



Traffic Impact Study

Circle K – US-24 & Meridian El Paso County, Colorado

See comments on pages
1-39 throughout

Prepared for:
Land Development Consultants

Kimley»»Horn

Add "PCD File No.
CS-21-003"

T R A F F I C I M P A C T S T U D Y

Traffic Engineer's Statement

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



Jeffrey R. Planck, P.E., PE #53006

May 27, 2021
Date

Developer's Statement

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

Ms. Sofia Hernandez
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Date

Circle K – US-24 & Meridian

El Paso County, Colorado

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May 2021



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TABLE OF CONTENTS

TABLE OF CONTENTS	i
APPENDICES	ii
LIST OF TABLES	ii
LIST OF FIGURES.....	ii
1.0 EXECUTIVE SUMMARY.....	1
2.0 INTRODUCTION.....	6
3.0 EXISTING AND FUTURE CONDITIONS.....	8
3.1 Surrounding Land Use.....	8
3.2 Existing and Future Roadway Network.....	8
3.3 Existing Traffic Volumes	9
3.4 Unspecified Development Traffic Growth.....	9
Figure 4 – 2021 Existing Traffic Volumes	12
4.0 PROJECT TRAFFIC CHARACTERISTICS.....	16
4.1 Trip Generation.....	16
4.2 Trip Distribution	17
4.3 Traffic Assignment.....	17
4.4 Total (Background Plus Project) Traffic.....	17
5.0 TRAFFIC OPERATIONS ANALYSIS	22
5.1 Analysis Methodology.....	22
5.2 Key Intersection Operational Analysis	23
5.3 Future Intersections.....	26
5.4 El Paso County and CDOT Turn Lane Requirement Analysis.....	27
5.5 Queuing Analysis.....	31
5.6 Access Spacing and Sight Distance Evaluation	32
5.7 Bicycle and Pedestrian Access.....	34
5.8 Improvement Summary	34
6.0 CONCLUSIONS AND RECOMMENDATIONS	37

APPENDICES

Appendix A – Intersection Count Sheets
Appendix B – CDOT Traffic Data
Appendix C – Trip Generation Worksheets
Appendix D – Intersection Analysis Worksheets
Appendix E – Queuing Analysis Worksheets
Appendix F – Conceptual Site Plan

LIST OF TABLES

Table 1 – Project Traffic Generation.....	17
Table 2 – Level of Service Definitions	22
Table 3 – US-24 and (Old) Meridian Road LOS Results	24
Table 4 – US-24 and (New) Meridian Road LOS Results.....	25
Table 5 – Project Accesses and Future Intersections LOS Results	27
Table 6 – Turn Lane Length Analysis Results	31

LIST OF FIGURES

Figure 1 – Vicinity Map.....	7
Figure 2 – Site Area	10
Figure 3 – Existing Lanes and Control	11
Figure 4 – 2021 Existing Traffic Volumes.....	12
Figure 5 – 2021 Existing Adjusted Traffic Volumes	13
Figure 6 – 2023 Background Traffic Volumes.....	14
Figure 7 – 2040 Background Traffic Volumes.....	15
Figure 8 – Project Trip Distribution	18
Figure 9 – Project Traffic Assignment	19
Figure 10 – 2023 Background Plus Project Traffic Volumes.....	20
Figure 11 – 2040 Background Plus Project Traffic Volumes.....	21
Figure 12 – 2023 Recommended Lane Configurations and Control	35
Figure 13 – 2040 Recommended Lane Configurations and Control	36

1.0 EXECUTIVE SUMMARY

A Circle K gas station is proposed to redevelop an existing gas station located on the southwest corner of US-24 and (Old) Meridian Road intersection in El Paso County, Colorado. The project is proposing 16 fueling positions with a 5,200 square foot convenience market. It should be noted that the existing gas station on site currently provides eight (8) fueling positions. It is expected that the project will be completed by 2023; therefore, analysis was conducted for the 2023 short term horizon as well as the 2040 long-term horizon per El Paso County requirements.

The purpose of this study is to identify project traffic generation characteristics and potential project traffic related impacts on the local street system, as well as to develop mitigation measures required for identified impacts. The following intersections were incorporated into this traffic study in accordance with El Paso County and Colorado Department of Transportation (CDOT) standards and requirements:

- US-24 and (Old) Meridian Road
- US-24 and (New) Meridian Road (future)
- Swingline Road and (New) Meridian Road (future)
- Swingline Road and (Old) Meridian Road (future realignment)
- Pacific Avenue and (New) Meridian Road (future)
- Pacific Avenue and (Old) Meridian Road (future)

Regional access will be provided by Woodmen Road and United States Highway 24 (US-24). Primary and direct access to the site will be provided from (New) Meridian Road and (Old) Meridian Road. The proposed accesses include three-quarter turning movements at the future intersection of Pacific Avenue and (New) Meridian Road and a full movement access along the west side of (Old) Meridian Road at the future Pacific Avenue. Driveway access will be provided along the north side of the proposed Pacific Avenue roadway extending between (Old) Meridian Road and (New) Meridian Road.

The redeveloped Circle K project is expected to generate approximately 4,356 weekday daily trips with 432 of these trips occurring during the morning peak hour and 360 trips occurring during the afternoon peak hour. Based on traffic volume counts conducted and driveways of the

existing gas station, the existing gas station on site is currently generating 110 trips during the weekday morning peak hour and 146 trips during the afternoon peak hour. To account for a COVID-19 adjustment, the existing gas station driveway volumes were increased and would be expected to generate approximately 160 trips during the weekday morning peak hour and 213 trips during the afternoon peak hour. Therefore, the redeveloped Circle K project is expected to generate a net additional 272 morning peak hour trips and 147 trips afternoon peak hour trips than the existing adjusted site traffic volume level.

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, anticipated surrounding development in the area, and the proposed access system for the project. Assignment of project traffic was based upon the trip generation described previously and the distributions developed.

Based on the analysis presented in this report, Kimley-Horn believes the redeveloped Circle K project will be successfully incorporated into the existing and future roadway network. The proposed project development and expected traffic volumes resulted in the following recommendations and conclusions:

2023 Recommendations:

- The following improvements are recommended in association with the project:
 - The future intersections of Pacific Avenue/(New) Meridian Road and Pacific Avenue/(Old Meridian Avenue will provide primary access for the project. The intersection of Pacific Avenue/(New) Meridian Road is proposed to allow three quarter turning movements with westbound left turns being prohibited. The intersection of Pacific Avenue/(Old) Meridian Road is proposed to allow full turning

Collaboration is needed between CDOT, City of Colorado Springs, and El Paso County regarding the proposed access to (New) Meridian Road. This will be discussed during the monthly CDOT-Local Agency coordination meeting (Dec. 21). Additional comments/guidance will be provided after the meeting.

Be Advised: If the proposed access is not supported by either agency then the TIS would need to be amended without the access from (New) Meridian Road.

driveways located extending between that the proposed are appropriately (M) standards for

- The driveway accesses along Pacific Avenue and the two future access intersections of Pacific Avenue/Meridian Road (New) and Pacific Avenue/Meridian Road (Old) are recommended to provide R1-1 “STOP” signs on the exiting approaches. It is anticipated that single shared movement lanes are sufficient for the exiting approaches of all these access intersections. A raised “pork-chop” median may be required in the exiting throat of the three-quarter movement access intersection of Pacific Avenue and (New) Meridian Road to prevent left turns onto (New) Meridian Road. A R3-2 “No Left Turn” sign should be installed under the STOP sign of this future intersection.

- There is approximately 340 feet of spacing along (New) Meridian Road between US-24 and the proposed Pacific Avenue (measured edge to edge). With the future intersection of Pacific Avenue and (New) Meridian Road being proposed to allow three-quarter turning movements, it is recommended that the northbound left turn lane at the US-24 and (New) Meridian Road intersection be restriped from 400 feet to 150 feet of length to accommodate back to back left turn lanes with the future intersection of Pacific Avenue and (New) Meridian Road. Further, the southbound left turn lane at the future Pacific Avenue and (New) Meridian Road intersection should provide 100 feet of length with a reduced shared taper length of 75 feet. A deviation request will need to be provided to allow these substandard left turn lane lengths; however, calculated vehicles are expected to be accommodated within the proposed left turn lane lengths.

Internal divider road not recommended with shorter intersection distance from HWY 24 intersection distance not met

- It is recommended that the existing 400 foot northbound right turn lane at the US-24 and (New) Meridian Road intersection be shortened to 155 feet of length plus a 160-foot taper to accommodate the future intersection of Pacific Avenue and (New) Meridian Road. This new length meets El Paso County standards for a design speed of 40 miles per hour and vehicle queues will be accommodated in this lane as the northbound to eastbound right turn acceleration lane will provide free movements at this intersection.

Intersection spacing distance not met for collector or minor arterial

- The following improvements along US-24 are anticipated to be completed by CDOT in association with the ongoing realignment of Meridian Road:
 - By project buildout year of 2023 and coinciding the completion of the new alignment of Meridian Road, it is anticipated that CDOT will convert the signalized intersection of US-24 and (Old) Meridian Road will to an unsignalized intersection. Further, this intersection will be restricted to right-in/right-out only movements with stop control along the northbound and southbound (Old) Meridian Road approaches.
 - With completion of the new alignment of Meridian Road, it is anticipated that CDOT will construct a combination right turn acceleration to deceleration lane that will extend eastbound along US-24 from (New) Meridian Road to (Old) Meridian Road. Likewise, a combination right turn acceleration to deceleration lane will extend westbound along US-24 from (Old) Meridian Road to (New) Meridian Road.
 - A 600-foot eastbound right turn deceleration lane with a 225-foot taper is recommended at the intersection of US-24 and (New) Meridian Road. A 1,125-foot left turn lane with a 225-foot taper is also recommended along the eastbound approach of this intersection. Likewise, a westbound left turn lane with a length of 770 feet is recommended at the US-24 and (New) Meridian Road intersection. Lastly, a southbound Meridian Road to westbound US-24 right turn acceleration is recommended with a length of 960 feet plus a 225-foot taper. It is anticipated that CDOT will be constructing all these improvements with the new alignment of Meridian Road.

2040 Recommendations:

- If future traffic volume projections materialize, US-24 will need to be improved to provide two through lanes in each direction throughout the study area.
- The westbound left turn lane at the US-24 and Meridian Road intersection may need to be extended from 770 feet to 835 feet of length.
- The eastbound approach of the US-24 and Meridian Road intersection may need to provide dual left turn lanes with 965 feet of length per lane.

General Recommendations:

- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to El Paso County Standards as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).

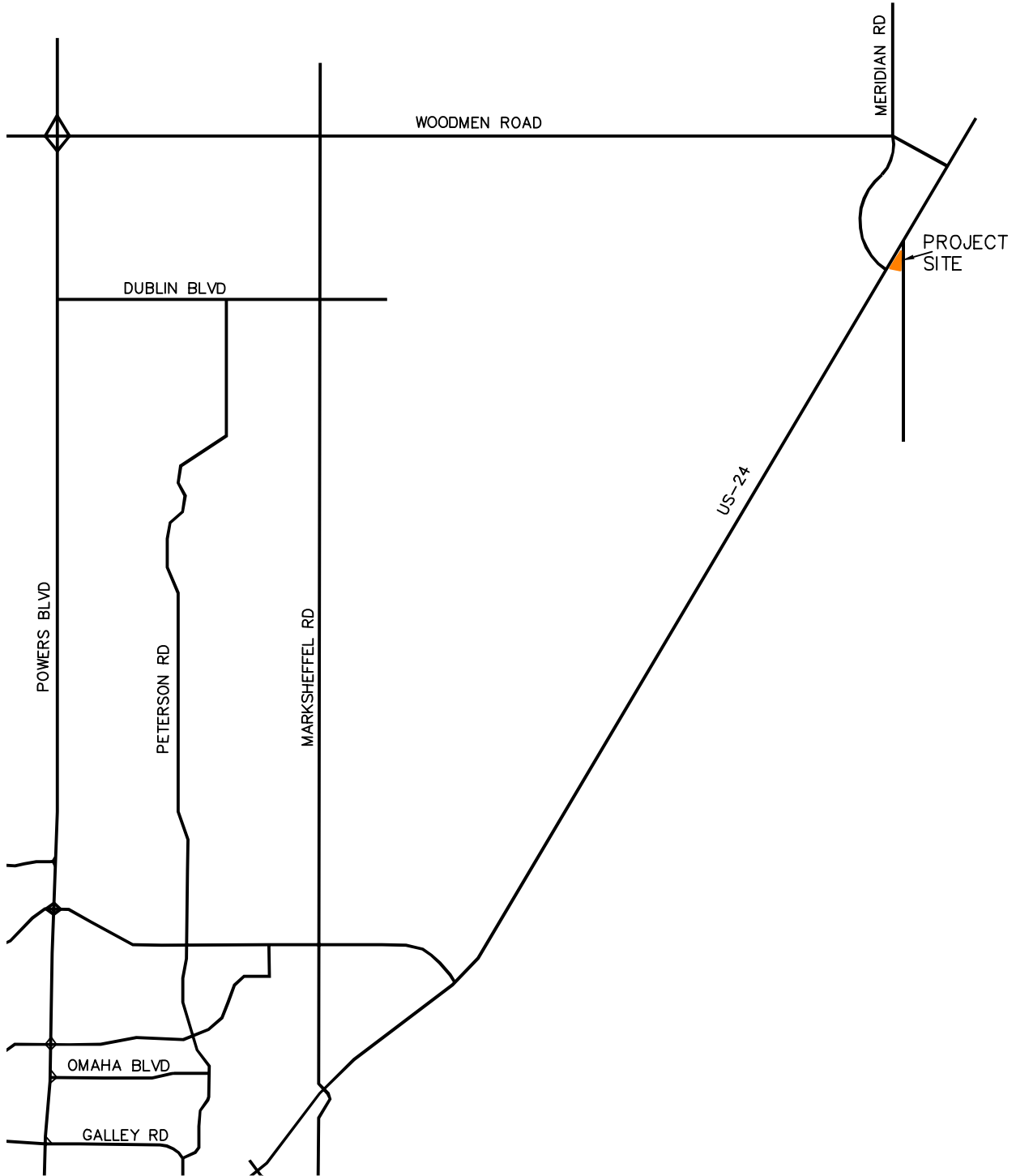
2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study of future traffic conditions associated with a Circle K gas station proposed to redevelop an existing gas station located on the southwest corner of US-24 and (Old) Meridian Road intersection in El Paso County, Colorado. A vicinity map illustrating the project location is shown in **Figure 1**. The project is proposing 16 fueling positions with a 5,200 square foot convenience market. It should be noted that the existing gas station on site currently provides eight (8) fueling positions. A conceptual site plan illustrating the development is shown in **Appendix F**. It is expected that the project will be completed by 2023; therefore, analysis was conducted for the 2023 short term horizon as well as the 2040 long-term horizon per El Paso County and CDOT requirements.

The purpose of this study is to identify project traffic generation characteristics and potential project traffic related impacts on the local street system, as well as to develop mitigation measures required for identified impacts. The following intersections were incorporated into this traffic study in accordance with El Paso County and Colorado Department of Transportation (CDOT) standards and requirements:

- US-24 and (Old) Meridian Road
- US-24 and (New) Meridian Road (future)
- Swingline Road and (New) Meridian Road (future)
- Swingline Road and (Old) Meridian Road (future realignment)
- Pacific Avenue and (New) Meridian Road (future)
- Pacific Avenue and (Old) Meridian Road (future)

Regional access will be provided by Woodmen Road and United States Highway 24 (US-24). Primary and direct access to the site will be provided from (New) Meridian Road and (Old) Meridian Road. The proposed accesses include three-quarter turning movements at the future intersection of Pacific Avenue and (New) Meridian Road and a full movement access along the west side of (Old) Meridian Road at the future Pacific Avenue. Driveway access will be provided along the north side of the proposed Pacific Avenue roadway extending between (Old) Meridian Road and (New) Meridian Road.



CIRCLE K – US-24 & MERIDIAN
EL PASO COUNTY, COLORADO
VICINITY MAP

FIGURE 1

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Surrounding Land Use

The project site is comprised of an existing gas station, two single-family residential homes, and vacant land. The south half of the project area will be for future development. The area to the southwest is primarily vacant while the surrounding area in direction includes residential developments. The area and roadway network surrounding the project site are shown in the aerial of **Figure 2**.

Coordinate with CDOT for potential Hwy 24 widening.
Provide a summary of the coordination efforts.

3.2 Existing and Future Roadway Network

US-24 provides one through lane in each direction adjacent to the project site with a posted speed limit of 55 miles per hour. US-24 is classified as a “principal arterial” per El Paso County roadway classification map while being categorized as E-X: Expressway, Major Bypass by CDOT. (Old) Meridian Road provides one through lane in each direction with a posted speed limit of 40 miles per hour. The (New) Meridian Road is currently under construction and is located approximately 1,000 feet west of the (Old) Meridian Road. El Paso County classifies Meridian Road as a principal arterial north of US-24 and a minor arterial roadway south of US-24

The existing intersection of US-24 and (Old) Meridian Road is signalized with protective-permissive left turn signal phasing on the eastbound westbound approaches of US-24. The north-south approaches of (Old) Meridian Road operates with split phasing. The eastbound and westbound approaches of this intersection provide a left turn lane, a through lane, and a right turn lane while the northbound and southbound approaches provide a shared through/left turn lane and a right turn lane. When the (New) Meridian Road is constructed, this intersection will operate under stop control on the north-south approach of (Old) Meridian Road and be restricted to right-in/right-out only movements.

The US-24 and (New) Meridian Road intersection will be signalized in the near future and be located approximately 1,000 feet west of the (Old) Meridian Road and US-24 intersection. The northbound and southbound approaches are anticipated to provide a left turn lane, two through lanes, and a right turn lane. The eastbound and westbound approaches are anticipated to

provide a left turn lane, a through lane, and a right turn lane. The existing intersection lane configuration and control for these study area key intersections are shown in **Figure 3**.

3.3 Existing Traffic Volumes

Existing PM peak hour turning movement counts were collected on Wednesday, April 14, 2021 while AM peak hour turning movement counts were conducted on Thursday, April 15, 2021. The counts were conducted in 15-minute intervals during the morning and afternoon peak hours of adjacent street traffic from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. Existing turning movement counts are shown in **Figure 4** with count sheets provided in **Appendix A**.

Due to the counts being collected during the COVID-19 Pandemic, an adjustment factor was determined in order to grow the counts to non-COVID conditions to represent normal condition traffic volumes. Peak hour through volumes conducted in 2019 that were provided by the Colorado Department of Transportation along US-24 were grown to year 2021. These volumes were compared to the approach volumes collected in 2021 at the intersection of US-24 and (Old) Meridian Road. It was determined the morning peak hour traffic volumes needed to be increase by 46 percent while the afternoon peak hour traffic volumes needed to be increased by 47 percent to identify normal existing conditions traffic volumes. The adjusted peak hour turning movement counts are shown in **Figure 5**.

3.4 Unspecified Development Traffic Growth

Based on information provided on the website for the Colorado Department of Transportation, the 20-year average growth factor along US-24 within the study area between 1.4 and 1.5. The average value equates to an annual growth rate of approximately 1.8 percent per year. Traffic information from the CDOT Online Transportation Information System (OTIS) is included in **Appendix B**. Based on the above information, a 2.0 percent annual growth rate was used to calculate future traffic volumes at the study area intersection and adjacent roadways. This

Elaborate on the background traffic. What other TIS was incorporated into the background traffic volumes? Was the TIS for the park-n-ride to the south included?

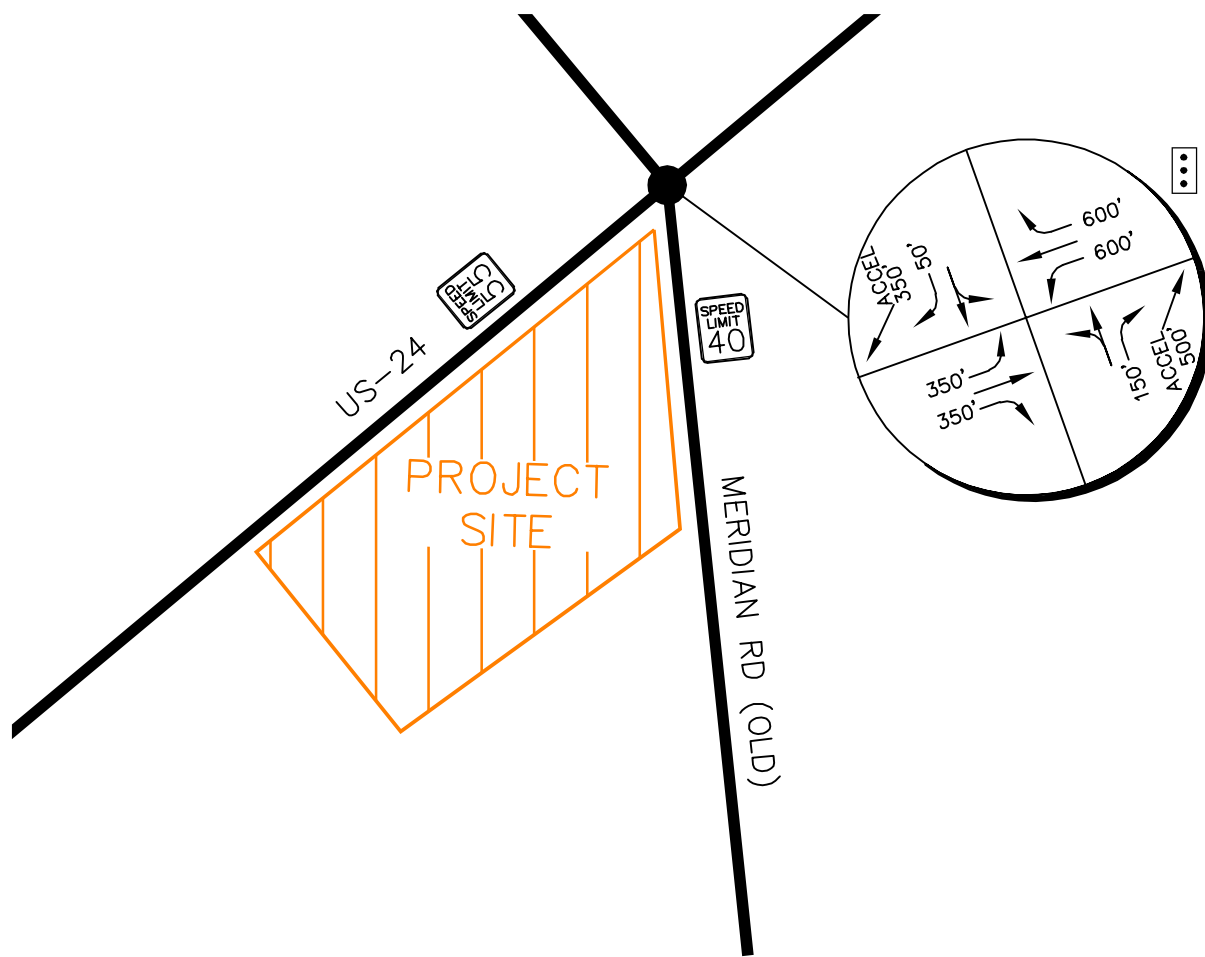
estimated short-term 2023 and long-term 2040 traffic volumes. Background traffic counts at the intersection of US-24 and (Old) Meridian Road and the intersection of US-24 and (New) Meridian Road due to the intersection of US-24 and (Old) Meridian Road being restricted to right-in/right-out traffic. The calculated background traffic volumes for 2023 and 2040 are respectively.

Update hatching to include Lot 2 for all the figure in this TIS. The Traffic Study needs to analyze traffic impact based on the entire requested rezoned properties.



