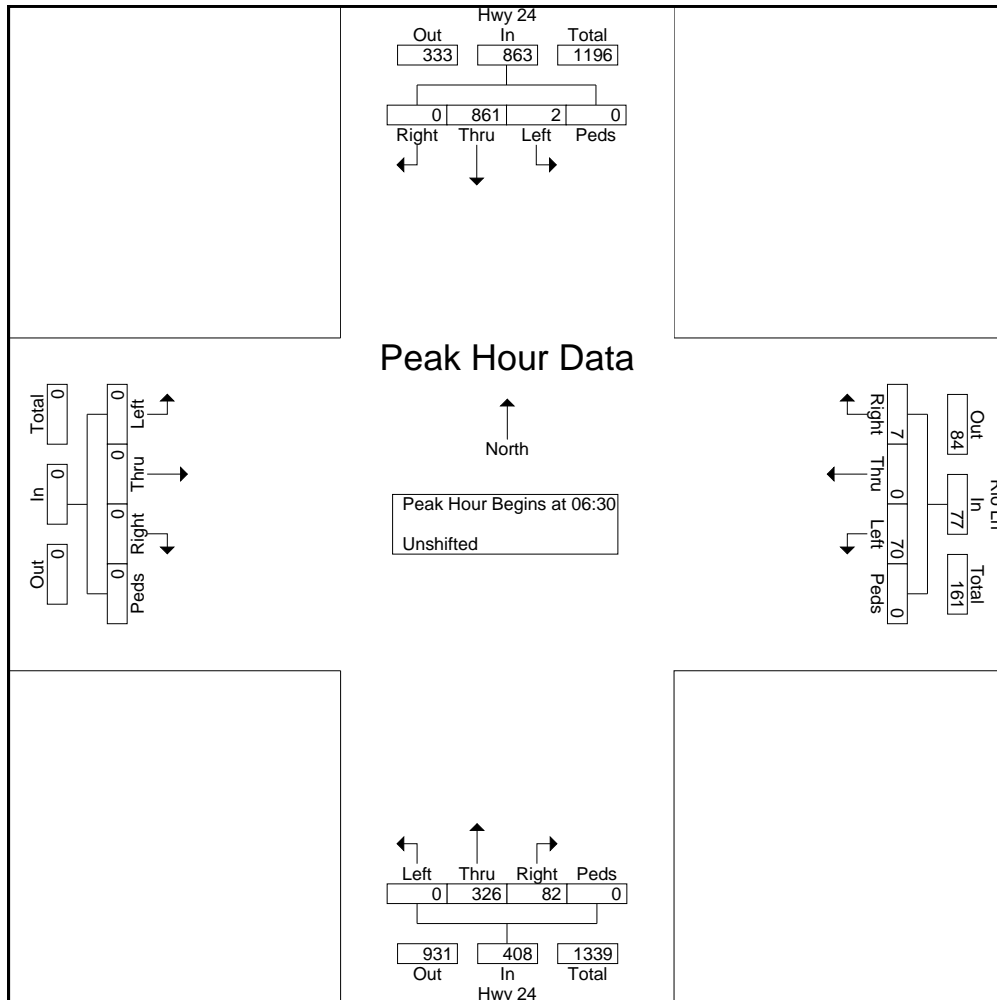
File Name : Hwy 24 - Rio Ln AM

Site Code : 184560

Start Date : 1/16/2019

Page No : 2

Start Time	Hwy 24 Southbound					Rio Ln Westbound					Hwy 24 Northbound					Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:30																					
06:30	1	217	0	0	218	16	0	2	0	18	0	91	16	0	107	0	0	0	0	0	343
06:45	0	236	0	0	236	15	0	0	0	15	0	84	24	0	108	0	0	0	0	0	359
07:00	0	201	0	0	201	20	0	3	0	23	0	83	16	0	99	0	0	0	0	0	323
07:15	1	207	0	0	208	19	0	2	0	21	0	68	26	0	94	0	0	0	0	0	323
Total Volume	2	861	0	0	863	70	0	7	0	77	0	326	82	0	408	0	0	0	0	0	1348
% App. Total	0.2	99.8	0	0		90.9	0	9.1	0		0	79.9	20.1	0		0	0	0	0		
PHF	.500	.912	.000	.000	.914	.875	.000	.583	.000	.837	.000	.896	.788	.000	.944	.000	.000	.000	.000	.000	.939



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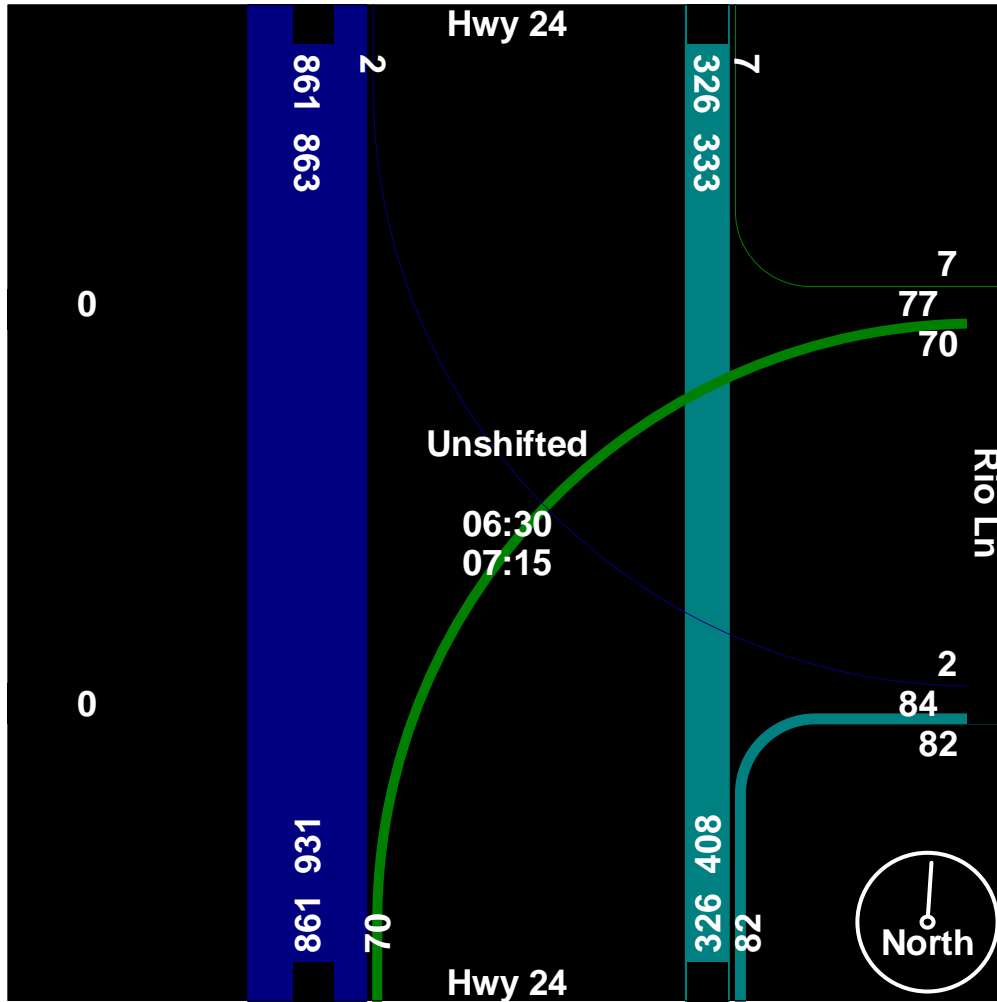
719-633-2868

File Name : Hwy 24 - Rio Ln AM

Site Code : 184560

Start Date : 1/16/2019

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LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Hwy 24 - Rio Ln PM

Site Code : 184560

Start Date : 1/16/2019

Page No : 1

Groups Printed- Unshifted

Start Time	Hwy 24 Southbound				Rio Ln Westbound				Hwy 24 Northbound				Rio Ln Eastbound				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
16:00	0	140	0	0	28	0	0	0	0	178	21	0	0	0	0	0	0	367
16:15	1	116	0	0	24	0	0	0	0	233	39	0	0	0	0	0	0	413
16:30	1	148	0	0	21	0	0	0	0	201	21	0	0	0	0	0	0	392
16:45	0	120	0	0	22	0	2	0	0	204	28	0	0	0	0	0	0	376
Total	2	524	0	0	95	0	2	0	0	816	109	0	0	0	0	0	0	1548
17:00	2	154	0	0	21	0	1	0	0	182	39	0	0	0	0	0	0	399
17:15	3	126	0	0	24	0	3	0	0	195	38	0	0	0	0	0	0	389
17:30	2	113	0	0	23	0	1	0	0	208	29	0	0	0	0	0	0	376
17:45	1	85	0	0	22	0	1	0	0	214	27	0	0	0	0	0	0	350
Total	8	478	0	0	90	0	6	0	0	799	133	0	0	0	0	0	0	1514
Grand Total	10	1002	0	0	185	0	8	0	0	1615	242	0	0	0	0	0	0	3062
Apprch %	1	99	0	0	95.9	0	4.1	0	0	87	13	0	0	0	0	0	0	
Total %	0.3	32.7	0	0	6	0	0.3	0	0	52.7	7.9	0	0	0	0	0	0	

