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Meridian Ranch Sketch Plan 2021 Amendment Traffic Impact Analysis

PCD File No. SKP213
(LSC #S214250)
June 25, 2021

ACCEPTED for FILE
Engineering Review

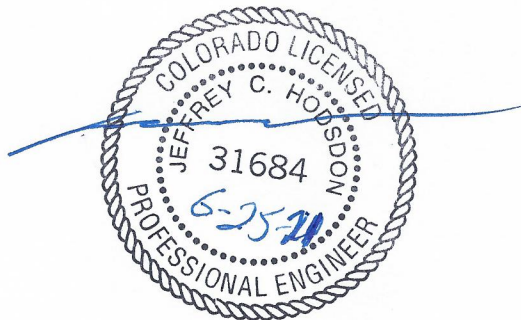
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EPC Planning & Community
Development Department

Traffic Engineer's Statement

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



Developer's Statement

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

A handwritten signature in black ink, appearing to be 'Paul [unclear]', written over a horizontal line.

6/25/2021
Date

Meridian Ranch Sketch Plan

2021 Amendment

Traffic Impact Analysis

Prepared for:
Mr. Raul Guzman
GTL Development, Inc.
P.O. Box 80036
San Diego, California 92138

JUNE 22, 2021

LSC Transportation Consultants
Prepared by: Kirstin D. Ferrin, P.E.
Reviewed by: Jeffrey C. Hodsdon, P.E.

LSC #S214250



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June 22, 2021

Mr. Raul Guzman
GTL Development, Inc.
P.O. Box 80036
San Diego, California 92138

RE: Meridian Ranch Sketch Plan
2021 Amendment
El Paso County, CO
Traffic Impact Analysis
LSC #S214250

Dear Raul:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the currently-proposed amendment to the Meridian Ranch Sketch Plan. As shown in Figure 1, Meridian Ranch is located east of Meridian Road, west of Eastonville Road, and north of Stapleton Drive in El Paso County, Colorado. Figure 1 also identifies the areas to be amended. The proposed Sketch Plan Amendment would increase the maximum number of residential dwelling units from 4,500 to 5,000.

REPORT CONTENTS

This report is being prepared as part of a submittal to El Paso County. The report identifies the traffic impacts of the proposed Sketch Plan Amendment on the streets and roadways within and adjacent to Meridian Ranch and presents updated recommendations for the transportation system. The report contains the following:

- The existing roadway and traffic conditions in the site's vicinity, including the roadway widths, lane geometries, and traffic controls, etc.;
- The peak-hour turning-movement traffic counts at key intersections in the vicinity of the site;
- The average week-day and peak-hour vehicle trips to be generated by land uses within the amendment area at buildout;
- The assignment of these trips to the area streets, roadways, and intersections; projections of long-term background traffic volumes;
- Resulting total traffic volumes on the area roadways;
- The Sketch Plan Amendment's resulting relative traffic impacts;

- The projected levels of service at the intersections within and adjacent to Meridian Ranch for the long term, following buildout; and
- The recommended transportation system, including functional classification of streets and roadways, number of lanes, intersection lane geometry/auxiliary turn lanes, and intersection traffic control.

PREVIOUS TRAFFIC REPORTS COMPLETED IN THE AREA

Appendix Table 1 contains a list of other traffic studies in the study area completed within the past five years (that LSC is aware of). This study accounts for the land use, trip generation, and the roadway network included in these studies.

LAND USE AND ACCESS

Land Use

Figure 2 shows the proposed amendment to the Sketch Plan. The amendment area is located west of the future intersection of Rex Road/Eastonville Road. The proposed amendment would increase the overall maximum number of residential dwelling units within all of Meridian Ranch from 4,500 to 5,000. There are currently 4,216 existing or approved residential dwelling units within Meridian Ranch. Based on the parcel sizes and proposed density shown in Figure 2, the parcel north of Rex Road could potentially be developed with up to 608 residential dwelling unit and the parcel south of Rex Road could potentially be developed with up to 405 dwelling units for a total of 1,013 dwelling units within the amendment area. However, based on the currently-proposed maximum number of residential dwelling units for all of Meridian Ranch, only 784 units will be allowed in this area. Table 1 shows a comparison of the land uses assumed in the 2017 report, which was prepared as part of the prior Sketch Plan Amendment, and the currently-proposed Sketch Plan Amendment.

Access

The 2017 Sketch Plan report assumed five full-movement access points to Rex Road between Pyramid Peak Drive (the terminus of Rex Road at the time of the study) and Eastonville Road. Since completion of that report, a full-movement intersection at Sunset Ridge Drive and two offset "T" intersections (Rolling Hills Drive and Estates Ridge Drive) have been approved as part of the Rolling Hills Ranch and Estates at Rolling Hills Ranch developments. A four-leg full-movement intersection and a three-leg "T" intersection (with access south of Rex Road) are planned as part of the Sketch Plan amendment.

The location of these access points is generally consistent with those shown on the 2017 Sketch Plan TIA. However, that study assumed both of these access points would be "T" intersections. The Sketch Plan amendment area is also planned to have a west side-street connection to the approved Estates Ridge Drive as shown in Figure 2.

Pedestrian Routes to School

School pedestrian plans were provided with the adjacent Estates at Rolling Hills Ranch and Rolling Hills Ranch at Meridian Ranch Filing Nos. 1 through 3. As preliminary plans/final plats are prepared in the Sketch Plan amendment areas, pedestrian connectivity to these two adjacent developments will be addressed. Sidewalks should be provided adjacent to all local streets and on both the north and south sides of Rex Road between Estates Ridge Drive and Eastonville Road.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major area roadways within and adjacent to Meridian Ranch are described below. Copies of the 2016 *El Paso County Major Transportation Corridors Plan (MTCP)* 2040 Roadway Plan and 2016 MTCP 2060 Corridor Preservation Plan with the site location identified on them have been attached to this report.

Meridian Road extends north from South Blaney Road to County Line Road. The posted speed limit on Meridian Road in the vicinity of Rex Road is 55 miles per hour (mph). Meridian Road is shown as a four-lane Principal Arterial south of Rex Road, a four-lane Minor Arterial north of Rex Road, and a two-lane Minor Arterial north of Murphy Road on the *El Paso County MTCP*.

Stapleton Drive is shown as a four-lane Principal Arterial on the *El Paso County MTCP* and *El Paso County Corridor Preservation Plan (CPP)*. Stapleton Drive extends east from Towner Drive to US Highway 24 (US Hwy 24). Stapleton Drive is planned to ultimately be extended west to connect with the Briargate Parkway extension.

Londonderry Drive is a two-lane Collector extending east from the Falcon Hills neighborhood to Eastonville Road. Londonderry Drive has one through lane in each direction and a raised center median.

Rex Road currently extends east from Goodson Road to Pyramid Peak Drive within the Meridian Ranch development. A new section of Rex Road between Pyramid Peak Drive and Sunrise Ridge Drive is platted and currently under construction. The posted speed limit on Rex Road is 45 miles per hour (mph) between Meridian Road and Mt. Gateway Drive and 35 mph east of Mt. Gateway Drive. Rex Road will be extended east from Sunrise Ridge Drive to Eastonville Road in the intermediate term, as shown on the *2016 MTCP 2040 Roadway Plan*, and may ultimately be extended to US Hwy 24, as shown on the *2016 MTCP 2060 Corridor Preservation Plan*. The extension of Rex Road east of Eastonville Road is in the planning process as part of the Grandview Reserve development located southeast of the future intersection of Eastonville/Rex. It is anticipated that this roadway segment would be installed prior to 2040. Rex Road is classified as a 4-Lane Minor Arterial roadway by El Paso County. Rex Road was previously shown as a Collector roadway in older versions of the *MTCP*. A copy of the *2040 MTCP Roadway Plan* from the *El Paso County 2040 Major Transportation Corridors Plan* adopted October 4, 2011 has been attached.

Regarding the existing Urban Collector cross section in the vicinity of Pyramid Peak Drive, at the time of application and approval of Meridian Ranch Estates Filing 2, Rex Road was classified as a Collector on the *MTCP*. It is our understanding that as part of the final plat process for Estates Filing No. 2, the County and GTL Development agreed that the four-lane cross section, built with the initial section of Rex Road east of Meridian, did not need to be carried farther east. As such, an agreement was reached to construct a County-standard Urban Residential Collector cross section.

Eastonville Road is shown as a two-lane Minor Arterial on the *MTCP*. Eastonville Road is a two-lane roadway extending northeast from Meridian Road past Hodgen Road. The posted speed limit on Eastonville Road north of Londonderry Road is 45 mph. The Eastonville Road cross section south of Stapleton Drive is consistent with a two-lane Urban Collector cross section. The section north of Stapleton Drive has been identified as a two-lane Rural Minor Arterial on the *MTCP*. However, the actual design has yet to be completed and the design could potentially identify a cross section different from the standard *ECM* Rural Minor Arterial cross section.

Existing Traffic Volumes

Figure 3 shows the peak-hour traffic volumes at the key intersections from the attached traffic counts conducted by LSC in March 2019 and April 2021.

Existing Levels of Service

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

Table 1: Level of Service Delay Ranges

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) ⁽¹⁾
A	10.0 sec or less	10.0 sec or less
B	10.1-20.0 sec	10.1-15.0 sec
C	20.1-35.0 sec	15.1-25.0 sec
D	35.1-55.0 sec	25.1-35.0 sec
E	55.1-80.0 sec	35.1-50.0 sec
F	80.1 sec or more	50.1 sec or more
(1) For unsignalized intersections, if V/C ratio is greater than 1.0 the level of service is LOS F, regardless of the projected average control delay per vehicle.		

Figure 3 presents the results of the existing intersection level of service analysis. The levels of service Rex are based on the unsignalized method of analysis procedures from the *Highway*

Capacity Manual, 6th Edition by the Transportation Research Board. The level of service reports are attached.

The intersection of Rex Road and Meridian Road is currently two-way, stop-sign-controlled. The westbound left-turn movement at this intersection is currently operating at LOS F during the morning and afternoon peak hours.

The intersection of Londonderry Drive/Eastonville Road is currently two-way, stop-sign-controlled. The eastbound left-turn movement at this intersection is currently operating at LOS C during the morning peak hour and LOS B during the afternoon peak hours.

The intersection of Stapleton Drive/Eastonville Road is currently two-way, stop-sign-controlled. The eastbound approach and the westbound left-turn and through movements at this intersection are currently operating at LOS C during the morning peak hour and LOS B during the afternoon peak hours.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the study-area streets without consideration of the land uses within the Amendment area. It includes through traffic and traffic generated by adjacent/nearby developments.

Short Term

Figure 4a shows the projected short-term background traffic volumes at the area intersections and on area street segments. The short-term background traffic scenario assumes the following:

- Buildout of all of the Meridian Ranch development except for the new school site north of Falcon High School and future additional development within the Falcon Regional Park.
- These background traffic volumes have been based on the existing traffic volumes (from Figure 3) plus estimates of additional traffic due to buildout of residential filings within Meridian Ranch that are either approved or currently under review, including WindingWalk at Meridian Ranch, Stonebridge at Meridian Ranch, Rolling Hills Ranch at Meridian Ranch Filing Nos. 1-3, and the Estates at Rolling Hills Ranch Filings 1 and 2.
- The short-term background traffic volumes also include estimates of additional traffic due to buildout of nearby developments, including Waterbury Filings 1 and 2 and the first phase of the Grandview Reserve.
- The short-term background traffic volumes do not include trips assumed to be generated by land uses within the current Meridian Ranch Sketch Plan Amendment area as these trips are included in the "total traffic."
- The short-term background analysis assumes Rex Road extended just east of Eastonville Road to serve the initial Grandview Reserve phase but not extended to US Hwy 24.

Figure 4b shows the lane geometry and traffic control assumed for the study-area intersections in the short-term background analysis scenario.

Long Term

Figure 5a shows the projected 2041 background traffic volumes. The 2041 background traffic volumes assume buildout of the Meridian Ranch development (except trips to be generated by land uses within the current Meridian Ranch Sketch Plan Amendment area, as these trips are included in the “amendment-area-generated traffic.”), including a new school site north of Falcon High School and buildout of the Falcon Regional Park, buildout of the Grandview Reserve, and Waterbury developments. The 2041 background traffic scenario assumes Stapleton Drive extended west to connect with the Briargate Parkway extension and Rex Road extended east to US Hwy 24.

Figure 5b shows the lane geometry and traffic control assumed for the study-area intersections in the 2041 background analysis scenario.

TRIP GENERATION

The trip-generation estimate for the amended Sketch Plan is based on nationally published trip-generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 3 shows the results of the trip-generation estimate. Table 1 also shows the trip-generation estimate from the previous Sketch Plan report completed by LSC in October 2017. It should be noted that trip-generation estimates assumed in the 2017 Sketch Plan report were based on the 9th Edition of the trip-generation manual published in 2017. However, estimates of traffic to be generated by land uses within Meridian Ranch in subsequent studies done by LSC for the Estates a Rolling Hills Ranch and Rolling Hills Ranch at Meridian Ranch were based on the updated 10th edition rates.

The land uses within the sketch-plan-amendment area are expected to generate about 7,401 vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. This is about 5,288 more weekdays trips than was assumed in the 2017 Sketch Plan Update TIS. During the morning peak hour, which generally occurs for one hour between 6:30 a.m. and 8:30 a.m., about 145 vehicles would enter and 435 vehicles would exit the amendment area. During the afternoon peak hour, which generally occurs for one hour between 4:15 p.m. and 6:15 p.m., about 489 vehicles would enter and 287 vehicles would exit the amendment area.

TRIP DISTRIBUTION AND ASSIGNMENT

Trip Distribution

The directional distribution of the traffic volumes to be generated by Meridian Ranch on the area roadways is an important factor in determining the traffic impacts. Figure 6 shows the overall short-term and long-term external-trip directional-distribution estimate for the trips estimated to be generated by land uses within the amendment area. The estimates were based on the following factors: the location of Meridian Ranch land uses with respect to nearby residential,

employment, commercial, and activity centers and the balance of the Colorado Springs metropolitan area; the land use types; and the internal/external street and roadway system serving the site.

Assignment of Site-Generated Trips

Short Term

The short-term estimates assume Rex Road has been extended just east of Eastonville Road to serve the initial phases of the Grandview Reserve development, but has not been extended to US Hwy 24. The long-term estimates were based on buildout of the area's roadway network.

Figure 7 shows the projected short-term traffic volumes at the key area intersections due to land uses within the **amendment area only**. The short-term site-generated traffic volumes assume Rex Road has been extended just east of Eastonville Road to serve the initial phases of the Grandview Reserve development but has not been extended to US Hwy 24. The short-term site-generated traffic volumes assume the 152-acre parcel located north of Rex Road is built out to a maximum density of 500 residential dwelling units and that the 45-acre parcel south of Rex Road has been developed with 284 units, which is the remaining number of lots to reach the proposed allowable maximum of 5,000 residential units within all of Meridian Ranch.

Long Term

Figure 8a shows the projected long-term traffic volumes at the key area intersections due to land uses within the **amendment area only**. The long-term amendment-area-generated traffic volumes assume Stapleton Drive has been extended west to connect with the Briargate Parkway extension and Rex Road has been extended east to US Hwy 24. The amendment area-generated traffic volumes shown in Figure 8a assume the 152-acre parcel located north of Rex Road is built out to a maximum density of 500 residential dwelling units and that the 45-acre parcel south of Rex Road has been developed with 284 units which is the remaining number of lots to reach the proposed allowable maximum of 5,000 residential units within all of Meridian Ranch.