CIRCLE K – US-24 & MERIDIAN
EL PASO COUNTY, COLORADO
SITE AREA

FIGURE 2

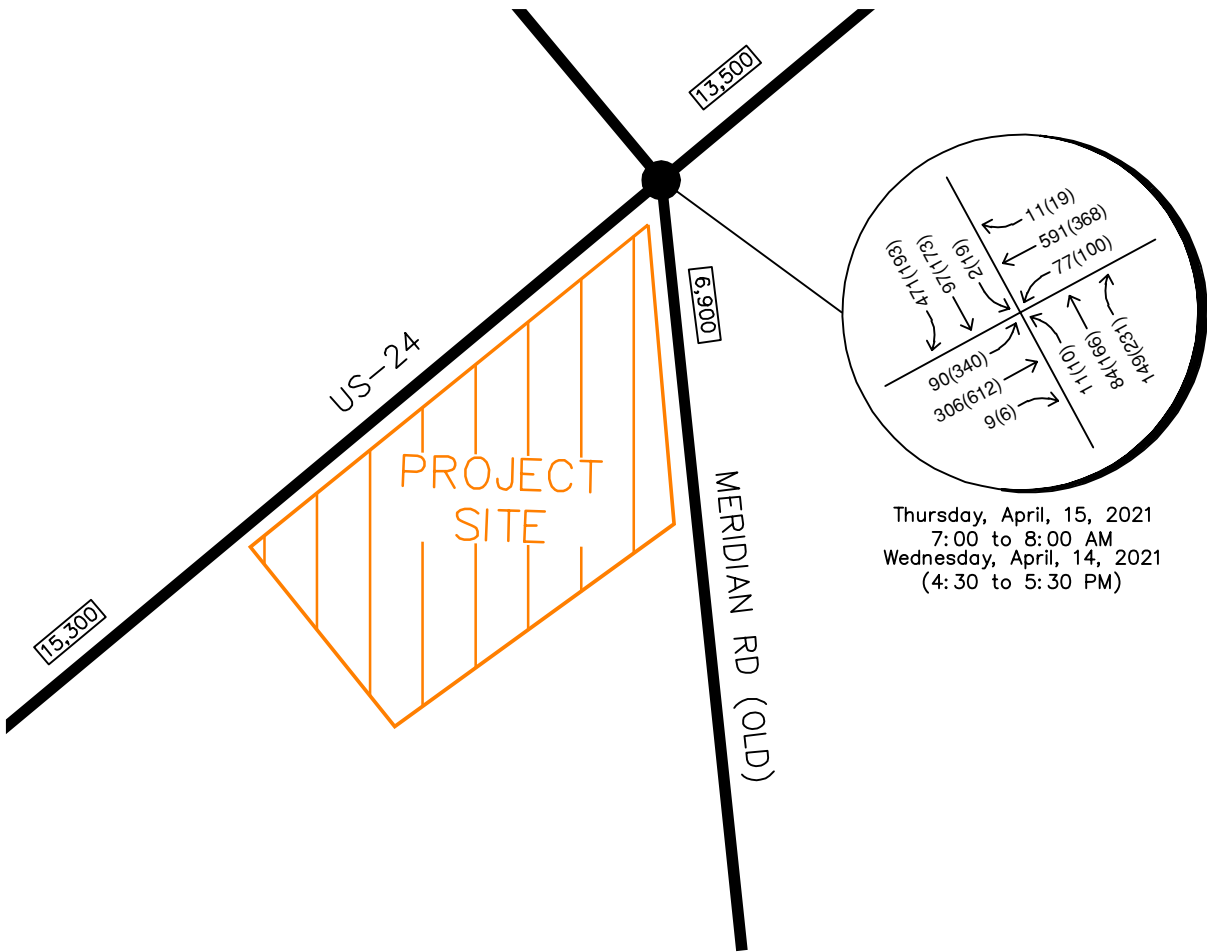


LEGEND

- Study Area Key Intersection
- Signalized Intersection
- Stop Controlled Approach
- Roadway Speed Limit
- 100' Turn Lane Length (feet)

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 EXISTING LANE CONFIGURATIONS

FIGURE 3



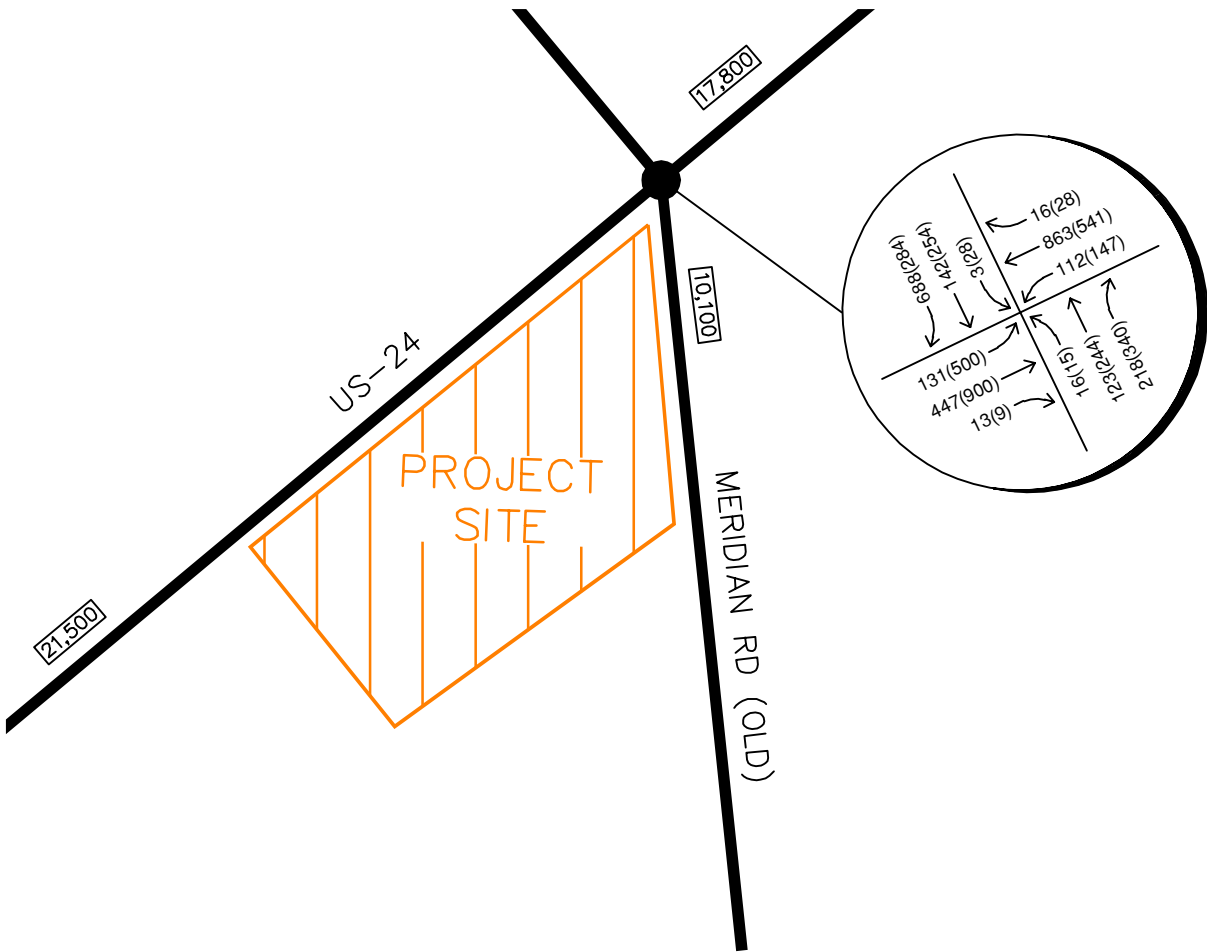
Thursday, April, 15, 2021
 7:00 to 8:00 AM
 Wednesday, April, 14, 2021
 (4:30 to 5:30 PM)

LEGEND

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM) Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2021 EXISTING TRAFFIC VOLUMES

FIGURE 4

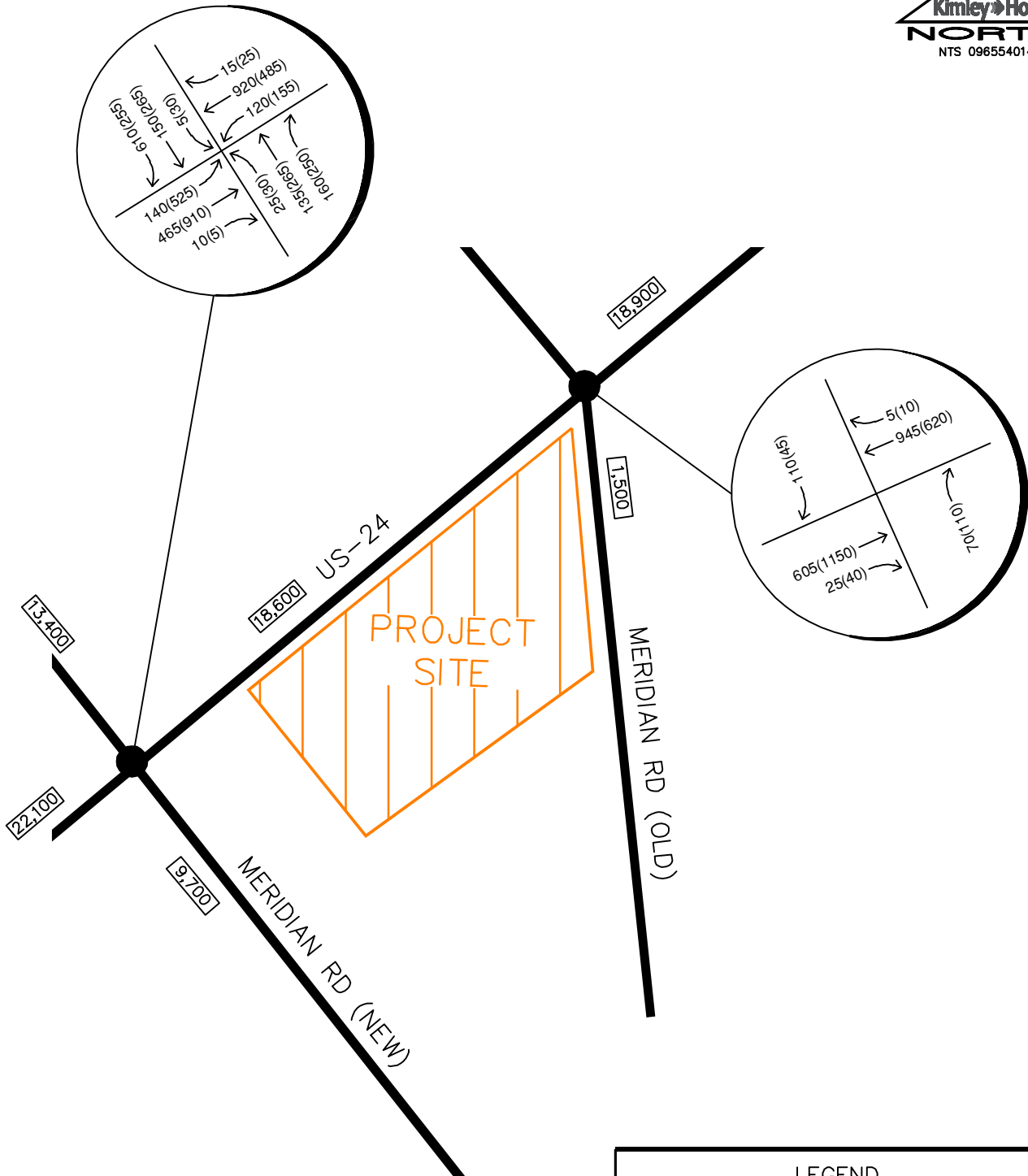


LEGEND

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM) Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 EXISTING ADJUSTED TRAFFIC VOLUMES

FIGURE 5

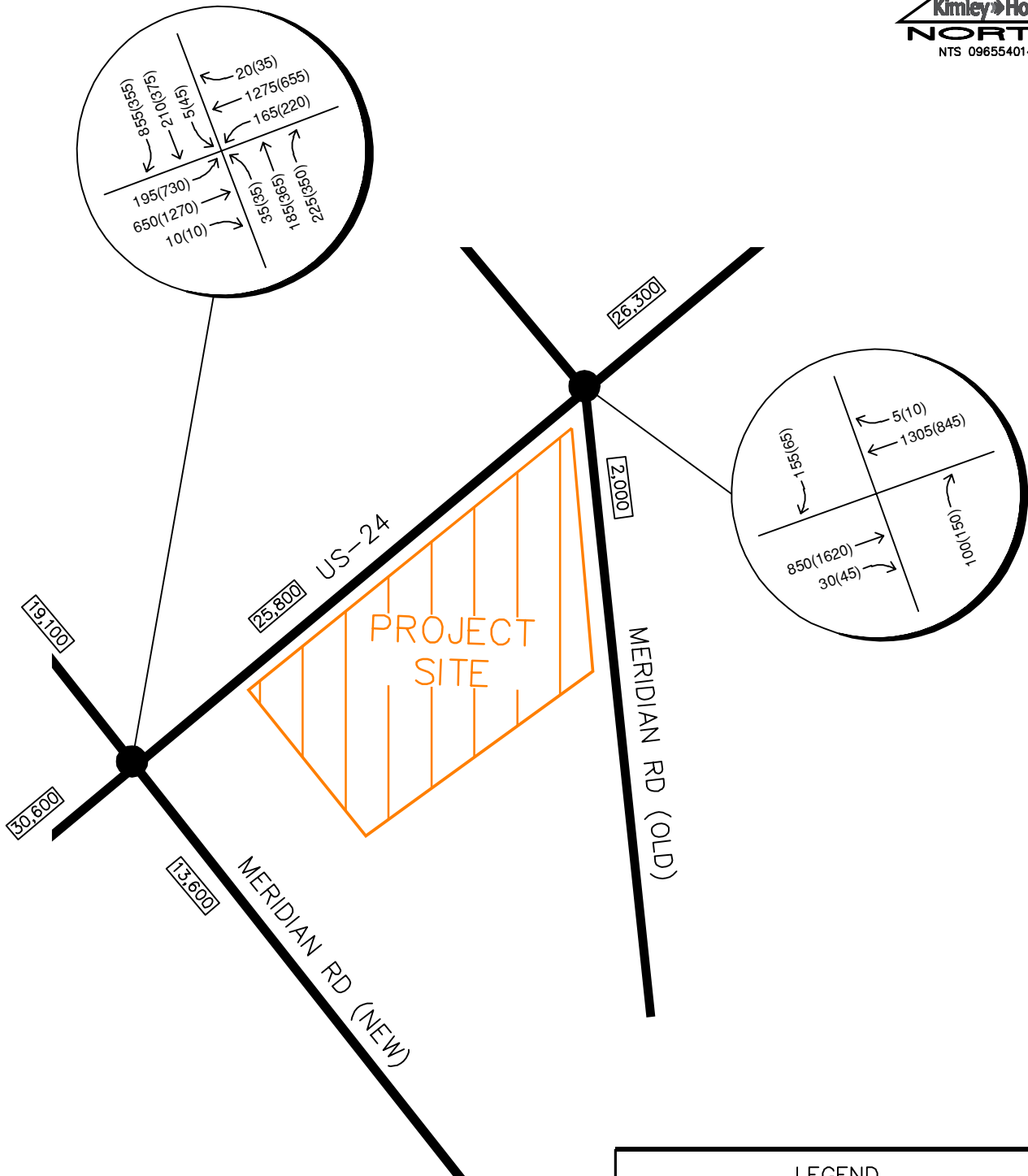


LEGEND

- Study Area Key Intersection
- xxx(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2023 BACKGROUND VOLUMES

FIGURE 6



LEGEND

- Study Area Key Intersection
- xxx(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2040 BACKGROUND VOLUMES

FIGURE 7

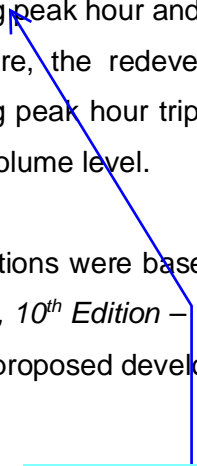
4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land uses to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Report*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rate equations that apply to Super Convenience Market/Gas Station (ITE Code 960) for traffic associated with the development.

Existing peak hour traffic volumes were collected at the site driveways of the existing gas station on site. Based on the data from these counts, it is determined that the existing site generates 110 morning peak hour trips (59 in and 51 out) and 146 afternoon peak hour trips (70 in and 76 out). To account for a COVID-19 adjustment, the existing gas station driveway volumes were increased and would be expected to generate approximately 160 trips during the weekday morning peak hour and 213 trips during the afternoon peak hour during normal traffic conditions. Therefore, the redeveloped Circle K project is expected to generate a net additional 272 morning peak hour trips and 147 trips afternoon peak hour trips than the existing adjusted site traffic volume level.

Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 10th Edition – Volume 2: Data*, 2017. **Table 1** summarizes the estimated trip generation for the proposed development. The trip generation worksheets are included in **Appendix C**.



Identify the percent increase used.

¹ Institute of Transportation Engineers, *Trip Generation: An Information Report*, Tenth Edition, Washington DC, 2017.

Update to include the southern lot 2 w/ highest and best use land use since this is a part of the rezone application

Table 1 – Project Traffic Generation

Land Use and Quantity	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Redeveloped Circle K – (ITE 960) – 16 Fueling Positions	4,356	216	216	432	180	180	360
Existing Gas Station Trips – Existing Counts: 8 Fueling Positions	*1,826	59	51	110	70	76	146
Existing Adjusted Gas Station Trips – 8 Fueling Positions	*2,662	86	74	160	102	111	213
Net Site Generated Trips	1,694	130	142	272	78	69	147

*Assuming PM peak hour is 8% of the Daily

4.2 Trip Distribution

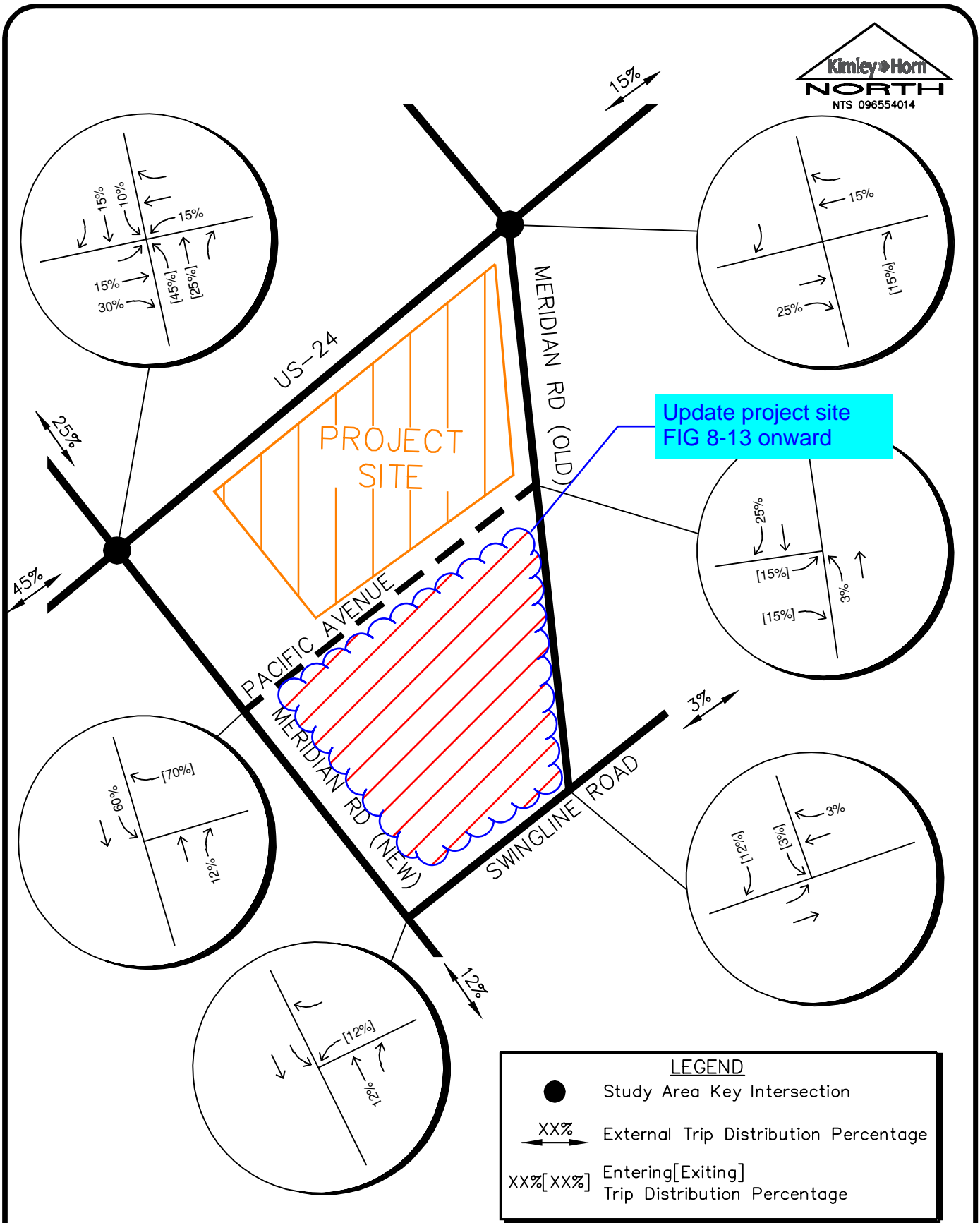
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution is illustrated in **Figure 8**.

4.3 Traffic Assignment

Traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Project traffic assignment for the Circle K project is shown in **Figure 9**.

4.4 Total (Background Plus Project) Traffic

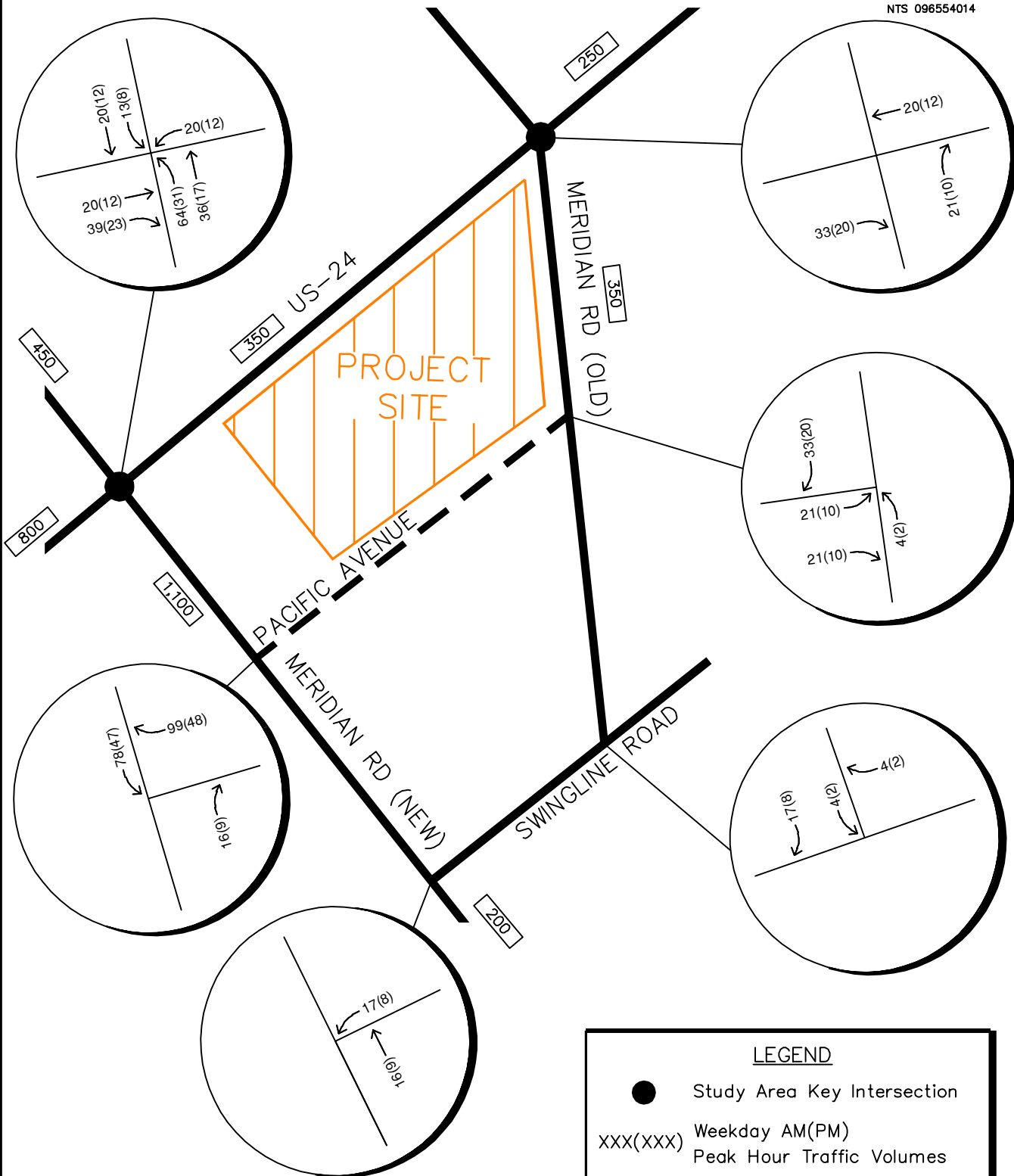
Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short term 2023 horizon and long term 2040 horizon. These total traffic volumes for the site are illustrated for the 2023 and 2040 horizon years in **Figure 10** and **Figure 11**, respectively.