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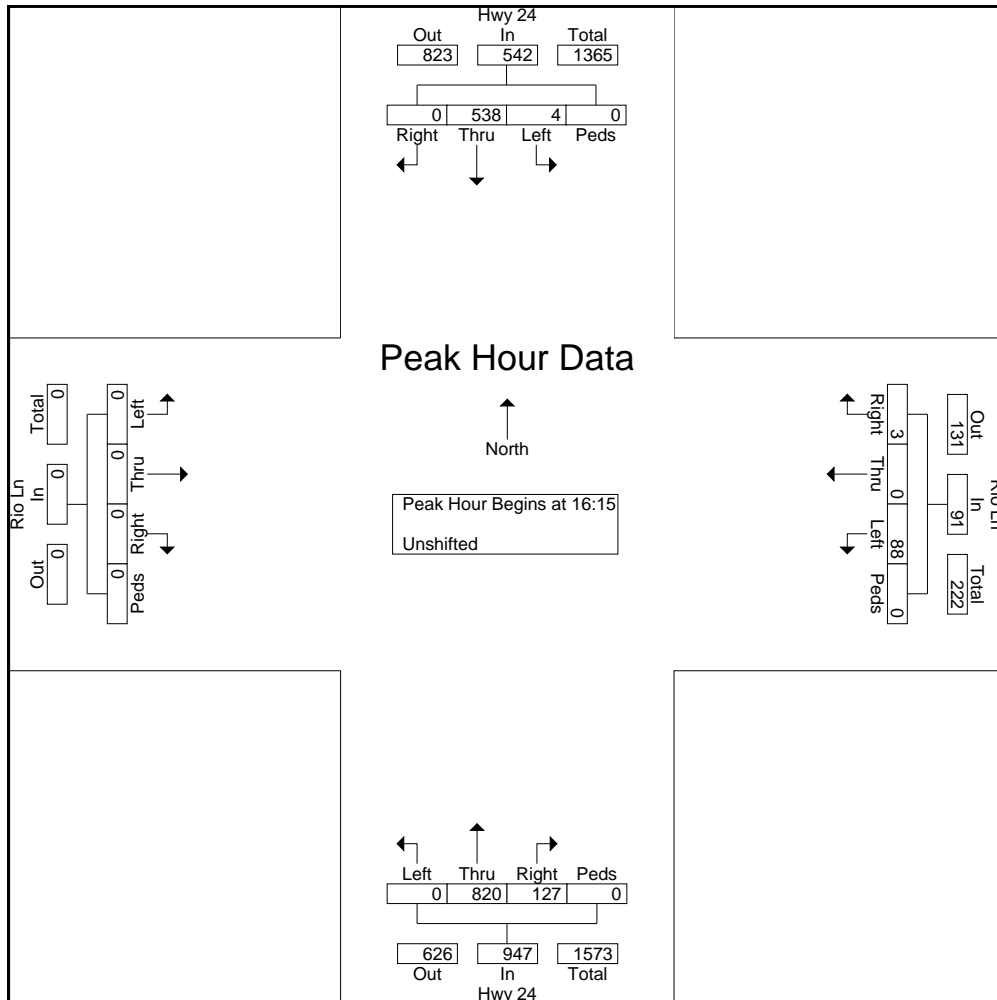
File Name : Hwy 24 - Rio Ln PM

Site Code : 184560

Start Date : 1/16/2019

Page No : 2

Start Time	Hwy 24 Southbound					Rio Ln Westbound					Hwy 24 Northbound					Rio Ln Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:15																					
16:15	1	116	0	0	117	24	0	0	0	24	0	233	39	0	272	0	0	0	0	0	413
16:30	1	148	0	0	149	21	0	0	0	21	0	201	21	0	222	0	0	0	0	0	392
16:45	0	120	0	0	120	22	0	2	0	24	0	204	28	0	232	0	0	0	0	0	376
17:00	2	154	0	0	156	21	0	1	0	22	0	182	39	0	221	0	0	0	0	0	399
Total Volume	4	538	0	0	542	88	0	3	0	91	0	820	127	0	947	0	0	0	0	0	1580
% App. Total	0.7	99.3	0	0		96.7	0	3.3	0		0	86.6	13.4	0		0	0	0	0		
PHF	.500	.873	.000	.000	.869	.917	.000	.375	.000	.948	.000	.880	.814	.000	.870	.000	.000	.000	.000	.000	.956



LSC Transportation Consultants, Inc.

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Colorado Springs, CO 80905

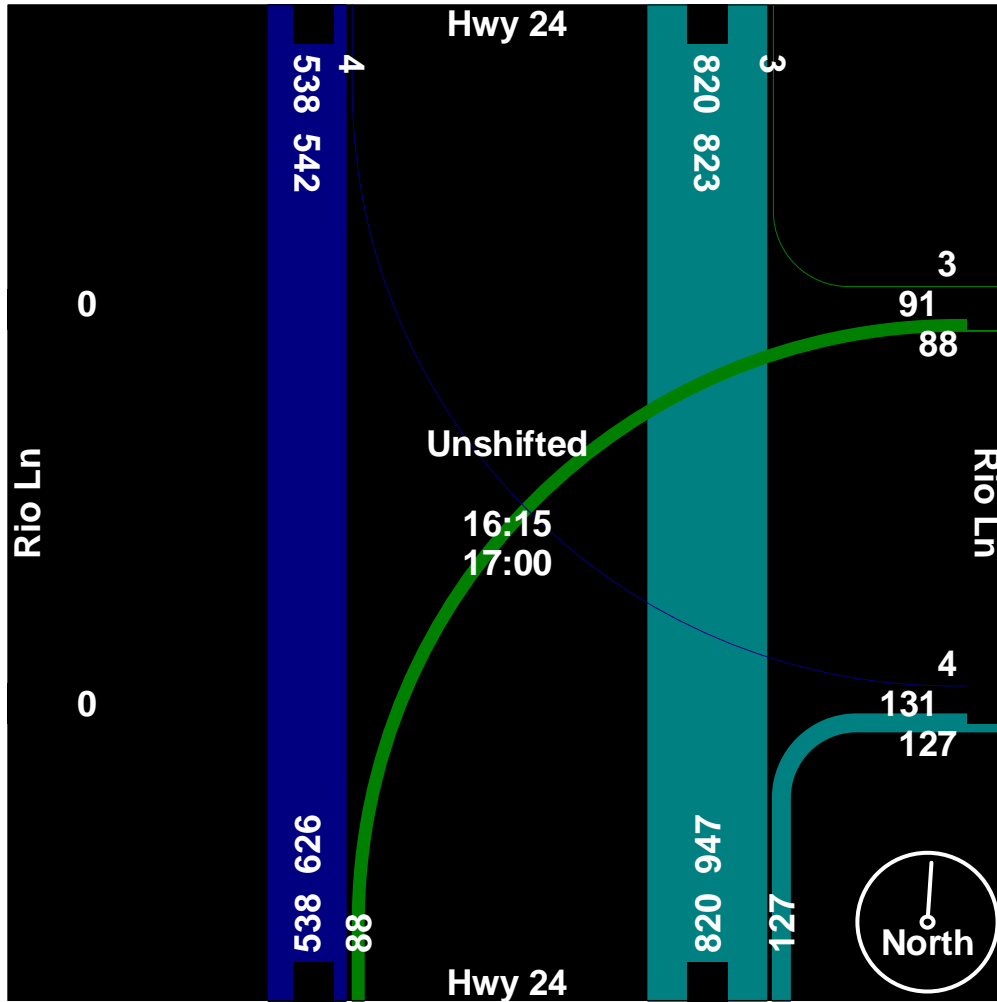
719-633-2868

File Name : Hwy 24 - Rio Ln PM

Site Code : 184560

Start Date : 1/16/2019

Page No : 3



Levels of Service



Timings

1: Meridian Rd & Woodmen Rd

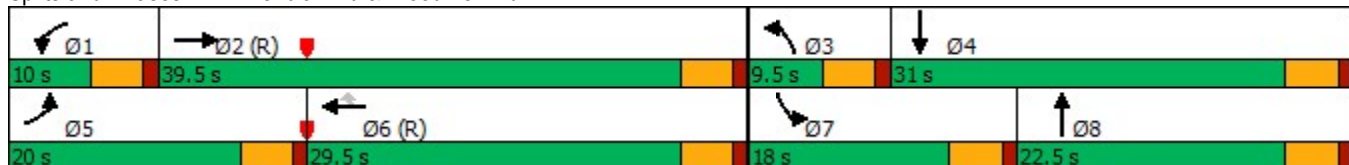
Existing
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	360	405	64	87	592	111	63	136	24	262	404	753
Future Volume (vph)	360	405	64	87	592	111	63	136	24	262	404	753
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	20.0	39.5		10.0	29.5	29.5	9.5	22.5		18.0	31.0	
Total Split (%)	22.2%	43.9%		11.1%	32.8%	32.8%	10.6%	25.0%		20.0%	34.4%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	15.1	44.4	90.0	8.2	35.4	35.4	5.5	10.7	90.0	12.8	19.9	90.0
Actuated g/C Ratio	0.17	0.49	1.00	0.09	0.39	0.39	0.06	0.12	1.00	0.14	0.22	1.00
v/c Ratio	0.63	0.23	0.04	0.31	0.47	0.16	0.30	0.32	0.02	0.62	0.60	0.55
Control Delay	39.6	15.3	0.0	45.6	15.2	0.5	44.4	37.5	0.0	42.2	34.9	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	15.3	0.0	45.6	15.2	0.5	44.4	37.5	0.0	42.2	34.9	1.4
LOS	D	B	A	D	B	A	D	D	A	D	C	A
Approach Delay		24.7			16.5			35.4			18.5	
Approach LOS		C			B			D			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 20 (22%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 20.5
 Intersection Capacity Utilization 55.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

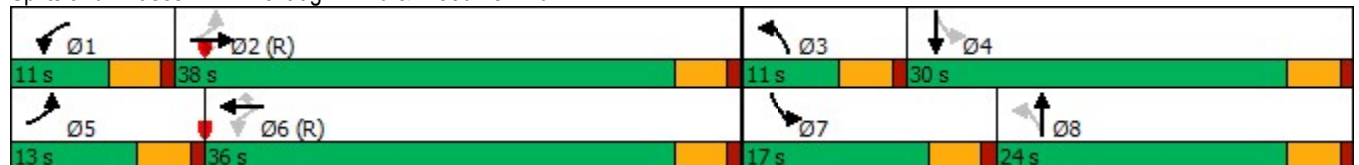
Existing
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	338	134	24	466	89	35	24	17	136	117	187
Future Volume (vph)	69	338	134	24	466	89	35	24	17	136	117	187
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	13.0	38.0	38.0	11.0	36.0	36.0	11.0	24.0		17.0	30.0	
Total Split (%)	14.4%	42.2%	42.2%	12.2%	40.0%	40.0%	12.2%	26.7%		18.9%	33.3%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	44.1	40.6	40.6	40.7	35.3	35.3	29.2	22.5	90.0	36.9	30.4	90.0
Actuated g/C Ratio	0.49	0.45	0.45	0.45	0.39	0.39	0.32	0.25	1.00	0.41	0.34	1.00
v/c Ratio	0.19	0.22	0.17	0.06	0.40	0.15	0.08	0.05	0.01	0.26	0.20	0.13
Control Delay	13.4	17.0	5.8	11.8	19.7	0.5	17.0	27.4	0.0	18.5	24.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	17.0	5.8	11.8	19.7	0.5	17.0	27.4	0.0	18.5	24.1	0.2
LOS	B	B	A	B	B	A	B	C	A	B	C	A
Approach Delay		13.8			16.4			16.5			12.2	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 6 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 41.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