Alternate Scenario Analysis (Long Term) Assuming 400 Dwelling Units South of Rex Road

This alternate scenario assumes a higher dwelling unit distribution (and corresponding trip generation) within the amendment area south of Rex Road (400 residential dwelling units) and a lower distribution north of Rex Road. This alternate scenario has been included in response to the developer's need for flexibility in the future development plans. This alternate scenario has been prepared to verify that projected traffic volumes, levels of service, etc. for the adjacent Rex Road intersections would also meet County *ECM* criteria under this development scenario.

The amendment-area-generated traffic volumes for this alternate scenario are shown in Figure 8b and assume the 45-acre parcel located south of Rex Road built out to a maximum density (400 units) and the 152-acre parcel north of Rex Road developed with 384 units. This is

the remaining number of lots to bring the total to the proposed allowable maximum of 5,000 residential units within all of Meridian Ranch.

TOTAL TRAFFIC

Short Term

Figure 9a shows the projected short-term total traffic volumes at the area intersections. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4a) and the short-term amendment-area-generated traffic volumes (from Figure 7).

Figures 9b shows the lane geometry and traffic control assumed for the study-area intersections in the short-term total analysis.

Long Term

Figure 10a shows the projected 2041 total traffic volumes at the area intersections, assuming the maximum number of units on the parcel north of Rex Road. These volumes are the sum of the 2041 background traffic volumes (from Figure 5a) and the long-term amendment-area-generated traffic volumes, assuming the maximum number of units on the parcel north of Rex Road (from Figure 8a).

Alternate Scenario Analysis (Long Term) Assuming 400 Dwelling Units South of Rex Road

Figure 10b shows the projected 2041 total traffic volumes at the area intersections under the alternate scenario. These volumes are the sum of the 2041 background traffic volumes (from Figure 5a) and the long-term alternate scenario amendment-area-generated traffic volumes (from Figure 8b). All other assumptions, including the access points, road system, and development of areas outside the amendment area, etc., are the same as the “base” scenario. This alternate scenario has been prepared to verify that projected traffic volumes, levels of service, etc. for the adjacent Rex Road intersections would also meet County *ECM* criteria under this development scenario.

Figures 10c and 10d shows the lane geometry and traffic control assumed for the study-area intersections in the 2041 total analysis.

PROJECTED LEVELS OF SERVICE

The key area intersections and access points were analyzed to determine the projected levels of service for the short-term and 2041 background and total traffic volumes, based on the unsignalized-intersection analysis procedures from the *Highway Capacity Manual* and the signalized-intersection analysis procedures from the Synchro computer program. Figures 4b, 5b, 9b, 10c, and 10d show the level of service analysis results. The level of service reports are attached.

Meridian Road/Rex Road

The intersection of Meridian Road/Rex Road is currently stop-sign controlled. It is our understanding that, as part of the Estates at Rolling Hills Ranch Filing No. 2, the Meridian Ranch developer has agreed to coordinate the design and construction of the necessary improvements to the Meridian Road/Rex Road intersection. The County is the lead for the completion of the design and construction of intersection improvements. The improvements include additional through lanes, road alignment adjustments, drainage improvements, and a traffic signal. The design is under contract and is in preliminary design. The design phase is expected to be completed during the second half of 2021, with the construction to begin soon after completed design. The construction is expected to be completed sometime in 2022.

The developer of Meridian Ranch will be responsible for the fair share cost of the design and construction of the traffic-signal improvements. At its November 18, 2020 meeting, the El Paso County Road Impact Fee Advisory Committee Rex and Meridian Signal Request unanimously approved the request to include the Rex Road and Meridian Road intersection as an Eligible Intersection Improvement. For reference, the meeting minutes are attached to this report as an appendix item.

By 2041, it was assumed that Meridian Road would be widened to provide two northbound and southbound through lanes. Based on the lane geometry shown in Figure 10c, all movements are projected to continue to operate at LOS D or better during the peak hours, through 2041.

Eastonville Road/Rex Road

Rex Road is planned to be constructed from Estates Ridge Drive to Eastonville Road as part of the development of the currently-proposed amendment area. It is our understanding that a section of Rex Road just east of Eastonville Road is also planned, in the short-term, to serve the initial phases of the Grandview Reserve development. The new intersection of Rex/Eastonville is projected to operate at LOS C or better for all movements during the peak hours as a four-leg, stop-sign-controlled intersection.

By 2041, it was assumed that this intersection would either need to be converted to traffic-signal control or designed as a modern roundabout to maintain an acceptable level of service. As shown in Figure 10c, all movements at this intersection are projected to operate at LOS D or better during the peak hours, if it is converted to traffic-signal control or constructed as a modern roundabout.

Londonderry Drive/Eastonville Road

The intersection of Londonderry/Rex is currently a stop-sign-controlled "T" intersection. It is anticipated that auxiliary lanes will be added to Eastonville Road approaching this intersection as part of the planned improvements to Eastonville Road. Based on the projected short-term total traffic volumes shown in Figure 9a and the lane geometry and traffic control shown in Figure 9b, the eastbound left-turn movement at this intersection is projected to operate at LOS C during the morning peak hour and LOS F during the afternoon peak hour.

By 2041, it was assumed that this intersection would need to either be converted to traffic-signal control or designed as a modern roundabout to maintain an acceptable level of service. As shown in Figure 10d all movements at this intersection are projected to operate at LOS C or better during the peak hours, if it is converted to traffic-signal control or if it is designed as a modern roundabout.

Stapleton Drive/Eastonville Road

The intersection of Stapleton Drive/Eastonville Drive is currently stop-sign controlled. As only the north section of Stapleton Drive has been completed, the only auxiliary lane on Stapleton Drive is a westbound right-turn deceleration lane. There are also currently no auxiliary lanes on the northbound and southbound approaches. A PPRTA project is currently planned to improve Eastonville Road in the vicinity of the site. However, the timing of this project is unknown. To maintain an acceptable level of service, these PPRTA improvements will likely need to be completed and the intersection will need to be converted to traffic-signal control in the short-term. Based on the projected short-term total traffic volumes shown in Figure 9a and the lane geometry and traffic control shown in Figure 9b, all movements at this intersection are projected to operate at LOS D or better during the peak hours.

By 2041, it was assumed that Stapleton Drive would be constructed to its final cross section. Based on the projected 2041 total traffic volumes shown in Figure 10a and the lane geometry and traffic signal control shown in Figure 9c, this intersection is projected to operate at an overall LOS D during the peak hours. However, several of the individual movements are projected to operate at LOS E. As it may not be possible to achieve a LOS D or better for all movements at this intersection even with the planned improvements to Stapleton Drive, Figure 10c also shows the results of the analysis assuming theoretical improvements, including widening of Eastonville Road to provide two northbound and southbound through lanes.

Rex Road Access Points

The intersections of Rex/Rolling Ranch, Rex/Estates Ridge, and the two additional access points to Rex Road to serve the currently-proposed amendment area are projected to operate at LOS C or better for all movements during the peak hours as stop-sign-controlled intersections, based on the projected short-term and 2041 traffic volumes.

Figure 10b shows the results of the level of service for the alternate scenario analysis for these intersections, assuming the maximum number of units are developed on the parcel within the amendment area on the north side of Rex Road. Figure 10d shows the results of the level of service analysis, assuming the maximum number of units are developed on the parcel within the amendment area on the south side of Rex Road.

QUEUING ANALYSIS

A queuing analysis was performed using Synchro/SimTraffic for Rex Road between the planned full-movement intersection for Rolling Hills Drive on the south side of Rex Road to be located about 1,244 feet east of Sunrise Ridge Drive and Estates Ridge Drive on the north side of Rex Road to be located about 560 feet further east. The 2041 total morning and afternoon peak-hour traffic volumes were entered into the Synchro model. The simulation was run five times and the results were averaged. The queuing reports are attached.

The projected maximum westbound left-turn queue on Rex Road approaching the full-movement intersection for Rolling Ranch Drive is 39 feet during the morning peak hour and 66 feet during the afternoon peak hour. The projected maximum eastbound left-turn queue length on Rex Road approaching the currently-proposed Estate Ridge Drive is 40 feet during the morning peak hour and 67 feet during the afternoon peak hour. The projected queues could be accommodated within the planned 560-foot spacing between these two intersections.

ROAD IMPROVEMENT FEE PROGRAM

Developments with the currently-proposed amendment area will not be required to participate in the Countywide Transportation Improvement Fee Program, as Meridian Ranch is located within the Woodmen Road Metropolitan District.

CONCLUSIONS AND RECOMMENDATIONS

- The existing and proposed street network within and in the vicinity of Meridian Ranch will be adequate to accommodate the proposed amended Sketch Plan land uses.
- A deviation request was approved for the spacing of intersection on Rex Road between Rolling Ranch Drive and Estates Ridge Drive. Based on the updated analysis discussed above, the projected queues could be accommodated within the planned 560-foot spacing between these two intersections. A copy of the approved deviation is attached.
- Figure 11 shows the buildout number of through lanes on the major streets in the study area and functional classifications.
- Table 4 summarizes key recommendations for the major streets in the study area. These recommendations are based on projected background traffic plus Sketch-Plan-Amendment-area traffic.

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

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By Jeffrey C. Hodsdon, P.E.
Principal

JCH:KDF:jas

Enclosures: Tables 1, 3, and 4
Figures 1-11
Traffic Counts
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Tables

Table 1
Meridian Ranch Sketch Plan Amendment 2021
Land Use Comparison

Land Uses Assumed in the Meridian Ranch Sketch Plan 2017 Traffic Analysis, October 3, 2017				Currently Proposed Land Uses				Change in Land Use	
Phase	Land Use	Quantity	Unit	Filing	Land Use	Quantity	Unit	Quantity	Unit
Existing/Approved	Single-Family Detached Housing	800	DU ⁽¹⁾	Meridian Ranch Filing 1	Single-Family Detached Housing	800	DU	0	DU
Existing/Approved	Single-Family Detached Housing	350	DU	Meridian Ranch Filing 2	Single-Family Detached Housing	350	DU	0	DU
Existing/Approved	Single-Family Detached Housing	122	DU	Meridian Ranch Filing 3	Single-Family Detached Housing	122	DU	0	DU
Existing/Approved	Single-Family Detached Housing	96	DU	Meridian Ranch Filing 4	Single-Family Detached Housing	96	DU	0	DU
Existing/Approved	Single-Family Detached Housing	54	DU	Meridian Ranch Filing 6	Single-Family Detached Housing	54	DU	0	DU
Existing/Approved	Single-Family Detached Housing	131	DU	Meridian Ranch Filing 7	Single-Family Detached Housing	131	DU	0	DU
Existing/Approved	Single-Family Detached Housing	62	DU	Meridian Ranch Estates Fil 2&3	Single-Family Detached Housing	62	DU	0	DU
Existing/Approved	Single-Family Detached Housing	200	DU	Meridian Ranch Filing 11	Single-Family Detached Housing	200	DU	0	DU
Existing/Approved	Single-Family Detached Housing	175	DU	Stonebridge Fil 1&2	Single-Family Detached Housing	175	DU	0	DU
Existing/Approved	Single-Family Detached Housing	62	DU	Meridian Ranch Fil 4B	Single-Family Detached Housing	62	DU	0	DU
Existing/Approved	Shopping Center	90	KSF ⁽²⁾		Shopping Center	90	KSF	0	KSF
Existing/Approved	Gasoline/Service Station with Convenience Market	20	VFP ⁽³⁾	Meridian Ranch Commercial	Gasoline/Service Station with Convenience Market	20	VFP	0	VFP
Existing/Approved	Single-Family Detached Housing	145	DU	Meridian Ranch Filing 8	Single-Family Detached Housing	145	DU	0	DU
Existing/Approved	Single-Family Detached Housing	181	DU	Meridian Ranch Filing 9	Single-Family Detached Housing	181	DU	0	DU
Existing/Approved	Meridian Ranch Elementary School	600	Students	Meridian Ranch Elementary School	Elementary School	600	Students	0	Students
Existing/Approved	Falcon High School	2000	Students	Falcon High School	High School	2000	Students	0	Students
Existing/Approved	Recreation Center	16.6	KSF	Recreation Center	Recreation Center	16.6	KSF	0	KSF
Existing/Approved	Antler Creek Golf Course	27	Holes	Antler Creek Golf Course	Golf Course	27	Holes	0	Holes
Existing/Approved	Single-Family Detached Housing	221	DU	The Vistas Filing 1	Single-Family Detached Housing	221	DU	0	DU
Existing/Approved	Single-Family Detached Housing	164	DU	Stonebridge Fil 3	Single-Family Detached Housing	164	DU	0	DU
I	Single-Family Detached Housing	126	DU	Winding Walk Fil 1	Single-Family Detached Housing	345	DU	-62	DU
III	Single-Family Detached Housing	388	DU	Winding Walk Fil 2	Single-Family Detached Housing	60	DU		
II	Single-Family Detached Housing	162	DU	Stonebridge Fil 4	Single-Family Detached Housing	209	DU		
IV	Single-Family Detached Housing	277	DU	Rolling Hills Ranch Fil 1-3	Single-Family Detached Housing	725	DU	562	DU
V	Single-Family Detached Housing	170	DU	Future 45 Acres South of Rex Rd	Single-Family Detached Housing	284 - 400	DU		DU
VII	Single-Family Detached Housing	431	DU	Estates at Rolling Hills Ranch Fil 1-2	Single-Family Detached Housing	114	DU		DU
VI	Single-Family Detached Housing	183	DU	Future 152 Acres North of Rex Rd	Single-Family Detached Housing	384 - 500	DU		
VII	Middle School	900	Students	Future School Site	Middle School	900	Students	0	Students
VII	Elementary School	600	Students		Elementary School	600	Students	0	Students
V	Recreation Center	16.6	KSF					-16.6	KSF
Total Residential Dwelling Units		4,500	DU	Total	Residential Dwelling Units	5,000	DU	500	DU

Notes:
(1) dwelling unit
(2) thousand square feet of floor area
(3) vehicle fueling positions

Source: LSC Transportation Consultants, Inc.