Update project site
 FIG 8-13 onward

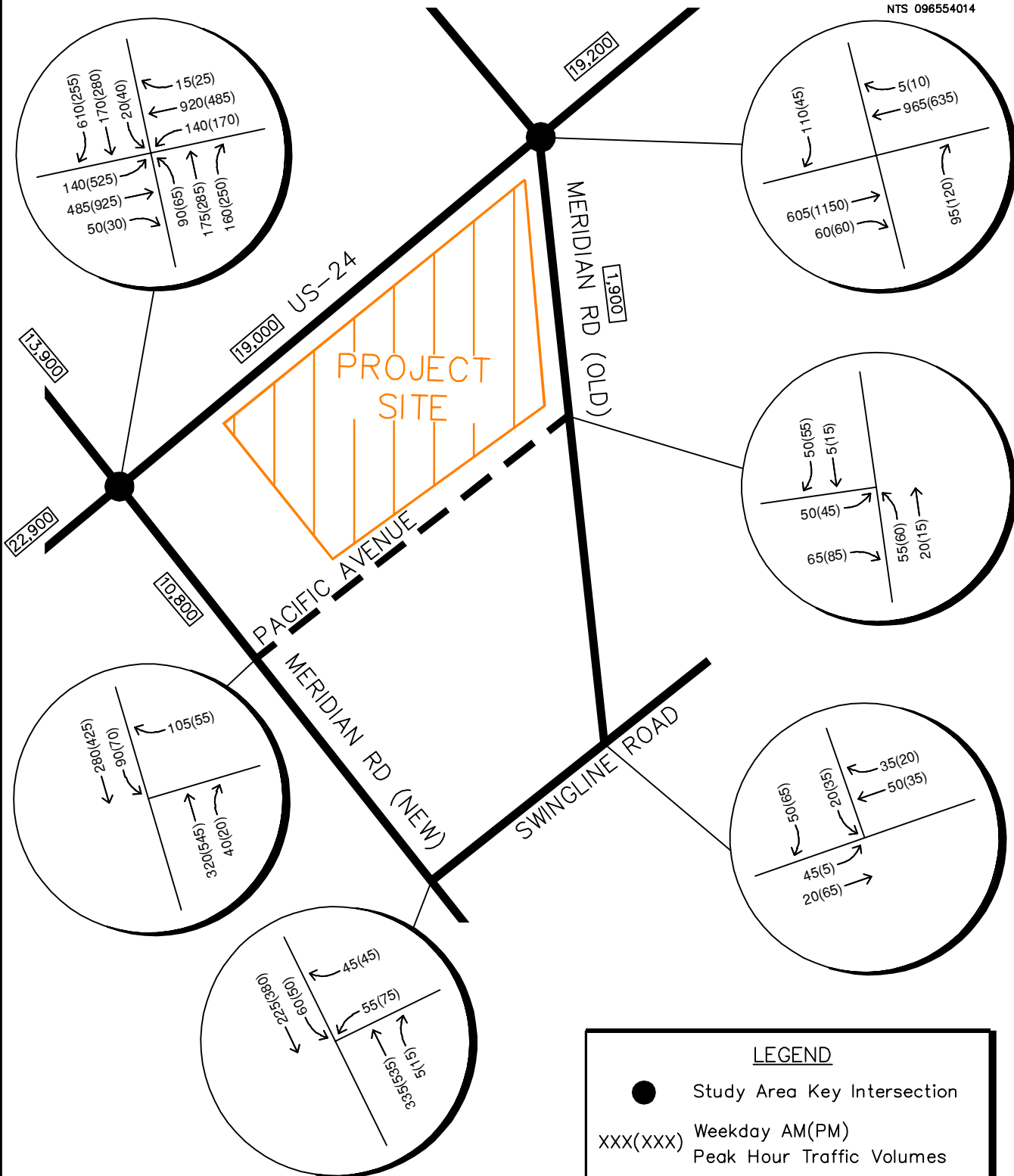
CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 TRIP DISTRIBUTION

FIGURE 8



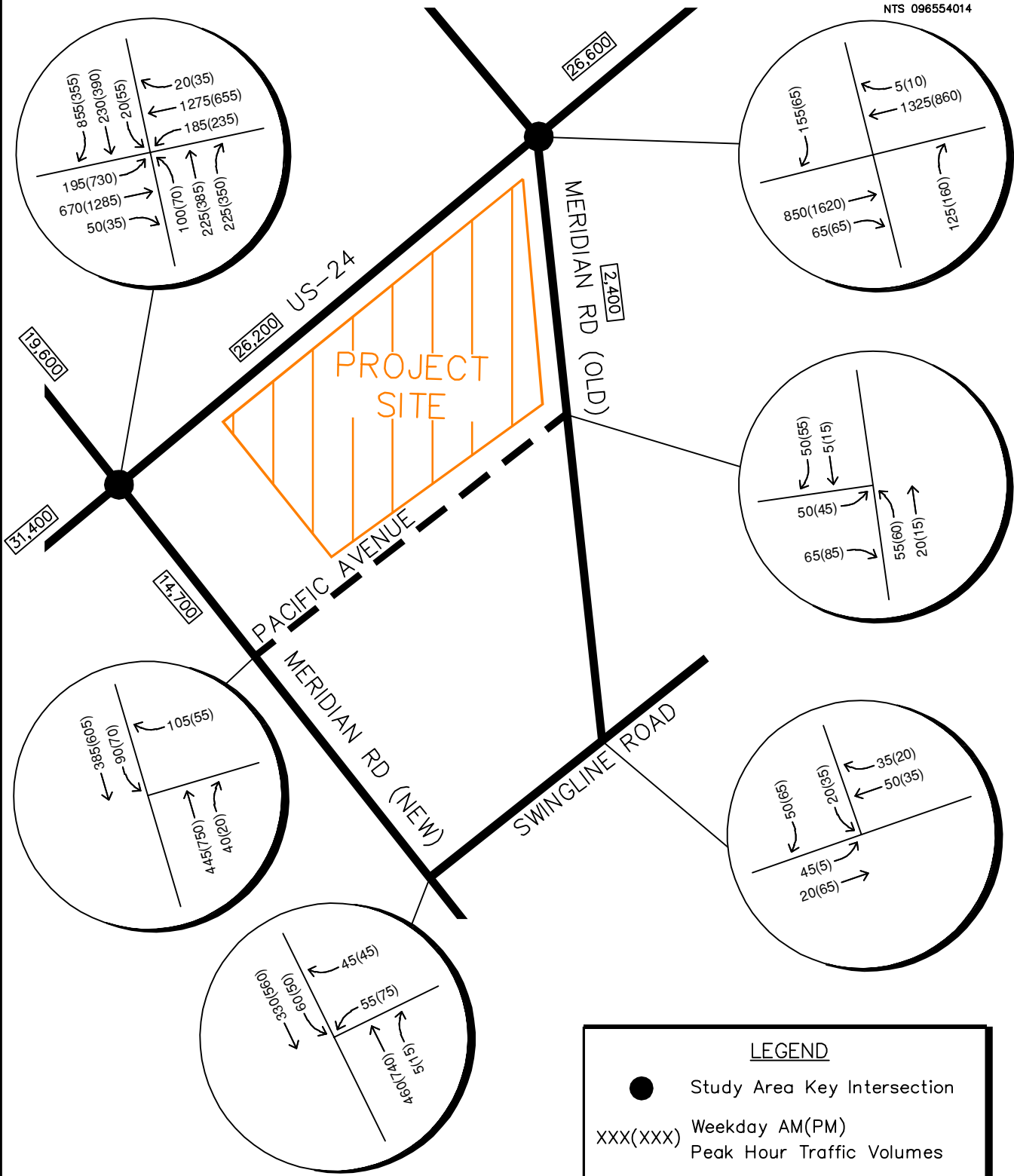
CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 TRAFFIC ASSIGNMENT

FIGURE 9



CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2023 TOTAL TRAFFIC VOLUMES

FIGURE 10



LEGEND

- Study Area Key Intersection
- xxx(xxx) Weekday AM(PM) Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2040 TOTAL TRAFFIC VOLUMES

FIGURE 11

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2023 and 2040 development horizons at the identified key intersections and access driveway. The acknowledged source for determining overall capacity is the current edition of the *Highway Capacity Manual (HCM)*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). Typical standard traffic engineering practice recommends LOS D for overall intersections and LOS E for movements or approaches as the minimum thresholds for acceptable operations at intersections. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Special Report 209, Transportation Research Board, 2010.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

² Transportation Research Board, *Highway Capacity Manual*, Special Report 209, Washington DC, 2010.

5.2 Key Intersection Operational Analysis

Calculations for the level of service at the key intersection and project access driveways for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 3**. Synchro traffic analysis software was used to analyze the study area intersection and access driveway. The Synchro Highway Capacity Manual (HCM) methodology reports were used to analyze intersection delay and level of service.

US-24 and (Old) Meridian Road

The intersection of US-24 and (Old) Meridian Road currently operates as a signalized intersection with protected-permissive left turn phasing on the east-west approaches. This intersection currently operates with LOS C during the morning peak hour and LOS E during the afternoon peak hour. By 2023 and coinciding with the realignment of Meridian Road to the west, the intersection will convert to an unsignalized intersection with stop-control on the north and south approaches and be restricted to right-in/right-out movements on (Old) Meridian Road. With this configuration and control, the intersection movements are anticipated to operate at LOS A during the morning and afternoon peak hours throughout the 2040 horizon. Acceleration lanes will be provided along US-24 at (Old) Meridian Road; therefore, there will not be any movements at this intersection that report vehicular delays. By 2040, the El Paso County Major Transportation Corridors Plan (MTCP) identifies US-24 to be widened to six-lanes. It was determined based on the projected through volumes that the roadway would only need to be widened to a four lane roadway (two through lanes in each direction) and was analyzed as such at the studied intersections along US-24. **Table 3** provides the results of the level of service at this intersection.

Table 3 – US-24 and (Old) Meridian Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2021 Existing (Adjusted)	33.3	C	65.4	E
2023 Background				
Northbound Right	0.0 *	A	0.0 *	A
Southbound Right	0.0 *	A	0.0 *	A
2023 Background Plus Project				
Northbound Right	0.0 *	A	0.0 *	A
Southbound Right	0.0 *	A	0.0 *	A
2040 Background				
Northbound Right	0.0 *	A	0.0 *	A
Southbound Right	0.0 *	A	0.0 *	A
2040 Background Plus Project #				
Northbound Right	0.0 *	A	0.0 *	A
Southbound Right	0.0 *	A	0.0 *	A

* = Acceleration Lane with Free Movement; # = Includes Two Eastbound and Westbound Through Lanes

US-24 and (New) Meridian Road

The intersection of US-24 and (New) Meridian Road is currently under construction and is anticipated to be complete by the short-term horizon buildout year. The northbound and southbound Meridian Road approaches are anticipated to provide a left turn lane, two through lanes, and a channelized free right turn lane. The eastbound and westbound US-24 approaches are anticipated to provide a left turn lane, a through lane, and a right turn lane. Therefore, under the proposed configuration and control, the intersection is anticipated to operate at LOS C during the morning peak hour and LOS D during the afternoon peak hour with the addition of project traffic and re-routed traffic from the US-24 and (Old) Meridian Road intersection. By 2040, US-24 was identified as needing to provide two through lanes in each direction. In addition, if 2040 volumes are realized, eastbound dual left turn lanes are likely to be needed due to high volumes of left turns projected at this intersection in the future. With these improvements, this intersection is anticipated to operate acceptably during the peak hours in 2040. **Table 4** provides the results of the level of service at this intersection.

Table 4 – US-24 and (New) Meridian Road LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
2023 Background	34.9	C	43.3	D
2023 Background Plus Project	33.2	C	40.0	D
2040 Background	94.2	F	131.3	F
2040 Background Plus Project#	31.3	C	40.1	D

= Includes Two Eastbound and Westbound Through Lanes and Eastbound Dual Left Turn Lanes

5.3 Future Intersections

The future intersections of Pacific Avenue/(New) Meridian Road and Pacific Avenue/(Old Meridian Avenue will provide primary access for the project. The intersection of Pacific Avenue/(New) Meridian Road is proposed to allow three quarter turning movements with westbound left turns being prohibited. The intersection of Pacific Avenue/(Old) Meridian Road is proposed to allow full turning movements. Direct access to the project will be provided from two driveways located along the north side of the proposed Pacific Avenue roadway extending between (Old) Meridian Road and (New) Meridian Road.

The driveway accesses along Pacific Avenue and the two future access intersections of Pacific Avenue/Meridian Road (New) and Pacific Avenue/Meridian Road (Old) are recommended to provide R1-1 "STOP" signs on the exiting approaches. It is anticipated that single shared movement lanes are sufficient for the exiting approaches of all these access intersections.

A raised "pork-chop" median may be required in the exiting throat of the three-quarter movement access intersection of Pacific Avenue and (New) Meridian Road to prevent left turns onto (New) Meridian Road. A R3-2 "No Left Turn" sign should be installed under the STOP sign of this future intersection. A northbound right turn lane should be provided at the proposed Pacific Avenue and (New) Meridian Road intersection.

The future intersection of Swingline Road and (New) Meridian Road is currently being constructed and will open with the completion of (New) Meridian Road in the surrounding area. (New) Meridian Road will provide two through lanes in each direction and separate left and right turn lanes onto Swingline Road. The westbound approach of Swingline Road will operate under stop control and will provide separate left and right turn lanes.

In addition, Swingline Road and (Old) Meridian Road will become a 'T'-intersection with the stop control on the north leg of (Old) Meridian Road. The existing south leg of (Old) Meridian Road at this intersection will be vacated with the completion of (New) Meridian Road. It is anticipated that the eastbound and westbound approaches of Swingline Road will provide one single lane for shared movements and the southbound approach will provide separate left and right turn lanes and stop control.

With the recommended lane configurations and control, all the movements at the project accesses and proposed new intersections to the south are anticipated to operate at LOS C or better during the morning and afternoon peak hour throughout the 2040 horizon. **Table 5** provides the results of the level of service at these intersections.

Table 5 – Project Accesses and Future Intersections LOS Results

Scenario	2023 Total Traffic				2040 Total Traffic			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Pacific Avenue & (New) Meridian Rd (3/4 Mvmts)								
Westbound Right	10.0	B	10.6	B	10.6	B	11.8	B
Southbound Left	8.4	A	9.1	A	8.8	A	10.0	B
Swingline Road & (New) Meridian Road								
Westbound Left	13.2	B	16.8	C	15.1	C	22.4	C
Westbound Right	9.6	A	10.5	B	10.1	B	11.6	B
Southbound Left	8.2	A	8.9	A	8.6	A	9.8	A
Swingline Road & (Old) Meridian Road								
Eastbound Left	7.5	A	7.3	A	7.5	A	7.3	A
Southbound Left	9.8	A	9.4	A	9.8	A	9.4	A
Southbound Right	8.9	A	8.8	A	8.9	A	8.8	A
Pacific Avenue & (Old) Meridian Road								
Northbound Left	7.4	A	7.5	A	7.4	A	7.5	A
Eastbound Approach	9.6	A	9.7	A	9.6	A	9.7	A

5.4 El Paso County and CDOT Turn Lane Requirement Analysis

The El Paso County ECM was used to determine if right turn lanes are warranted along (New) Meridian Road. El Paso County classifies Meridian Road as a minor arterial roadway. According to El Paso County ECM guidelines for Minor Arterials, a right turn lane is required for any access with a projected peak hour right turning volume of 50 vehicles per hour or greater.

Based on 2040 traffic volume projections, a northbound right turn lane is not warranted for the future Pacific Avenue and (New) Meridian Road based on projected 2040 total traffic volumes being 40 northbound right turning vehicles per hour.

Provide left and right turn lane analysis at the Pacific Avenue and Old Meridian Road intersection for each leg

Include the SBLT analysis at the Pacific Avenue/(New) Meridian intersection

Since US-24 is a state owned and maintained facility, it is recommended that auxiliary turn lanes along US-24 be constructed in accordance with the current CDOT State Highway Access Code (SHAC). CDOT categorizes the segment of US-24 through the study area as E-X: Expressway. According to the State Highway Access Code for category E-X roadways, the following thresholds apply:

- A left turn deceleration lane is required for any access with a projected average daily left turn ingress volume greater than 10 with the transition taper included within the required deceleration length. If the projected peak hour left ingress turning volume is greater than 10 vehicles per hour (vph), a left turn deceleration, storage, and taper lane is required for any access.
- A right turn deceleration lane and taper is required for any access with a projected peak hour right ingress turning volume greater than 10 vph.
- A right turn acceleration lane and taper is required for any access with a project peak hour right turning volume greater than 10 vph.

Based on traffic projections and the above thresholds, auxiliary turn lanes requirements along US-24 with a posted speed limit of 55 miles per hour are as follows:

US-24 and (Old) Meridian Road

- An eastbound right turn deceleration lane exists and **is** warranted based on the projected 2023 background plus project traffic being 60 eastbound right turns during the peak hour and the threshold being 10 vph. The existing right turn lane length is approximately 350 feet. The right turn deceleration lane length per SHAC requirements is 600 feet with a 225-foot taper (18.5:1 ratio). Therefore, the 600-foot deceleration lane is not accommodated in the existing 350-foot turn lane. It is anticipated that with completion of the (New) Meridian Road intersection to the west, a combination acceleration to deceleration lane will extend eastbound along US-24 from (New) Meridian Road to (Old) Meridian Road.
- A westbound right turn deceleration lane exists and **is** warranted based on the projected 2023 background plus project traffic being 10 westbound right turns during the peak hour and the threshold being 10 vph. The existing right turn lane length is approximately 600 feet with a 50-foot taper. The right turn deceleration lane length per SHAC requirements is 600 feet with a 225-foot taper (18.5:1 ratio). A design waiver was likely granted

previously by CDOT for the existing substandard taper length due to the bridge located east of this intersection. Project traffic does not contribute to this movement and no mitigation is recommended to the existing taper length.

- An acceleration lane for the northbound right to eastbound through exists and **is** warranted based on the projected 2023 background plus project traffic being 120 northbound right turns during the peak hour and the threshold being 10 vph. The existing acceleration lane length is 500 feet long with a 225-foot taper. The acceleration lane length per SHAC requirements is 960 feet with a 225-foot taper (18.5:1 ratio). A design waiver was likely granted previously by CDOT for the existing substandard acceleration lane length due to the bridge located east of this intersection. It is believed that the existing northbound to eastbound acceleration lane along US-24 should remain at the current length and no mitigation is recommended.
- An acceleration lane for the southbound right to westbound through exists and **is** warranted based on the projected 2023 background plus project traffic being 110 southbound right turns during the peak hour and the threshold being 10 vph. The existing acceleration lane length is 350 feet long with a 225-foot taper. The acceleration lane length per SHAC requirements is 960 feet with a 225-taper (18.5:1 ratio). Therefore, the 960-foot acceleration lane is not accommodated in the existing 350-foot acceleration lane. It is anticipated that with completion of the (New) Meridian Road intersection to the west, a combination acceleration to deceleration lane will extend westbound along US-24 from (Old) Meridian Road to (New) Meridian Road.

US-24 and (New) Meridian Road

The intersection of US-24 and (New) Meridian Road is currently under construction and some turn lanes cannot be determined from the aerials. Therefore, only recommendations based on CDOT standards have been provided for the future auxiliary turn lanes.

- An eastbound right turn deceleration lane **is** warranted based on the projected 2023 background plus project traffic being 50 eastbound right turns during the peak hour and the threshold being 10 vph. The right turn deceleration lane length per SHAC requirements is 600 feet with a 225-foot taper (18.5:1 ratio). Therefore, a 600-foot deceleration lane with a 225-foot taper is recommended.
- A westbound right turn deceleration lane **is** warranted based on the projected 2023 background plus project traffic being 25 westbound right turns during the peak hour and

the threshold being 10 vph. The right turn deceleration lane length per SHAC requirements is 600 feet with a 225-foot taper (18.5:1 ratio). The eastbound right turn lane is anticipated to be continuous from the southbound right acceleration lane at the intersection of US-24 and (Old) Meridian Road and therefore is recommended to provide 350 feet of storage with 150 feet of shared taper.

- An eastbound left turn deceleration is warranted based on the projected 2023 background plus project traffic being 525 eastbound left turns during the peak hour and the threshold being 10 vph. The left turn deceleration lane per SHAC requirements is 525 feet of storage plus 600 feet of deceleration length plus a 225-foot taper (18.5:1 ratio). Therefore, the left turn deceleration lane should provide 1,125 feet of length plus a 225-foot taper. If 2040 volumes are realized, eastbound dual left turn lanes will likely be needed at this intersection should provide 965 feet of length per lane plus a 225-foot taper.
- A westbound left turn deceleration is warranted based on the projected 2023 background plus project traffic being 170 westbound left turns during the peak hour and the threshold being 10 vph. The left turn deceleration lane per SHAC requirements is 170 feet of storage plus 600 feet of deceleration length plus a 225-foot taper (18.5:1 ratio). Therefore, the left turn deceleration lane should provide 770 feet of length plus a 225-foot taper. By 2040, the turn lane may need to be extended to 835 feet of length.
- An acceleration lane for the northbound right to eastbound through is warranted based on the projected 2023 background plus project traffic being 250 northbound right turns during the peak hour and the threshold being 10 vph. The acceleration lane length per SHAC requirements is 960 feet with a 225-foot taper (18.5:1 ratio). However, it is anticipated that a combination acceleration to deceleration lane will extend eastbound along US-24 from (New) Meridian Road to (Old) Meridian Road.
- An acceleration lane for the southbound right to westbound through is warranted based on the projected 2023 background plus project traffic being 610 southbound right turns during the peak hour and the threshold being 10 vph. The acceleration lane length per SHAC requirements is 960 feet with a 225-foot taper (18.5:1 ratio). Therefore, a 960-foot acceleration lane with a 225-foot taper is recommended to be provided.

5.5 Queuing Analysis

A queuing analysis was conducted for turn lanes at the study intersections. The queuing analysis was performed using the Synchro analysis software presenting the results of the 95th percentile queue length. Results are shown in the following **Table 6** with calculations provided in **Appendix D** for the unsignalized intersections and **Appendix E** for the signalized intersections.

Table 6 – Turn Lane Length Analysis Results

Intersection Turn Lane	Existing Turn Lane Length (feet)	2023 Total Queue Length (feet)	2023 Recommended Turn Lane Length (feet)	2040 Total Queue Length (feet)	2040 Recommended Turn Lane Length (feet)
US-24 & (New) Meridian					
Eastbound Left	DNE	523'	1125'+225'T	356' DL	965'+225'T DL
Eastbound Right	DNE	0'	600'+225'T	0'	600'+225'T
Westbound Left	DNE	237'	770'+225'T	232'	835'+225'T
Westbound Right	DNE	0'	C	0'	C
Northbound Left	400'	108'	150'	113'	150'
Northbound Right	DNE	0'	200'	0'	200'
Southbound Left	150'	57'	150'	71'	150'
Southbound Right	300'	0'	300'	0'	300'
Pacific Ave & (New) Meridian Rd					
Westbound Approach	DNE	25'	C	25'	C
Southbound Left	DNE	25'	100'	25'	100'
Swingline Rd & (New) Meridian					
Westbound Left	DNE	25'	100'	50'	100'
Westbound Right	DNE	25'	C	25'	C
Southbound Left	125'	25'	125'	25'	125'
Swingline Rd & (Old) Meridian					
Southbound Left	250'	25'	250'	25'	250'
Southbound Right	C	25'	C	25'	C
Pacific Ave & (Old) Meridian Rd					
Eastbound Approach	DNE	25'	C	25'	C

DNE = Does Not Exist; T = Taper; DL = Dual Left Turn Lanes; C = Continuous Lane

Results of the queuing analysis indicate that vehicle queues are expected to remain within the provided turn lanes of the studied intersections. In addition, the turn lanes for the eastbound left, eastbound right, westbound left, and westbound right at the intersection of US-24 and (New) Meridian Road have been designed per SHAC requirements.

There is approximately 340 feet of spacing along (New) Meridian Road between US-24 and the proposed Pacific Avenue (measured edge to edge). With the future intersection of Pacific Avenue and (New) Meridian Road being proposed to allow three-quarter turning movements, it is recommended that the northbound left turn lane at the US-24 and (New) Meridian Road

intersection be restriped from 400 feet to 150 feet of length to accommodate back to back left turn lanes with the future intersection of Pacific Avenue and (New) Meridian Road. Further, the southbound left turn lane at the future Pacific Avenue and (New) Meridian Road intersection

should request calculation. **The highlighted section is incorrect. Limited access on an arterial road is granted if there is no lower classification road that can provide access to an existing lot. Access is available for this property through (Old) Meridian Road which is a lower classification road, therefore access from (New) Meridian is not necessary.**

It is recommended Meridian Road accommodate length queues acceleration. **The applicant would have to submit a deviation request for the ECM Administrator's review and consideration. With available access via (Old) Meridian Road there does not seem to be sufficient justification why a deviation from the ECM should be granted for intersection spacing at (New) Meridian road.**

Per the comment on page 2, additional guidance will be provided after the CDOT coordination meeting.

5.6 Access Spacing and Sight Distance Evaluation

The future Pacific Avenue access along (New) Meridian Road will be located approximately 390 feet south of US-24 (measured centerline to centerline) while the access along (Old) Meridian Road will be located approximately 410 feet south of US-24. According to El Paso County 2016 Major Transportation Corridors Plan Update, Meridian Road to the south of US-24 is classified as a Minor Arterial while (Old) Meridian Road will have the character of a minor collector roadway once the (New) Meridian Road realignment is complete.

According to the El Paso Engineering Criteria Manual (ECM), spacing of roads accessing an urban minor arterial that will result in a full movement intersection shall be planned at one-quarter mile. **However, as stated in the ECM, one parcel access shall be granted to each existing lot, if it does not create safety or operational problems.** Therefore, it is believed that an access (Pacific Avenue) along (New) Meridian Road should be granted to allow for access to the existing lot. This access along (New) Meridian Road is proposed with three-quarter movements with the exiting left turn movements being restricted. The back to back left turn configuration with this proposed access along (New) Meridian Road and the intersection of US-24 and Meridian Road (New) has been discussed in detail above in Section 5.5. According to the El Paso Engineering Criteria Manual, spacing of intersections along minor collector roadways should be 330 feet from the right-of-way line of the arterial to the centerline of the

access roadway. Therefore, it is believed that the proposed accesses along (New) Meridian Road and (Old) Meridian Road are appropriately spaced according to ECM standards.

With AASHTO standards for a roadway design speed of 40 miles per hour along (New) Meridian Road, the intersection sight distance for a vehicle turning right from stop is 390 feet, while the sight distance for a vehicle turning right from stop is 385 feet. Therefore, all obstructions for right turning vehicles from stop should be clear to the left within the triangle created with a vertex point located 14.5 feet from the edge of the major road traveled way and a line of sight distance of 385 feet located in the middle of the nearest northbound through lane along (New) Meridian Road.

Likewise, with AASHTO standards and a future collector roadway design speed of 35 miles per hour along (Old) Meridian Road, the intersection sight distance for a vehicle turning left from stop is 390 feet, while the sight distance for a vehicle turning right from stop is 335 feet. Therefore, all obstructions for left turning vehicles from stop should be clear to the right within the triangle created with a vertex point located 14.5 feet from the edge of the major road traveled way (typical position of the minor road driver's eye when stopped) and a line of sight distance of 390 feet located in the middle of the northbound through lane along (Old) Meridian Road. Likewise, all obstructions for right turning vehicles from stop should be clear to the left within the triangle created with a vertex point located 14.5 feet from the edge of the major road traveled way and a line of sight distance of 335 feet located in the middle of the southbound through lane along (Old) Meridian Road.