Existing
AM Peak Hour

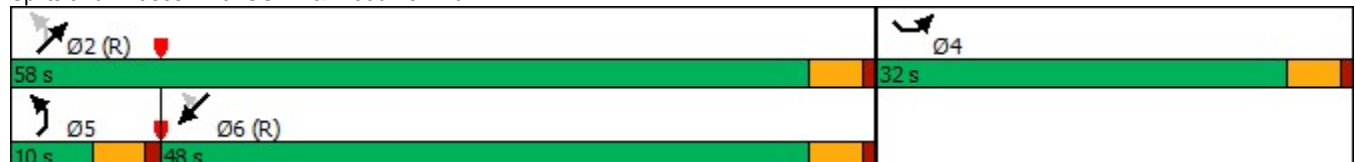


Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↶	↶	↶↶	↶	↶	↶
Traffic Volume (vph)	297	205	219	205	502	368
Future Volume (vph)	297	205	219	205	502	368
Turn Type	Prot	Free	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			6
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	32.0		10.0	58.0	48.0	48.0
Total Split (%)	35.6%		11.1%	64.4%	53.3%	53.3%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-0.5		-0.5	-0.5	-0.5	0.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max		None	C-Max	C-Max	C-Max
Act Effct Green (s)	28.0	90.0	54.0	54.0	44.0	43.5
Actuated g/C Ratio	0.31	1.00	0.60	0.60	0.49	0.48
v/c Ratio	0.56	0.13	0.29	0.18	0.59	0.41
Control Delay	22.5	0.2	8.7	8.6	19.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	0.2	8.7	8.6	19.9	2.8
LOS	C	A	A	A	B	A
Approach Delay	13.4			8.7	12.7	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 12.0
 Intersection LOS: B
 Intersection Capacity Utilization 59.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: US 24 & Woodmen Rd



Intersection						
Int Delay, s/veh	2.1					
Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	70	7	326	82	2	861
Future Vol, veh/h	70	7	326	82	2	861
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	100	100	94	94	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	7	347	87	2	946

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1341	391	0	0	434
Stage 1	391	-	-	-	-
Stage 2	950	-	-	-	-
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	168	658	-	-	1126
Stage 1	683	-	-	-	-
Stage 2	376	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	167	658	-	-	1126
Mov Cap-2 Maneuver	167	-	-	-	-
Stage 1	683	-	-	-	-
Stage 2	374	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	39.5	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	179	1126	-
HCM Lane V/C Ratio	-	-	0.43	0.002	-
HCM Control Delay (s)	-	-	39.5	8.2	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	2	0	-

Timings
1: Meridian Rd & Woodmen Rd

Existing
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	755	606	78	115	517	132	108	431	94	157	321	479
Future Volume (vph)	755	606	78	115	517	132	108	431	94	157	321	479
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	30.0	44.5		12.0	26.5	26.5	10.0	22.5		11.0	23.5	
Total Split (%)	33.3%	49.4%		13.3%	29.4%	29.4%	11.1%	25.0%		12.2%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	24.2	42.1	90.0	7.7	25.6	25.6	5.5	15.7	90.0	6.5	18.7	90.0
Actuated g/C Ratio	0.27	0.47	1.00	0.09	0.28	0.28	0.06	0.17	1.00	0.07	0.21	1.00
v/c Ratio	0.85	0.38	0.05	0.47	0.62	0.27	0.52	0.70	0.06	0.64	0.44	0.30
Control Delay	41.3	16.8	0.1	37.9	31.5	11.0	50.2	41.2	0.1	53.1	33.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	16.8	0.1	37.9	31.5	11.0	50.2	41.2	0.1	53.1	33.5	0.5
LOS	D	B	A	D	C	B	D	D	A	D	C	A
Approach Delay		28.8			28.9			36.6			20.2	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 58 (64%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 28.0
 Intersection Capacity Utilization 67.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

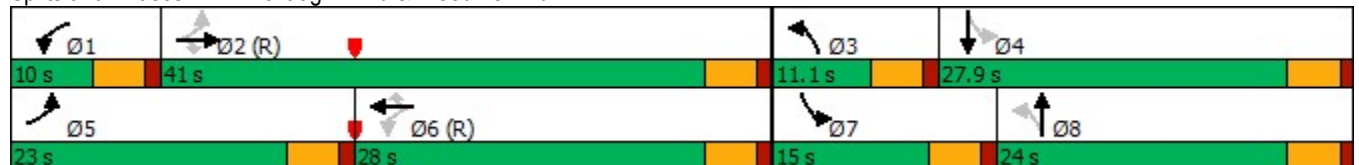
Existing
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	420	123	42	495	221	108	178	104	170	107	204
Future Volume (vph)	262	420	123	42	495	221	108	178	104	170	107	204
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	23.0	41.0	41.0	10.0	28.0	28.0	11.1	24.0		15.0	27.9	
Total Split (%)	25.6%	45.6%	45.6%	11.1%	31.1%	31.1%	12.3%	26.7%		16.7%	31.0%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	46.5	40.5	40.5	33.4	27.9	27.9	26.9	20.3	90.0	33.1	23.4	90.0
Actuated g/C Ratio	0.52	0.45	0.45	0.37	0.31	0.31	0.30	0.23	1.00	0.37	0.26	1.00
v/c Ratio	0.59	0.29	0.17	0.11	0.45	0.34	0.30	0.49	0.08	0.43	0.22	0.13
Control Delay	11.6	10.3	5.7	9.0	17.9	2.3	21.4	35.5	0.1	22.7	27.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	10.3	5.7	9.0	17.9	2.3	21.4	35.5	0.1	22.7	27.7	0.2
LOS	B	B	A	A	B	A	C	D	A	C	C	A
Approach Delay		10.1			12.9			22.2			14.2	
Approach LOS		B			B			C			B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 4 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 13.8
 Intersection LOS: B
 Intersection Capacity Utilization 62.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

Existing
PM Peak Hour



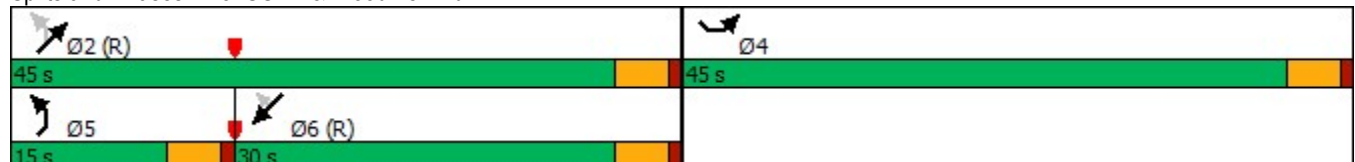
Lane Group	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↖	↗	↖↗	↖	↖	↗
Traffic Volume (vph)	478	172	416	449	252	408
Future Volume (vph)	478	172	416	449	252	408
Turn Type	Prot	Free	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			6
Detector Phase	4		5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	22.5		9.5	22.5	22.5	22.5
Total Split (s)	45.0		15.0	45.0	30.0	30.0
Total Split (%)	50.0%		16.7%	50.0%	33.3%	33.3%
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5		4.5	4.5	4.5	4.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max		None	C-Max	C-Max	C-Max
Act Effct Green (s)	40.5	90.0	40.5	40.5	25.7	25.7
Actuated g/C Ratio	0.45	1.00	0.45	0.45	0.29	0.29
v/c Ratio	0.63	0.11	0.51	0.55	0.50	0.57
Control Delay	17.0	0.1	17.9	21.2	30.9	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	0.1	17.9	21.2	30.9	6.0
LOS	B	A	B	C	C	A
Approach Delay	12.5			19.6	15.5	
Approach LOS	B			B	B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 72 (80%), Referenced to phase 2:NETL and 6:SWT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 16.2
 Intersection Capacity Utilization 62.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: US 24 & Woodmen Rd



Intersection						
Int Delay, s/veh	5.3					
Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	88	3	820	127	4	538
Future Vol, veh/h	88	3	820	127	4	538
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	95	95	87	87	100	100
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	3	943	146	4	538

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1562	1016	0	0	1089
Stage 1	1016	-	-	-	-
Stage 2	546	-	-	-	-
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	123	289	-	-	641
Stage 1	350	-	-	-	-
Stage 2	580	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	122	289	-	-	641
Mov Cap-2 Maneuver	122	-	-	-	-
Stage 1	350	-	-	-	-
Stage 2	575	-	-	-	-

Approach	NB	NE	SW
HCM Control Delay, s	95.6	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	NBLn1	SWL	SWT
Capacity (veh/h)	-	-	124	641	-
HCM Lane V/C Ratio	-	-	0.772	0.006	-
HCM Control Delay (s)	-	-	95.6	10.7	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	4.5	0	-