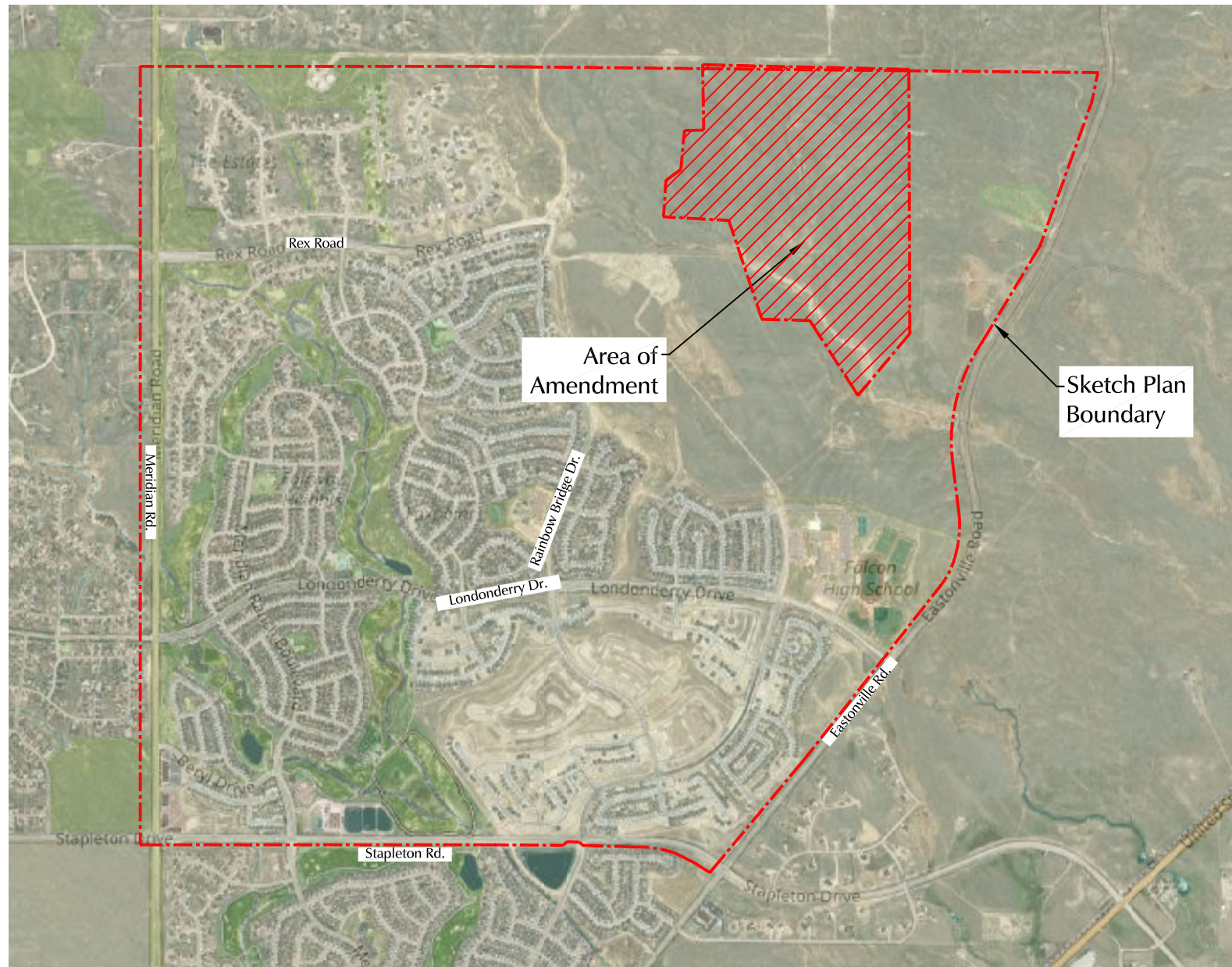
Apr-21

Table 3
Trip Generation Estimate
Meridian Ranch Sketch Plan Amendment 2021

			Trip Generation Rates ⁽¹⁾						Total Trips Generated			
Land Use Code	Land Use Description	Trip Generation Units	Average Weekday Traffic	Morning		Afternoon		Average Weekday Traffic	Morning		Afternoon	
				Peak Hour	In	Out	Peak Hour		In	Out		
Trip Generation Estimate For the Sketch Plan Amendment Area												
210	Single-Family Detached Housing	784 DU ⁽²⁾	9.44	0.19	0.56	0.62	0.37	7,401	145	435	489	287
Trip Generation Estimate for the Same Area From the <i>The Meridian Ranch Sketch Plan 2017 Amendment Traffic Impact Analysis</i> , October 3, 2017												
210	Single-Family Detached Housing	222 DU	9.52	0.19	0.56	0.62	0.37	2,113	41	123	138	81
Change(Increase) in Trip Generation Estimate								5,288	104	312	351	206
Notes:												
(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)												
(2) DU = dwelling unit												
Source: LSC Transportation Consultants, Inc.												
Apr-21												

Table 4 Meridian Ranch 2021 Sketch Plan Amendment Roadway Improvements				
Item #		Improvement	Timing	Responsibility
Roadway Segment Improvements				
1	Eastonville Road - Rex Road to Latigo final grading and paving	TBD by EPC; PPRTA "A-List" Project		PPRTA ⁽¹⁾
2	Eastonville Road - Roadway Design - Stapleton to Rex Road	As per EPC direction		Meridian Ranch
3	Eastonville Road - Roadway Upgrade - Stapleton to Rex Road	TBD by EPC; PPRTA "A-List" Project		PPRTA ⁽¹⁾
4	Construct Rex Road as an Urban 2-Lane Minor Arterial from Sunrise Ridge Drive to Rolling Ranch Drive.	The Estates at Rolling Hills Ranch Filing No. 2		Meridian Ranch
5	Construct Rex Road as an Urban 2-Lane Minor Arterial from Rolling Ranch Drive to Estate Ridge Drive.	The Estates at Rolling Hills Ranch Filing No. 2		Meridian Ranch
6	Construct Rex Road as an Urban 2-Lane Minor Arterial from the Rolling Ranch Drive to the eastern access intersection shown on the Sketch Plan Amendment (just west of the County park)	As needed to provide access to planned future subdivisions within the currently proposed Meridian Ranch Amendment Area; specific timing/phasing to be addressed with the Preliminary Plan(s).		Meridian Ranch
7	Construct Rex Road as an Urban 2-Lane Minor Arterial from the eastern access intersection shown on the Sketch Plan Amendment (just west of the County park) to Eastonville Road.	Prior to development beyond 350 DUs in currently proposed Meridian Ranch Amendment Area (after a cumulative Meridian Ranch total of about 4,570 total DUs is reached). This specific timing/phasing will be reevaluated, and a more specific phasing/timing will be provided with the Preliminary Plan(s).		Meridian Ranch
8	Rex Road from Eastonville Road to US 24	With Grandview Estates		Grandview Estates
9	Meridian Road - Widen to provide two northbound and two southbound through lanes from just north of Indian Paint Trail to Murphy Road.	Shown on 2040 MTCP Roadway Plan		El Paso County
10	Stapleton Drive - Meridian Road to Eastonville Road complete southern (eastbound) half	Shown on 2040 MTCP Roadway Plan		El Paso County
11	Stapleton Drive - Eastonville Road to US Hwy 24 complete southern (eastbound) half	Shown on 2040 MTCP Roadway Plan		Waterbury Metro District
Rex/Meridian				
(Please refer to the "Rex/Meridian Intersection" section of the report for additional details)				
12	Rex & Meridian: Design & Construction of Intersection Improvements - The improvements will include additional through lanes, road alignment adjustments, drainage improvements and a traffic-signal.	The design is under contract and is in preliminary design and the design phase is expected to be completed during the second half of 2021 with the construction to begin soon after completed design. The construction is expected to be completed sometime in 2022.	The County is the lead for the completion of the design and construction of intersection improvements. The developer of Meridian Ranch will be responsible for the fair share cost of the design and construction of the traffic-signal improvements. At its November 18, 2020 meeting, the El Paso County Road Impact Fee Advisory Committee Rex and Meridian Signal Request~ unanimously approved the request to include the Rex Road and Meridian Road intersection as an Eligible Intersection Improvement.	
Rex/Eastonville				
13	Include a northbound left-turn lane on Eastonville Road at Rex Road into the design of the Eastonville Road PPRTA project.	TBD by EPC; PPRTA "A-List" Project		PPRTA
14	Include a southbound right turn lane on Eastonville Road at Rex Road into the design of the Eastonville Road PPRTA project.	TBD by EPC; PPRTA "A-List" Project		PPRTA
15	Construct 205' eastbound left-turn plus 160' taper on Rex Road approaching Eastonville Road	To be included in the design and construction (lane will be included in roadway cross section).		Meridian Ranch
16	Construct 155' eastbound right-turn deceleration lane plus 160 foot taper on Rex Road approaching Eastonville Road	With development of projects adjacent to this section of Rex Road		Meridian Ranch
17	Convert from two-way, stop-sign control to alternate traffic control (traffic signal or modern one-lane roundabout)	Future (with the connection of Rex Road to Highway 24, future area development and increases in through traffic)		Likely El Paso County under the county fee program guidelines
Eastonville/Londonderry				
18	Include a northbound left-turn lane on Eastonville Road at Londonderry Drive into the design of the Eastonville Road PPRTA project.	TBD by EPC; PPRTA "A-List" Project		PPRTA
19	Include a southbound right turn lane on Eastonville Road at Londonderry Drive into the design of the Eastonville Road PPRTA project.	TBD by EPC; PPRTA "A-List" Project		PPRTA
18	Convert from two-way, stop-sign control to alternate traffic control (traffic signal or modern one-lane roundabout)	Future (with future area development and increases in through traffic)		Likely El Paso County under the county fee program guidelines
Rex/Rolling Ranch & Rex/Estate Ridge				
19	Construct a 190-foot westbound left-turn lane on Rex Road approaching Rolling Ranch Drive and a 185-foot eastbound left-turn lane on Rex Road approaching Estate Ridge Drive with a shared 90-foot reverse curve taper.	With The Estates at Rolling Hills Ranch Filing No. 2 or Rolling Hills Ranch at Meridian Ranch Filing No. 3		Meridian Ranch
20	Construct a 155-foot eastbound right-turn deceleration lane on Rex Road approaching Rolling Ranch Drive plus a 160-foot taper.	Rolling Hills Ranch at Meridian Ranch Filing No. 3		Meridian Ranch
21	Construct a 155-foot westbound right-turn deceleration lane on Rex Road approaching Estates Ridge Drive plus a 160-foot taper.	With development of filings within the amendment area north of Rex Road		Meridian Ranch
West Amendment Area Access Point to Rex Road				
22	Construct a 205-foot westbound left-turn lane on Rex Road approaching the west access to the amendment area plus a 160-foot taper	With development of filings within the amendment area south of Rex Road		Meridian Ranch
23	Construct a 155-foot eastbound right-turn deceleration lane on Rex Road approaching the west access to the amendment area plus a 160-foot taper.	With development of filings within the amendment area north of Rex Road		Meridian Ranch
East Amendment Area Access Point to Rex Road				
24	Construct a 255-foot westbound left-turn lane on Rex Road approaching the west access to the amendment area plus a 160-foot taper	With development of filings within the amendment area south of Rex Road		Meridian Ranch
25	Construct a 155-foot eastbound right-turn deceleration lane on Rex Road approaching the west access to the amendment area plus a 160-foot taper.	With development of filings within the amendment area south of Rex Road		Meridian Ranch
Notes: (1) The design of Eastonville Road is being performed by the Meridian Ranch developer. The projected will be constructed by El Paso County as PPRTA project.				
Source: LSC Transportation Consultants, Inc. - (June, 2021)				

Figures



Approximate Scale
Scale: 1" = 2,000'

Figure 1
**Vicinity
Map**

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

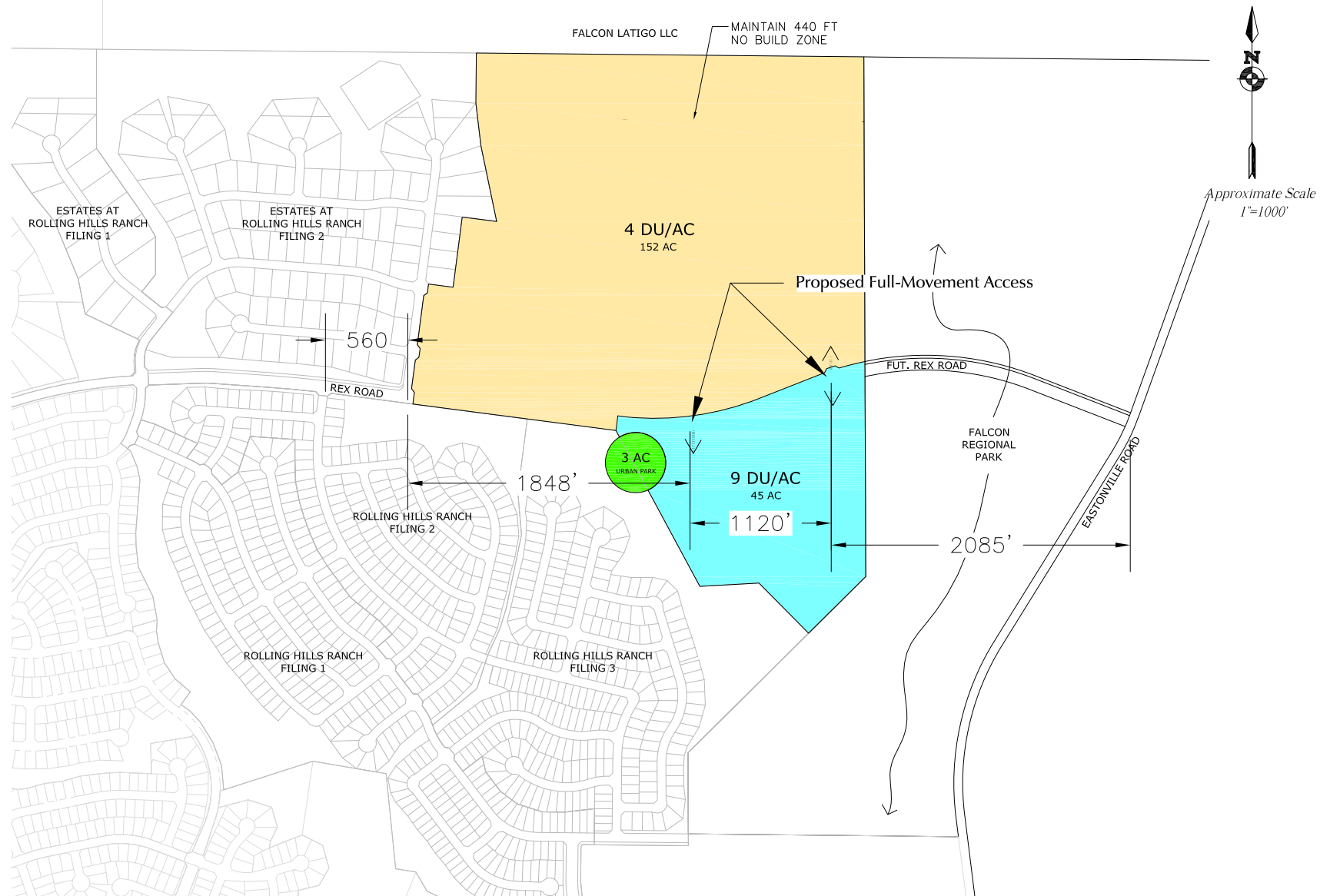
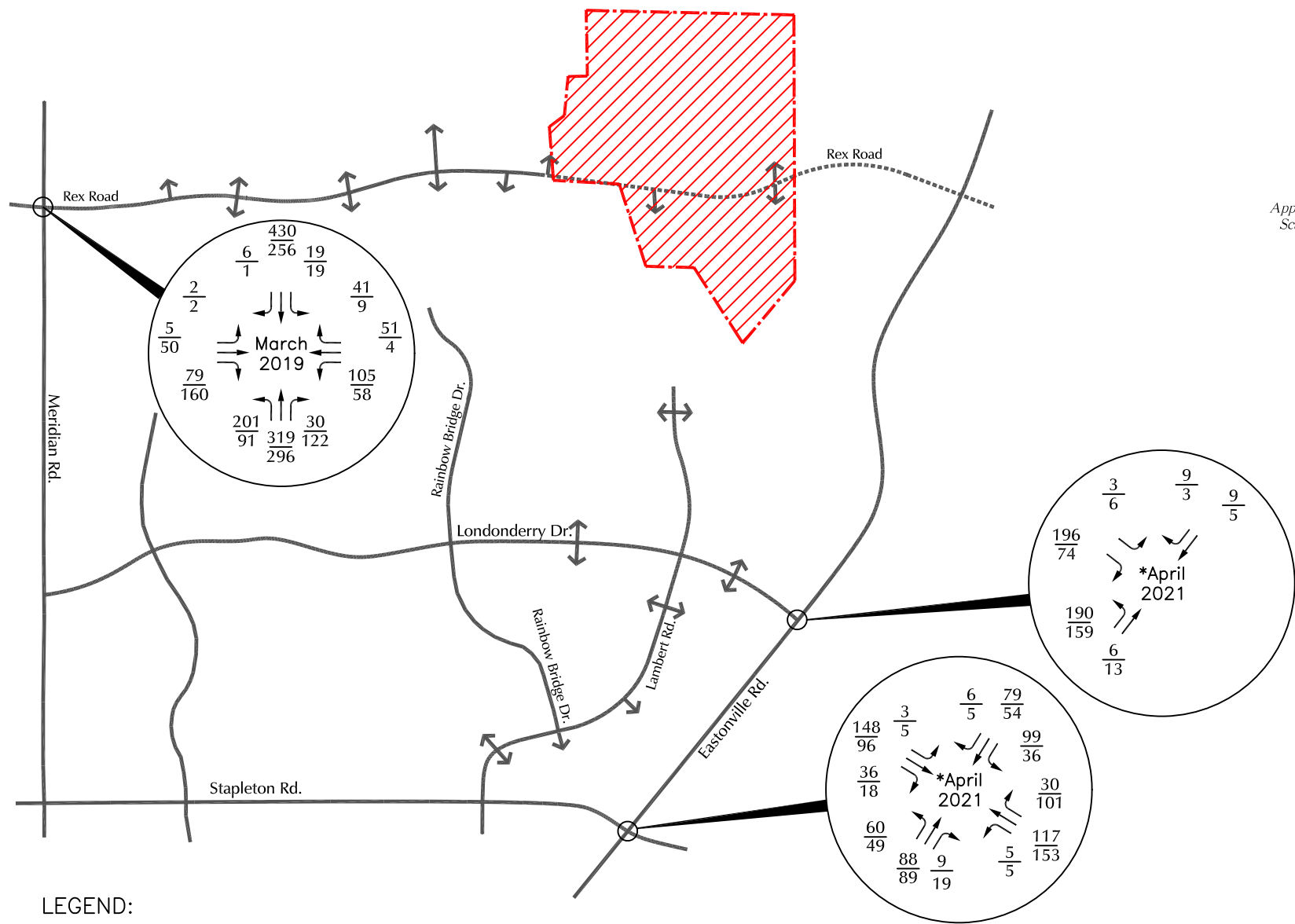