It is believed that both accesses are appropriately located to provide the necessary sight distance needed. It is recommended that appropriate sight distance triangles be provided at all site access points to give drivers exiting the development areas a clear view of oncoming traffic. Landscaping and objects within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

5.7 Bicycle and Pedestrian Access

Bicycle lanes and sidewalks are provided along both sides of the recently constructed (New) Meridian Road. Sidewalks are provided on both side of Swingline Road. Adjacent to the site, there are no bicycle lanes or sidewalks along US-24 and (Old) Meridian Road.

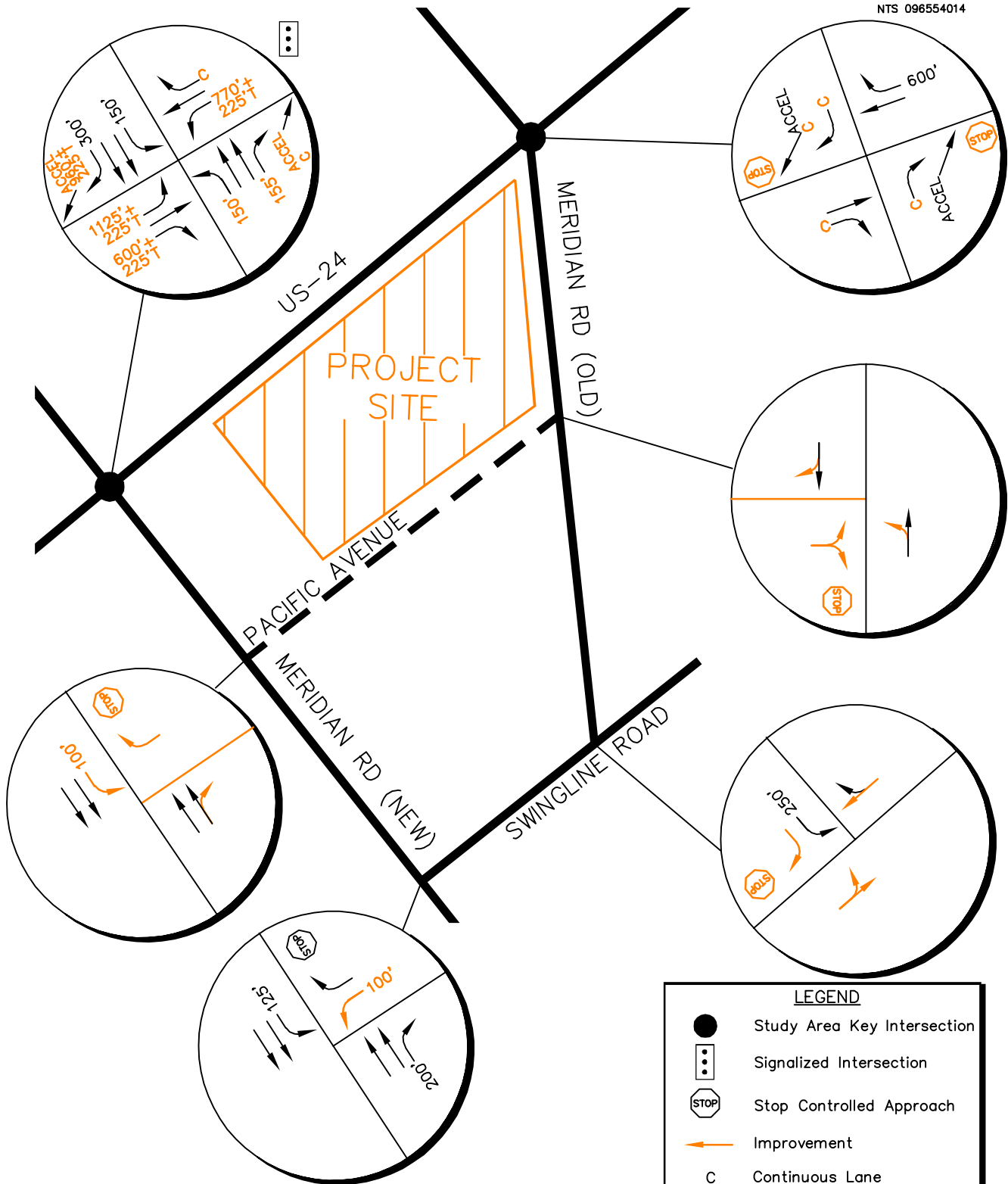
5.8 Improvement Summary

Based on the results of the intersection operational and queuing analysis, the recommended lane configurations and control at the study key intersection and project access in 2023 and 2040 are shown in **Figure 12** and **Figure 13**, respectively.

Review the Big-O-Tires project application (PCD File No. VR1810 & PPR1836). With Old Meridian classified as Collector, Big-O-Tires was required to dedicate 10-ft additional ROW and provide escrow for future improvements in lieu of constructing sidewalk, curb & gutter.

Given the extent of the of (Old) Meridian Rd frontage, expect to upgrade (Old) Meridian Road to the standard Urban Non-Residential Collector road cross section from Hwy 24 to Swingline Rd.

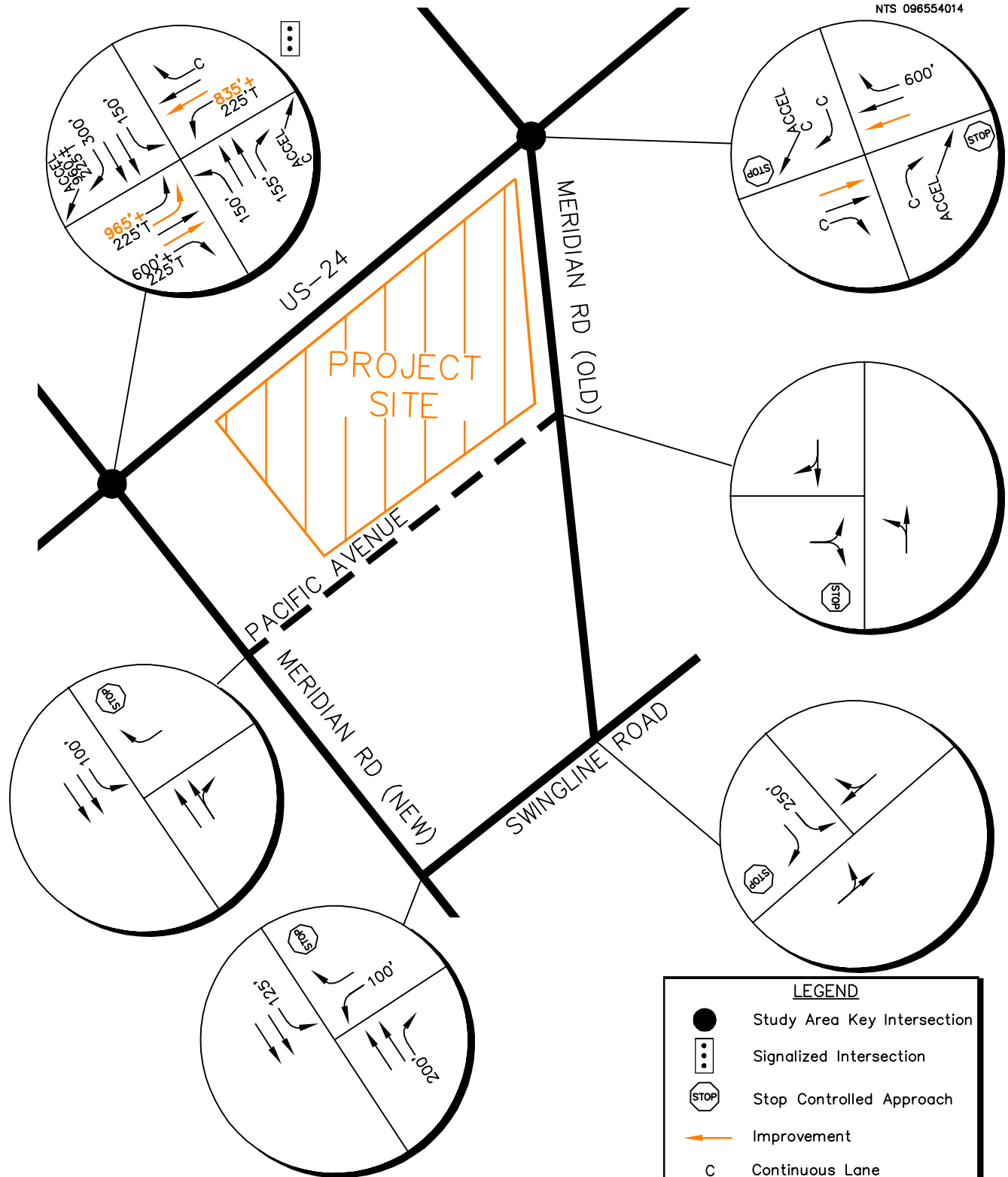
Update the conclusion/recommendation to note the 10-ft ROW dedication along (Old) Meridian Road and upgrading Swingline Road to the standard Urban Non-Residential Collector. Staff recommends the TIS include a note for the applicant to petition the Road Impact Fee advisory committee to include (Old) Meridian Road improvement as an eligible improvement for credits in the Road Impact Fee program.



LEGEND	
●	Study Area Key Intersection
⋮	Signalized Intersection
STOP	Stop Controlled Approach
→	Improvement
C	Continuous Lane
↪ 100'	100' Turn Lane Length (feet)

CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2023 RECOMMENDED LANE
 CONFIGURATIONS AND CONTROL

FIGURE 12



CIRCLE K – US-24 & MERIDIAN
 EL PASO COUNTY, COLORADO
 2040 RECOMMENDED LANE
 CONFIGURATIONS AND CONTROL

LEGEND	
●	Study Area Key Intersection
⋮	Signalized Intersection
STOP	Stop Controlled Approach
←	Improvement
C	Continuous Lane
↪ 100'	100' Turn Lane Length (feet)

FIGURE 13

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes the redeveloped Circle K project will be successfully incorporated into the existing and future roadway network. The proposed project development and expected traffic volumes resulted in the following recommendations and conclusions:

2023 Recommendations:

- The following improvements are recommended in association with the project:
 - The future intersections of Pacific Avenue/(New) Meridian Road and Pacific Avenue/(Old Meridian Avenue will provide primary access for the project. The intersection of Pacific Avenue/(New) Meridian Road is proposed to allow three quarter turning movements with westbound left turns being prohibited. The intersection of Pacific Avenue/(Old) Meridian Road is proposed to allow full turning movements. Direct access to the project will be provided from two driveways located along the north side of the proposed Pacific Avenue roadway extending between (Old) Meridian Road and (New) Meridian Road. It is believed that the proposed accesses along (New) Meridian Road and (Old) Meridian Road are appropriately spaced to meet El Paso County Engineering Criteria Manual (ECM) standards for sight distance.
 - The driveway accesses along Pacific Avenue and the two future access intersections of Pacific Avenue/Meridian Road (New) and Pacific Avenue/Meridian Road (Old) are recommended to provide R1-1 “STOP” signs on the exiting approaches. It is anticipated that single shared movement lanes are sufficient for the exiting approaches of all these access intersections. A raised “pork-chop” median may be required in the exiting throat of the three-quarter movement access intersection of Pacific Avenue and (New) Meridian Road to prevent left turns onto (New) Meridian Road. A R3-2 “No Left Turn” sign should be installed under the STOP sign of this future intersection.
 - There is approximately 340 feet of spacing along (New) Meridian Road between US-24 and the proposed Pacific Avenue (measured edge to edge). With the future

- intersection of Pacific Avenue and (New) Meridian Road being proposed to allow three-quarter turning movements, it is recommended that the northbound left turn lane at the US-24 and (New) Meridian Road intersection be restriped from 400 feet to 150 feet of length to accommodate back to back left turn lanes with the future intersection of Pacific Avenue and (New) Meridian Road. Further, the southbound left turn lane at the future Pacific Avenue and (New) Meridian Road intersection should provide 100 feet of length with a reduced shared taper length of 75 feet. A deviation request will need to be provided to allow these substandard left turn lane lengths; however, calculated vehicles are expected to be accommodated within the proposed left turn lane lengths.
- It is recommended that the existing 400 foot northbound right turn lane at the US-24 and (New) Meridian Road intersection be shortened to 155 feet of length plus a 160-foot taper to accommodate the future intersection of Pacific Avenue and (New) Meridian Road. This new length meets El Paso County standards for a design speed of 40 miles per hour and vehicle queues will be accommodated in this lane as the northbound to eastbound right turn acceleration lane will provide free movements at this intersection.
 - The following improvements along US-24 are anticipated to be completed by CDOT in association with the ongoing realignment of Meridian Road:
 - By project buildout year of 2023 and coinciding the completion of the new alignment of Meridian Road, it is anticipated that CDOT will convert the signalized intersection of US-24 and (Old) Meridian Road will to an unsignalized intersection. Further, this intersection will be restricted to right-in/right-out only movements with stop control along the northbound and southbound (Old) Meridian Road approaches.
 - With completion of the new alignment of Meridian Road, it is anticipated that CDOT will construct a combination right turn acceleration to deceleration lane that will extend eastbound along US-24 from (New) Meridian Road to (Old) Meridian Road. Likewise, a combination right turn acceleration to deceleration lane will extend westbound along US-24 from (Old) Meridian Road to (New) Meridian Road.

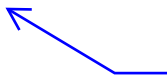
- A 600-foot eastbound right turn deceleration lane with a 225-foot taper is recommended at the intersection of US-24 and (New) Meridian Road. A 1,125-foot left turn lane with a 225-foot taper is also recommended along the eastbound approach of this intersection. Likewise, a westbound left turn lane with a length of 770 feet is recommended at the US-24 and (New) Meridian Road intersection. Lastly, a southbound Meridian Road to westbound US-24 right turn acceleration is recommended with a length of 960 feet plus a 225-foot taper. It is anticipated that CDOT will be constructing all these improvements with the new alignment of Meridian Road.

2040 Recommendations:

- If future traffic volume projections materialize, US-24 will need to be improved to provide two through lanes in each direction throughout the study area.
- The westbound left turn lane at the US-24 and Meridian Road intersection may need to be extended from 770 feet to 835 feet of length.
- The eastbound approach of the US-24 and Meridian Road intersection may need to provide dual left turn lanes with 965 feet of length per lane.

General Recommendations:

- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to El Paso County Standards as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).



Add a bullet point which identify the proposed classification for the proposed internal roadway (Pacific Ave)

Add a section for road impact fee. State the applicable road impacts are and what option the developer will be selecting for payment. If the site is in a special district, so state and summarize the applicable fee.

List all deviations from the County ECM that the applicant will making during the subsequent preliminary plan application.

APPENDICES

APPENDIX A

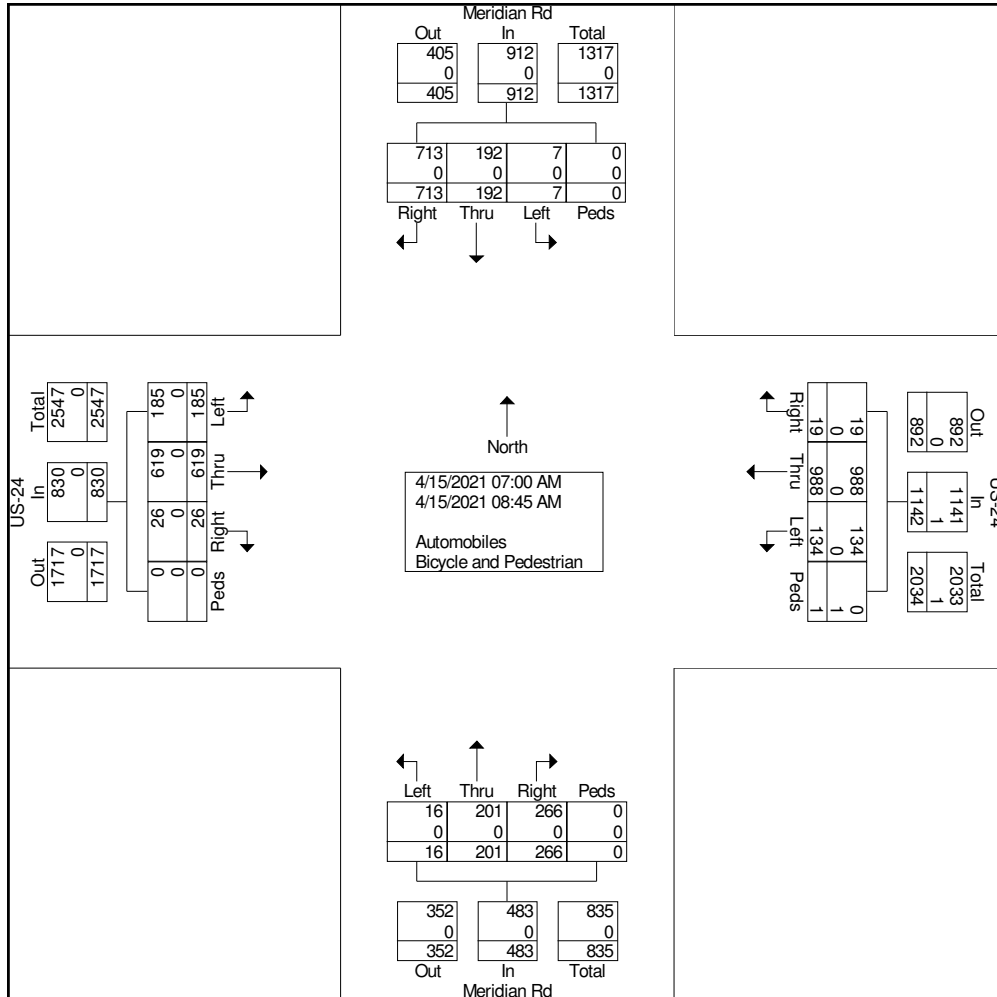
Intersection Count Sheets



Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
US-24 & Meridian Rd

File Name : US24 and Meridian AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 2



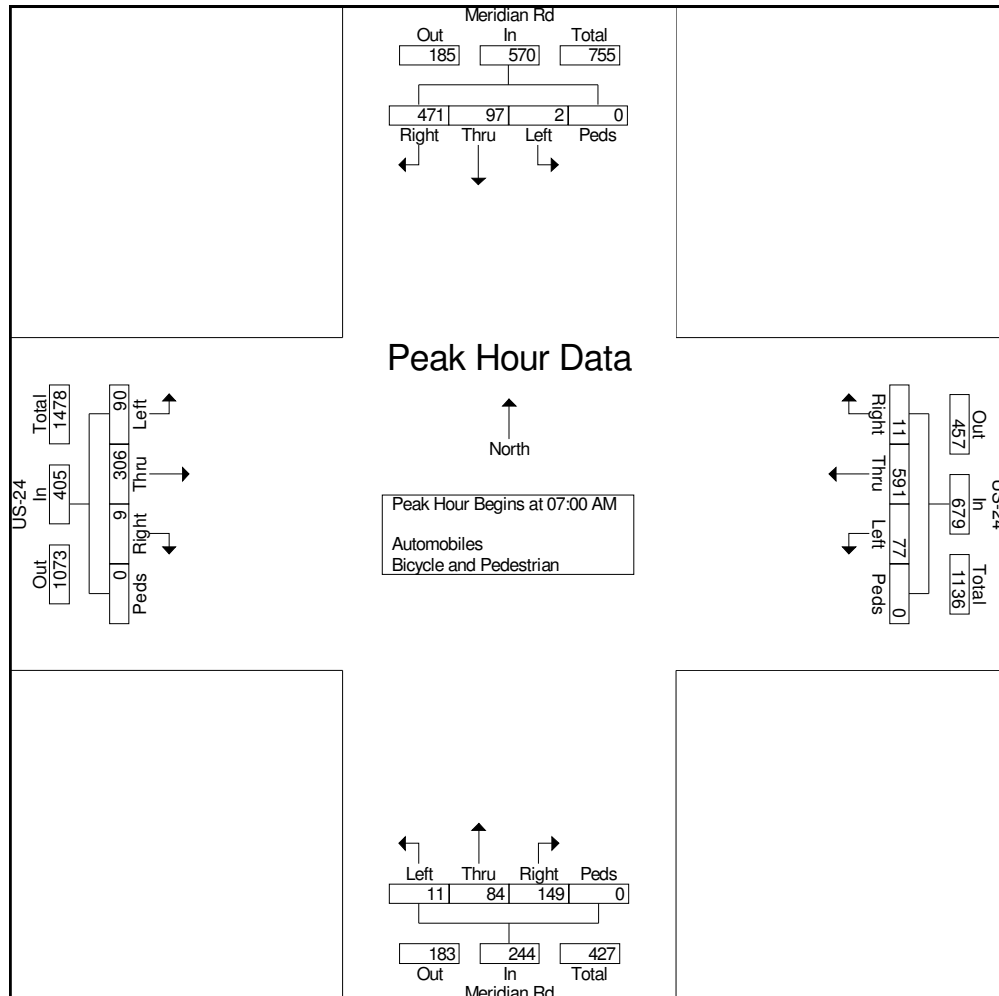


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
US-24 & Meridian Rd

File Name : US24 and Meridian AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 3

Start Time	US-24 Eastbound					US-24 Westbound					Meridian Rd Northbound					Meridian Rd Southbound					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 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	20	70	3	0	93	16	166	2	0	184	3	25	37	0	65	1	18	127	0	146	488
07:15 AM	26	85	0	0	111	11	164	3	0	178	2	15	42	0	59	0	25	114	0	139	487
07:30 AM	22	78	3	0	103	24	151	2	0	177	5	20	25	0	50	0	31	135	0	166	496
07:45 AM	22	73	3	0	98	26	110	4	0	140	1	24	45	0	70	1	23	95	0	119	427
Total Volume	90	306	9	0	405	77	591	11	0	679	11	84	149	0	244	2	97	471	0	570	1898
% App. Total	22.2	75.6	2.2	0		11.3	87	1.6	0		4.5	34.4	61.1	0		0.4	17	82.6	0		
PHF	.865	.900	.750	.000	.912	.740	.890	.688	.000	.923	.550	.840	.828	.000	.871	.500	.782	.872	.000	.858	.957

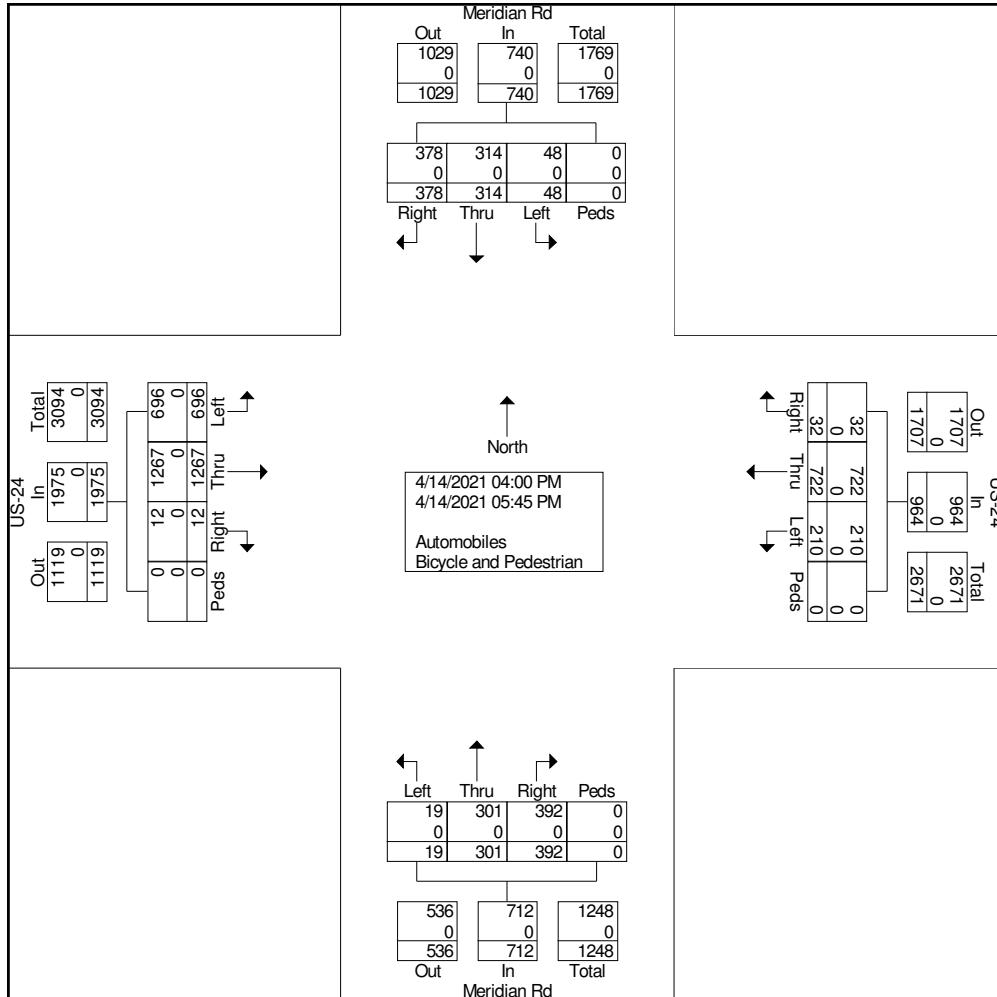




Ridgeview Data Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
US-24 & Meridian Rd

File Name : US24 and Meridian PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 2