Timings
1: Meridian Rd & Woodmen Rd

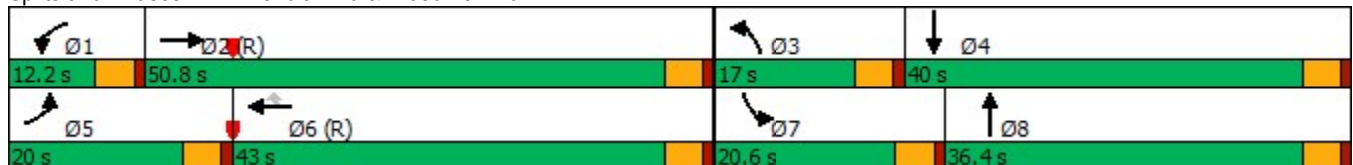
Short-Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	325	550	100	100	775	75	250	350	50	250	725	1000
Future Volume (vph)	325	550	100	100	775	75	250	350	50	250	725	1000
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	20.0	50.8		12.2	43.0	43.0	17.0	36.4		20.6	40.0	
Total Split (%)	16.7%	42.3%		10.2%	35.8%	35.8%	14.2%	30.3%		17.2%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	15.2	49.4	120.0	8.1	42.3	42.3	12.5	31.5	120.0	15.0	34.0	120.0
Actuated g/C Ratio	0.13	0.41	1.00	0.07	0.35	0.35	0.10	0.26	1.00	0.12	0.28	1.00
v/c Ratio	0.75	0.38	0.06	0.48	0.68	0.13	0.70	0.38	0.03	0.68	0.84	0.73
Control Delay	61.9	26.2	0.1	75.9	21.9	0.4	62.9	37.3	0.0	58.4	48.9	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	26.2	0.1	75.9	21.9	0.4	62.9	37.3	0.0	58.4	48.9	3.1
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		35.4			25.9			44.3			26.9	
Approach LOS		D			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 18 (15%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 30.6
 Intersection LOS: C
 Intersection Capacity Utilization 71.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

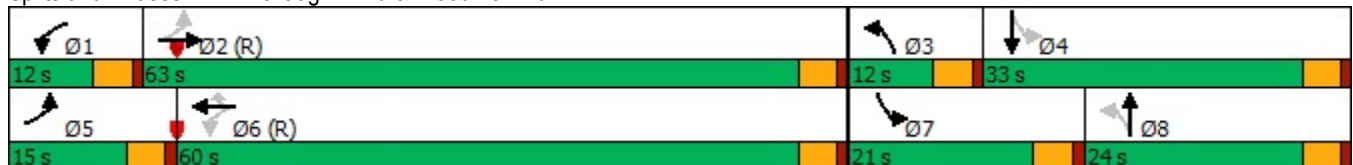
Short-Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	635	125	50	700	125	50	25	50	150	100	200
Future Volume (vph)	90	635	125	50	700	125	50	25	50	150	100	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	15.0	63.0	63.0	12.0	60.0	60.0	12.0	24.0		21.0	33.0	
Total Split (%)	12.5%	52.5%	52.5%	10.0%	50.0%	50.0%	10.0%	20.0%		17.5%	27.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	69.1	61.7	61.7	65.6	58.3	58.3	30.9	23.4	120.0	41.0	31.5	120.0
Actuated g/C Ratio	0.58	0.51	0.51	0.55	0.49	0.49	0.26	0.20	1.00	0.34	0.26	1.00
v/c Ratio	0.27	0.36	0.15	0.14	0.49	0.18	0.14	0.07	0.03	0.34	0.22	0.13
Control Delay	14.0	18.6	5.5	9.9	18.6	2.0	28.5	41.9	0.0	31.0	37.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	18.6	5.5	9.9	18.6	2.0	28.5	41.9	0.0	31.0	37.5	0.2
LOS	B	B	A	A	B	A	C	D	A	C	D	A
Approach Delay		16.2			15.7			19.8			18.7	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 4 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 16.6
 Intersection LOS: B
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

Short-Term Background
AM Peak Hour

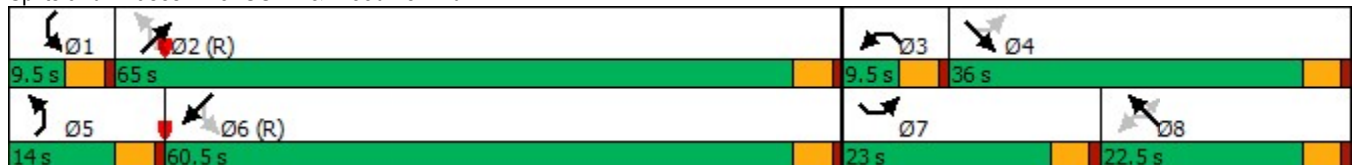
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWT	SWR	Ø1
Lane Configurations											
Traffic Volume (vph)	300	55	480	20	50	350	235	25	575	475	
Future Volume (vph)	300	55	480	20	50	350	235	25	575	475	
Turn Type	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Perm	NA	Free	
Protected Phases	7	4		3	8	5	2		6		1
Permitted Phases	4		Free	8		2		2		Free	
Detector Phase	7	4		3	8	5	2	2	6		
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	22.5	22.5		9.5	22.5	9.5	22.5	22.5	22.5		9.5
Total Split (s)	23.0	36.0		9.5	22.5	14.0	65.0	65.0	60.5		9.5
Total Split (%)	19.2%	30.0%		7.9%	18.8%	11.7%	54.2%	54.2%	50.4%		8%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-0.5	0.0		0.0	0.0	-0.5	-0.5	0.0	-0.5		
Total Lost Time (s)	4.0	4.5		4.5	4.5	4.0	4.0	4.5	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	Max		None	None	None	C-Max	C-Max	C-Max		None
Act Effct Green (s)	41.5	35.3	120.0	19.4	15.5	70.5	70.5	70.0	56.6	120.0	
Actuated g/C Ratio	0.35	0.29	1.00	0.16	0.13	0.59	0.59	0.58	0.47	1.00	
v/c Ratio	0.61	0.11	0.31	0.09	0.23	0.57	0.21	0.03	0.70	0.32	
Control Delay	25.4	21.4	1.1	28.8	47.5	15.3	12.3	0.0	30.4	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.4	21.4	1.1	28.8	47.5	15.3	12.3	0.0	30.4	0.5	
LOS	C	C	A	C	D	B	B	A	C	A	
Approach Delay		11.2			42.0		13.5		16.9		
Approach LOS		B			D		B		B		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.0
 Intersection Capacity Utilization 74.0%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 3: US 24 & Woodmen Rd



Timings
1: Meridian Rd & Woodmen Rd

Short-Term Background
PM Peak Hour

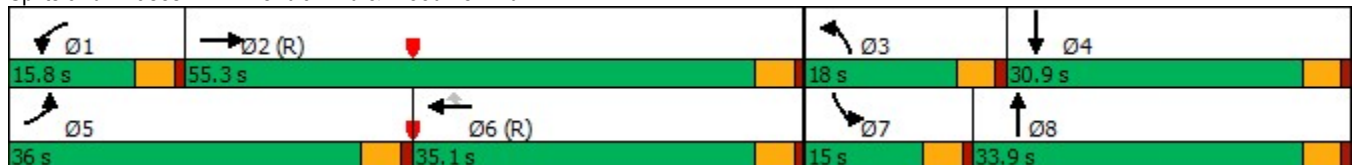
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	825	625	200	150	690	125	300	875	175	235	625	500
Future Volume (vph)	825	625	200	150	690	125	300	875	175	235	625	500
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	36.0	55.3		15.8	35.1	35.1	18.0	33.9		15.0	30.9	
Total Split (%)	30.0%	46.1%		13.2%	29.3%	29.3%	15.0%	28.3%		12.5%	25.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	31.3	51.6	120.0	10.5	30.8	30.8	13.2	29.5	120.0	10.4	26.7	120.0
Actuated g/C Ratio	0.26	0.43	1.00	0.09	0.26	0.26	0.11	0.25	1.00	0.09	0.22	1.00
v/c Ratio	0.96	0.43	0.13	0.60	0.92	0.29	0.80	1.01	0.11	0.79	0.79	0.32
Control Delay	65.6	25.2	0.2	66.4	48.4	3.1	68.4	77.6	0.1	72.8	52.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.6	25.2	0.2	66.4	48.4	3.1	68.4	77.6	0.1	72.8	52.6	0.5
LOS	E	C	A	E	D	A	E	E	A	E	D	A
Approach Delay		42.4			45.3			65.5			36.9	
Approach LOS		D			D			E			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 24 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 47.2
 Intersection Capacity Utilization 88.5%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

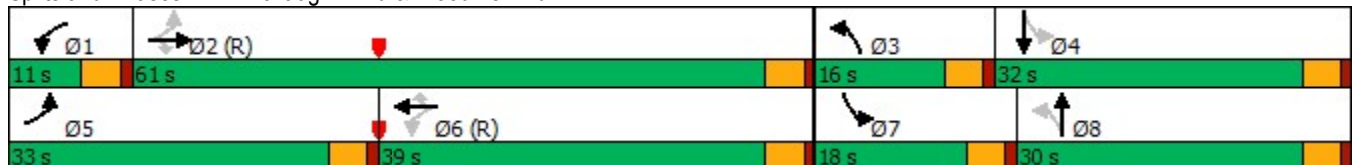
Short-Term Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	655	100	75	590	250	150	175	150	150	100	225
Future Volume (vph)	285	655	100	75	590	250	150	175	150	150	100	225
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	33.0	61.0	61.0	11.0	39.0	39.0	16.0	30.0		18.0	32.0	
Total Split (%)	27.5%	50.8%	50.8%	9.2%	32.5%	32.5%	13.3%	25.0%		15.0%	26.7%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	67.5	58.7	58.7	52.2	45.8	45.8	38.3	27.3	120.0	39.7	28.0	120.0
Actuated g/C Ratio	0.56	0.49	0.49	0.44	0.38	0.38	0.32	0.23	1.00	0.33	0.23	1.00
v/c Ratio	0.65	0.42	0.13	0.21	0.44	0.33	0.38	0.48	0.11	0.41	0.23	0.14
Control Delay	32.1	18.7	3.8	9.8	19.3	1.9	30.4	45.3	0.1	30.4	39.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	18.7	3.8	9.8	19.3	1.9	30.4	45.3	0.1	30.4	39.3	0.2
LOS	C	B	A	A	B	A	C	D	A	C	D	A
Approach Delay		20.9			13.8			26.3			18.0	
Approach LOS		C			B			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 15 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 19.3
 Intersection Capacity Utilization 64.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