Figure 2
Sketch Plan Amendment Area

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



Approximate Scale
Scale: 1" = 2,000'



LEGEND:

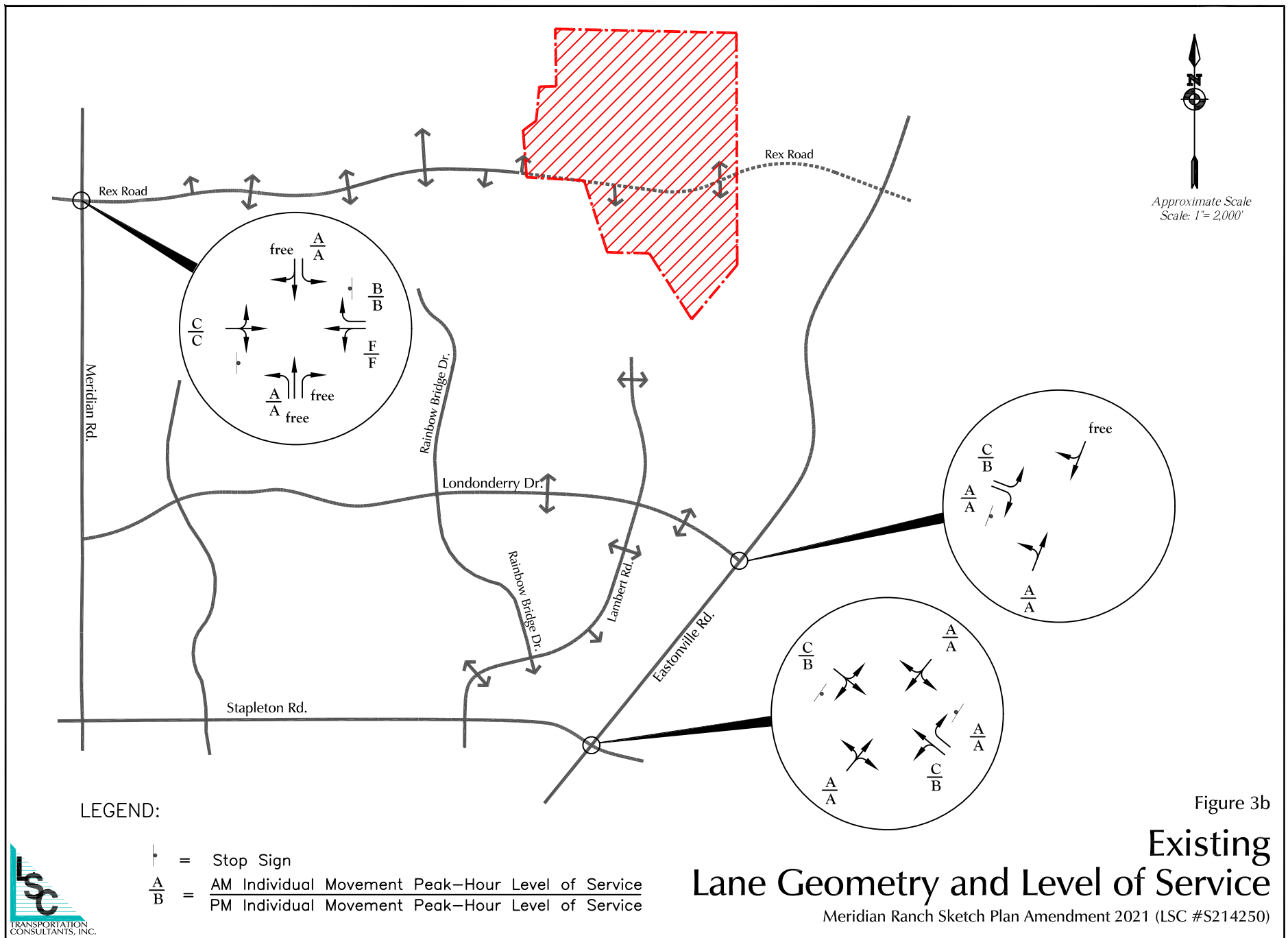
$\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$

*Counts by LSC



Figure 3a
Existing Traffic

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



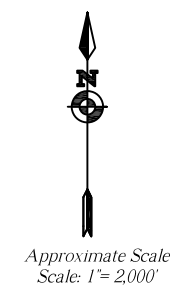
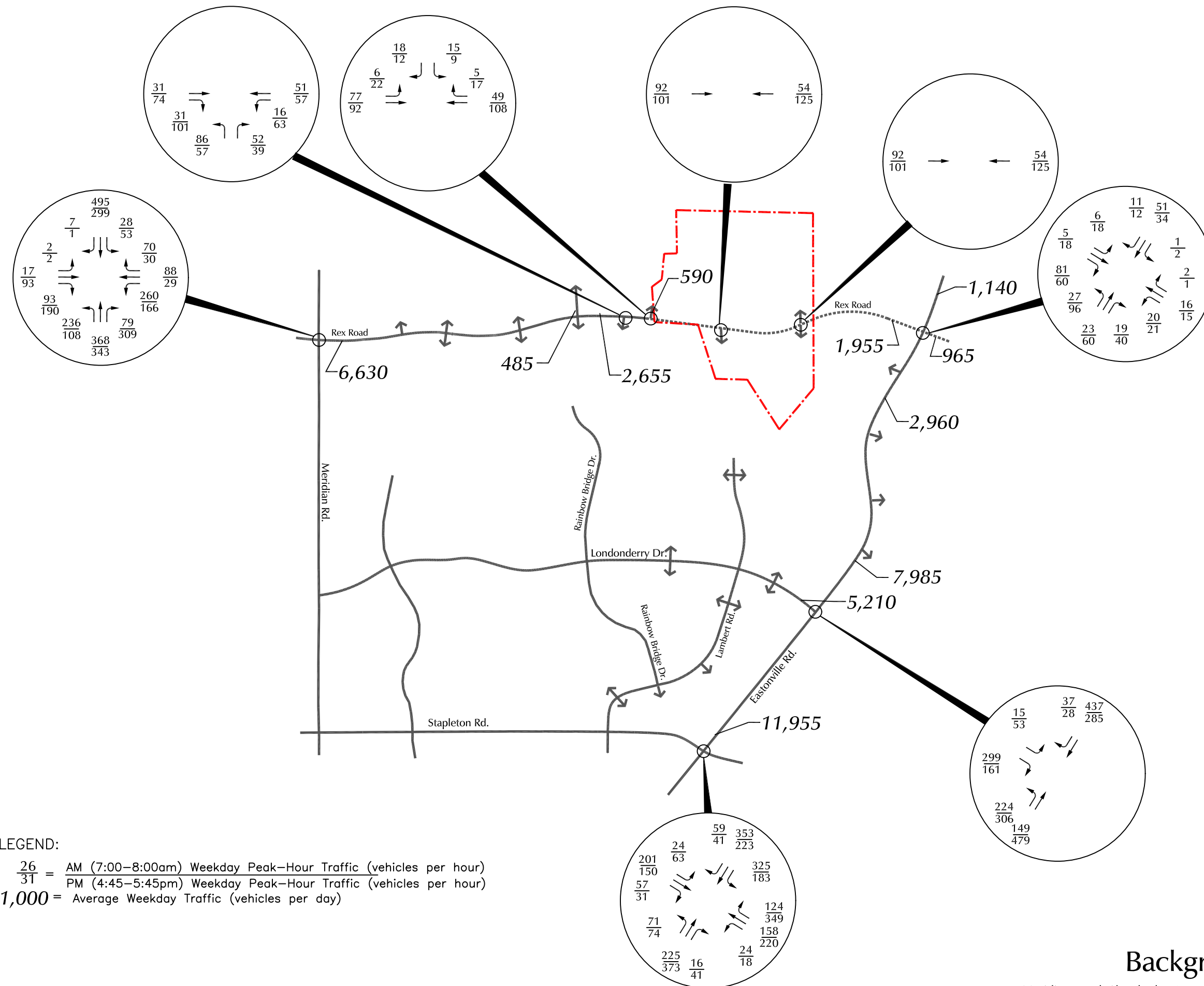