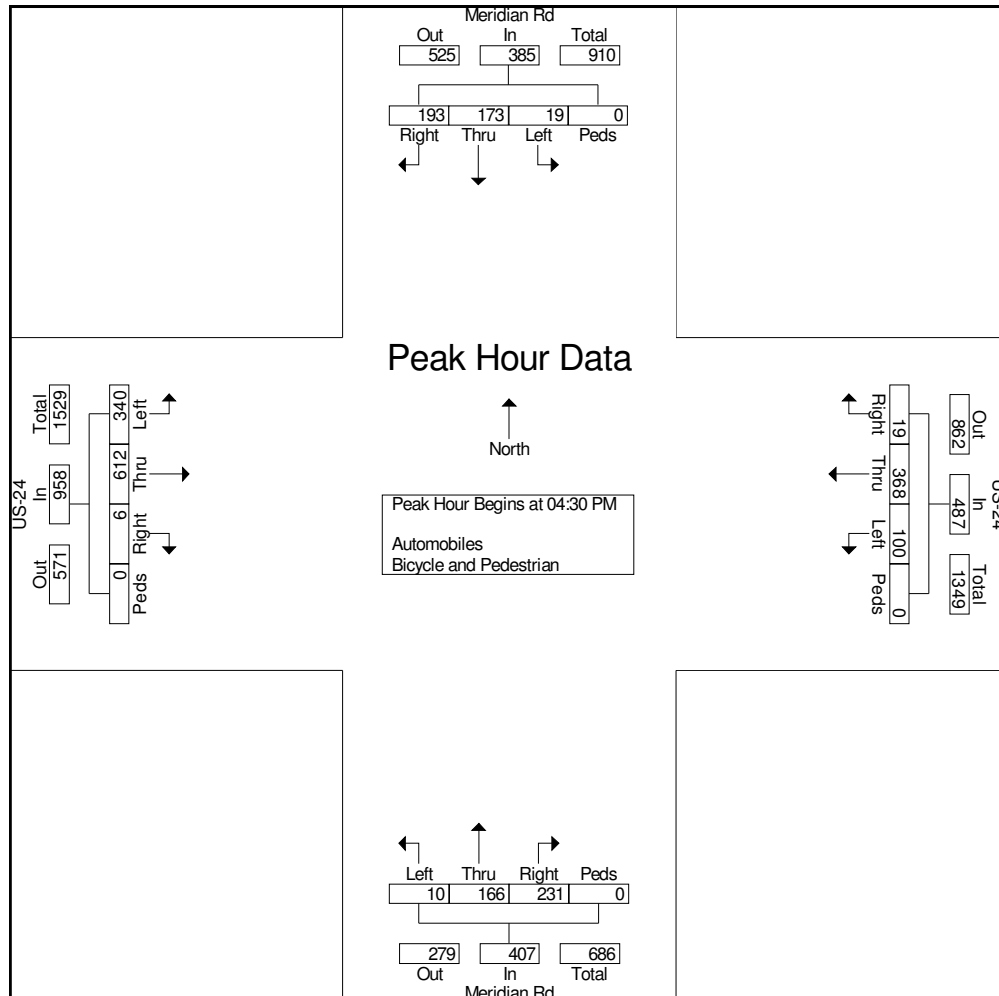


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
US-24 & Meridian Rd

File Name : US24 and Meridian PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 3

Start Time	US-24 Eastbound					US-24 Westbound					Meridian Rd Northbound					Meridian Rd Southbound					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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	74	159	1	0	234	18	101	4	0	123	0	47	53	0	100	6	38	56	0	100	557
04:45 PM	88	150	1	0	239	27	89	9	0	125	5	39	62	0	106	6	39	40	0	85	555
05:00 PM	87	149	3	0	239	32	90	2	0	124	3	41	62	0	106	3	53	41	0	97	566
05:15 PM	91	154	1	0	246	23	88	4	0	115	2	39	54	0	95	4	43	56	0	103	559
Total Volume	340	612	6	0	958	100	368	19	0	487	10	166	231	0	407	19	173	193	0	385	2237
% App. Total	35.5	63.9	0.6	0		20.5	75.6	3.9	0		2.5	40.8	56.8	0		4.9	44.9	50.1	0		
PHF	.934	.962	.500	.000	.974	.781	.911	.528	.000	.974	.500	.883	.931	.000	.960	.792	.816	.862	.000	.934	.988

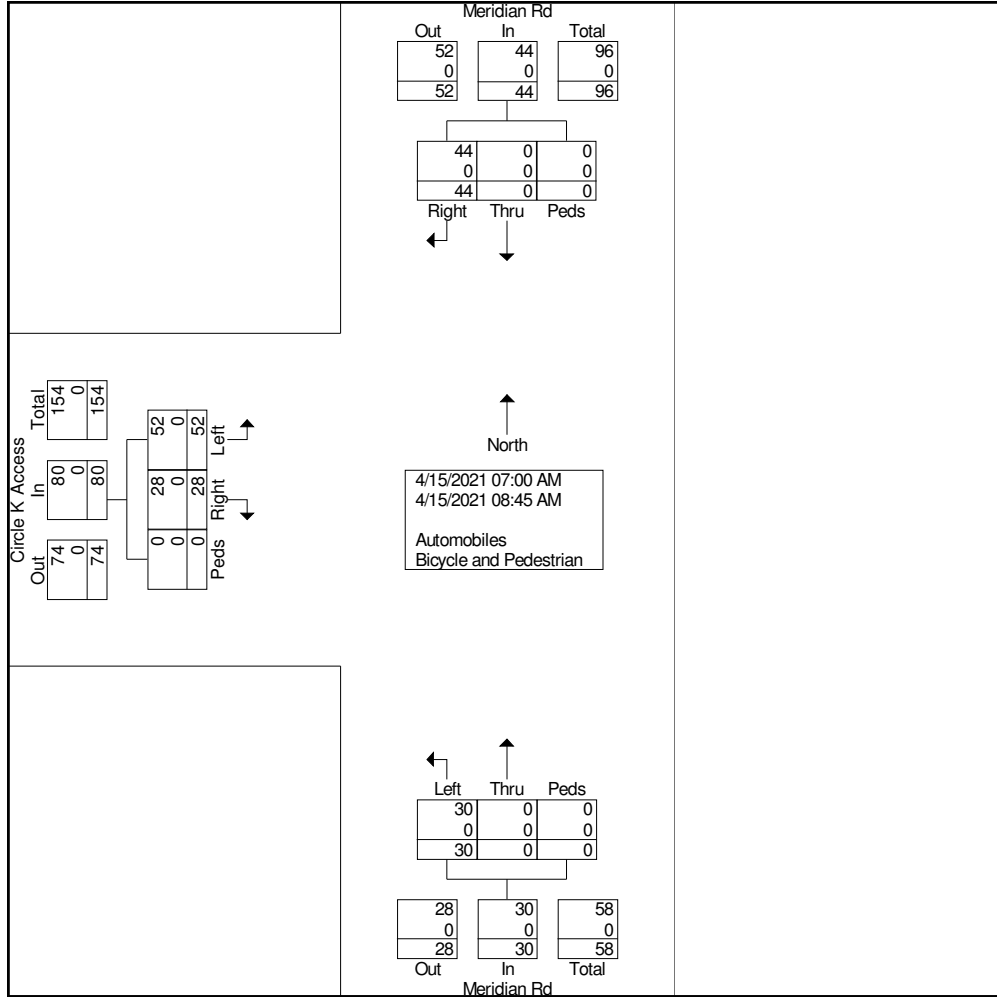




Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
Meridian Circle K Access

File Name : Meridian CircleK Access AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 2



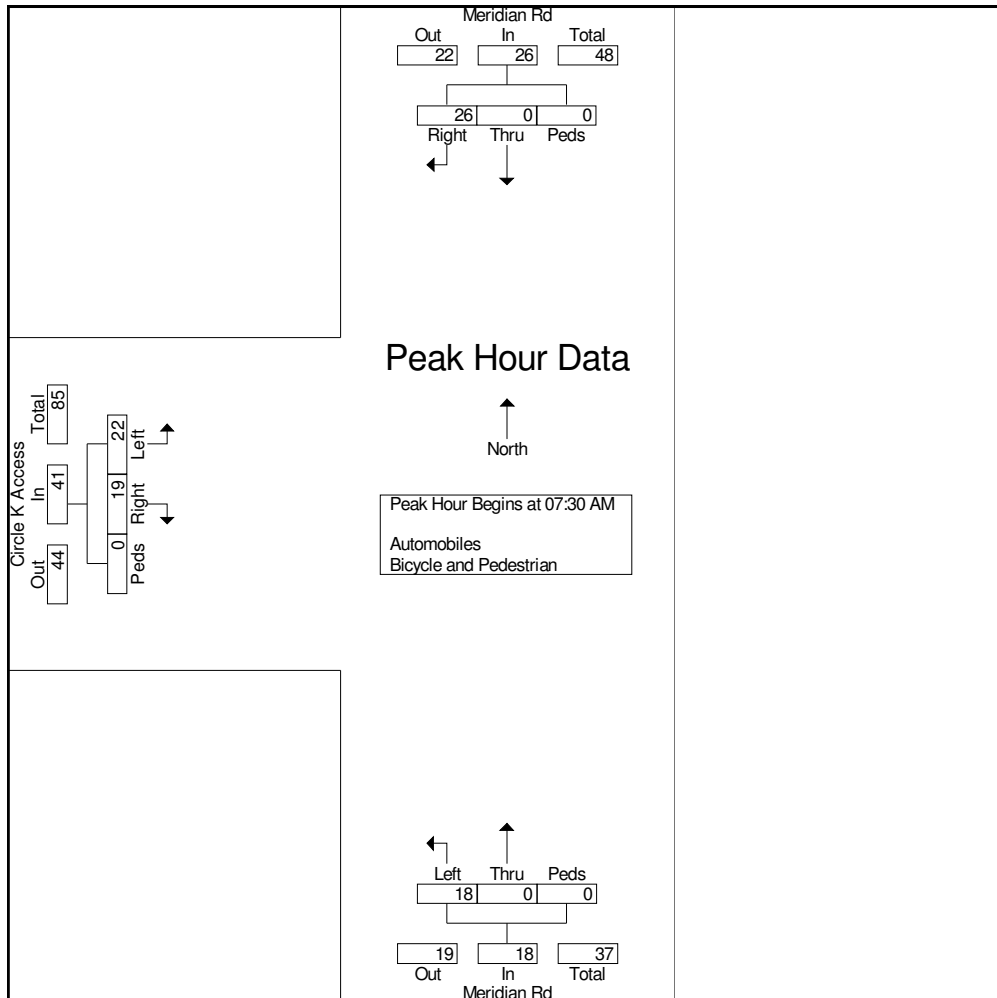


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
Meridian Circle K Access

File Name : Meridian CircleK Access AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 3

Start Time	Circle K Access Eastbound				Meridian Rd Northbound				Meridian Rd Southbound				Int. Total
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	4	8	0	12	5	0	0	5	0	9	0	9	26
07:45 AM	7	3	0	10	6	0	0	6	0	3	0	3	19
08:00 AM	6	4	0	10	2	0	0	2	0	10	0	10	22
08:15 AM	5	4	0	9	5	0	0	5	0	4	0	4	18
Total Volume	22	19	0	41	18	0	0	18	0	26	0	26	85
% App. Total	53.7	46.3	0		100	0	0		0	100	0		
PHF	.786	.594	.000	.854	.750	.000	.000	.750	.000	.650	.000	.650	.817

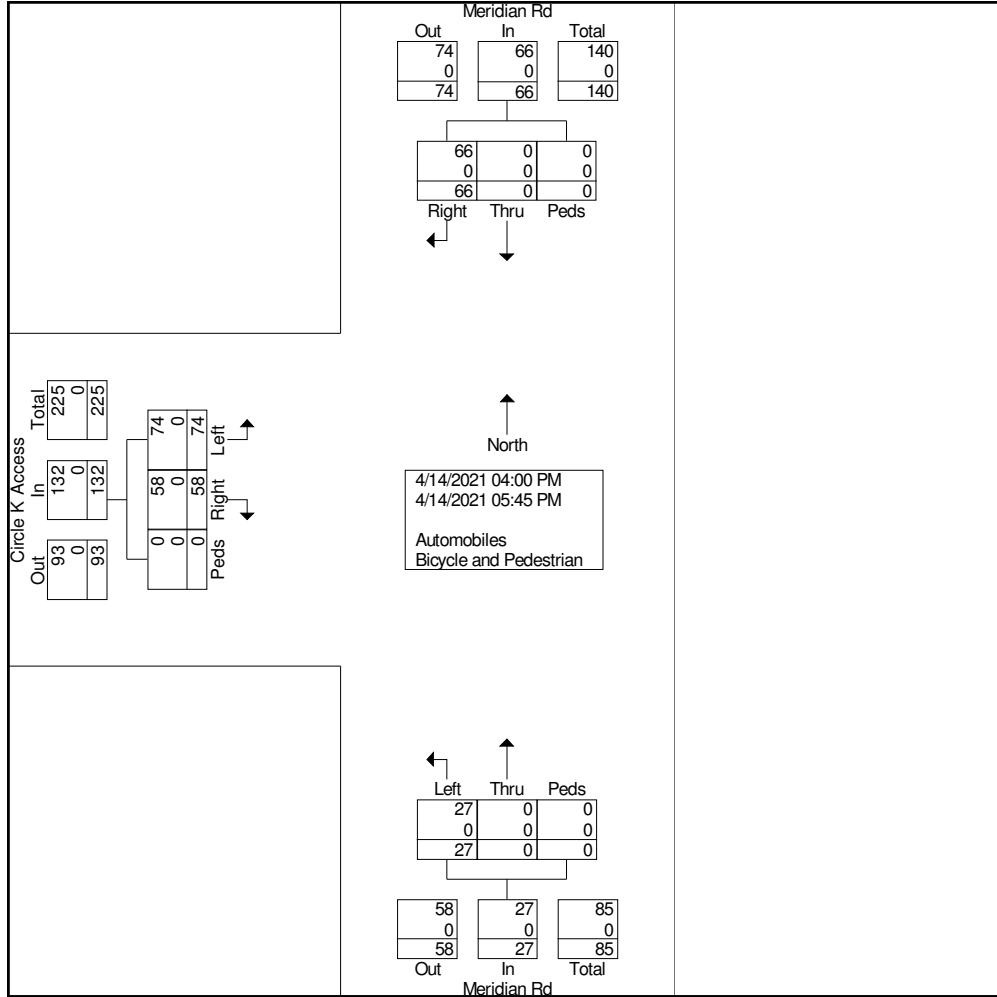




Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
Meridian Circle K Access

File Name : Meridian CircleK Access PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 2



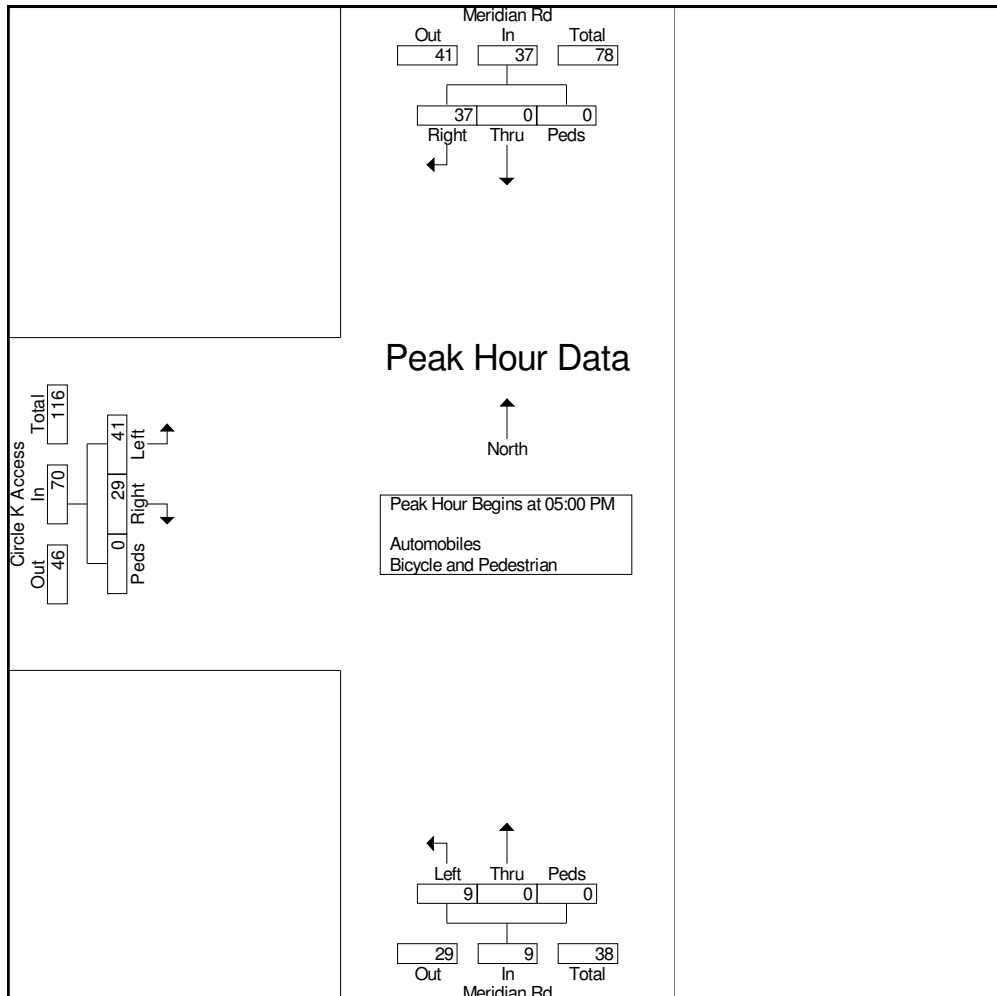


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
Meridian Circle K Access

File Name : Meridian CircleK Access PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 3

Start Time	Circle K Access Eastbound				Meridian Rd Northbound				Meridian Rd Southbound				Int. Total
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	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 05:00 PM													
05:00 PM	12	10	0	22	2	0	0	2	0	8	0	8	32
05:15 PM	10	7	0	17	1	0	0	1	0	7	0	7	25
05:30 PM	10	8	0	18	3	0	0	3	0	14	0	14	35
05:45 PM	9	4	0	13	3	0	0	3	0	8	0	8	24
Total Volume	41	29	0	70	9	0	0	9	0	37	0	37	116
% App. Total	58.6	41.4	0		100	0	0		0	100	0		
PHF	.854	.725	.000	.795	.750	.000	.000	.750	.000	.661	.000	.661	.829

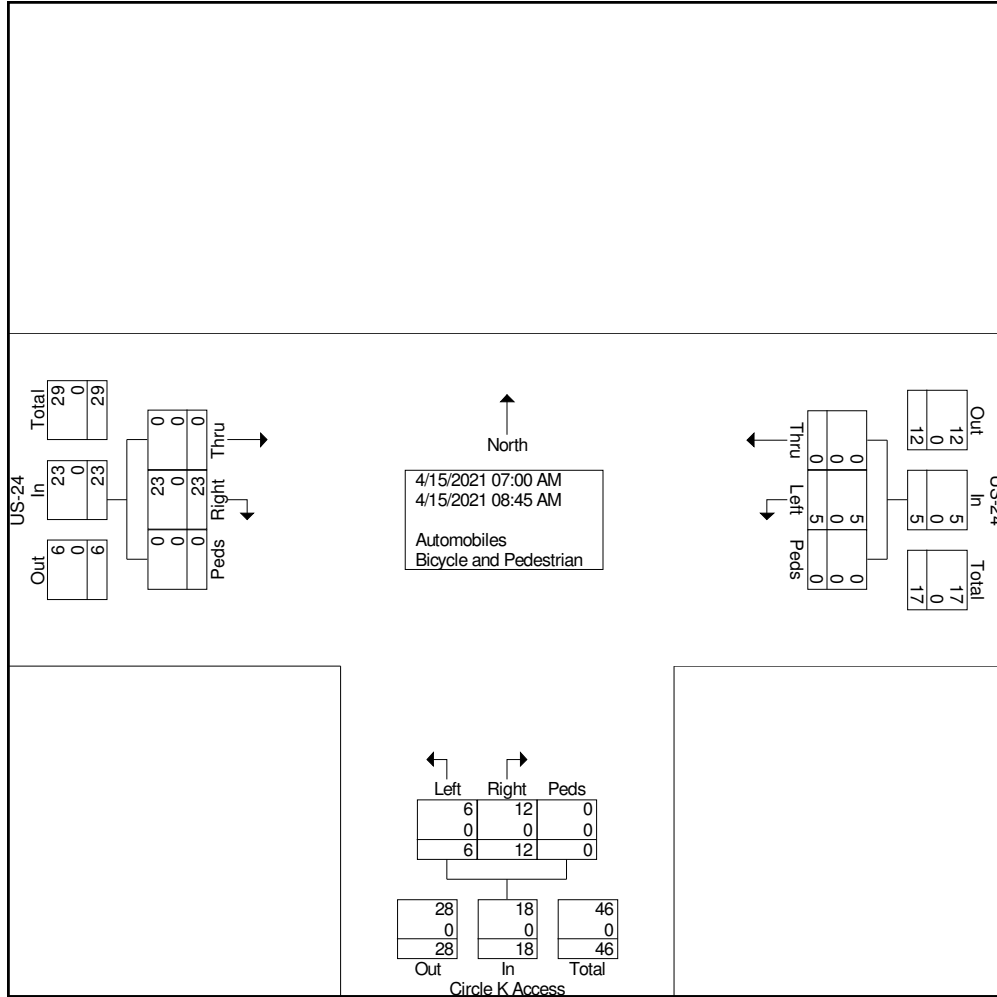




Ridgeview Data Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
US-24 Circle K Access

File Name : US24 CircleK Access AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 2



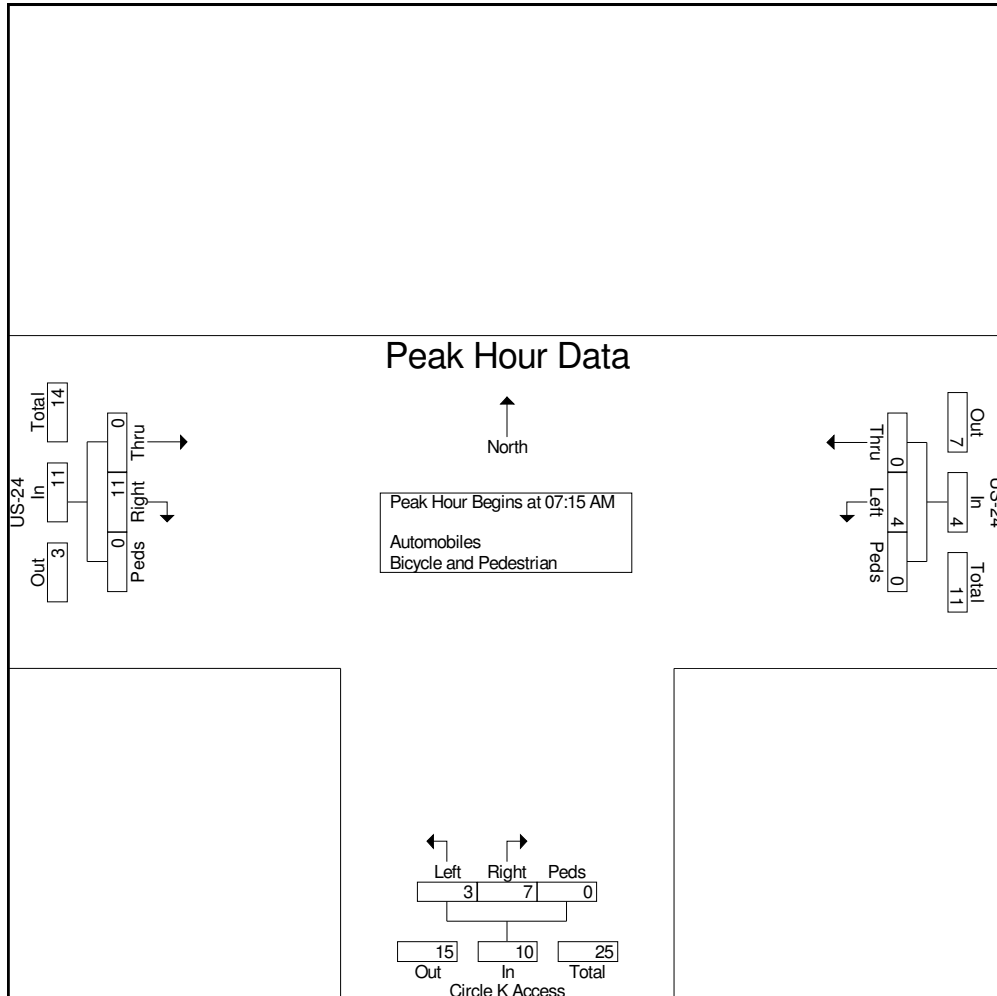


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
AM Peak
US-24 Circle K Access

File Name : US24 CircleK Access AM
Site Code : IPO 538
Start Date : 4/15/2021
Page No : 3

Start Time	US-24 Eastbound				US-24 Westbound				Circle K Access Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	6	0	6	0	0	0	0	0	2	0	2	8
07:30 AM	0	3	0	3	2	0	0	2	1	0	0	1	6
07:45 AM	0	0	0	0	2	0	0	2	0	2	0	2	4
08:00 AM	0	2	0	2	0	0	0	0	2	3	0	5	7
Total Volume	0	11	0	11	4	0	0	4	3	7	0	10	25
% App. Total	0	100	0		100	0	0		30	70	0		
PHF	.000	.458	.000	.458	.500	.000	.000	.500	.375	.583	.000	.500	.781