Short-Term Background
PM Peak Hour

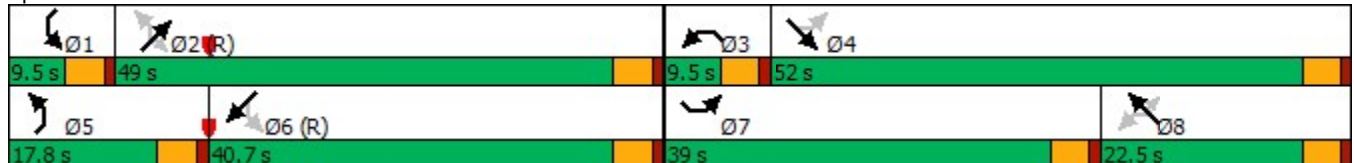


Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWT	SWR	Ø1
Lane Configurations	↖	↗	↖	↖	↗	↖↗	↗	↖	↗	↖	
Traffic Volume (vph)	550	90	315	25	65	450	515	35	300	400	
Future Volume (vph)	550	90	315	25	65	450	515	35	300	400	
Turn Type	pm+pt	NA	Free	pm+pt	NA	pm+pt	NA	Perm	NA	Free	
Protected Phases	7	4		3	8	5	2		6		1
Permitted Phases	4		Free	8		2		2		Free	
Detector Phase	7	4		3	8	5	2	2	6		
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	22.5	22.5		9.5	22.5	9.5	22.5	22.5	22.5		9.5
Total Split (s)	39.0	52.0		9.5	22.5	17.8	49.0	49.0	40.7		9.5
Total Split (%)	32.5%	43.3%		7.9%	18.8%	14.8%	40.8%	40.8%	33.9%		8%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	Max		None	None	None	C-Max	C-Max	C-Max		None
Act Effct Green (s)	57.0	51.3	120.0	19.4	15.6	54.0	54.0	54.0	36.4	120.0	
Actuated g/C Ratio	0.48	0.43	1.00	0.16	0.13	0.45	0.45	0.45	0.30	1.00	
v/c Ratio	0.80	0.12	0.21	0.12	0.29	0.62	0.63	0.05	0.56	0.27	
Control Delay	22.2	12.5	0.3	23.0	49.0	25.1	29.6	0.1	39.8	0.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.2	12.5	0.3	23.0	49.0	25.1	29.6	0.1	39.8	0.4	
LOS	C	B	A	C	D	C	C	A	D	A	
Approach Delay		14.1			41.9		26.5		17.3		
Approach LOS		B			D		C		B		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 20.3
 Intersection Capacity Utilization 79.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 3: US 24 & Woodmen Rd



Timings
1: Meridian Rd & Woodmen Rd

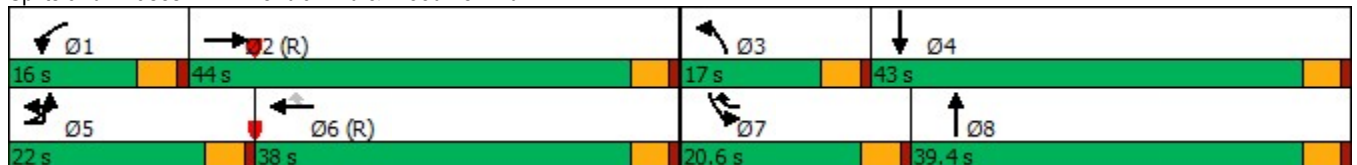
Long-Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	450	535	175	150	785	200	325	350	100	250	940	1040
Future Volume (vph)	450	535	175	150	785	200	325	350	100	250	940	1040
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	9.5	9.5	22.5		9.5	22.5	
Total Split (s)	22.0	44.0		16.0	38.0	20.6	17.0	39.4		20.6	43.0	
Total Split (%)	18.3%	36.7%		13.3%	31.7%	17.2%	14.2%	32.8%		17.2%	35.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	
Act Effct Green (s)	18.0	41.1	120.0	10.9	34.0	53.0	13.0	37.0	120.0	15.0	39.0	120.0
Actuated g/C Ratio	0.15	0.34	1.00	0.09	0.28	0.44	0.11	0.31	1.00	0.12	0.32	1.00
v/c Ratio	0.91	0.44	0.11	0.53	0.86	0.28	0.88	0.32	0.06	0.68	0.95	0.76
Control Delay	72.7	32.2	0.1	78.9	31.6	0.8	77.0	33.3	0.1	58.4	56.9	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	32.2	0.1	78.9	31.6	0.8	77.0	33.3	0.1	58.4	56.9	3.6
LOS	E	C	A	E	C	A	E	C	A	E	E	A
Approach Delay		43.5			32.5			47.3			32.2	
Approach LOS		D			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 36.6
 Intersection LOS: D
 Intersection Capacity Utilization 83.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings

2: McLaughlin Rd & Woodmen Rd

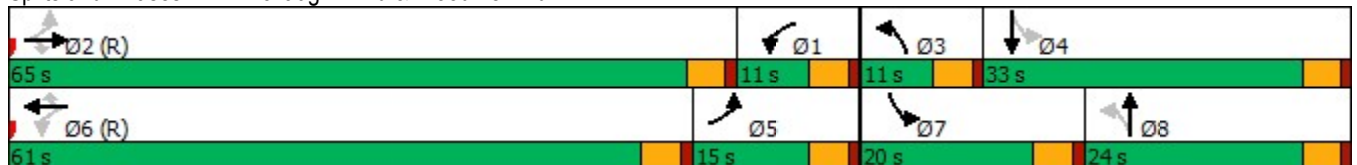
Long-Term Background
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	660	125	50	860	125	50	50	50	175	140	225
Future Volume (vph)	100	660	125	50	860	125	50	50	50	175	140	225
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	15.0	65.0	65.0	11.0	61.0	61.0	11.0	24.0		20.0	33.0	
Total Split (%)	12.5%	54.2%	54.2%	9.2%	50.8%	50.8%	9.2%	20.0%		16.7%	27.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	70.4	62.2	62.2	63.2	57.0	57.0	30.5	23.3	120.0	41.6	32.3	120.0
Actuated g/C Ratio	0.59	0.52	0.52	0.53	0.48	0.48	0.25	0.19	1.00	0.35	0.27	1.00
v/c Ratio	0.35	0.38	0.15	0.16	0.62	0.18	0.14	0.14	0.03	0.39	0.30	0.15
Control Delay	21.7	18.6	5.4	8.3	20.1	1.1	28.9	43.5	0.0	31.9	38.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	18.6	5.4	8.3	20.1	1.1	28.9	43.5	0.0	31.9	38.5	0.2
LOS	C	B	A	A	C	A	C	D	A	C	D	A
Approach Delay		17.1			17.3			24.2			20.4	
Approach LOS		B			B			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 98 (82%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 18.2
 Intersection LOS: B
 Intersection Capacity Utilization 56.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

Long-Term Background
AM Peak Hour

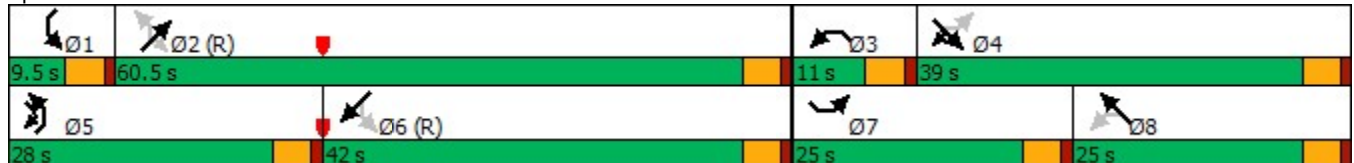


Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWT	SWR	Ø1
Lane Configurations											
Traffic Volume (vph)	275	55	550	20	50	510	660	25	745	475	
Future Volume (vph)	275	55	550	20	50	510	660	25	745	475	
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA	pm+pt	NA	Perm	NA	Free	
Protected Phases	7	4	4 5	3	8	5	2		6		1
Permitted Phases	4			8		2		2			Free
Detector Phase	7	4	4 5	3	8	5	2	2	6		
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	22.5	22.5		9.5	22.5	9.5	22.5	22.5	22.5		9.5
Total Split (s)	25.0	39.0		11.0	25.0	28.0	60.5	60.5	42.0		9.5
Total Split (%)	20.8%	32.5%		9.2%	20.8%	23.3%	50.4%	50.4%	35.0%		8%
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	-0.5	0.0		0.0	0.0	-0.5	-0.5	0.0	-0.5		
Total Lost Time (s)	4.0	4.5		4.5	4.5	4.0	4.0	4.5	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	Max		None	None	None	C-Max	C-Max	C-Max		None
Act Effct Green (s)	46.0	38.9	60.2	22.5	17.5	66.0	66.0	65.5	44.7	120.0	
Actuated g/C Ratio	0.38	0.32	0.50	0.19	0.15	0.55	0.55	0.55	0.37	1.00	
v/c Ratio	0.26	0.10	0.37	0.08	0.20	0.61	0.24	0.03	0.42	0.32	
Control Delay	16.7	21.1	6.7	25.7	44.8	17.8	14.2	0.0	29.4	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.7	21.1	6.7	25.7	44.8	17.8	14.2	0.0	29.4	0.5	
LOS	B	C	A	C	D	B	B	A	C	A	
Approach Delay		10.8			39.2		15.4		18.1		
Approach LOS		B			D		B		B		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 99 (83%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 15.8
 Intersection Capacity Utilization 53.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 3: US 24 & Woodmen Rd