Figure 4a

Short-Term Background Traffic

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

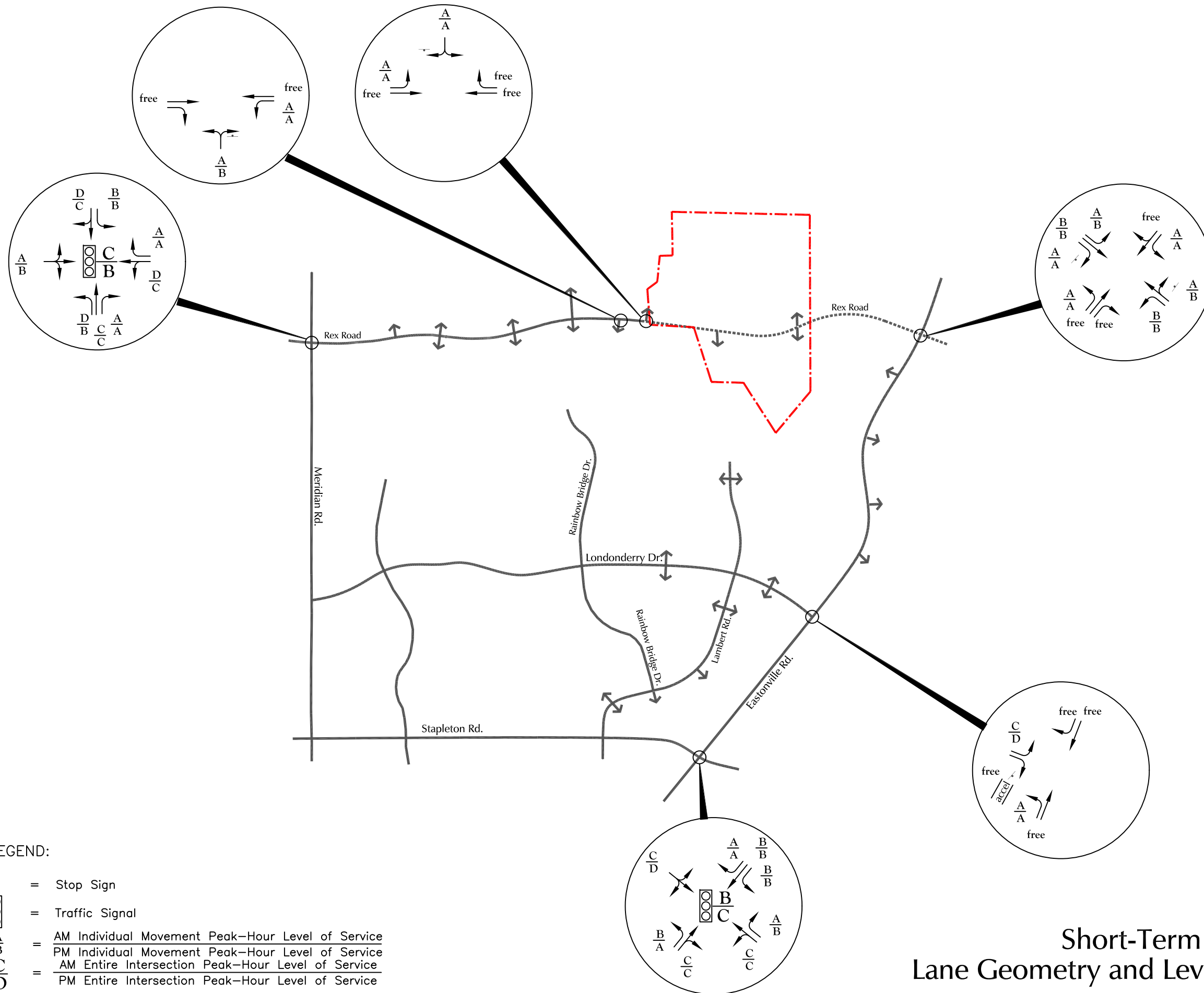


Figure 4b

Short-Term Background Lane Geometry and Level-of-Service

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

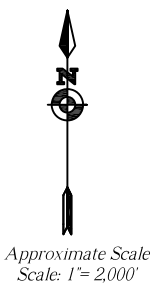
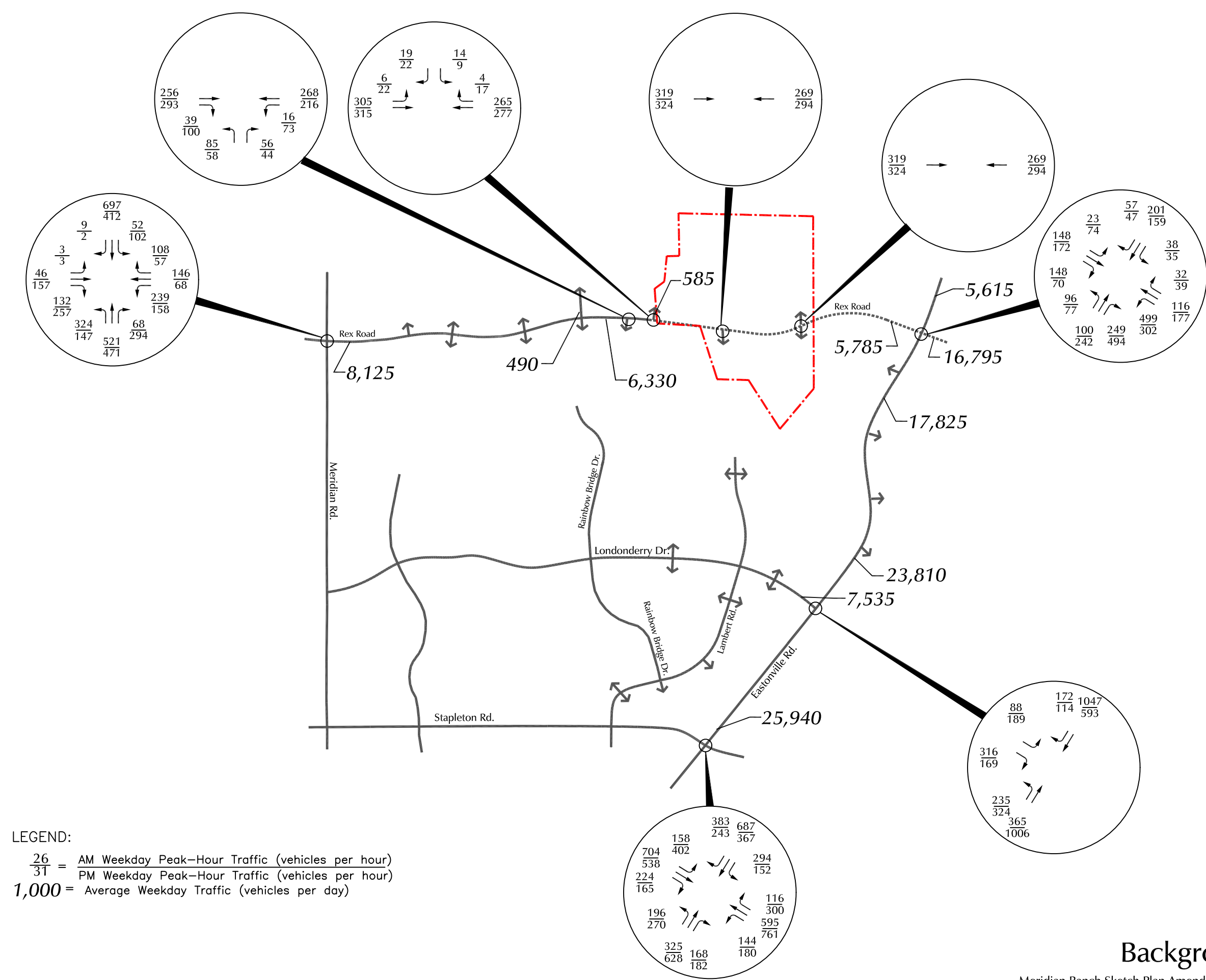


Figure 5a
2041
Background Traffic
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

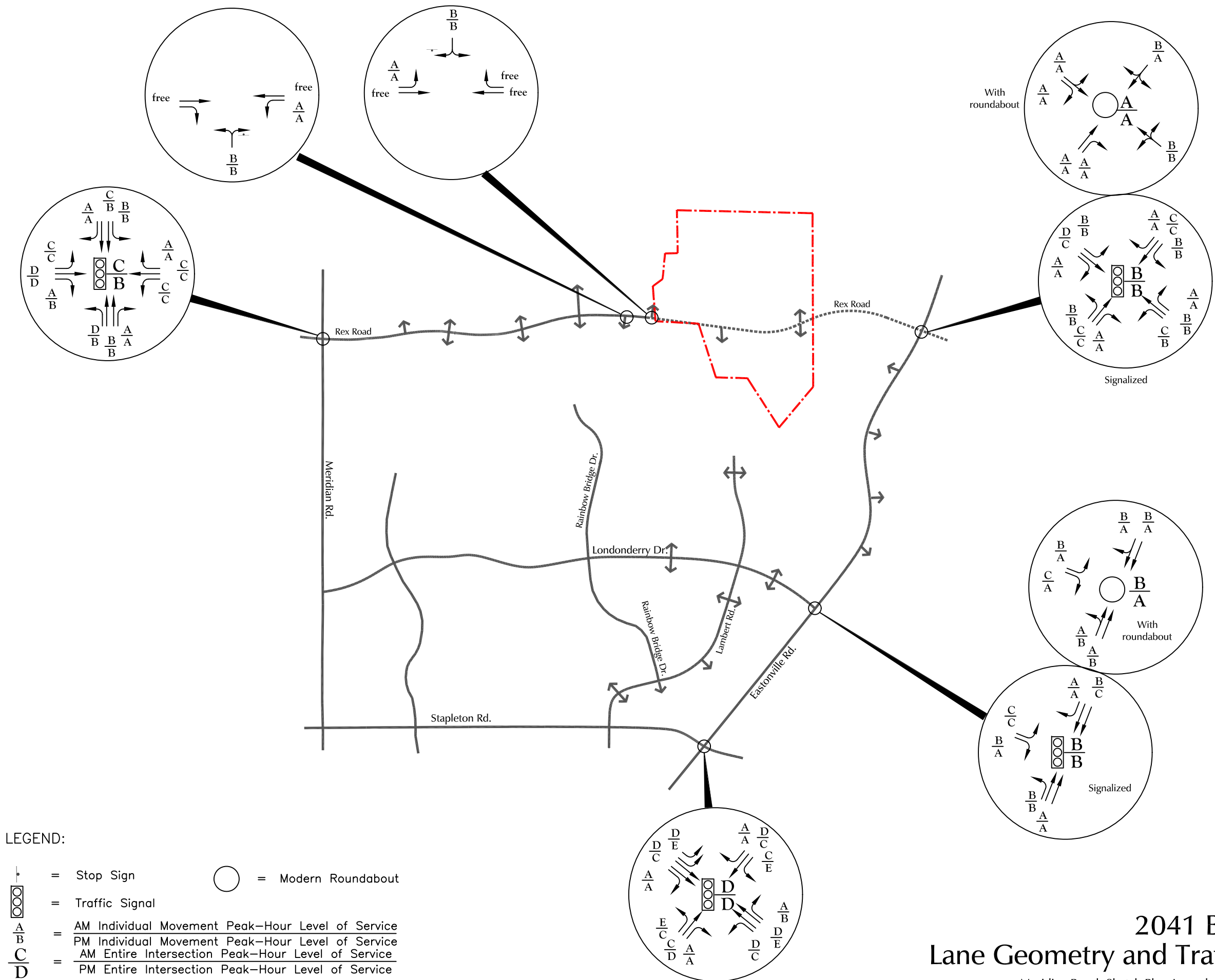
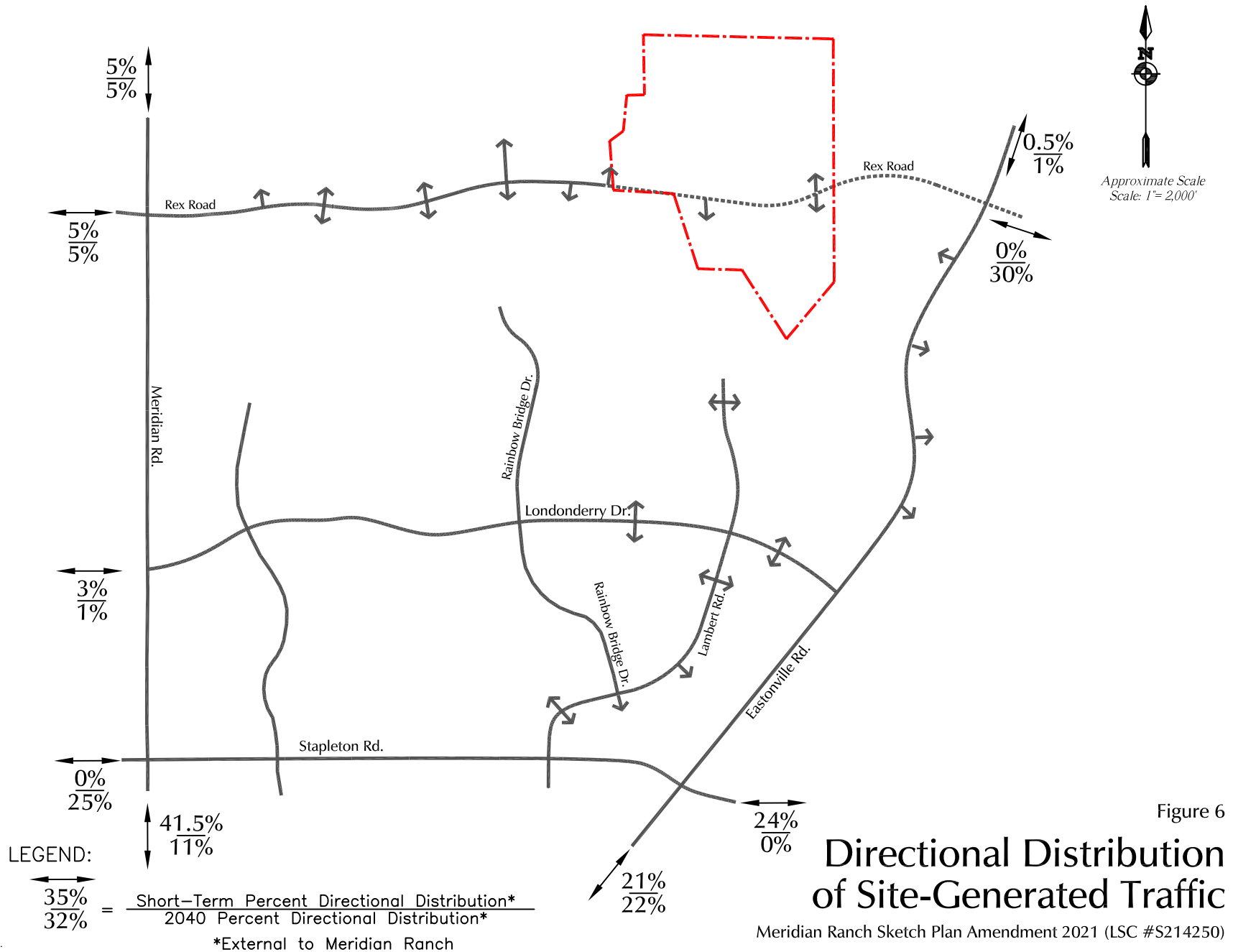


Figure 5b
2041 Background
Lane Geometry and Traffic Control
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



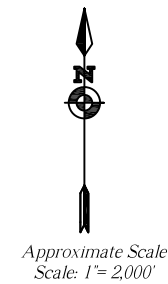
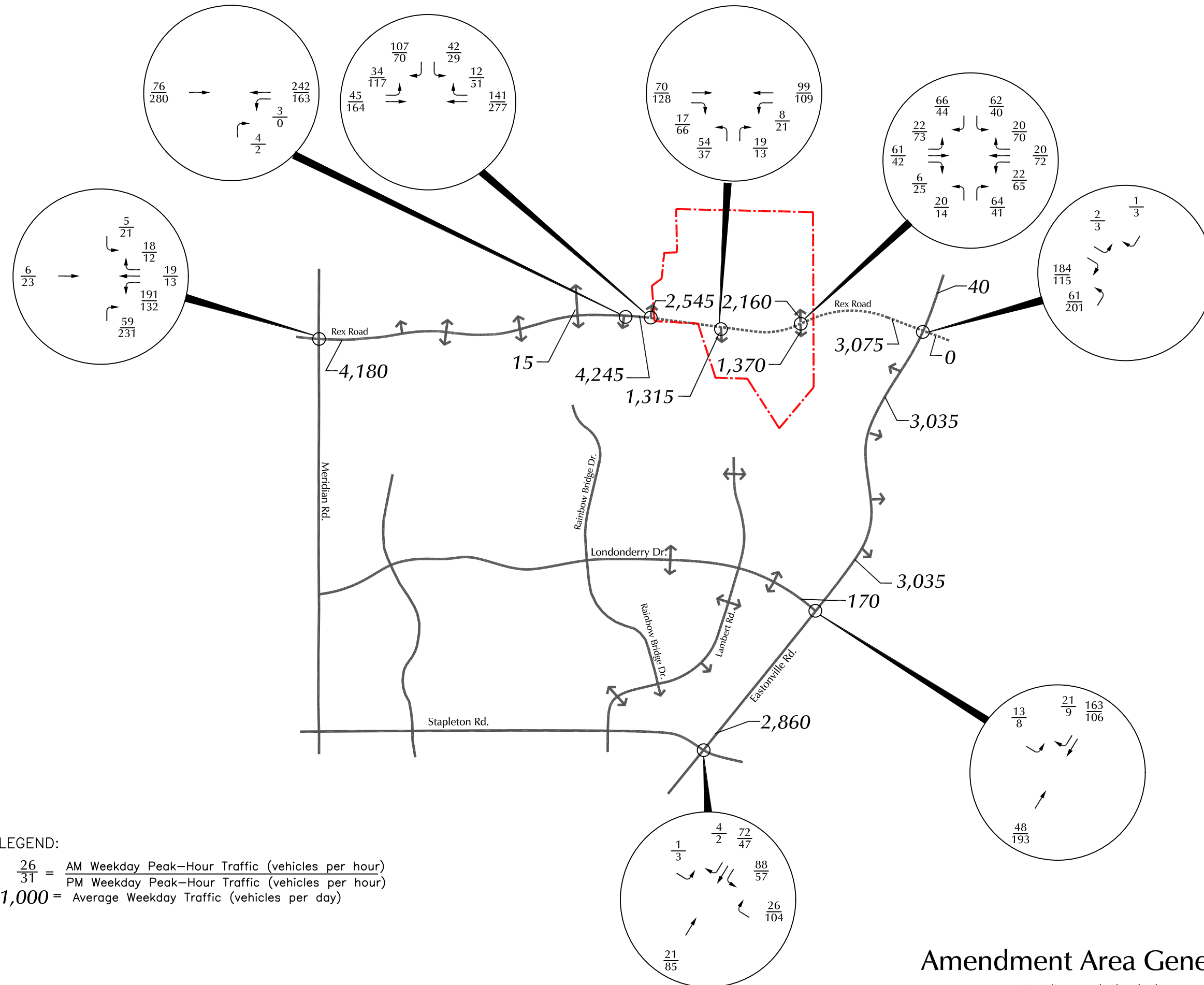