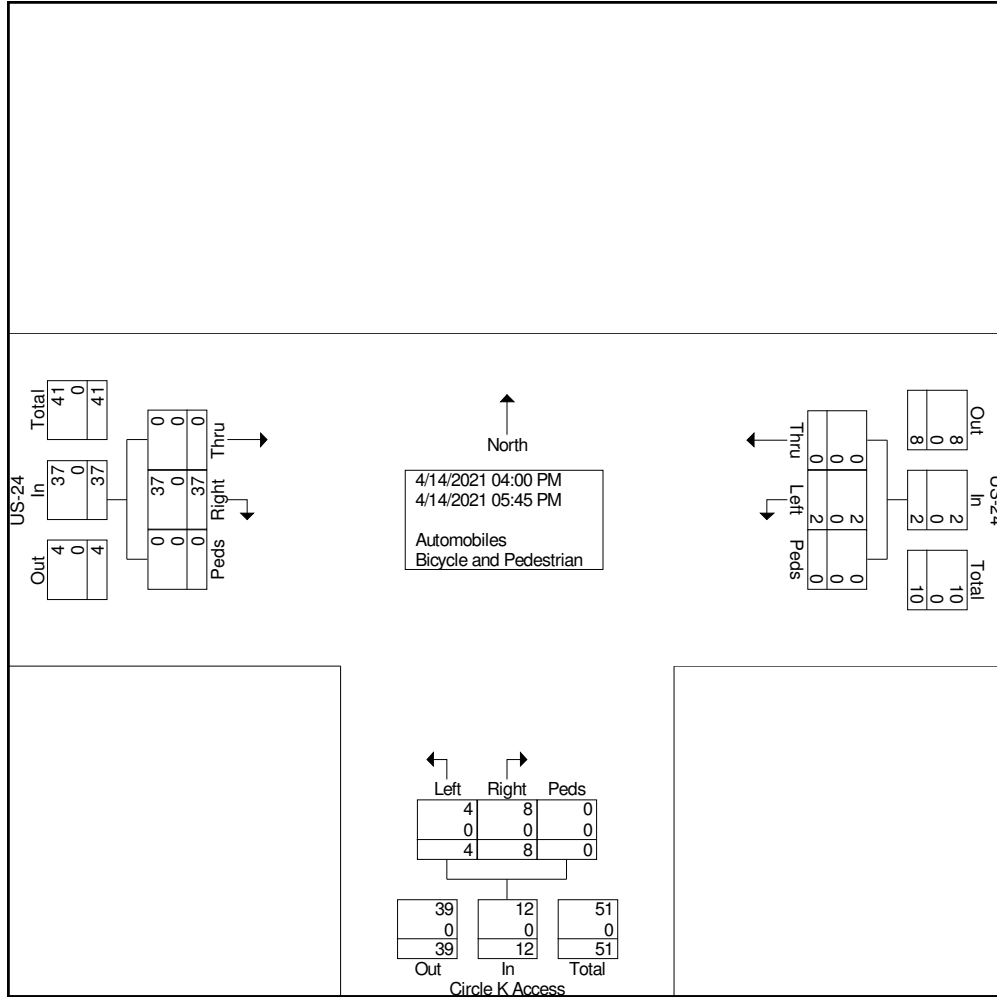




Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
US-24 Circle K Access

File Name : US24 CircleK Access PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 2



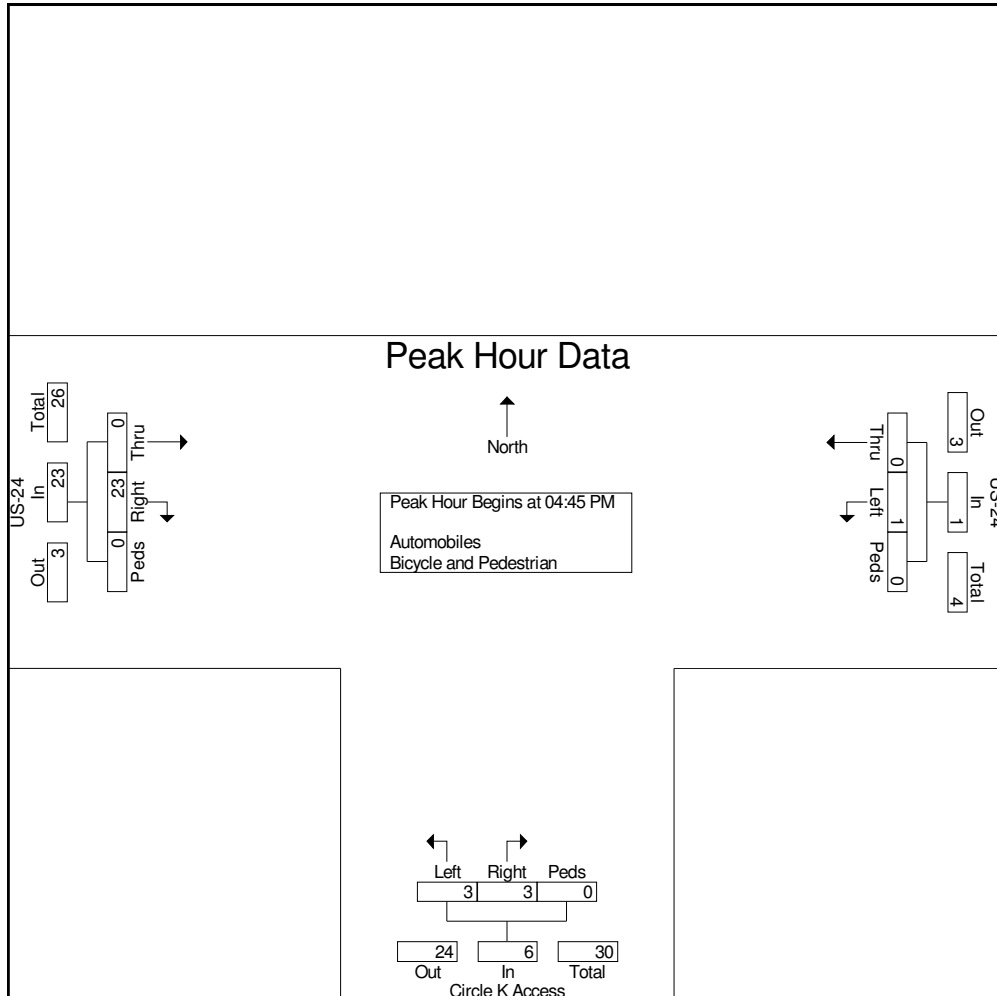


Ridgeview Data
Collection

Falcon, CO
Circle K - US24 & Meridian
PM Peak
US-24 Circle K Access

File Name : US24 CircleK Access PM
Site Code : IPO 538
Start Date : 4/14/2021
Page No : 3

Start Time	US-24 Eastbound				US-24 Westbound				Circle K Access Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	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	0	4	0	4	0	0	0	0	1	2	0	3	7
05:00 PM	0	5	0	5	0	0	0	0	0	0	0	0	5
05:15 PM	0	9	0	9	0	0	0	0	0	1	0	1	10
05:30 PM	0	5	0	5	1	0	0	1	2	0	0	2	8
Total Volume	0	23	0	23	1	0	0	1	3	3	0	6	30
% App. Total	0	100	0		100	0	0		50	50	0		
PHF	.000	.639	.000	.639	.250	.000	.000	.250	.375	.375	.000	.500	.750



APPENDIX B

CDOT Traffic Data

Circle K US-24 & Meridian Counts Adjustment

Traffic Counts		
Scenario	AM Peak	PM Peak
2019 Existing (Pre-COVID - 2019-04-16)	2,076	2,161
2019 Grown to 2021	2,160	2,248
2021 Counts (During COVID - 2021-04-15)	1,478	1,529
Percent Change	-31.57%	-31.99%
Growth Adjustment	46.13%	47.04%
Adjustment Factor	1.46	1.47

CDOT OTIS Count Station 107900: SH-24 S/O Woodman Road

COUNTDIR	HOUR7	HOUR8	HOUR16	HOUR17
Primary	535	476	1464	1346
Secondary	1541	1023	697	607
Total	2076	1499	2161	1953

OTIS Growth Rate for Circle K @ US-24 & Meridian Road

ROUTE	UPDATEYR	AADT	AADTYR	COUNTYEAR	OFFPKTRK	YR20FACTOR	Growth Rate	DHV	DD	LOCATION	
024G	2019	20000	2019	2019	5.9	1.5	1.950%	10.5	75	ON SH 24 0.5MI NE/O CONSTITUTION AVE COLORADO SPRINGS	
024G	2019	17000	2019	2017	4.1	1.4	1.615%	9.5	69	ON SH 24 NE/O FALCON HIGHWAY FALCON	
024G	2019	14000	2019	2017	3.8	1.49	1.917%	11	57	ON SH 24 NE/O WOODMAN RD FALCON	
024G	2019	11000	2019	2017	4.7	1.45	1.785%	11	57	ON SH 24 NE/O JUDGE ORR RD FALCON	
							Average	1.817%			

APPENDIX C

Trip Generation Worksheets

Project Circle K @ US-24 & Meridian Road
 Subject Trip Generation for Super Convenience Market/Gas Station
 Designed by MAG Date 5/4/2021 Job No. 096554014
 Checked by _____ Date _____ Sheet No. _____ of _____

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Super Convenience Market/Gas Station (960)

Independent Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 5,200 Square Feet
 X = 5.200
 T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 404)

T = 83.14 (X)		Directional Distribution:	50%	ent.	50%	exit.
T = 83.14 *	5.200	T =	432	Average Vehicle Trip Ends		
			216	entering	216	exiting
			216	+	216	= 432

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series page 405)

T = 69.28 (X)		Directional Distribution:	50%	ent.	50%	exit.
T = 69.28 *	5.200	T =	360	Average Vehicle Trip Ends		
			180	entering	180	exiting
			180	+	180	= 360

Weekday (800 Series page 335)

Average Weekday		Directional Distribution:	50%	entering,	50%	exiting
T = 837.58 (X)		T =	4356	Average Vehicle Trip Ends		
T = 837.58 *	5.200		2178	entering	2178	exiting
			2178	+	2178	= 4356

Non Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)

PM Peak Hour =	44%	Non-Pass By	AM Peak Hour =	38%	Non-Pass By
	IN	Out	Total	* Utilized ITE 945 pass-by calculations	
AM Peak	82	82	164		
PM Peak	79	79	158		
Daily	958	958	1916	PM Peak Hour Rate Applied to Daily	

Pass-By Trip Volumes (Per ITE Trip Generation Handbook, 3rd Edition September 2017)

PM Peak Hour =	56%	Pass By	AM Peak Hour =	62%	Pass By
	IN	Out	Total		
AM Peak	134	134	268		
PM Peak	101	101	202		
Daily	1220	1220	2440	PM Peak Hour Rate Applied to Daily	

APPENDIX D

Intersection Analysis Worksheets

Timings
1: (Old) Meridian Road & US-24

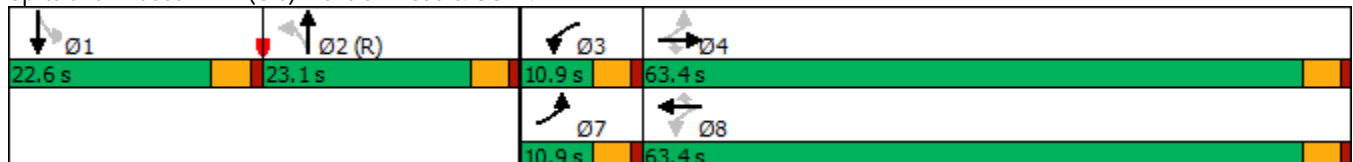
2021 Existing AM.syn
05/06/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	447	13	112	863	16	16	123	218	3	142	688
Future Volume (vph)	131	447	13	112	863	16	16	123	218	3	142	688
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free	Perm	NA	Free
Protected Phases	7	4		3	8			2				1
Permitted Phases	4		4	8		8	2		Free	1		Free
Detector Phase	7	4	4	3	8	8	2	2		1		1
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	22.5	22.5		22.5		22.5
Total Split (s)	10.9	63.4	63.4	10.9	63.4	63.4	23.1	23.1		22.6		22.6
Total Split (%)	9.1%	52.8%	52.8%	9.1%	52.8%	52.8%	19.3%	19.3%		18.8%		18.8%
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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5				4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag		Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max		Max		Max
Act Effct Green (s)	65.3	58.9	58.9	65.3	58.9	58.9		18.6	120.0			18.1
Actuated g/C Ratio	0.54	0.49	0.49	0.54	0.49	0.49		0.16	1.00			0.15
v/c Ratio	0.87	0.51	0.02	0.28	0.98	0.02		0.53	0.14			0.95
Control Delay	68.2	23.2	0.0	13.2	56.8	0.1		54.4	0.2			110.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0
Total Delay	68.2	23.2	0.0	13.2	56.8	0.1		54.4	0.2			110.5
LOS	E	C	A	B	E	A		D	A			F
Approach Delay		32.6			50.9			21.3				20.0
Approach LOS		C			D			C				B

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 33.9
 Intersection LOS: C
 Intersection Capacity Utilization 82.7%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: (Old) Meridian Road & US-24



HCM Signalized Intersection Capacity Analysis
 1: (Old) Meridian Road & US-24

2021 Existing AM.syn
 05/06/2021

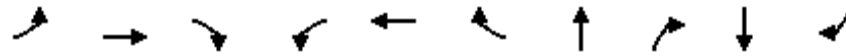
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	447	13	112	863	16	16	123	218	3	142	688
Future Volume (vph)	131	447	13	112	863	16	16	123	218	3	142	688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.0		4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00		1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1852	1583		1861	1583
Flt Permitted	0.07	1.00	1.00	0.35	1.00	1.00		0.95	1.00		0.57	1.00
Satd. Flow (perm)	127	1863	1583	659	1863	1583		1776	1583		1059	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	136	466	14	117	899	17	17	128	227	3	148	717
RTOR Reduction (vph)	0	0	7	0	0	9	0	0	0	0	0	0
Lane Group Flow (vph)	136	466	7	117	899	8	0	145	227	0	151	717
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Free	Perm	NA	Free
Protected Phases	7	4		3	8			2			1	
Permitted Phases	4		4	8		8	2		Free	1		Free
Actuated Green, G (s)	65.3	58.9	58.9	65.3	58.9	58.9		18.6	120.0		18.1	120.0
Effective Green, g (s)	65.3	58.9	58.9	65.3	58.9	58.9		18.6	120.0		18.1	120.0
Actuated g/C Ratio	0.54	0.49	0.49	0.54	0.49	0.49		0.16	1.00		0.15	1.00
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5			4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	156	914	776	417	914	776		275	1583		159	1583
v/s Ratio Prot	c0.05	0.25		0.01	c0.48							
v/s Ratio Perm	0.43		0.00	0.14		0.01		0.08	0.14		c0.14	c0.45
v/c Ratio	0.87	0.51	0.01	0.28	0.98	0.01		0.53	0.14		0.95	0.45
Uniform Delay, d1	29.1	20.7	15.6	14.7	30.1	15.6		46.7	0.0		50.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	37.6	0.4	0.0	0.4	25.6	0.0		7.1	0.2		59.2	0.9
Delay (s)	66.7	21.2	15.6	15.1	55.7	15.6		53.7	0.2		109.6	0.9
Level of Service	E	C	B	B	E	B		D	A		F	A
Approach Delay (s)		31.1			50.4			21.1			19.8	
Approach LOS		C			D			C			B	

Intersection Summary		
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.89	
Actuated Cycle Length (s)	120.0	Sum of lost time (s) 18.0
Intersection Capacity Utilization	82.7%	ICU Level of Service E
Analysis Period (min)	15	

c Critical Lane Group

Timings
1: (Old) Meridian Road & US-24

2021 Existing PM.syn
05/06/2021

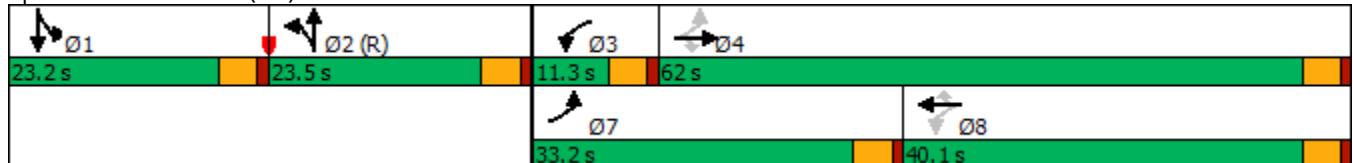


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	500	900	9	147	541	28	244	340	254	284
Future Volume (vph)	500	900	9	147	541	28	244	340	254	284
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Free	NA	Free
Protected Phases	7	4		3	8		2		1	
Permitted Phases	4		4	8		8		Free		Free
Detector Phase	7	4	4	3	8	8	2		1	
Switch Phase										
Minimum Initial (s)	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	22.5		22.5	
Total Split (s)	33.2	62.0	62.0	11.3	40.1	40.1	23.5		23.2	
Total Split (%)	27.7%	51.7%	51.7%	9.4%	33.4%	33.4%	19.6%		19.3%	
Yellow Time (s)	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	
Lost Time Adjust (s)	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	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag		Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	None	None	C-Max		Max	
Act Effct Green (s)	68.8	57.5	57.5	42.4	35.6	35.6	19.0	120.0	18.7	120.0
Actuated g/C Ratio	0.57	0.48	0.48	0.35	0.30	0.30	0.16	1.00	0.16	1.00
v/c Ratio	1.05	1.03	0.01	0.93	1.00	0.05	0.90	0.22	1.00	0.18
Control Delay	89.5	69.4	0.0	83.0	81.0	0.2	82.0	0.3	104.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.5	69.4	0.0	83.0	81.0	0.2	82.0	0.3	104.1	0.3
LOS	F	E	A	F	F	A	F	A	F	A
Approach Delay		76.1			78.2		35.6		52.0	
Approach LOS		E			E		D		D	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.05
 Intersection Signal Delay: 65.0
 Intersection LOS: E
 Intersection Capacity Utilization 99.8%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: (Old) Meridian Road & US-24



HCM Signalized Intersection Capacity Analysis
 1: (Old) Meridian Road & US-24

2021 Existing PM.syn
 05/06/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	500	900	9	147	541	28	15	244	340	28	254	284	
Future Volume (vph)	500	900	9	147	541	28	15	244	340	28	254	284	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.0		4.5	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00		0.99	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1857	1583		1853	1583	
Flt Permitted	0.10	1.00	1.00	0.11	1.00	1.00		1.00	1.00		0.99	1.00	
Satd. Flow (perm)	186	1863	1583	209	1863	1583		1857	1583		1853	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Adj. Flow (vph)	510	918	9	150	552	29	15	249	347	29	259	290	
RTOR Reduction (vph)	0	0	5	0	0	20	0	0	0	0	0	0	
Lane Group Flow (vph)	510	918	4	150	552	9	0	264	347	0	288	290	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Free	Split	NA	Free	
Protected Phases	7	4		3	8		2	2		1	1		
Permitted Phases	4		4	8		8			Free			Free	
Actuated Green, G (s)	68.8	57.5	57.5	42.4	35.6	35.6		19.0	120.0		18.7	120.0	
Effective Green, g (s)	68.8	57.5	57.5	42.4	35.6	35.6		19.0	120.0		18.7	120.0	
Actuated g/C Ratio	0.57	0.48	0.48	0.35	0.30	0.30		0.16	1.00		0.16	1.00	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5		4.5			4.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0			3.0		
Lane Grp Cap (vph)	485	892	758	162	552	469		294	1583		288	1583	
v/s Ratio Prot	c0.25	0.49		0.05	0.30			c0.14			c0.16		
v/s Ratio Perm	c0.35		0.00	0.27		0.01			0.22			0.18	
v/c Ratio	1.05	1.03	0.01	0.93	1.00	0.02		0.90	0.22		1.00	0.18	
Uniform Delay, d1	37.0	31.2	16.3	33.1	42.2	29.8		49.5	0.0		50.6	0.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	55.1	37.8	0.0	49.0	38.3	0.0		31.8	0.3		53.0	0.3	
Delay (s)	92.1	69.1	16.3	82.2	80.5	29.9		81.4	0.3		103.7	0.3	
Level of Service	F	E	B	F	F	C		F	A		F	A	
Approach Delay (s)		76.9			78.8			35.3			51.8		
Approach LOS		E			E			D			D		
Intersection Summary													
HCM 2000 Control Delay			65.4									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			99.8%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	605	25	0	945	5	0	0	70	0	0	110
Future Vol, veh/h	0	605	25	0	945	5	0	0	70	0	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	350	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	630	26	0	984	5	0	0	73	0	0	115

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	0	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0
Stage 1	0	-	-	0	-	-	0	0
Stage 2	0	-	-	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	1150	40	0	620	10	0	0	110	0	0	45
Future Vol, veh/h	0	1150	40	0	620	10	0	0	110	0	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	350	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1173	41	0	633	10	0	0	112	0	0	46

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	0	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0
Stage 1	0	-	-	0	-	-	0	0
Stage 2	0	-	-	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	605	60	0	965	5	0	0	95	0	0	110
Future Vol, veh/h	0	605	60	0	965	5	0	0	95	0	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	630	63	0	1005	5	0	0	99	0	0	115

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	0	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0
Stage 1	0	-	-	0	-	-	0	0
Stage 2	0	-	-	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	1150	60	0	635	10	0	0	120	0	0	45
Future Vol, veh/h	0	1150	60	0	635	10	0	0	120	0	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1173	61	0	648	10	0	0	122	0	0	46

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	0	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0
Stage 1	0	-	-	0	-	-	0	0
Stage 2	0	-	-	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	850	30	0	1305	5	0	0	100	0	0	155
Future Vol, veh/h	0	850	30	0	1305	5	0	0	100	0	0	155
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	350	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	885	31	0	1359	5	0	0	104	0	0	161

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	0	0	0	0
Stage 1	0	-	-	0	-	-	0	0	0	0	0	0
Stage 2	0	-	-	0	-	-	0	0	0	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↑	↗			↗			↗
Traffic Vol, veh/h	0	1620	45	0	845	10	0	0	150	0	0	65
Future Vol, veh/h	0	1620	45	0	845	10	0	0	150	0	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	350	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1653	46	0	862	10	0	0	153	0	0	66

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	0	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0
Stage 1	0	-	-	0	-	-	0	0
Stage 2	0	-	-	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	850	65	0	1325	5	0	0	125	0	0	155
Future Vol, veh/h	0	850	65	0	1325	5	0	0	125	0	0	155
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	885	68	0	1380	5	0	0	130	0	0	161

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	0	0	0	0
Stage 1	0	-	-	0	-	-	0	0	0	0	0	0
Stage 2	0	-	-	0	-	-	0	0	0	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1620	65	0	860	10	0	0	160	0	0	65
Future Vol, veh/h	0	1620	65	0	860	10	0	0	160	0	0	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	Free
Storage Length	-	-	0	-	-	375	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1653	66	0	878	10	0	0	163	0	0	66

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	-
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	0	0	0	0
Stage 1	0	-	-	0	-	-	0	0	0	0	0	0
Stage 2	0	-	-	0	-	-	0	0	0	0	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	-	0
HCM Lane LOS	A	-	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	-

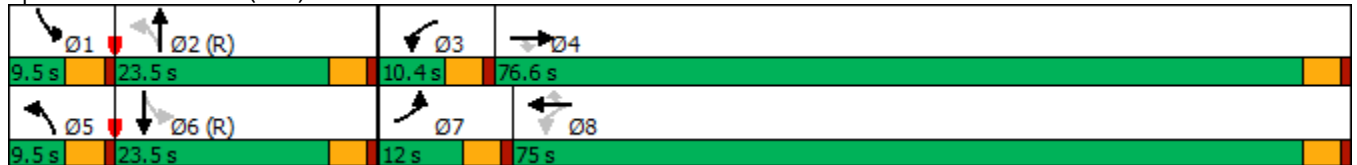
Timings
2: (New) Meridian Road & US-24

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	465	10	120	920	15	25	135	160	5	150	610
Future Volume (vph)	140	465	10	120	920	15	25	135	160	5	150	610
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	12.0	76.6	76.6	10.4	75.0	75.0	9.5	23.5		9.5	23.5	
Total Split (%)	10.0%	63.8%	63.8%	8.7%	62.5%	62.5%	7.9%	19.6%		7.9%	19.6%	
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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	7.5	70.9	70.9	75.2	69.3	69.3	28.8	27.8	120.0	27.0	24.0	120.0
Actuated g/C Ratio	0.06	0.59	0.59	0.63	0.58	0.58	0.24	0.23	1.00	0.22	0.20	1.00
v/c Ratio	0.71	0.46	0.01	0.26	0.93	0.02	0.09	0.18	0.11	0.02	0.23	0.42
Control Delay	73.7	15.2	0.0	8.0	38.8	0.0	36.4	39.3	0.1	35.4	43.3	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	15.2	0.0	8.0	38.8	0.0	36.4	39.3	0.1	35.4	43.3	0.8
LOS	E	B	A	A	D	A	D	D	A	D	D	A
Approach Delay		28.3			34.8			19.5			9.4	
Approach LOS		C			C			B			A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 24.5
 Intersection LOS: C
 Intersection Capacity Utilization 75.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2023 Background AM.syn