Timings
1: Meridian Rd & Woodmen Rd

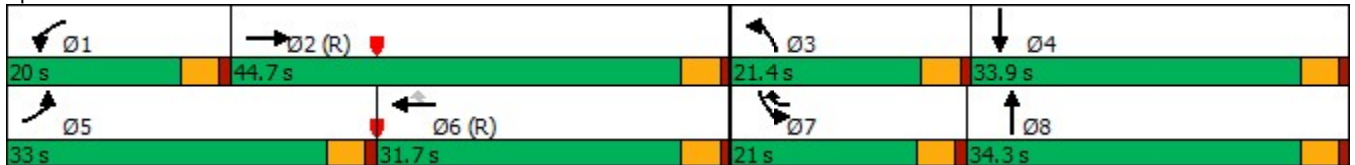
Long-Term Background
 PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	750	725	375	225	570	400	450	850	200	425	700	600
Future Volume (vph)	750	725	375	225	570	400	450	850	200	425	700	600
Turn Type	Prot	NA	Free	Prot	NA	pm+ov	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	7	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	9.5	9.5	22.5		9.5	22.5	
Total Split (s)	33.0	44.7		20.0	31.7	21.0	21.4	34.3		21.0	33.9	
Total Split (%)	27.5%	37.3%		16.7%	26.4%	17.5%	17.8%	28.6%		17.5%	28.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	None	None	None		None	None	
Act Effct Green (s)	28.5	41.8	120.0	13.9	27.2	48.2	16.9	29.8	120.0	16.5	29.4	120.0
Actuated g/C Ratio	0.24	0.35	1.00	0.12	0.23	0.40	0.14	0.25	1.00	0.14	0.24	1.00
v/c Ratio	0.96	0.61	0.25	0.68	0.86	0.70	0.93	0.97	0.13	0.90	0.81	0.38
Control Delay	68.5	35.3	0.4	45.0	57.2	43.2	78.3	68.2	0.2	74.5	51.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	35.3	0.4	45.0	57.2	43.2	78.3	68.2	0.2	74.5	51.0	0.7
LOS	E	D	A	D	E	D	E	E	A	E	D	A
Approach Delay		41.7			50.2			62.1			39.3	
Approach LOS		D			D			E			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 78 (65%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 47.6
 Intersection LOS: D
 Intersection Capacity Utilization 87.8%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

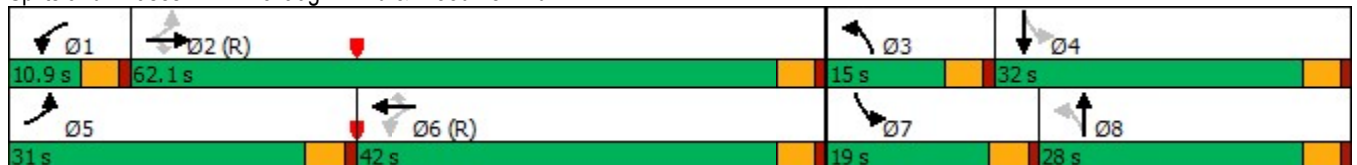
Long-Term Background
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	950	100	75	790	275	150	200	150	200	125	250
Future Volume (vph)	300	950	100	75	790	275	150	200	150	200	125	250
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	31.0	62.1	62.1	10.9	42.0	42.0	15.0	28.0		19.0	32.0	
Total Split (%)	25.8%	51.8%	51.8%	9.1%	35.0%	35.0%	12.5%	23.3%		15.8%	26.7%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	68.5	59.8	59.8	50.8	44.5	44.5	34.9	24.7	120.0	41.1	27.8	120.0
Actuated g/C Ratio	0.57	0.50	0.50	0.42	0.37	0.37	0.29	0.21	1.00	0.34	0.23	1.00
v/c Ratio	0.77	0.60	0.13	0.31	0.60	0.36	0.43	0.61	0.11	0.59	0.29	0.16
Control Delay	23.5	13.5	2.6	17.1	28.9	8.0	32.3	51.5	0.1	36.1	40.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	13.5	2.6	17.1	28.9	8.0	32.3	51.5	0.1	36.1	40.4	0.2
LOS	C	B	A	B	C	A	C	D	A	D	D	A
Approach Delay		14.9			23.1			30.4			21.4	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 5 (4%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

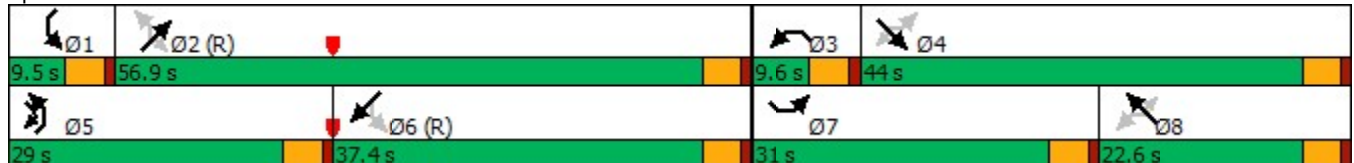
Long-Term Background
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	NER	SWT	SWR	Ø1
Lane Configurations											
Traffic Volume (vph)	850	90	360	25	65	650	1610	35	965	425	
Future Volume (vph)	850	90	360	25	65	650	1610	35	965	425	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	Perm	NA	Free	
Protected Phases	7	4	5	3	8	5	2		6		1
Permitted Phases	4		4	8		2		2			Free
Detector Phase	7	4	5	3	8	5	2	2	6		
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	22.5	22.5	9.5	9.5	22.5	9.5	22.5	22.5	22.5		9.5
Total Split (s)	31.0	44.0	29.0	9.6	22.6	29.0	56.9	56.9	37.4		9.5
Total Split (%)	25.8%	36.7%	24.2%	8.0%	18.8%	24.2%	47.4%	47.4%	31.2%		8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Recall Mode	Max	Max	None	None	None	None	C-Max	C-Max	C-Max		None
Act Effct Green (s)	49.1	43.3	70.6	19.6	15.7	61.9	61.9	61.9	34.7	120.0	
Actuated g/C Ratio	0.41	0.36	0.59	0.16	0.13	0.52	0.52	0.52	0.29	1.00	
v/c Ratio	0.75	0.15	0.22	0.12	0.29	0.86	0.63	0.04	0.70	0.29	
Control Delay	16.7	13.3	1.0	25.4	48.9	42.7	22.3	0.1	41.4	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.7	13.3	1.0	25.4	48.9	42.7	22.3	0.1	41.4	0.5	
LOS	B	B	A	C	D	D	C	A	D	A	
Approach Delay		12.1			42.4		27.7		28.9		
Approach LOS		B			D		C		C		

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 96 (80%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 79.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 3: US 24 & Woodmen Rd



Timings

Short-Term Total

1: Meridian Rd & Woodmen Rd

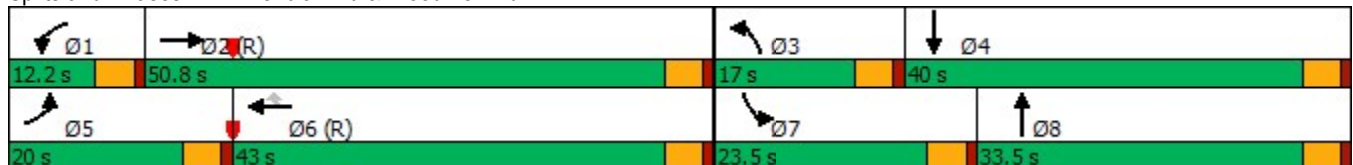
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	561	97	101	783	93	245	342	54	310	715	987
Future Volume (vph)	315	561	97	101	783	93	245	342	54	310	715	987
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	20.0	50.8		12.2	43.0	43.0	17.0	33.5		23.5	40.0	
Total Split (%)	16.7%	42.3%		10.2%	35.8%	35.8%	14.2%	27.9%		19.6%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5		-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	15.1	49.7	120.0	8.1	42.7	42.7	12.5	28.7	120.0	17.5	33.7	120.0
Actuated g/C Ratio	0.13	0.41	1.00	0.07	0.36	0.36	0.10	0.24	1.00	0.15	0.28	1.00
v/c Ratio	0.73	0.38	0.06	0.48	0.68	0.15	0.69	0.40	0.03	0.72	0.84	0.73
Control Delay	60.9	26.1	0.1	78.3	20.8	0.4	62.4	39.9	0.0	57.6	48.9	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	26.1	0.1	78.3	20.8	0.4	62.4	39.9	0.0	57.6	48.9	2.9
LOS	E	C	A	E	C	A	E	D	A	E	D	A
Approach Delay		34.8			24.8			45.1			27.7	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 20 (17%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 30.7
 Intersection LOS: C
 Intersection Capacity Utilization 70.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

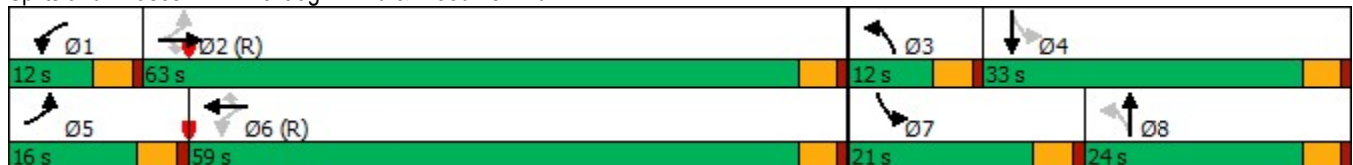
Short-Term Total
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	709	125	50	727	127	50	25	50	156	100	200
Future Volume (vph)	90	709	125	50	727	127	50	25	50	156	100	200
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	16.0	63.0	63.0	12.0	59.0	59.0	12.0	24.0		21.0	33.0	
Total Split (%)	13.3%	52.5%	52.5%	10.0%	49.2%	49.2%	10.0%	20.0%		17.5%	27.5%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5		-0.5	-0.5	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	69.1	61.7	61.7	65.6	58.3	58.3	30.7	23.2	120.0	41.0	31.5	120.0
Actuated g/C Ratio	0.58	0.51	0.51	0.55	0.49	0.49	0.26	0.19	1.00	0.34	0.26	1.00
v/c Ratio	0.28	0.41	0.15	0.16	0.51	0.18	0.14	0.07	0.03	0.35	0.22	0.13
Control Delay	13.6	19.5	6.0	9.4	18.2	1.8	28.5	42.1	0.0	31.2	37.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	19.5	6.0	9.4	18.2	1.8	28.5	42.1	0.0	31.2	37.5	0.2
LOS	B	B	A	A	B	A	C	D	A	C	D	A
Approach Delay		17.1			15.4			19.8			18.9	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 4 (3%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 50.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