Figure 7
**Short-Term
 Amendment Area Generated Traffic**
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

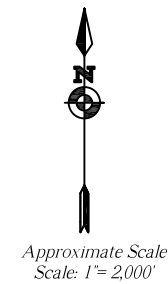
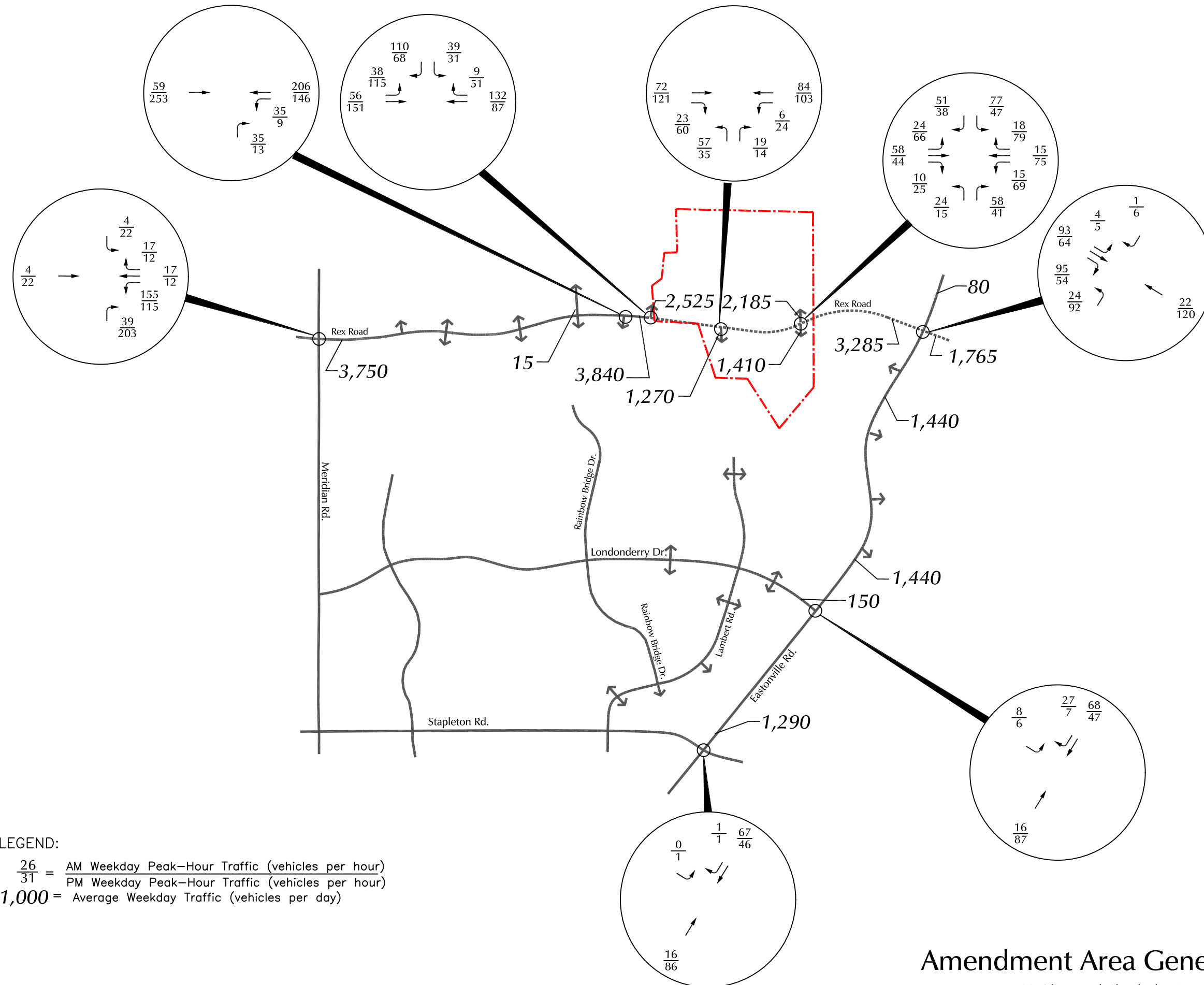
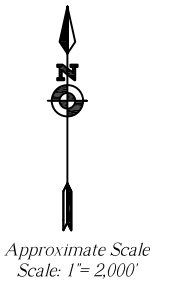
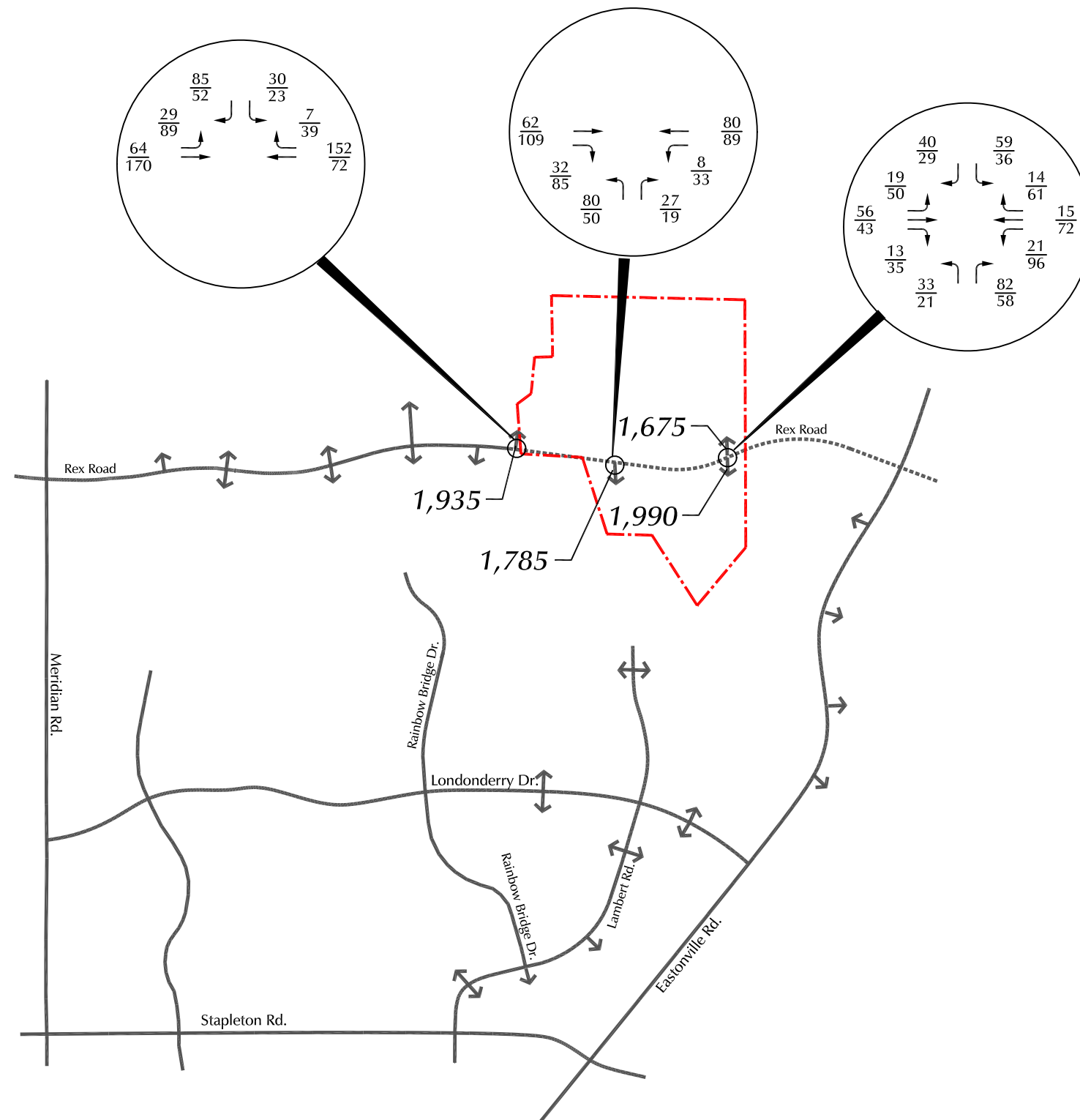


Figure 8a
**Long-Term
 Amendment Area Generated Traffic**
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

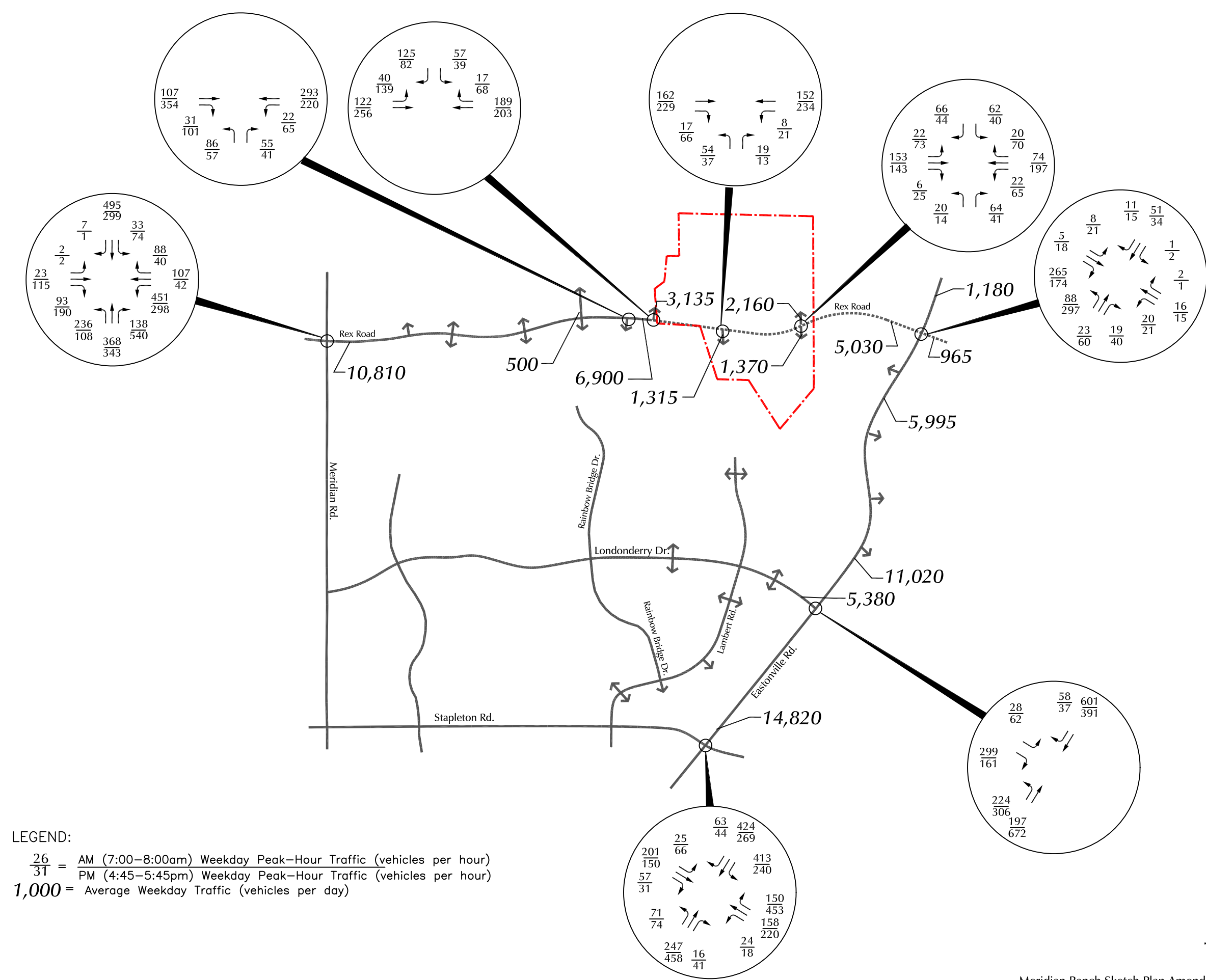


LEGEND:

$\frac{26}{31}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{26}{31}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 1,000 = Average Weekday Traffic (vehicles per day)

Long-Term Amendment Area Generated Traffic with Maximum Density South of Rex Rd.

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



Approximate Scale
 Scale: 1" = 2,000'

Figure 9a
**Short-Term
 Total Traffic**
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



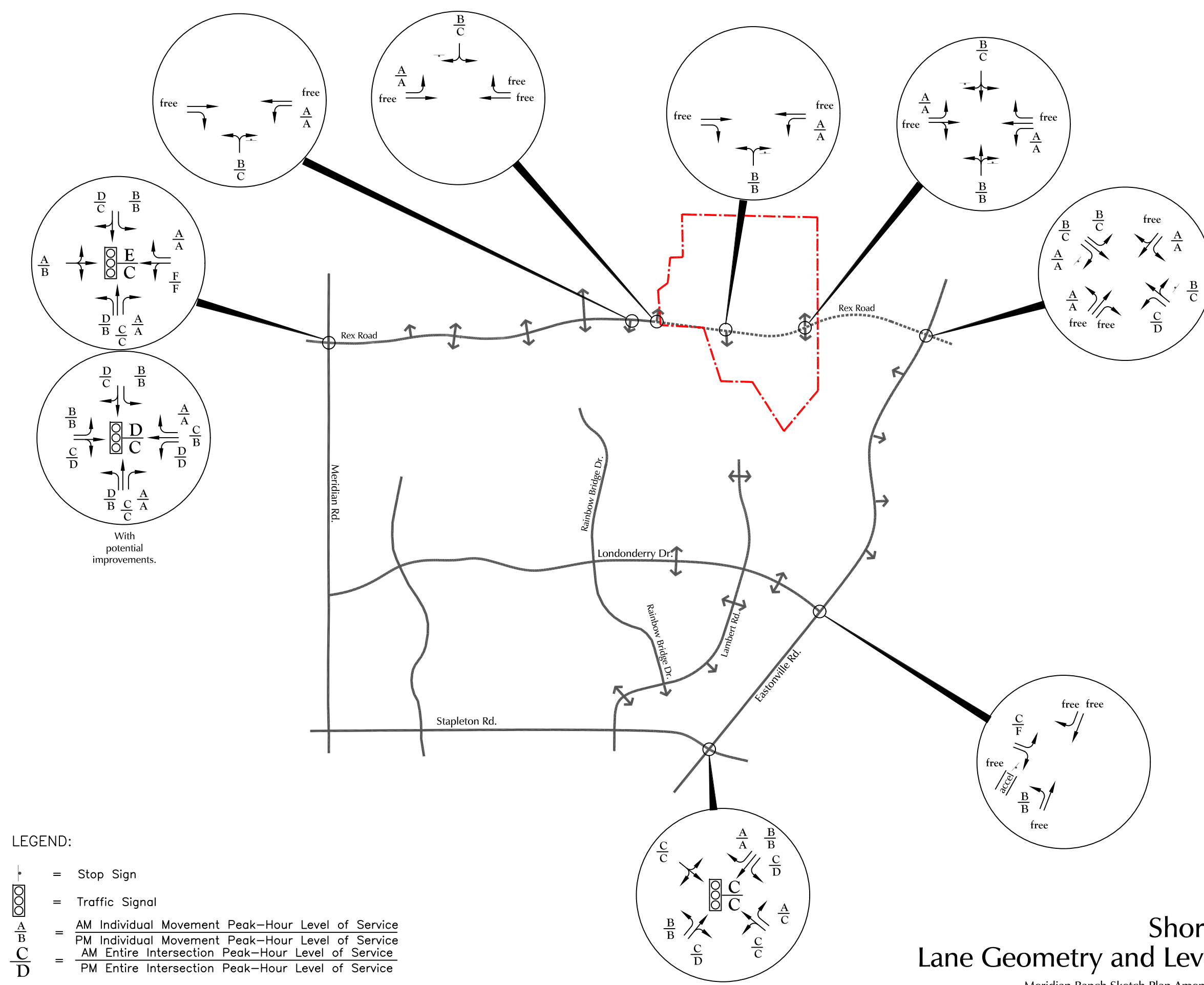


Figure 9b
Short-Term Total Lane Geometry and Level-of-Service
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)