05/06/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	140	465	10	120	920	15	25	135	160	5	150	610
Future Volume (veh/h)	140	465	10	120	920	15	25	135	160	5	150	610
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	505	11	130	1000	16	27	147	0	5	163	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1071	908	511	1047	888	309	796		308	731	
Arrive On Green	0.06	0.57	0.57	0.05	0.56	0.56	0.02	0.22	0.00	0.01	0.21	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	505	11	130	1000	16	27	147	0	5	163	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.2	19.0	0.4	3.7	60.7	0.5	1.4	4.0	0.0	0.3	4.6	0.0
Cycle Q Clear(g_c), s	5.2	19.0	0.4	3.7	60.7	0.5	1.4	4.0	0.0	0.3	4.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	1071	908	511	1047	888	309	796		308	731	
V/C Ratio(X)	0.74	0.47	0.01	0.25	0.95	0.02	0.09	0.18		0.02	0.22	
Avail Cap(c_a), veh/h	216	1124	952	514	1099	931	339	796		371	731	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.5	15.0	11.0	11.5	25.0	11.7	36.2	37.7	0.0	37.4	39.7	0.0
Incr Delay (d2), s/veh	11.9	0.3	0.0	0.3	17.0	0.0	0.1	0.5	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.0	0.1	1.5	30.3	0.2	0.6	1.8	0.0	0.1	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.4	15.3	11.0	11.7	41.9	11.7	36.3	38.2	0.0	37.4	40.4	0.0
LnGrp LOS	E	B	B	B	D	B	D	D		D	D	
Approach Vol, veh/h		668			1146			174	A		168	A
Approach Delay, s/veh		27.1			38.1			37.9			40.3	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	31.4	10.1	73.2	7.5	29.2	11.7	71.7				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	19.0	5.9	72.1	5.0	19.0	7.5	70.5				
Max Q Clear Time (g_c+I1), s	2.3	6.0	5.7	21.0	3.4	6.6	7.2	62.7				
Green Ext Time (p_c), s	0.0	0.6	0.0	3.8	0.0	0.7	0.0	4.5				

Intersection Summary

HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: (New) Meridian Road & US-24

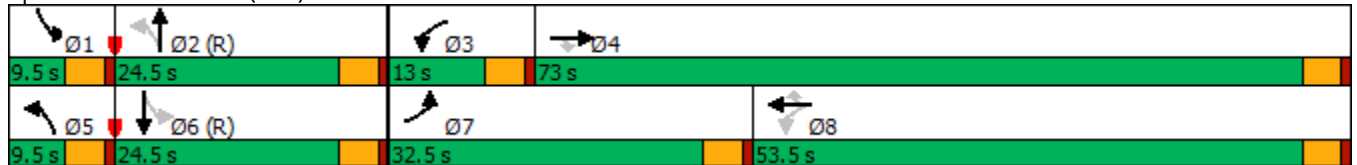
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	525	910	5	155	485	25	30	265	250	30	265	255
Future Volume (vph)	525	910	5	155	485	25	30	265	250	30	265	255
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	32.5	73.0	73.0	13.0	53.5	53.5	9.5	24.5		9.5	24.5	
Total Split (%)	27.1%	60.8%	60.8%	10.8%	44.6%	44.6%	7.9%	20.4%		7.9%	20.4%	
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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	24.5	67.4	67.4	60.0	51.5	51.5	27.9	24.9	120.0	27.9	24.9	120.0
Actuated g/C Ratio	0.20	0.56	0.56	0.50	0.43	0.43	0.23	0.21	1.00	0.23	0.21	1.00
v/c Ratio	0.82	0.95	0.01	0.90	0.66	0.04	0.14	0.39	0.17	0.14	0.39	0.17
Control Delay	55.6	42.6	0.0	75.2	32.6	0.1	36.4	44.5	0.2	36.4	44.5	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	55.6	42.6	0.0	75.2	32.6	0.1	36.4	44.5	0.2	36.4	44.5	0.2
LOS	E	D	A	E	C	A	D	D	A	D	D	A
Approach Delay		47.2			41.3			23.7			23.6	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 37.9
 Intersection Capacity Utilization 83.0%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2023 Background PM.syn

05/06/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑	↖	↖	↑	↖	↖	↑↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	525	910	5	155	485	25	30	265	250	30	265	255
Future Volume (veh/h)	525	910	5	155	485	25	30	265	250	30	265	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	571	989	5	168	527	27	33	288	0	33	288	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	1030	873	209	807	683	254	721		254	721	
Arrive On Green	0.19	0.55	0.55	0.07	0.43	0.43	0.03	0.20	0.00	0.03	0.20	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	571	989	5	168	527	27	33	288	0	33	288	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	19.3	60.5	0.2	6.3	26.8	1.2	1.7	8.4	0.0	1.7	8.4	0.0
Cycle Q Clear(g_c), s	19.3	60.5	0.2	6.3	26.8	1.2	1.7	8.4	0.0	1.7	8.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	650	1030	873	209	807	683	254	721		254	721	
V/C Ratio(X)	0.88	0.96	0.01	0.81	0.65	0.04	0.13	0.40		0.13	0.40	
Avail Cap(c_a), veh/h	806	1068	905	213	807	683	279	721		279	721	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.4	25.7	12.1	27.3	27.0	19.7	36.5	41.5	0.0	36.5	41.5	0.0
Incr Delay (d2), s/veh	9.3	18.4	0.0	19.6	1.9	0.0	0.2	1.7	0.0	0.2	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	30.7	0.1	3.7	12.2	0.4	0.8	3.9	0.0	0.8	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	44.1	12.1	46.9	28.9	19.8	36.7	43.1	0.0	36.7	43.1	0.0
LnGrp LOS	E	D	B	D	C	B	D	D		D	D	
Approach Vol, veh/h		1565			722			321	A		321	A
Approach Delay, s/veh		48.5			32.8			42.5			42.5	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	28.8	12.7	70.6	7.8	28.8	27.1	56.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	20.0	8.5	68.5	5.0	20.0	28.0	49.0				
Max Q Clear Time (g_c+I1), s	3.7	10.4	8.3	62.5	3.7	10.4	21.3	28.8				
Green Ext Time (p_c), s	0.0	1.2	0.0	3.6	0.0	1.2	1.3	3.5				

Intersection Summary

HCM 6th Ctrl Delay	43.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: (New) Meridian Road & US-24

2023 Total AM.syn

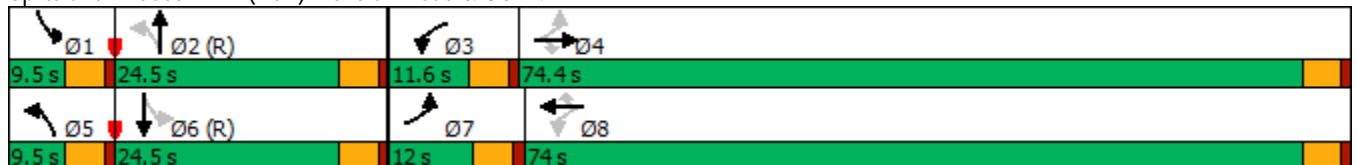
05/26/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	485	50	140	920	15	90	175	160	20	170	610
Future Volume (vph)	140	485	50	140	920	15	90	175	160	20	170	610
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	12.0	74.4	74.4	11.6	74.0	74.0	9.5	24.5		9.5	24.5	
Total Split (%)	10.0%	62.0%	62.0%	9.7%	61.7%	61.7%	7.9%	20.4%		7.9%	20.4%	
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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	77.3	69.3	69.3	76.5	68.9	68.9	28.7	25.4	120.0	26.8	21.2	120.0
Actuated g/C Ratio	0.64	0.58	0.58	0.64	0.57	0.57	0.24	0.21	1.00	0.22	0.18	1.00
v/c Ratio	0.84	0.49	0.06	0.31	0.93	0.02	0.36	0.25	0.11	0.08	0.30	0.42
Control Delay	62.1	16.6	0.5	8.6	39.9	0.0	40.7	42.3	0.1	35.0	44.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	16.6	0.5	8.6	39.9	0.0	40.7	42.3	0.1	35.0	44.8	0.8
LOS	E	B	A	A	D	A	D	D	A	D	D	A
Approach Delay		24.9			35.2			26.1			11.0	
Approach LOS		C			D			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 25.1
 Intersection LOS: C
 Intersection Capacity Utilization 79.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2023 Total AM.syn
05/26/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	485	50	140	920	15	90	175	160	20	170	610
Future Volume (veh/h)	140	485	50	140	920	15	90	175	160	20	170	610
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	527	54	152	1000	16	98	190	0	22	185	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1048	888	484	1048	888	334	796		321	725	
Arrive On Green	0.06	0.56	0.56	0.06	0.56	0.56	0.05	0.22	0.00	0.03	0.20	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	527	54	152	1000	16	98	190	0	22	185	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.3	20.7	1.9	4.3	60.6	0.5	5.2	5.3	0.0	1.2	5.2	0.0
Cycle Q Clear(g_c), s	4.3	20.7	1.9	4.3	60.6	0.5	5.2	5.3	0.0	1.2	5.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	1048	888	484	1048	888	334	796		321	725	
V/C Ratio(X)	0.79	0.50	0.06	0.31	0.95	0.02	0.29	0.24		0.07	0.26	
Avail Cap(c_a), veh/h	209	1097	930	496	1091	925	334	796		357	725	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.8	16.2	12.0	11.8	24.9	11.7	35.6	38.2	0.0	36.1	40.1	0.0
Incr Delay (d2), s/veh	17.5	0.4	0.0	0.4	17.1	0.0	0.5	0.7	0.0	0.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	8.7	0.7	1.7	30.3	0.2	2.3	2.4	0.0	0.5	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	16.5	12.0	12.2	42.0	11.7	36.0	38.9	0.0	36.2	40.9	0.0
LnGrp LOS	D	B	B	B	D	B	D	D		D	D	
Approach Vol, veh/h		733			1168			288	A		207	A
Approach Delay, s/veh		22.2			37.7			37.9			40.4	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	30.9	10.8	71.2	9.5	28.5	10.8	71.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	20.0	7.1	69.9	5.0	20.0	7.5	69.5				
Max Q Clear Time (g_c+I1), s	3.2	7.3	6.3	22.7	7.2	7.2	6.3	62.6				
Green Ext Time (p_c), s	0.0	0.8	0.0	4.1	0.0	0.8	0.0	4.1				

Intersection Summary

HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: (New) Meridian Road & US-24

2023 Total PM.syn

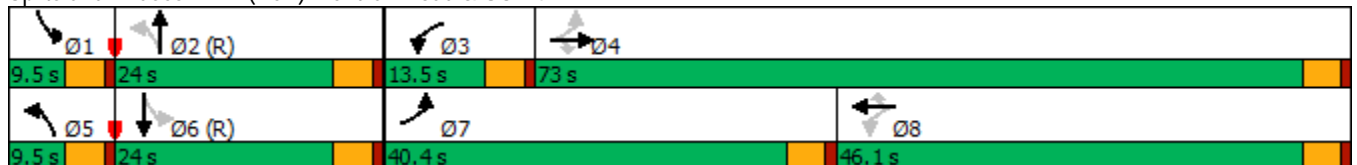
05/26/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	525	925	30	170	485	25	65	285	250	40	280	255
Future Volume (vph)	525	925	30	170	485	25	65	285	250	40	280	255
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	40.4	73.0	73.0	13.5	46.1	46.1	9.5	24.0		9.5	24.0	
Total Split (%)	33.7%	60.8%	60.8%	11.3%	38.4%	38.4%	7.9%	20.0%		7.9%	20.0%	
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)	-0.5	-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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	81.7	68.2	68.2	53.2	43.7	43.7	27.1	22.7	120.0	27.1	22.7	120.0
Actuated g/C Ratio	0.68	0.57	0.57	0.44	0.36	0.36	0.23	0.19	1.00	0.23	0.19	1.00
v/c Ratio	0.92	0.95	0.04	0.92	0.78	0.04	0.32	0.46	0.17	0.20	0.46	0.17
Control Delay	47.4	42.8	0.1	79.1	43.7	0.1	40.1	47.0	0.2	37.5	46.8	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	47.4	42.8	0.1	79.1	43.7	0.1	40.1	47.0	0.2	37.5	46.8	0.2
LOS	D	D	A	E	D	A	D	D	A	D	D	A
Approach Delay		43.6			51.0			26.8			25.5	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 38.9
 Intersection LOS: D
 Intersection Capacity Utilization 83.5%
 ICU Level of Service E
 Analysis Period (min) 15

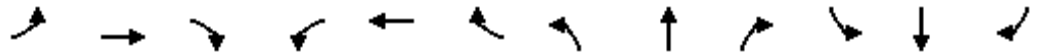
Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
 2: (New) Meridian Road & US-24

2023 Total PM.syn

05/26/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	525	925	30	170	485	25	65	285	250	40	280	255
Future Volume (veh/h)	525	925	30	170	485	25	65	285	250	40	280	255
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	571	1005	33	185	527	27	71	310	0	43	304	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	613	1046	887	226	787	667	256	685		247	649	
Arrive On Green	0.22	0.56	0.56	0.08	0.42	0.42	0.05	0.19	0.00	0.04	0.18	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	571	1005	33	185	527	27	71	310	0	43	304	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	22.0	61.4	1.1	7.0	27.3	1.2	3.8	9.3	0.0	2.3	9.2	0.0
Cycle Q Clear(g_c), s	22.0	61.4	1.1	7.0	27.3	1.2	3.8	9.3	0.0	2.3	9.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	613	1046	887	226	787	667	256	685		247	649	
V/C Ratio(X)	0.93	0.96	0.04	0.82	0.67	0.04	0.28	0.45		0.17	0.47	
Avail Cap(c_a), veh/h	766	1075	911	227	787	667	256	685		265	649	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.3	25.2	11.9	27.0	28.0	20.5	37.6	42.8	0.0	37.8	43.8	0.0
Incr Delay (d2), s/veh	16.0	18.4	0.0	20.4	2.2	0.0	0.6	2.2	0.0	0.3	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.2	31.0	0.4	4.1	12.5	0.5	1.7	4.3	0.0	1.0	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.3	43.6	11.9	47.4	30.2	20.5	38.1	45.0	0.0	38.2	46.2	0.0
LnGrp LOS	D	D	B	D	C	C	D	D		D	D	
Approach Vol, veh/h		1609			739			381	A		347	A
Approach Delay, s/veh		40.7			34.2			43.7			45.2	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	27.1	13.4	71.1	9.5	25.9	30.1	54.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	19.5	9.0	68.5	5.0	19.5	35.9	41.6				
Max Q Clear Time (g_c+I1), s	4.3	11.3	9.0	63.4	5.8	11.2	24.0	29.3				
Green Ext Time (p_c), s	0.0	1.2	0.0	3.2	0.0	1.2	1.6	2.8				

Intersection Summary

HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

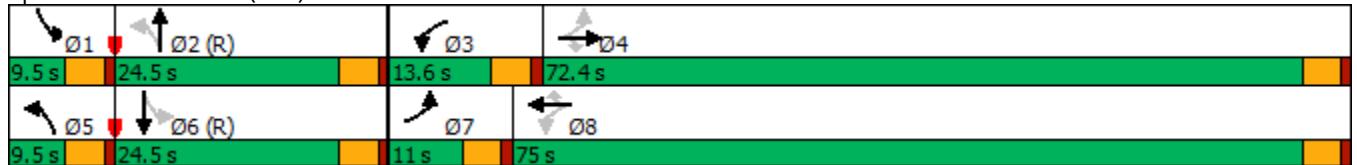
Timings
2: (New) Meridian Road & US-24

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	650	10	165	1275	20	35	185	225	5	210	855
Future Volume (vph)	195	650	10	165	1275	20	35	185	225	5	210	855
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	11.0	72.4	72.4	13.6	75.0	75.0	9.5	24.5		9.5	24.5	
Total Split (%)	9.2%	60.3%	60.3%	11.3%	62.5%	62.5%	7.9%	20.4%		7.9%	20.4%	
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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	75.8	68.8	68.8	80.2	71.0	71.0	29.2	28.1	120.0	27.6	24.3	120.0
Actuated g/C Ratio	0.63	0.57	0.57	0.67	0.59	0.59	0.24	0.23	1.00	0.23	0.20	1.00
v/c Ratio	1.28	0.66	0.01	0.47	1.26	0.02	0.15	0.24	0.15	0.02	0.32	0.59
Control Delay	194.8	21.5	0.0	11.0	148.7	0.1	36.1	39.2	0.2	34.2	43.5	1.6
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	194.8	21.5	0.0	11.0	148.7	0.1	36.1	39.2	0.2	34.2	43.5	1.6
LOS	F	C	A	B	F	A	D	D	A	C	D	A
Approach Delay		60.7			131.1			19.2			10.0	
Approach LOS		E			F			B			A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.28
 Intersection Signal Delay: 68.6
 Intersection LOS: E
 Intersection Capacity Utilization 101.2%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2040 Background AM.syn

05/06/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑↑	↗	↖	↑↑	↗
Traffic Volume (veh/h)	195	650	10	165	1275	20	35	185	225	5	210	855
Future Volume (veh/h)	195	650	10	165	1275	20	35	185	225	5	210	855
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	707	11	179	1386	22	38	201	0	5	228	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1102	934	417	1107	938	267	732		266	649	
Arrive On Green	0.06	0.59	0.59	0.06	0.59	0.59	0.03	0.21	0.00	0.01	0.18	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	212	707	11	179	1386	22	38	201	0	5	228	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.0	30.0	0.3	4.7	71.0	0.7	2.0	5.7	0.0	0.3	6.7	0.0
Cycle Q Clear(g_c), s	7.0	30.0	0.3	4.7	71.0	0.7	2.0	5.7	0.0	0.3	6.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	164	1102	934	417	1107	938	267	732		266	649	
V/C Ratio(X)	1.29	0.64	0.01	0.43	1.25	0.02	0.14	0.27		0.02	0.35	
Avail Cap(c_a), veh/h	164	1102	934	452	1107	938	287	732		329	649	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.7	16.3	10.2	13.1	24.5	10.1	37.2	40.1	0.0	39.2	42.8	0.0
Incr Delay (d2), s/veh	169.7	1.3	0.0	0.7	121.2	0.0	0.2	0.9	0.0	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	12.7	0.1	1.8	66.3	0.2	0.9	2.6	0.0	0.1	3.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	209.4	17.5	10.2	13.8	145.7	10.2	37.5	41.0	0.0	39.2	44.3	0.0
LnGrp LOS	F	B	B	B	F	B	D	D		D	D	
Approach Vol, veh/h		930			1587			239	A		233	A
Approach Delay, s/veh		61.2			128.9			40.4			44.2	
Approach LOS		E			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	28.7	11.3	74.7	8.1	25.9	11.0	75.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	20.0	9.1	67.9	5.0	20.0	6.5	70.5				
Max Q Clear Time (g_c+I1), s	2.3	7.7	6.7	32.0	4.0	8.7	9.0	73.0				
Green Ext Time (p_c), s	0.0	0.9	0.1	5.9	0.0	1.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	94.2
HCM 6th LOS	F

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

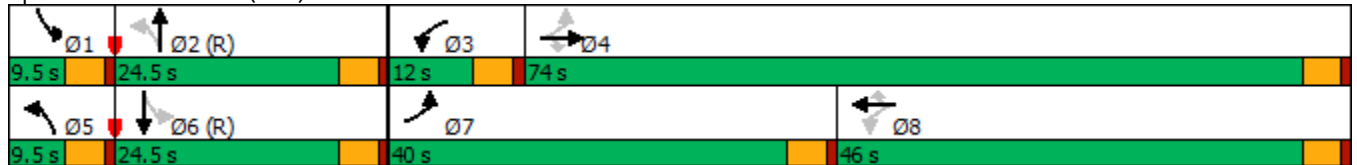
Timings
2: (New) Meridian Road & US-24

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	730	1270	10	220	655	35	35	365	350	45	375	355
Future Volume (vph)	730	1270	10	220	655	35	35	365	350	45	375	355
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	40.0	74.0	74.0	12.0	46.0	46.0	9.5	24.5		9.5	24.5	
Total Split (%)	33.3%	61.7%	61.7%	10.0%	38.3%	38.3%	7.9%	20.4%		7.9%	20.4%	
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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	82.0	70.0	70.0	50.0	42.0	42.0	26.8	22.4	120.0	27.6	24.3	120.0
Actuated g/C Ratio	0.68	0.58	0.58	0.42	0.35	0.35	0.22	0.19	1.00	0.23	0.20	1.00
v/c Ratio	1.34	1.27	0.01	1.34	1.09	0.06	0.21	0.60	0.24	0.27	0.57	0.24
Control Delay	193.1	154.7	0.0	214.2	100.5	0.2	37.5	49.8	0.4	38.9	47.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	193.1	154.7	0.0	214.2	100.5	0.2	37.5	49.8	0.4	38.9	47.8	0.4
LOS	F	F	A	F	F	A	D	D	A	D	D	A
Approach Delay		167.9			124.1			26.2			25.6	
Approach LOS		F			F			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.34
 Intersection Signal Delay: 110.2
 Intersection LOS: F
 Intersection Capacity Utilization 106.9%
 ICU Level of Service G
 Analysis Period (min) 15

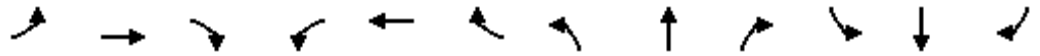
Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2040 Background PM.syn

05/06/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	730	1270	10	220	655	35	35	365	350	45	375	355
Future Volume (veh/h)	730	1270	10	220	655	35	35	365	350	45	375	355
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	793	1380	11	239	712	38	38	397	0	49	408	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	594	1091	925	179	655	555	196	636		202	649	
Arrive On Green	0.30	0.58	0.58	0.07	0.35	0.35	0.03	0.18	0.00	0.04	0.18	0.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	793	1380	11	239	712	38	38	397	0	49	408	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	36.0	70.0	0.3	8.0	42.0	1.9	2.1	12.4	0.0	2.7	12.7	0.0
Cycle Q Clear(g_c), s	36.0	70.0	0.3	8.0	42.0	1.9	2.1	12.4	0.0	2.7	12.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	594	1091	925	179	655	555	196	636		202	649	
V/C Ratio(X)	1.33	1.26	0.01	1.34	1.09	0.07	0.19	0.62		0.24	0.63	
Avail Cap(c_a), veh/h	594	1091	925	179	655	555	216	636		216	649	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.1	25.0	10.5	31.2	39.0	26.0	38.6	45.5	0.0	38.5	45.3	0.0
Incr Delay (d2), s/veh	161.6	126.6	0.0	184.5	61.4	0.1	0.5	4.6	0.0	0.6	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	42.9	67.2	0.1	12.4	30.1	0.7	0.9	5.9	0.0	1.2	6.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	197.8	151.6	10.5	215.7	100.4	26.0	39.1	50.1	0.0	39.1	49.9	0.0
LnGrp LOS	F	F	B	F	F	C	D	D		D	D	
Approach Vol, veh/h		2184			989			435	A		457	A
Approach Delay, s/veh		167.6			125.4			49.1			48.7	
Approach LOS		F			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	25.5	12.0	74.0	8.1	25.9	40.0	46.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	20.0	7.5	69.5	5.0	20.0	35.5	41.5				
Max Q Clear Time (g_c+I1), s	4.7	14.4	10.0	72.0	4.1	14.7	38.0	44.0				
Green Ext Time (p_c), s	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	131.3
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: (New) Meridian Road & US-24

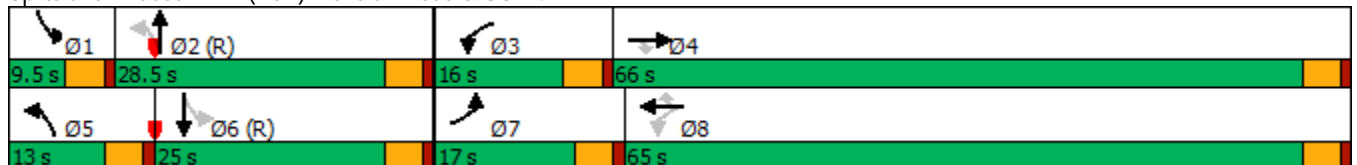
2040 Total AM.syn
05/26/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	670	50	185	1275	20	100	225	225	20	230	855
Future Volume (vph)	195	670	50	185	1275	20	100	225	225	20	230	855
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	17.0	66.0	66.0	16.0	65.0	65.0	13.0	28.5		9.5	25.0	
Total Split (%)	14.2%	55.0%	55.0%	13.3%	54.2%	54.2%	10.8%	23.8%		7.9%	20.8%	
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)	-0.5	-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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	12.1	58.1	58.1	68.9	57.4	57.4	38.3	32.5	120.0	31.4	25.3	120.0
Actuated g/C Ratio	0.10	0.48	0.48	0.57	0.48	0.48	0.32	0.27	1.00	0.26	0.21	1.00
v/c Ratio	0.61	0.43	0.07	0.47	0.82	0.03	0.33	0.26	0.15	0.07	0.34	0.59
Control Delay	59.7	20.6	0.7	13.4	31.2	0.1	34.3	37.8	0.2	31.6	43.3	1.6
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	59.7	20.6	0.7	13.4	31.2	0.1	34.3	37.8	0.2	31.6	43.3	1.6
LOS	E	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		27.9			28.6			21.8			10.8	
Approach LOS		C			C			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 22.7
 Intersection LOS: C
 Intersection Capacity Utilization 66.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2040 Total AM.syn
05/26/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↗	↑↑	↖	↖	↑↑	↖	↗	↑↑	↖
Traffic Volume (veh/h)	195	670	50	185	1275	20	100	225	225	20	230	855
Future Volume (veh/h)	195	670	50	185	1275	20	100	225	225	20	230	855
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	212	728	54	201	1386	22	109	245	0	22	250	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	285	1607	717	420	1603	715	414	1092		397	964	
Arrive On Green	0.08	0.45	0.45	0.08	0.45	0.45	0.06	0.31	0.00	0.03	0.27	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	212	728	54	201	1386	22	109	245	0	22	250	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	7.2	16.9	2.3	7.1	42.1	0.9	5.1	6.2	0.0	1.1	6.6	0.0
Cycle Q Clear(g_c), s	7.2	16.9	2.3	7.1	42.1	0.9	5.1	6.2	0.0	1.1	6.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	285	1607	717	420	1603	715	414	1092		397	964	
V/C Ratio(X)	0.74	0.45	0.08	0.48	0.86	0.03	0.26	0.22		0.06	0.26	
Avail Cap(c_a), veh/h	374	1836	819	453	1806	806	438	1092		432	964	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.8	22.6	18.6	16.5	29.7	18.3	27.4	30.9	0.0	30.0	34.3	0.0
Incr Delay (d2), s/veh	5.6	0.2	0.0	0.8	4.3	0.0	0.3	0.5	0.0	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	7.1	0.9	3.0	18.4	0.3	2.2	2.7	0.0	0.5	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.4	22.8	18.7	17.3	33.9	18.4	27.7	31.4	0.0	30.1	34.9	0.0
LnGrp LOS	E	C	B	B	C	B	C	C		C	C	
Approach Vol, veh/h		994			1609			354	A		272	A
Approach Delay, s/veh		30.4			31.6			30.2			34.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	40.9	13.8	58.3	11.4	36.6	13.9	58.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	24.0	11.5	61.5	8.5	20.5	12.5	60.5				
Max Q Clear Time (g_c+I1), s	3.1	8.2	9.1	18.9	7.1	8.6	9.2	44.1				
Green Ext Time (p_c), s	0.0	1.3	0.1	6.2	0.0	1.1	0.2	9.5				