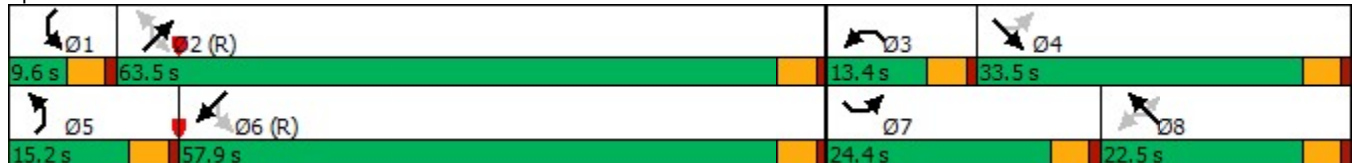
Short-Term Total
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	291	158	466	107	98	45	395	211	96	82	547	461
Future Volume (vph)	291	158	466	107	98	45	395	211	96	82	547	461
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		Free
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	24.4	33.5		13.4	22.5	22.5	15.2	63.5	63.5	9.6	57.9	
Total Split (%)	20.3%	27.9%		11.2%	18.8%	18.8%	12.7%	52.9%	52.9%	8.0%	48.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-0.5	0.0		0.0	0.0	0.0	-0.5	-0.5	0.0	0.0	-0.5	
Total Lost Time (s)	4.0	4.5		4.5	4.5	4.5	4.0	4.0	4.5	4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	Max	Max		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	42.9	29.3	120.0	26.6	18.0	18.0	69.1	59.5	59.0	58.7	54.1	120.0
Actuated g/C Ratio	0.36	0.24	1.00	0.22	0.15	0.15	0.58	0.50	0.49	0.49	0.45	1.00
v/c Ratio	0.60	0.38	0.30	0.38	0.20	0.13	0.60	0.23	0.12	0.15	0.70	0.31
Control Delay	23.9	29.0	0.9	32.1	45.8	0.7	16.2	18.0	1.5	12.7	32.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	29.0	0.9	32.1	45.8	0.7	16.2	18.0	1.5	12.7	32.0	0.5
LOS	C	C	A	C	D	A	B	B	A	B	C	A
Approach Delay		13.2			31.9			14.6			17.2	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.7
 Intersection LOS: B
 Intersection Capacity Utilization 74.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: US 24 & Woodmen Rd



Timings

Short-Term Total

1: Meridian Rd & Woodmen Rd

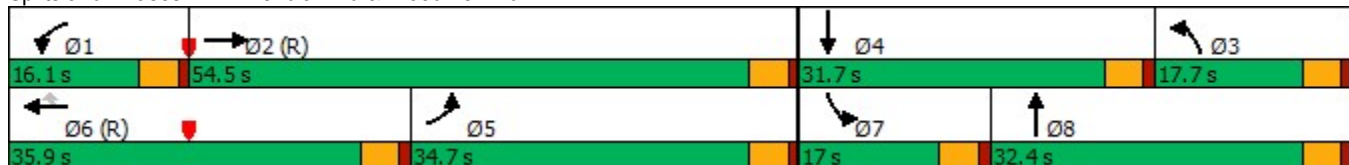
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	802	647	192	157	722	277	290	815	181	308	615	490
Future Volume (vph)	802	647	192	157	722	277	290	815	181	308	615	490
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			Free
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	34.7	54.5		16.1	35.9	35.9	17.7	32.4		17.0	31.7	
Total Split (%)	28.9%	45.4%		13.4%	29.9%	29.9%	14.8%	27.0%		14.2%	26.4%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lag	Lag		Lead	Lead	Lead	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	30.2	50.8	120.0	10.8	31.4	31.4	15.3	27.9	120.0	12.5	25.1	120.0
Actuated g/C Ratio	0.25	0.42	1.00	0.09	0.26	0.26	0.13	0.23	1.00	0.10	0.21	1.00
v/c Ratio	0.97	0.45	0.13	0.61	0.94	0.58	0.67	0.99	0.11	0.86	0.83	0.31
Control Delay	68.4	26.0	0.2	71.9	78.0	36.4	58.8	75.6	0.1	76.3	55.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	26.0	0.2	71.9	78.0	36.4	58.8	75.6	0.1	76.3	55.8	0.5
LOS	E	C	A	E	E	D	E	E	A	E	E	A
Approach Delay		43.7			67.2			61.2			41.1	
Approach LOS		D			E			E			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 52.6
 Intersection LOS: D
 Intersection Capacity Utilization 89.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Woodmen Rd



Timings
2: McLaughlin Rd & Woodmen Rd

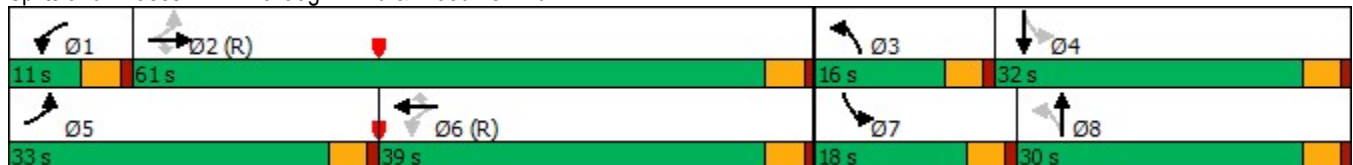
Short-Term Total
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	285	756	100	75	782	262	150	175	150	160	100	225
Future Volume (vph)	285	756	100	75	782	262	150	175	150	160	100	225
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		Free
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	33.0	61.0	61.0	11.0	39.0	39.0	16.0	30.0		18.0	32.0	
Total Split (%)	27.5%	50.8%	50.8%	9.2%	32.5%	32.5%	13.3%	25.0%		15.0%	26.7%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max		None	Max	
Act Effct Green (s)	67.5	58.7	58.7	49.4	43.1	43.1	38.0	27.0	120.0	40.0	28.0	120.0
Actuated g/C Ratio	0.56	0.49	0.49	0.41	0.36	0.36	0.32	0.22	1.00	0.33	0.23	1.00
v/c Ratio	0.74	0.49	0.13	0.24	0.62	0.36	0.38	0.48	0.11	0.43	0.23	0.14
Control Delay	41.9	25.4	8.1	10.7	21.1	1.6	30.4	45.6	0.1	31.0	39.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	25.4	8.1	10.7	21.1	1.6	30.4	45.6	0.1	31.0	39.3	0.2
LOS	D	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		28.0			15.8			26.4			18.4	
Approach LOS		C			B			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 22.4
 Intersection LOS: C
 Intersection Capacity Utilization 70.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: McLaughlin Rd & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

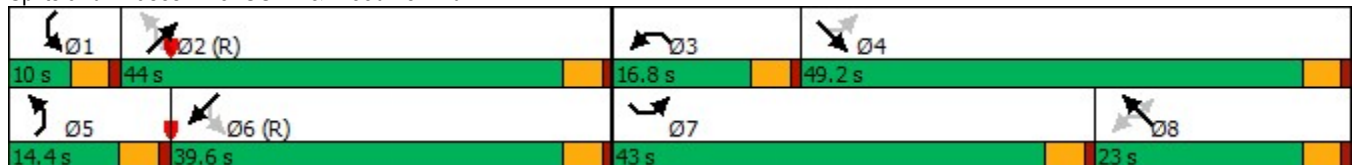
Short-Term Total
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	503	260	303	149	328	225	353	421	333	105	277	388
Future Volume (vph)	503	260	303	149	328	225	353	421	333	105	277	388
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		Free
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	43.0	49.2		16.8	23.0	23.0	14.4	44.0	44.0	10.0	39.6	
Total Split (%)	35.8%	41.0%		14.0%	19.2%	19.2%	12.0%	36.7%	36.7%	8.3%	33.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	Max	Max		None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	61.5	46.2	120.0	29.3	18.5	18.5	49.4	39.5	39.5	40.6	35.1	120.0
Actuated g/C Ratio	0.51	0.38	1.00	0.24	0.15	0.15	0.41	0.33	0.33	0.34	0.29	1.00
v/c Ratio	0.80	0.39	0.20	0.50	0.66	0.56	0.53	0.71	0.56	0.50	0.54	0.26
Control Delay	32.2	31.1	0.3	26.3	54.1	12.5	26.4	42.7	19.1	32.3	40.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	31.1	0.3	26.3	54.1	12.5	26.4	42.7	19.1	32.3	40.1	0.4
LOS	C	C	A	C	D	B	C	D	B	C	D	A
Approach Delay		22.9			34.9			30.2			19.1	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 26.6
 Intersection LOS: C
 Intersection Capacity Utilization 79.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: US 24 & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

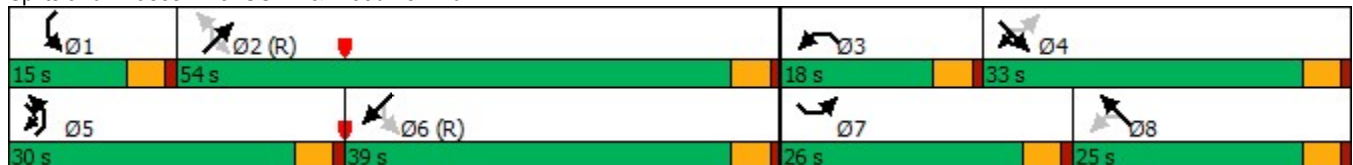
Long-Term Total
AM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	266	158	536	112	98	45	505	636	96	82	717	461
Future Volume (vph)	266	158	536	112	98	45	505	636	96	82	717	461
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA	Free	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	7	4	4 5	3	8		5	2		1	6	
Permitted Phases	4			8		Free	2		2	6		Free
Detector Phase	7	4	4 5	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		9.5	22.5		9.5	22.5	22.5	9.5	22.5	
Total Split (s)	26.0	33.0		18.0	25.0		30.0	54.0	54.0	15.0	39.0	
Total Split (%)	21.7%	27.5%		15.0%	20.8%		25.0%	45.0%	45.0%	12.5%	32.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	-0.5	0.0		0.0	0.0		-0.5	-0.5	0.0	0.0	-0.5	
Total Lost Time (s)	4.0	4.5		4.5	4.5		4.0	4.0	4.5	4.5	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	Max	Max		None	None		None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	47.0	31.3	52.6	31.2	20.5	120.0	65.0	52.1	51.6	51.6	43.7	120.0
Actuated g/C Ratio	0.39	0.26	0.44	0.26	0.17	1.00	0.54	0.43	0.43	0.43	0.36	1.00
v/c Ratio	0.26	0.35	0.40	0.34	0.18	0.03	0.60	0.29	0.14	0.23	0.42	0.31
Control Delay	15.0	27.1	8.9	28.0	43.5	0.0	18.0	22.6	2.0	16.0	30.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	27.1	8.9	28.0	43.5	0.0	18.0	22.6	2.0	16.0	30.0	0.5
LOS	B	C	A	C	D	A	B	C	A	B	C	A
Approach Delay		13.7			29.0			19.0			18.3	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 99 (83%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 56.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: US 24 & Woodmen Rd