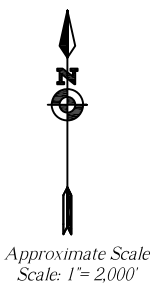
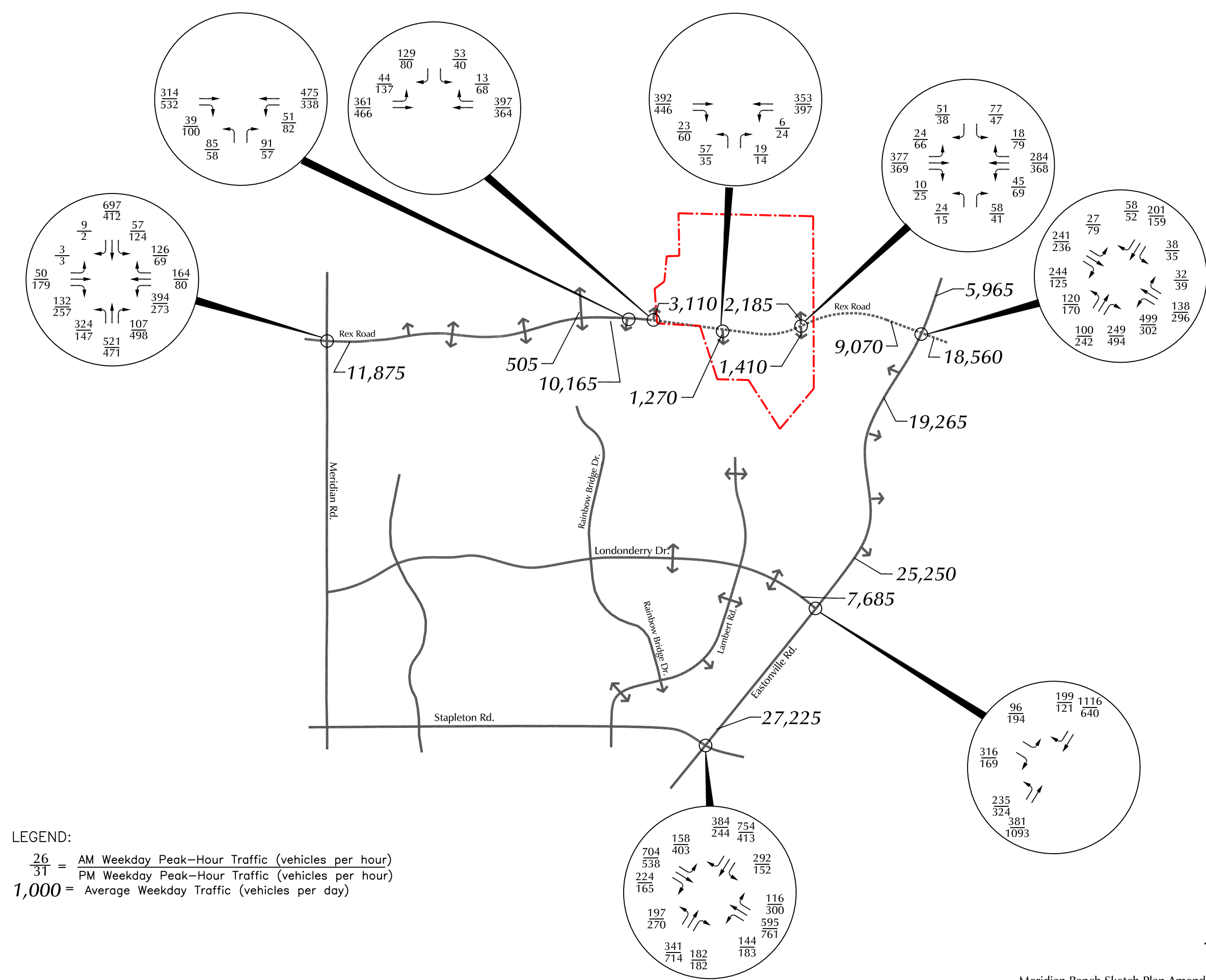
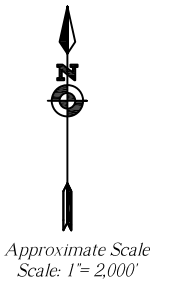
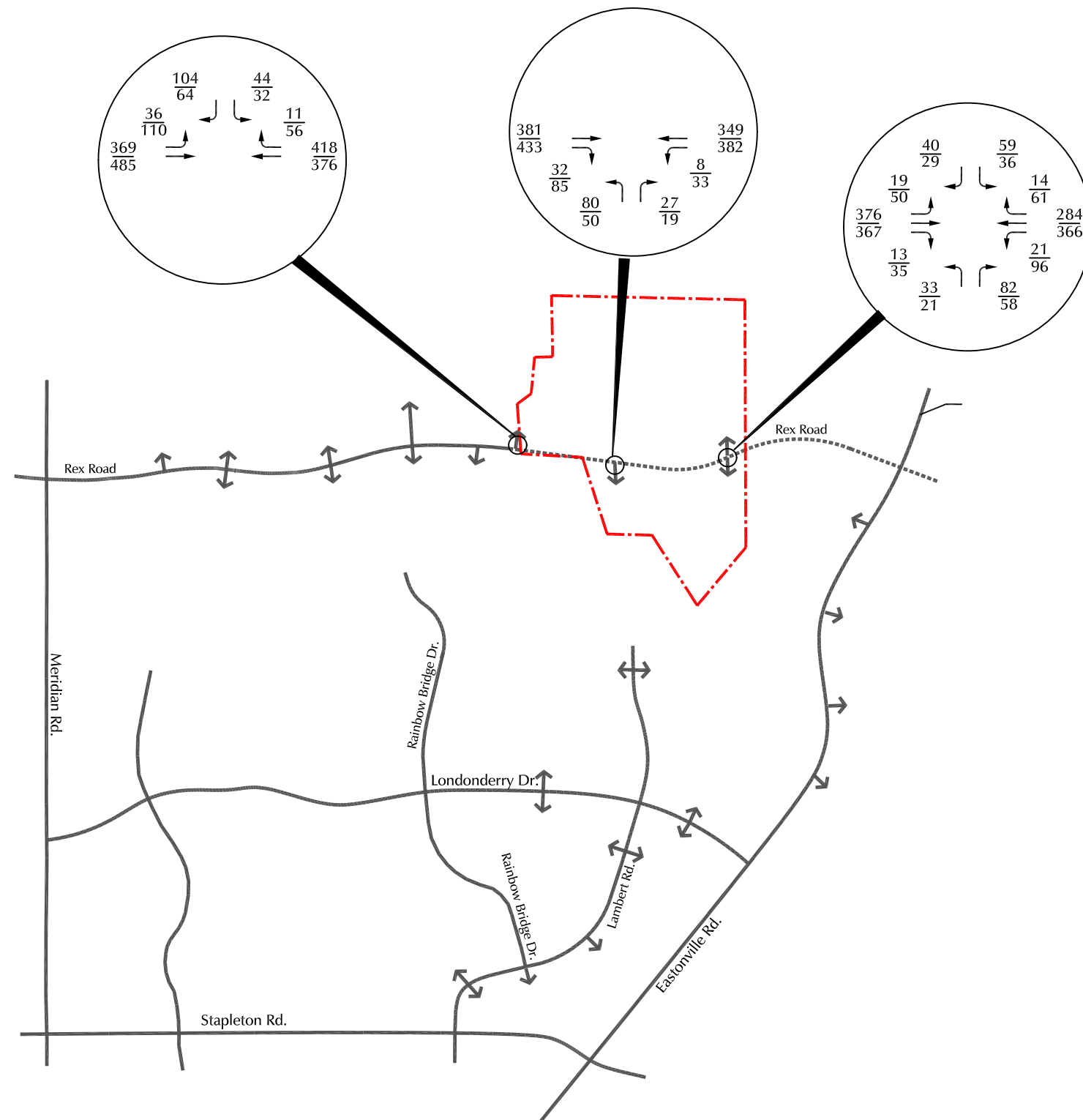
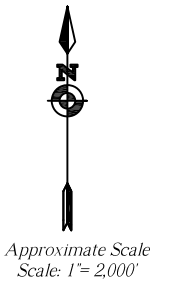
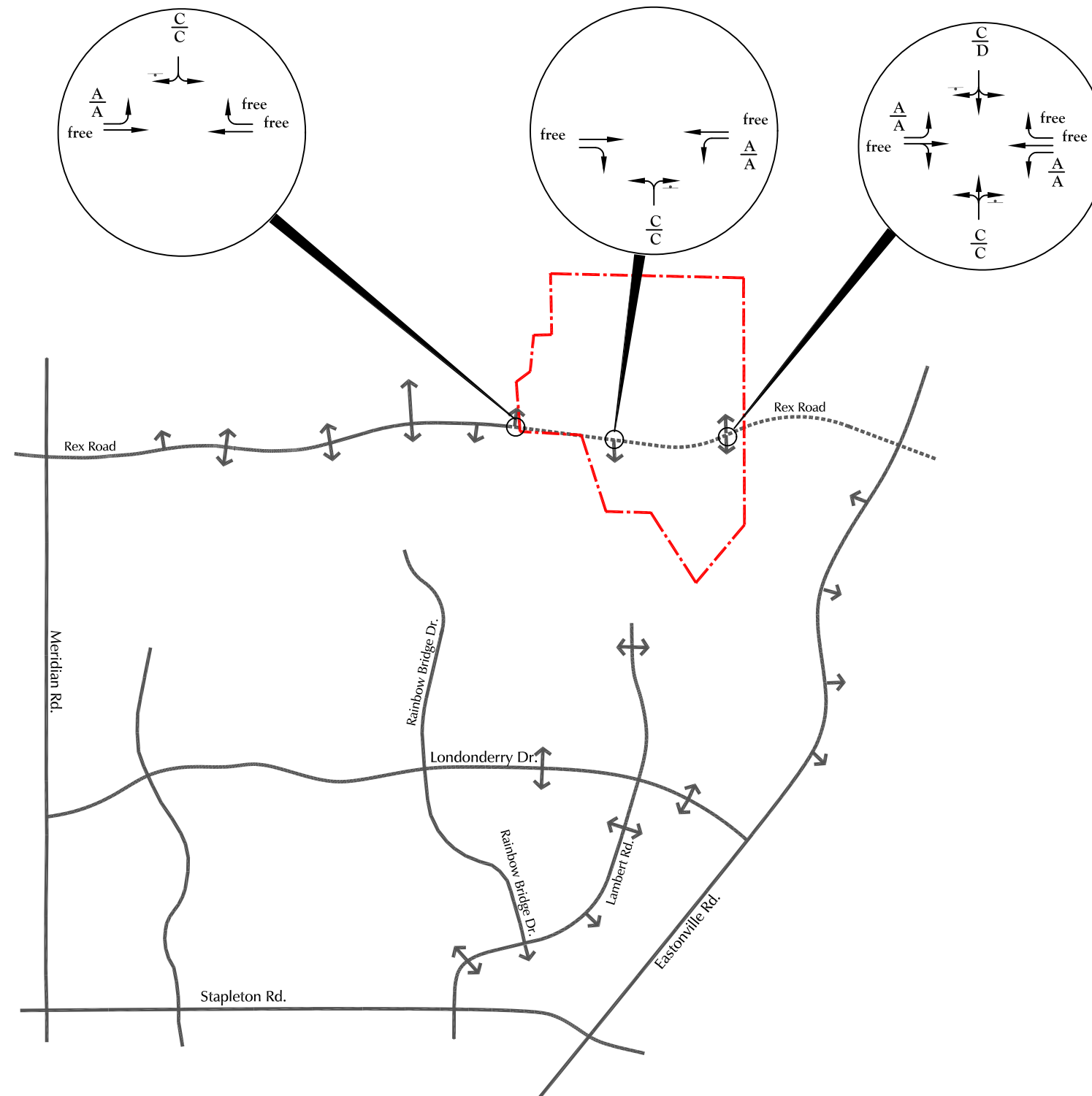


Figure 10a
**2041
 Total Traffic**
 Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



LEGEND:

$\frac{26}{31}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{26}{31}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 1,000 = Average Weekday Traffic (vehicles per day)



LEGEND:



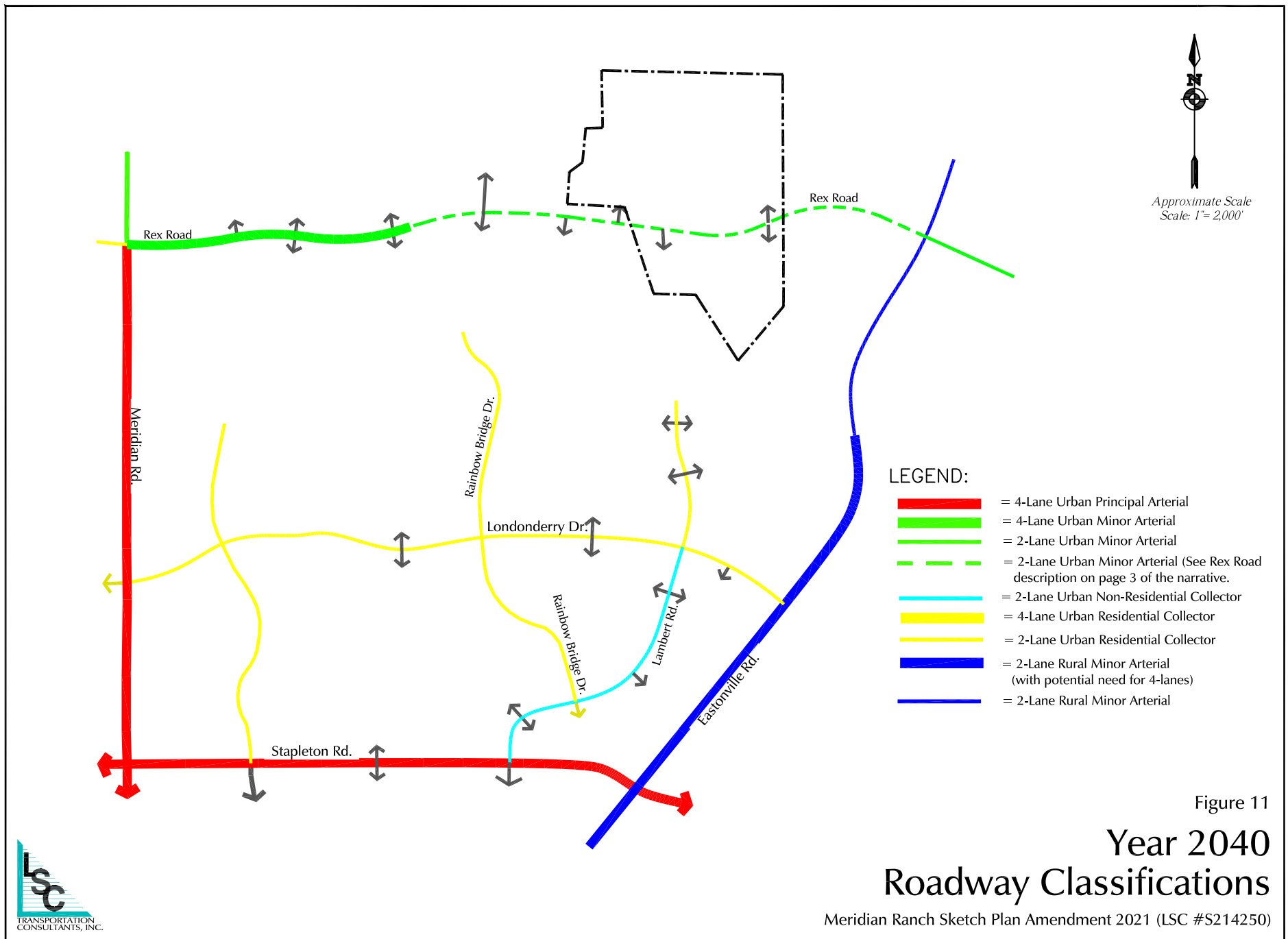
-  = Stop Sign
-  = Traffic Signal
- $\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
- $\frac{C}{D}$ = PM Individual Movement Peak-Hour Level of Service
- $\frac{C}{D}$ = AM Entire Intersection Peak-Hour Level of Service
- $\frac{C}{D}$ = PM Entire Intersection Peak-Hour Level of Service

Figure 10d
2041 Total Lane Geometry and Traffic Control
with Maximum Density South of Rex Rd.