Intersection Summary

HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Timings
2: (New) Meridian Road & US-24

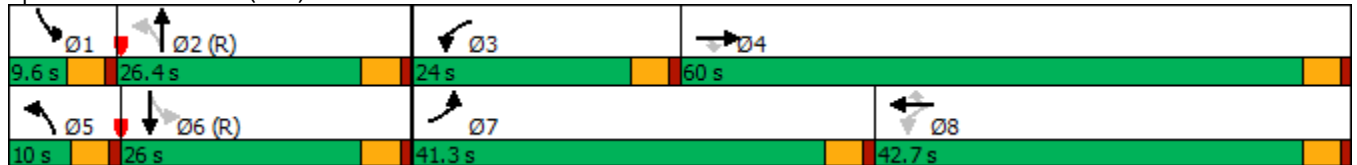
2040 Total PM.syn
05/26/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	730	1285	35	235	655	35	70	385	350	55	390	355
Future Volume (vph)	730	1285	35	235	655	35	70	385	350	55	390	355
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		Free	6		Free
Detector Phase	7	4	4	3	8	8	5	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)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5		9.5	22.5	
Total Split (s)	41.3	60.0	60.0	24.0	42.7	42.7	10.0	26.4		9.6	26.0	
Total Split (%)	34.4%	50.0%	50.0%	20.0%	35.6%	35.6%	8.3%	22.0%		8.0%	21.7%	
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)	-0.5	-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	None	None	None	None	None	None	C-Max		None	C-Max	
Act Effct Green (s)	33.2	54.8	54.8	56.2	38.9	38.9	33.0	27.8	120.0	32.3	27.4	120.0
Actuated g/C Ratio	0.28	0.46	0.46	0.47	0.32	0.32	0.28	0.23	1.00	0.27	0.23	1.00
v/c Ratio	0.83	0.86	0.05	0.80	0.62	0.06	0.33	0.51	0.24	0.26	0.53	0.24
Control Delay	49.1	35.9	0.1	51.5	37.0	0.2	37.5	44.8	0.4	36.1	45.3	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	49.1	35.9	0.1	51.5	37.0	0.2	37.5	44.8	0.4	36.1	45.3	0.4
LOS	D	D	A	D	D	A	D	D	A	D	D	A
Approach Delay		40.0			39.3			24.8			24.8	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 34.5
 Intersection LOS: C
 Intersection Capacity Utilization 76.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 2: (New) Meridian Road & US-24



HCM 6th Signalized Intersection Summary
2: (New) Meridian Road & US-24

2040 Total PM.syn
05/26/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↗	↕	↖	↖	↕	↖	↗	↕	↖
Traffic Volume (veh/h)	730	1285	35	235	655	35	70	385	350	55	390	355
Future Volume (veh/h)	730	1285	35	235	655	35	70	385	350	55	390	355
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	793	1397	38	255	712	38	76	418	0	60	424	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	896	1562	697	303	1069	477	298	947		295	919	
Arrive On Green	0.26	0.44	0.44	0.12	0.30	0.30	0.05	0.27	0.00	0.04	0.26	0.00
Sat Flow, veh/h	3456	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	793	1397	38	255	712	38	76	418	0	60	424	0
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	26.5	43.6	1.7	11.6	21.0	2.1	3.7	11.7	0.0	2.9	12.1	0.0
Cycle Q Clear(g_c), s	26.5	43.6	1.7	11.6	21.0	2.1	3.7	11.7	0.0	2.9	12.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	896	1562	697	303	1069	477	298	947		295	919	
V/C Ratio(X)	0.88	0.89	0.05	0.84	0.67	0.08	0.26	0.44		0.20	0.46	
Avail Cap(c_a), veh/h	1074	1658	740	385	1146	511	301	947		306	919	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.7	31.1	19.3	28.4	36.7	30.1	30.8	36.6	0.0	31.0	37.4	0.0
Incr Delay (d2), s/veh	7.9	6.5	0.0	12.5	1.4	0.1	0.4	1.5	0.0	0.3	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	19.6	0.6	5.9	9.3	0.8	1.6	5.3	0.0	1.3	5.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	37.5	19.3	40.9	38.0	30.1	31.2	38.1	0.0	31.4	39.1	0.0
LnGrp LOS	D	D	B	D	D	C	C	D		C	D	
Approach Vol, veh/h		2228			1005			494	A		484	A
Approach Delay, s/veh		41.9			38.5			37.0			38.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.8	36.0	18.5	56.7	9.8	35.0	35.1	40.1				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.1	21.9	19.5	55.5	5.5	21.5	36.8	38.2				
Max Q Clear Time (g_c+I1), s	4.9	13.7	13.6	45.6	5.7	14.1	28.5	23.0				
Green Ext Time (p_c), s	0.0	1.7	0.4	6.7	0.0	1.6	2.2	4.5				

Intersection Summary

HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection

Int Delay, s/veh 2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	105	320	40	90	280
Future Vol, veh/h	0	105	320	40	90	280
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	114	348	43	98	304

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	174	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	839	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	839	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	839	1164
HCM Lane V/C Ratio	-	-	0.136	0.084
HCM Control Delay (s)	-	-	10	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	55	545	20	70	425
Future Vol, veh/h	0	55	545	20	70	425
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	592	22	76	462

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	296	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	700	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	700	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	700	961
HCM Lane V/C Ratio	-	-	0.085	0.079
HCM Control Delay (s)	-	-	10.6	9.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.3

Intersection

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↖	↕
Traffic Vol, veh/h	0	105	445	40	90	385
Future Vol, veh/h	0	105	445	40	90	385
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	114	484	43	98	418

Major/Minor

	Minor1	Major1	Major2		
Conflicting Flow All	-	242	0	0	527
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22
Pot Cap-1 Maneuver	0	759	-	-	1036
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	759	-	-	1036
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach

	WB	NB	SB
HCM Control Delay, s	10.6	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	759	1036
HCM Lane V/C Ratio	-	-	0.15	0.094
HCM Control Delay (s)	-	-	10.6	8.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.3

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↗	↘	↕
Traffic Vol, veh/h	0	55	750	20	70	605
Future Vol, veh/h	0	55	750	20	70	605
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	-	100	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	60	815	22	76	658

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	408	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	593	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	593	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	593	793
HCM Lane V/C Ratio	-	-	0.101	0.096
HCM Control Delay (s)	-	-	11.8	10
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.3	0.3

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	55	45	335	5	60	225
Future Vol, veh/h	55	45	335	5	60	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	49	364	5	65	245

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	617	182	0	0	369	0
Stage 1	364	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	422	829	-	-	1186	-
Stage 1	673	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	399	829	-	-	1186	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	-	500	829	1186	-
HCM Lane V/C Ratio	-	-	0.12	0.059	0.055	-
HCM Control Delay (s)	-	-	13.2	9.6	8.2	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	0.2	-

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↕	↗	↘	↕↕
Traffic Vol, veh/h	75	45	535	15	50	380
Future Vol, veh/h	75	45	535	15	50	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	49	582	16	54	413

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	897	291	0	0	598
Stage 1	582	-	-	-	-
Stage 2	315	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	279	706	-	-	975
Stage 1	522	-	-	-	-
Stage 2	713	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	264	706	-	-	975
Mov Cap-2 Maneuver	386	-	-	-	-
Stage 1	522	-	-	-	-
Stage 2	674	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	386	706	975
HCM Lane V/C Ratio	-	-	0.211	0.069	0.056
HCM Control Delay (s)	-	-	16.8	10.5	8.9
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	0.2

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑	↗	↘	↑↑
Traffic Vol, veh/h	55	45	460	5	60	330
Future Vol, veh/h	55	45	460	5	60	330
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	49	500	5	65	359

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	810	250	0	0	505
Stage 1	500	-	-	-	-
Stage 2	310	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	318	750	-	-	1056
Stage 1	575	-	-	-	-
Stage 2	717	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	298	750	-	-	1056
Mov Cap-2 Maneuver	417	-	-	-	-
Stage 1	575	-	-	-	-
Stage 2	673	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	-	417	750
HCM Lane V/C Ratio	-	-	0.143	0.065
HCM Control Delay (s)	-	-	15.1	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.5	0.2

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↕↕	↗	↖	↕↕
Traffic Vol, veh/h	75	45	740	15	50	560
Future Vol, veh/h	75	45	740	15	50	560
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	200	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	49	804	16	54	609

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1217	402	0	0	820	0
Stage 1	804	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	173	598	-	-	805	-
Stage 1	401	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	161	598	-	-	805	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	401	-	-	-	-	-
Stage 2	593	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	-	288	598	805	-
HCM Lane V/C Ratio	-	-	0.283	0.082	0.068	-
HCM Control Delay (s)	-	-	22.4	11.6	9.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.3	0.2	-

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	↔
Traffic Vol, veh/h	45	20	50	35	20	50
Future Vol, veh/h	45	20	50	35	20	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	22	54	38	22	54

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	92	0	0	193	73
Stage 1	-	-	-	73	-
Stage 2	-	-	-	120	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1503	-	-	796	989
Stage 1	-	-	-	950	-
Stage 2	-	-	-	905	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1503	-	-	770	989
Mov Cap-2 Maneuver	-	-	-	770	-
Stage 1	-	-	-	919	-
Stage 2	-	-	-	905	-

Approach

	EB	WB	SB
HCM Control Delay, s	5.2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1503	-	-	-	770	989
HCM Lane V/C Ratio	0.033	-	-	-	0.028	0.055
HCM Control Delay (s)	7.5	0	-	-	9.8	8.9
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.2

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	5	65	35	20	35	65
Future Vol, veh/h	5	65	35	20	35	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	71	38	22	38	71
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	60	0	-	0	130	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1544	-	-	-	864	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1544	-	-	-	861	1020
Mov Cap-2 Maneuver	-	-	-	-	861	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	942	-
Approach	EB	WB	SB			
HCM Control Delay, s	0.5	0	9			
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1544	-	-	-	861	1020
HCM Lane V/C Ratio	0.004	-	-	-	0.044	0.069
HCM Control Delay (s)	7.3	0	-	-	9.4	8.8
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.2

Intersection

Int Delay, s/veh 4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	45	20	50	35	20	50
Future Vol, veh/h	45	20	50	35	20	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	22	54	38	22	54

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	92	0	0	193	73
Stage 1	-	-	-	73	-
Stage 2	-	-	-	120	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1503	-	-	796	989
Stage 1	-	-	-	950	-
Stage 2	-	-	-	905	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1503	-	-	770	989
Mov Cap-2 Maneuver	-	-	-	770	-
Stage 1	-	-	-	919	-
Stage 2	-	-	-	905	-

Approach

	EB	WB	SB
HCM Control Delay, s	5.2	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1503	-	-	-	770	989
HCM Lane V/C Ratio	0.033	-	-	-	0.028	0.055
HCM Control Delay (s)	7.5	0	-	-	9.8	8.9
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.2

Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	5	65	35	20	35	65
Future Vol, veh/h	5	65	35	20	35	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	71	38	22	38	71

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	60	0	0 130 49
Stage 1	-	-	- 49 -
Stage 2	-	-	- 81 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1544	-	- 864 1020
Stage 1	-	-	- 973 -
Stage 2	-	-	- 942 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1544	-	- 861 1020
Mov Cap-2 Maneuver	-	-	- 861 -
Stage 1	-	-	- 970 -
Stage 2	-	-	- 942 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1544	-	-	-	861	1020
HCM Lane V/C Ratio	0.004	-	-	-	0.044	0.069
HCM Control Delay (s)	7.3	0	-	-	9.4	8.8
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.2

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	50	65	55	20	5	50
Future Vol, veh/h	50	65	55	20	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	71	60	22	5	54

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	174	32	59	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	142	-	-	-	-	-
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	816	1042	1545	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	784	1042	1545	-	-	-
Mov Cap-2 Maneuver	784	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1545	-	912	-	-
HCM Lane V/C Ratio	0.039	-	0.137	-	-
HCM Control Delay (s)	7.4	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	85	60	15	15	55
Future Vol, veh/h	45	85	60	15	15	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	92	65	16	16	60

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	192	46	76	0	0
Stage 1	46	-	-	-	-
Stage 2	146	-	-	-	-
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	797	1023	1523	-	-
Stage 1	976	-	-	-	-
Stage 2	881	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	763	1023	1523	-	-
Mov Cap-2 Maneuver	763	-	-	-	-
Stage 1	934	-	-	-	-
Stage 2	881	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1523	-	915	-	-
HCM Lane V/C Ratio	0.043	-	0.154	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	50	65	55	20	5	50
Future Vol, veh/h	50	65	55	20	5	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	71	60	22	5	54

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	174	32	59	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	142	-	-	-	-	-
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	816	1042	1545	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	784	1042	1545	-	-	-
Mov Cap-2 Maneuver	784	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1545	-	912	-	-
HCM Lane V/C Ratio	0.039	-	0.137	-	-
HCM Control Delay (s)	7.4	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	45	85	60	15	15	55
Future Vol, veh/h	45	85	60	15	15	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	92	65	16	16	60

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	192	46	76	0	0
Stage 1	46	-	-	-	-
Stage 2	146	-	-	-	-
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	797	1023	1523	-	-
Stage 1	976	-	-	-	-
Stage 2	881	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	763	1023	1523	-	-
Mov Cap-2 Maneuver	763	-	-	-	-
Stage 1	934	-	-	-	-
Stage 2	881	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	6	0
HCM LOS	A		

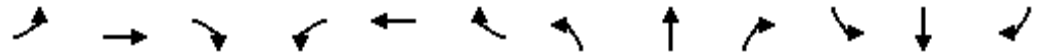
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1523	-	915	-	-
HCM Lane V/C Ratio	0.043	-	0.154	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

APPENDIX E

Queuing Analysis Worksheets

Queues
2: (New) Meridian Road & US-24

2023 Total AM.syn
05/26/2021



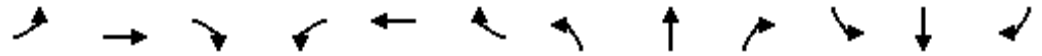
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	152	527	54	152	1000	16	98	190	174	22	185	663
v/c Ratio	0.84	0.49	0.06	0.31	0.93	0.02	0.36	0.25	0.11	0.08	0.30	0.42
Control Delay	62.1	16.6	0.5	8.6	39.9	0.0	40.7	42.3	0.1	35.0	44.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	16.6	0.5	8.6	39.9	0.0	40.7	42.3	0.1	35.0	44.8	0.8
Queue Length 50th (ft)	65	222	0	37	660	0	61	68	0	13	66	0
Queue Length 95th (ft)	#185	311	4	61	#989	0	108	105	0	35	102	0
Internal Link Dist (ft)		1241			1307			590			512	
Turn Bay Length (ft)	800		600	750			150		400	150		300
Base Capacity (vph)	180	1092	967	492	1086	963	272	747	1583	290	623	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.48	0.06	0.31	0.92	0.02	0.36	0.25	0.11	0.08	0.30	0.42

Intersection Summary

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

Queues
2: (New) Meridian Road & US-24

2023 Total PM.syn
05/26/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	571	1005	33	185	527	27	71	310	272	43	304	277
v/c Ratio	0.92	0.95	0.04	0.92	0.78	0.04	0.32	0.46	0.17	0.20	0.46	0.17
Control Delay	47.4	42.8	0.1	79.1	43.7	0.1	40.1	47.0	0.2	37.5	46.8	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	47.4	42.8	0.1	79.1	43.7	0.1	40.1	47.0	0.2	37.5	46.8	0.2
Queue Length 50th (ft)	316	682	0	94	367	0	43	116	0	26	114	0
Queue Length 95th (ft)	#523	#1010	0	#237	#521	0	84	164	0	57	161	0
Internal Link Dist (ft)		1345			1307			590			309	
Turn Bay Length (ft)	800		60	750			150		400	150		300
Base Capacity (vph)	647	1071	950	202	678	662	224	668	1583	220	668	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.94	0.03	0.92	0.78	0.04	0.32	0.46	0.17	0.20	0.46	0.17

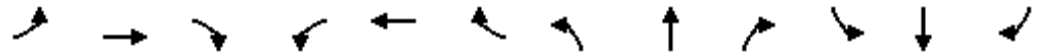
Intersection Summary

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

Queues
2: (New) Meridian Road & US-24

2040 Total AM.syn

05/26/2021

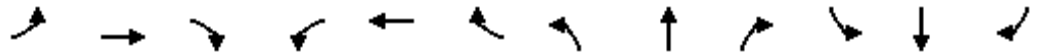


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	212	728	54	201	1386	22	109	245	245	22	250	929
v/c Ratio	0.61	0.43	0.07	0.47	0.82	0.03	0.33	0.26	0.15	0.07	0.34	0.59
Control Delay	59.7	20.6	0.7	13.4	31.2	0.1	34.3	37.8	0.2	31.6	43.3	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	20.6	0.7	13.4	31.2	0.1	34.3	37.8	0.2	31.6	43.3	1.6
Queue Length 50th (ft)	81	181	0	60	457	0	63	85	0	12	91	0
Queue Length 95th (ft)	122	221	5	89	534	0	113	125	0	33	133	0
Internal Link Dist (ft)		1471			1307			590			563	
Turn Bay Length (ft)	800		600	750			150		400	150		300
Base Capacity (vph)	371	1828	863	440	1798	851	338	957	1583	325	745	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.40	0.06	0.46	0.77	0.03	0.32	0.26	0.15	0.07	0.34	0.59

Intersection Summary

Queues
2: (New) Meridian Road & US-24

2040 Total PM.syn
05/26/2021



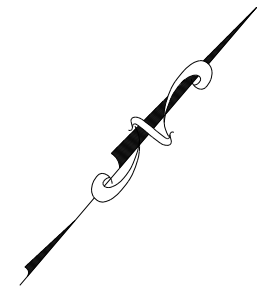
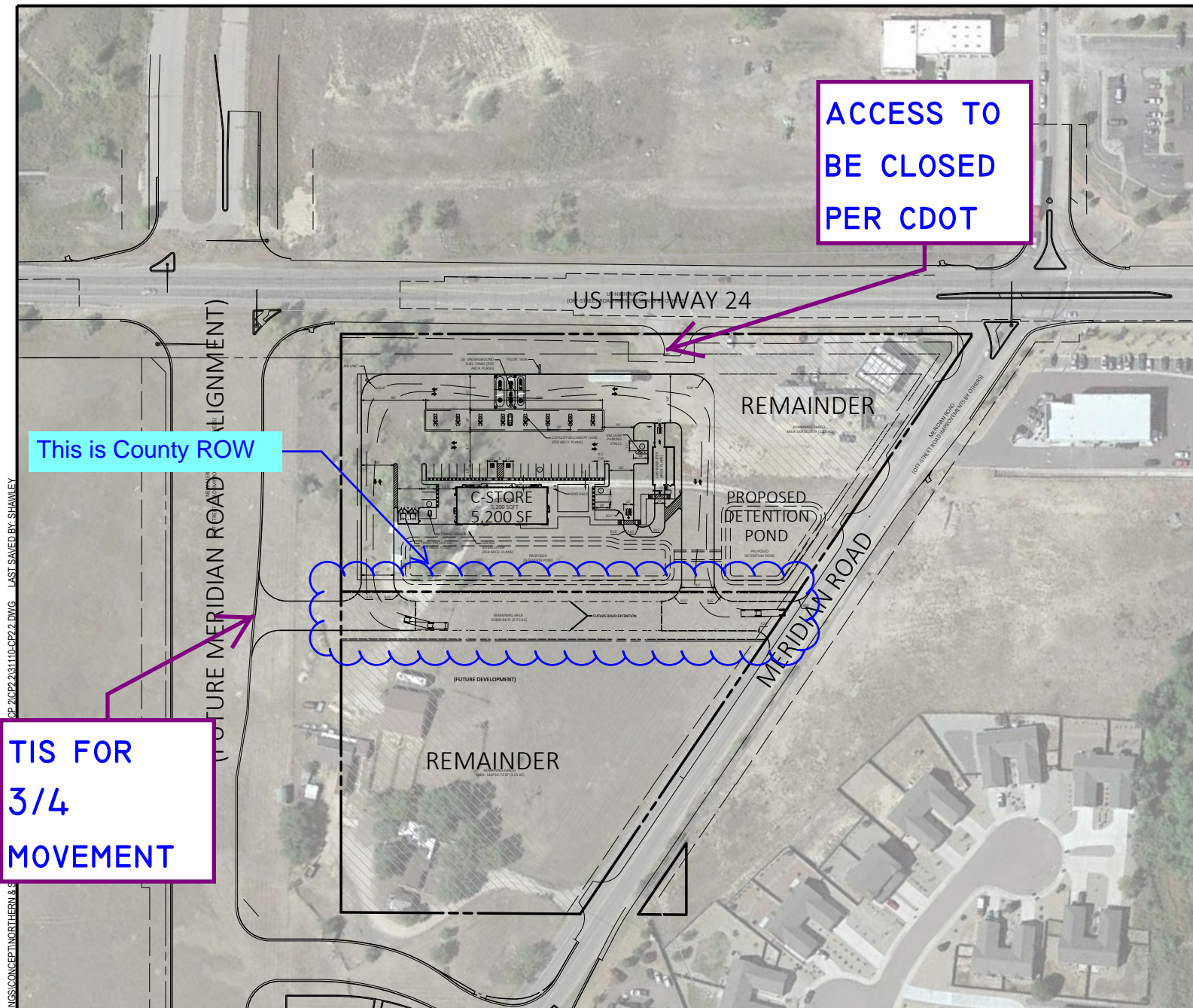
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	793	1397	38	255	712	38	76	418	380	60	424	386
v/c Ratio	0.83	0.86	0.05	0.80	0.62	0.06	0.33	0.51	0.24	0.26	0.53	0.24
Control Delay	49.1	35.9	0.1	51.5	37.0	0.2	37.5	44.8	0.4	36.1	45.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	35.9	0.1	51.5	37.0	0.2	37.5	44.8	0.4	36.1	45.3	0.4
Queue Length 50th (ft)	294	475	0	133	234	0	45	158	0	35	162	0
Queue Length 95th (ft)	356	592	0	#232	311	0	87	214	0	71	218	0
Internal Link Dist (ft)		1037			1307			590			683	
Turn Bay Length (ft)	800		600	750			150		400	150		300
Base Capacity (vph)	1067	1661	793	357	1167	613	230	818	1583	229	807	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.84	0.05	0.71	0.61	0.06	0.33	0.51	0.24	0.26	0.53	0.24

Intersection Summary

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

APPENDIX F

Conceptual Site Plan



SITE SIZE				
PARCEL	ACRES	S.F.		
C-STORE	3.92±	170,898±		
REMAINDER	5.07±	220,751±		
TOTAL	8.99±	391,649±		
DESCRIPTION		BUILDING AREA SF		
CONVENIENCE STORE		5,200±		
STALL DIMENSIONS:				
STD:	9.5'X18'			
ADA:	12'X18'			
CARWASH:	12'X18'			
PARKING INFORMATION:				
CIRCLE K				
REQUIRED:				
CITY REQ'D 1 PER X,XXX GFA	SPACES			
	STD	ADA	VAN ADA	TOTAL
	35	1	1	37
PROVIDED:				
	SPACES			
	STD	ADA	VAN ADA	TOTAL
	28	1	1	30

CP-20P2.231110-CP2.2.DWG - LAST SAVED BY: SHAWLEY
 LOCATION: P:\310003\1100\DRAWINGS\CONCEPT\NORTHERN.KS

**TIS FOR
3/4
MOVEMENT**

This is County ROW

**ACCESS TO
BE CLOSED
PER CDOT**

NOTES:
 THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. SITE INFORMATION WAS OBTAINED FROM CLIENT'S DOCUMENTS; DESIGN MAY VARY, DEPENDING ON ACTUAL TOPOGRAPHY, DRAINAGE, SOILS, SURVEY, ETC. THIS ADDITIONAL DATA AND SITE CONDITIONS COULD CAUSE CHANGES IN PARKING RATIOS AND SPACE AVAILABLE FOR DEVELOPMENT, AND MAY INCREASE ESTIMATED DEVELOPMENT COSTS.

12/29/20	CONCEPTUAL SITE PLAN	
Store #:	CK #XXXX	
Address:	FALCON, CO. US HWY 24 & MERIDIAN RD	