Timings
3: US 24 & Woodmen Rd

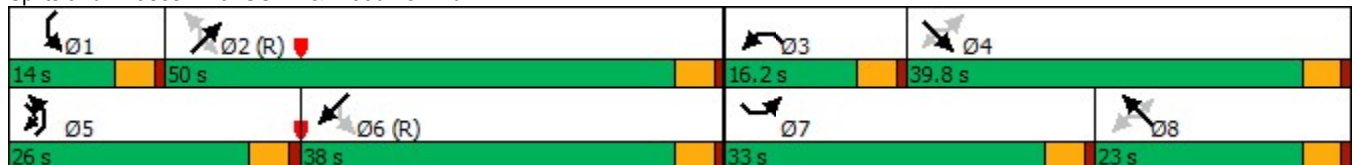
Long-Term Total
PM Peak Hour

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	803	260	348	139	328	225	603	1516	333	105	942	413
Future Volume (vph)	803	260	348	139	328	225	603	1516	333	105	942	413
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	9.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	33.0	39.8	26.0	16.2	23.0	23.0	26.0	50.0	50.0	14.0	38.0	
Total Split (%)	27.5%	33.2%	21.7%	13.5%	19.2%	19.2%	21.7%	41.7%	41.7%	11.7%	31.7%	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Act Effct Green (s)	51.5	36.3	60.9	29.2	18.5	18.5	59.5	46.3	46.3	43.6	34.9	120.0
Actuated g/C Ratio	0.43	0.30	0.51	0.24	0.15	0.15	0.50	0.39	0.39	0.36	0.29	1.00
v/c Ratio	0.85	0.50	0.24	0.46	0.66	0.62	0.86	0.80	0.51	0.60	0.68	0.28
Control Delay	26.7	20.6	2.7	28.7	54.1	22.0	40.9	36.6	18.8	35.4	40.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	20.6	2.7	28.7	54.1	22.0	40.9	36.6	18.8	35.4	40.7	0.4
LOS	C	C	A	C	D	C	D	D	B	D	D	A
Approach Delay		19.7			38.6			35.1			28.9	
Approach LOS		B			D			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 96 (80%), Referenced to phase 2:NETL and 6:SWTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 30.4
 Intersection Capacity Utilization 82.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 3: US 24 & Woodmen Rd



Queuing Reports



Queuing and Blocking Report
Baseline

09/25/2019

Intersection: 2: McLaughlin Rd & Woodmen Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	B12	B12	NB	NB
Directions Served	L	T	T	R	L	T	T	R	T	T	L	T
Maximum Queue (ft)	121	341	411	85	83	270	277	58	88	88	70	78
Average Queue (ft)	55	115	187	33	33	135	157	25	3	3	25	17
95th Queue (ft)	101	247	315	65	72	227	243	54	45	45	55	49
Link Distance (ft)		869	869	869		405	405		233	233		435
Upstream Blk Time (%)			0						0	0		
Queuing Penalty (veh)			0						0	0		
Storage Bay Dist (ft)	375				350			350			125	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: McLaughlin Rd & Woodmen Rd

Movement	SB	SB	SB
Directions Served	L	T	R
Maximum Queue (ft)	199	318	125
Average Queue (ft)	95	92	31
95th Queue (ft)	173	211	119
Link Distance (ft)		572	
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	175		100
Storage Blk Time (%)	1	6	0
Queuing Penalty (veh)	4	22	0

Queuing and Blocking Report
Baseline

09/25/2019

Intersection: 3: US 24 & Woodmen Rd

Movement	SE	SE	SE	SE	SE	B12	B17	NW	NW	NW	NW	NE
Directions Served	L	L	T	R	R	T	T	L	T	T	R	L
Maximum Queue (ft)	113	132	286	125	111	209	79	145	84	104	34	254
Average Queue (ft)	40	60	94	79	23	13	3	72	32	39	3	136
95th Queue (ft)	85	103	227	146	94	102	56	126	69	78	17	216
Link Distance (ft)		233	233			420	405		454	454		
Upstream Blk Time (%)			2				0					
Queuing Penalty (veh)			9				0					
Storage Bay Dist (ft)	250			100	100			250			250	850
Storage Blk Time (%)			6	1	0							
Queuing Penalty (veh)			34	2	1							

Intersection: 3: US 24 & Woodmen Rd

Movement	NE	NE	NE	NE	NE	SW	SW	SW	SW
Directions Served	L	T	T	T	R	L	T	T	T
Maximum Queue (ft)	230	270	229	128	71	237	341	310	183
Average Queue (ft)	112	162	119	36	30	65	220	187	62
95th Queue (ft)	188	240	201	103	60	185	312	276	160
Link Distance (ft)							1321	1321	1321
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	850				100	250			
Storage Blk Time (%)				0	0	0	4		
Queuing Penalty (veh)				0	0	0	3		

Intersection: 10: US 24 & Old Meridian Road/Old Meridian Rd

Movement	B9	B9
Directions Served	T	
Maximum Queue (ft)	522	103
Average Queue (ft)	41	3
95th Queue (ft)	292	73
Link Distance (ft)	904	904
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

09/25/2019

Intersection: 19:

Movement	SE	NW	SW	SW
Directions Served	L	R	L	R
Maximum Queue (ft)	58	8	59	67
Average Queue (ft)	17	0	17	34
95th Queue (ft)	49	4	46	54
Link Distance (ft)	454	638	359	359
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 85

Queuing and Blocking Report
Baseline

09/25/2019

Intersection: 2: McLaughlin Rd & Woodmen Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	B17	B17	B12	B12
Directions Served	L	T	T	R	L	T	T	R	T	T	T	T
Maximum Queue (ft)	264	647	766	525	268	451	477	375	26	38	241	313
Average Queue (ft)	113	185	131	36	55	263	311	132	1	2	17	33
95th Queue (ft)	203	429	424	225	152	418	457	350	19	24	114	178
Link Distance (ft)		869	869	869		405	405		420	420	232	232
Upstream Blk Time (%)		0	0			1	2				0	1
Queuing Penalty (veh)		0	1			4	13				1	3
Storage Bay Dist (ft)	375				350			350				
Storage Blk Time (%)		0				2	4	0				
Queuing Penalty (veh)		0				1	11	0				

Intersection: 2: McLaughlin Rd & Woodmen Rd

Movement	B12	NB	NB	NB	SB	SB	SB
Directions Served		L	T	R	L	T	R
Maximum Queue (ft)	149	150	454	150	200	440	125
Average Queue (ft)	5	98	171	53	129	126	37
95th Queue (ft)	63	170	354	170	208	321	129
Link Distance (ft)	232		435			572	
Upstream Blk Time (%)	0		2			0	
Queuing Penalty (veh)	0		0			0	
Storage Bay Dist (ft)		125		125	175		100
Storage Blk Time (%)		5	20	0	8	7	0
Queuing Penalty (veh)		18	60	0	30	32	0

Queuing and Blocking Report
Baseline

09/25/2019

Intersection: 3: US 24 & Woodmen Rd

Movement	SE	SE	SE	SE	SE	B12	B12	B17	B17	NW	NW	NW
Directions Served	L	L	T	R	R	T	T	T	T	L	T	T
Maximum Queue (ft)	229	232	323	96	57	510	337	407	405	195	245	297
Average Queue (ft)	205	215	250	10	4	206	35	89	44	85	127	150
95th Queue (ft)	248	258	391	56	37	570	211	319	224	152	223	258
Link Distance (ft)			232	232		420	420	405	405		455	455
Upstream Blk Time (%)	2	9	18			10	0	0	0			
Queuing Penalty (veh)	0	0	128			68	1	1	0			
Storage Bay Dist (ft)	250	250			100					250		
Storage Blk Time (%)	2	9	18	0	0						0	5
Queuing Penalty (veh)	5	24	146	0	0						0	11

Intersection: 3: US 24 & Woodmen Rd

Movement	NW	NE	NE	NE	NE	NE	NE	SW	SW	SW	SW	SW
Directions Served	R	L	L	T	T	T	R	L	T	T	T	R
Maximum Queue (ft)	222	377	457	466	458	393	125	275	1360	1361	1368	375
Average Queue (ft)	90	192	224	401	332	229	102	257	1161	1138	1095	315
95th Queue (ft)	191	317	378	506	440	359	156	360	1610	1611	1659	540
Link Distance (ft)									1323	1323	1323	
Upstream Blk Time (%)									41	34	42	
Queuing Penalty (veh)									0	0	0	
Storage Bay Dist (ft)	200	850	850				100	250				350
Storage Blk Time (%)	0					18	3	0	96		59	1
Queuing Penalty (veh)	0					62	16	0	101		244	2

Intersection: 10: US 24 & Old Meridian Road/Old Meridian Rd

Movement	B9	B9
Directions Served	T	
Maximum Queue (ft)	392	95
Average Queue (ft)	50	3
95th Queue (ft)	321	67
Link Distance (ft)	902	902
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

09/25/2019

Intersection: 19:

Movement	SE	NW	NW	SW	SW
Directions Served	L	T	R	L	R
Maximum Queue (ft)	160	13	29	68	105
Average Queue (ft)	65	0	2	24	53
95th Queue (ft)	121	5	16	59	87
Link Distance (ft)	455	382	382	268	268
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1044