Meridian Ranch Sketch Plan Amendment 2021 (LSC #S214250)



Traffic Counts

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd-Rex Rd AM

Site Code : 194180

Start Date : 3/5/2019

Page No : 1

Groups Printed- Unshifted

	Meridian Rd Southbound				Rex Rd Westbound				Meridian Rd Northbound				Rex Rd Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:30	1	66	0	0	28	14	1	0	23	41	6	0	0	1	18	0	199
06:45	2	73	1	0	28	16	3	0	50	33	9	0	0	1	18	0	234
Total	3	139	1	0	56	30	4	0	73	74	15	0	0	2	36	0	433
07:00	1	97	1	0	41	20	7	0	59	58	6	0	1	0	19	0	310
07:15	6	102	0	0	31	14	8	0	64	75	9	0	0	2	20	0	331
07:30	6	113	2	0	16	9	14	0	52	98	9	0	1	0	19	0	339
07:45	6	118	3	0	17	8	12	0	26	86	6	0	0	3	21	0	306
Total	19	430	6	0	105	51	41	0	201	317	30	0	2	5	79	0	1286
08:00	3	81	0	0	15	7	6	0	25	40	9	0	0	1	16	0	203
08:15	2	54	0	0	16	5	7	0	20	34	16	0	0	3	11	0	168
Grand Total	27	704	7	0	192	93	58	0	319	465	70	0	2	11	142	0	2090
Apprch %	3.7	95.4	0.9	0	56	27.1	16.9	0	37.4	54.4	8.2	0	1.3	7.1	91.6	0	
Total %	1.3	33.7	0.3	0	9.2	4.4	2.8	0	15.3	22.2	3.3	0	0.1	0.5	6.8	0	

LSC Transportation Consultants, Inc.

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

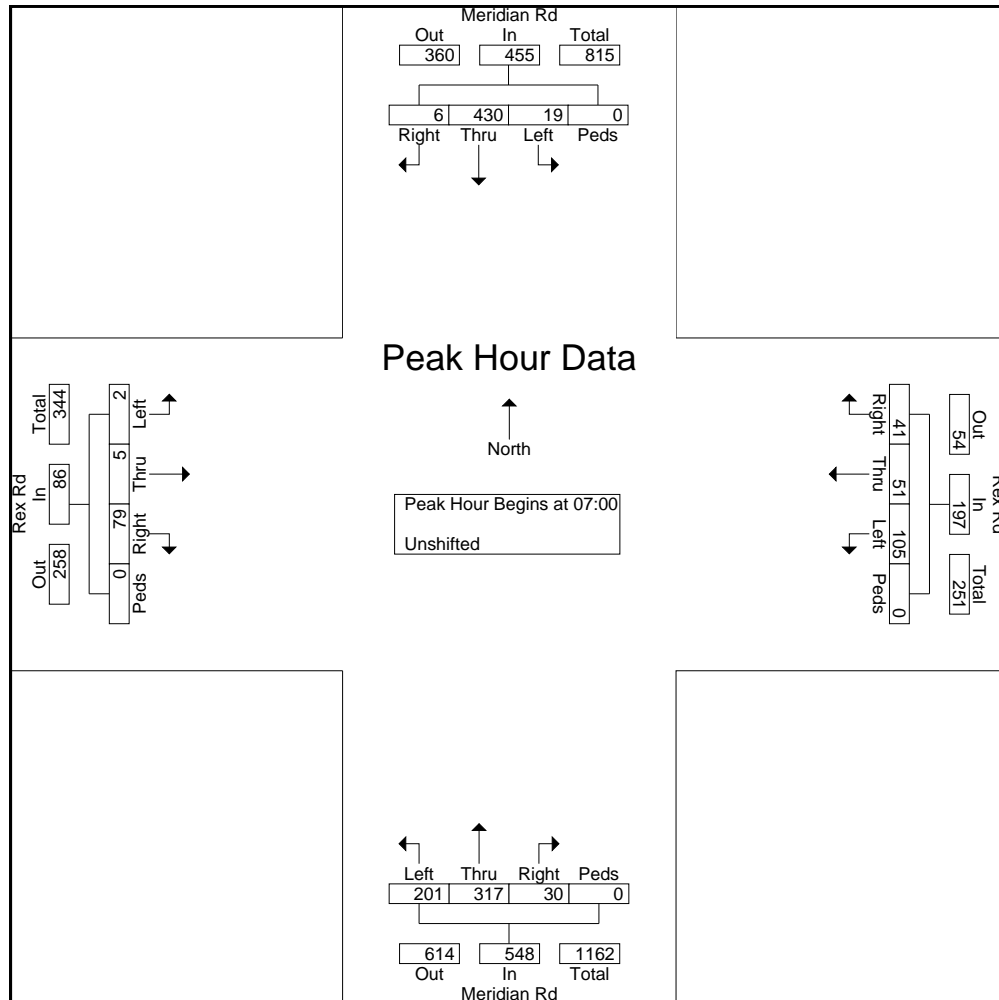
File Name : Meridian Rd-Rex Rd AM

Site Code : 194180

Start Date : 3/5/2019

Page No : 2

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	1	97	1	0	99	41	20	7	0	68	59	58	6	0	123	1	0	19	0	20	310
07:15	6	102	0	0	108	31	14	8	0	53	64	75	9	0	148	0	2	20	0	22	331
07:30	6	113	2	0	121	16	9	14	0	39	52	98	9	0	159	1	0	19	0	20	339
07:45	6	118	3	0	127	17	8	12	0	37	26	86	6	0	118	0	3	21	0	24	306
Total Volume	19	430	6	0	455	105	51	41	0	197	201	317	30	0	548	2	5	79	0	86	1286
% App. Total	4.2	94.5	1.3	0		53.3	25.9	20.8	0		36.7	57.8	5.5	0		2.3	5.8	91.9	0		
PHF	.792	.911	.500	.000	.896	.640	.638	.732	.000	.724	.785	.809	.833	.000	.862	.500	.417	.940	.000	.896	.948



LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Meridian Rd-Rex Rd PM

Site Code : 194180

Start Date : 3/5/2019

Page No : 1

Groups Printed- Unshifted

	Meridian Rd Southbound				Rex Rd Westbound				Meridian Rd Northbound				Rex Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	3	59	0	0	14	2	2	0	15	61	17	0	2	5	17	0	197
16:15	4	43	2	0	13	4	7	0	19	83	30	0	0	10	29	0	244
16:30	3	43	0	0	15	0	0	0	23	78	26	0	1	7	43	0	239
16:45	7	57	0	0	13	0	2	0	23	63	34	0	1	14	30	0	244
Total	17	202	2	0	55	6	11	0	80	285	107	0	4	36	119	0	924
17:00	5	88	0	0	16	1	4	2	21	72	27	0	0	15	39	0	290
17:15	4	68	1	0	14	3	3	1	24	83	35	0	0	14	48	0	298
17:30	4	55	1	0	14	2	3	0	23	62	28	0	0	7	36	0	235
17:45	3	56	0	0	13	2	2	1	21	59	29	0	0	11	34	0	231
Total	16	267	2	0	57	8	12	4	89	276	119	0	0	47	157	0	1054
Grand Total	33	469	4	0	112	14	23	4	169	561	226	0	4	83	276	0	1978
Apprch %	6.5	92.7	0.8	0	73.2	9.2	15	2.6	17.7	58.7	23.6	0	1.1	22.9	76	0	
Total %	1.7	23.7	0.2	0	5.7	0.7	1.2	0.2	8.5	28.4	11.4	0	0.2	4.2	14	0	

LSC Transportation Consultants, Inc.

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

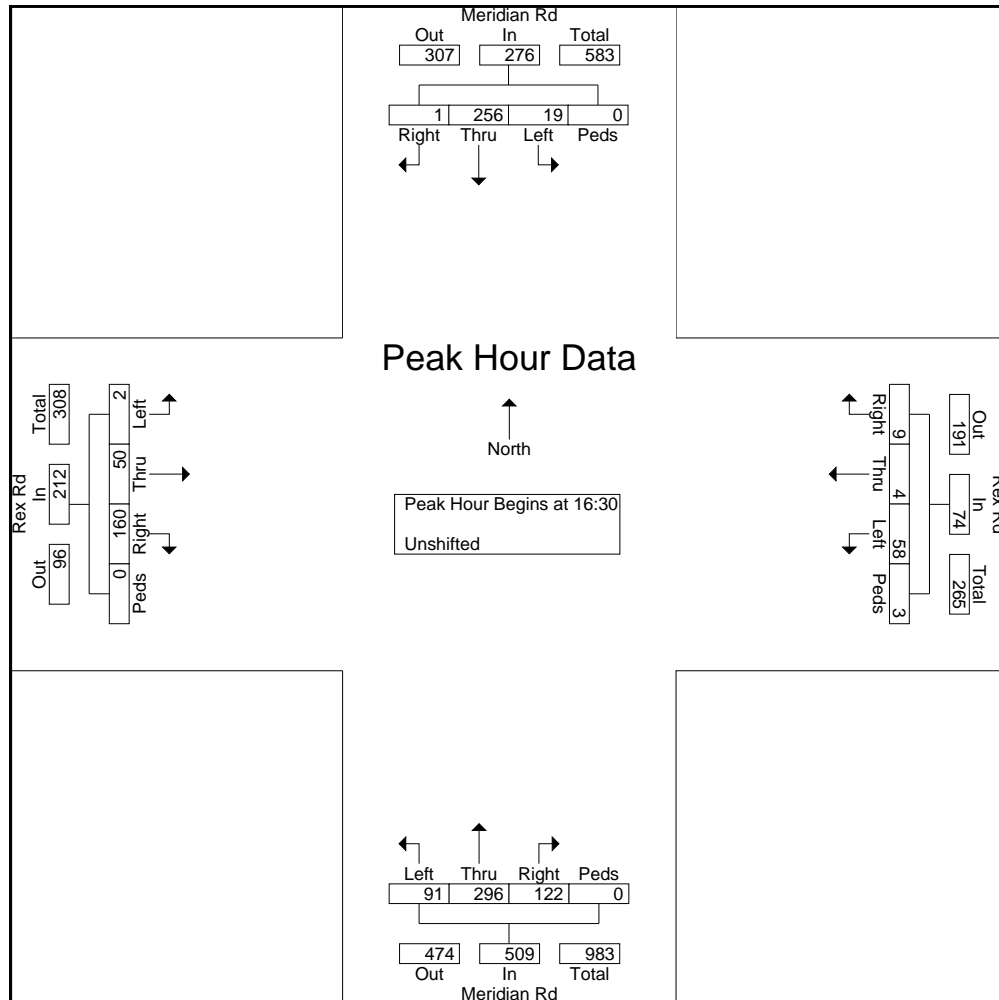
File Name : Meridian Rd-Rex Rd PM

Site Code : 194180

Start Date : 3/5/2019

Page No : 2

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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	3	43	0	0	46	15	0	0	0	15	23	78	26	0	127	1	7	43	0	51	239
16:45	7	57	0	0	64	13	0	2	0	15	23	63	34	0	120	1	14	30	0	45	244
17:00	5	88	0	0	93	16	1	4	2	23	21	72	27	0	120	0	15	39	0	54	290
17:15	4	68	1	0	73	14	3	3	1	21	24	83	35	0	142	0	14	48	0	62	298
Total Volume	19	256	1	0	276	58	4	9	3	74	91	296	122	0	509	2	50	160	0	212	1071
% App. Total	6.9	92.8	0.4	0		78.4	5.4	12.2	4.1		17.9	58.2	24	0		0.9	23.6	75.5	0		
PHF	.679	.727	.250	.000	.742	.906	.333	.563	.375	.804	.948	.892	.871	.000	.896	.500	.833	.833	.000	.855	.898



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

File Name : Eastonville Rd -Londonderry Dr AM
Site Code : S214250
Start Date : 4/15/2021
Page No : 1

Groups Printed- Unshifted

	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
07:00 AM	0	2	2	0	4	0	0	0	0	0	44	2	0	0	46	0	0	31	0	31	81
07:15 AM	0	2	3	0	5	0	0	0	0	0	96	1	0	0	97	0	0	74	0	74	176
07:30 AM	0	2	2	0	4	0	0	0	0	0	22	2	0	0	24	0	0	54	0	54	82
07:45 AM	0	3	2	0	5	0	0	0	0	0	28	1	0	0	29	3	0	37	1	41	75
Total	0	9	9	0	18	0	0	0	0	0	190	6	0	0	196	3	0	196	1	200	414
08:00 AM	0	1	5	0	6	0	0	0	0	0	24	1	0	0	25	0	0	18	0	18	49
08:15 AM	0	0	2	0	2	0	0	0	0	0	24	2	0	0	26	2	0	37	1	40	68
08:30 AM	0	1	0	0	1	0	0	0	0	0	13	1	0	0	14	2	0	23	0	25	40
08:45 AM	0	7	2	0	9	0	0	0	0	0	13	5	0	0	18	0	0	12	0	12	39
Total	0	9	9	0	18	0	0	0	0	0	74	9	0	0	83	4	0	90	1	95	196
Grand Total	0	18	18	0	36	0	0	0	0	0	264	15	0	0	279	7	0	286	2	295	610
Apprch %	0	50	50	0		0	0	0	0		94.6	5.4	0	0		2.4	0	96.9	0.7		
Total %	0	3	3	0	5.9	0	0	0	0	0	43.3	2.5	0	0	45.7	1.1	0	46.9	0.3	48.4	

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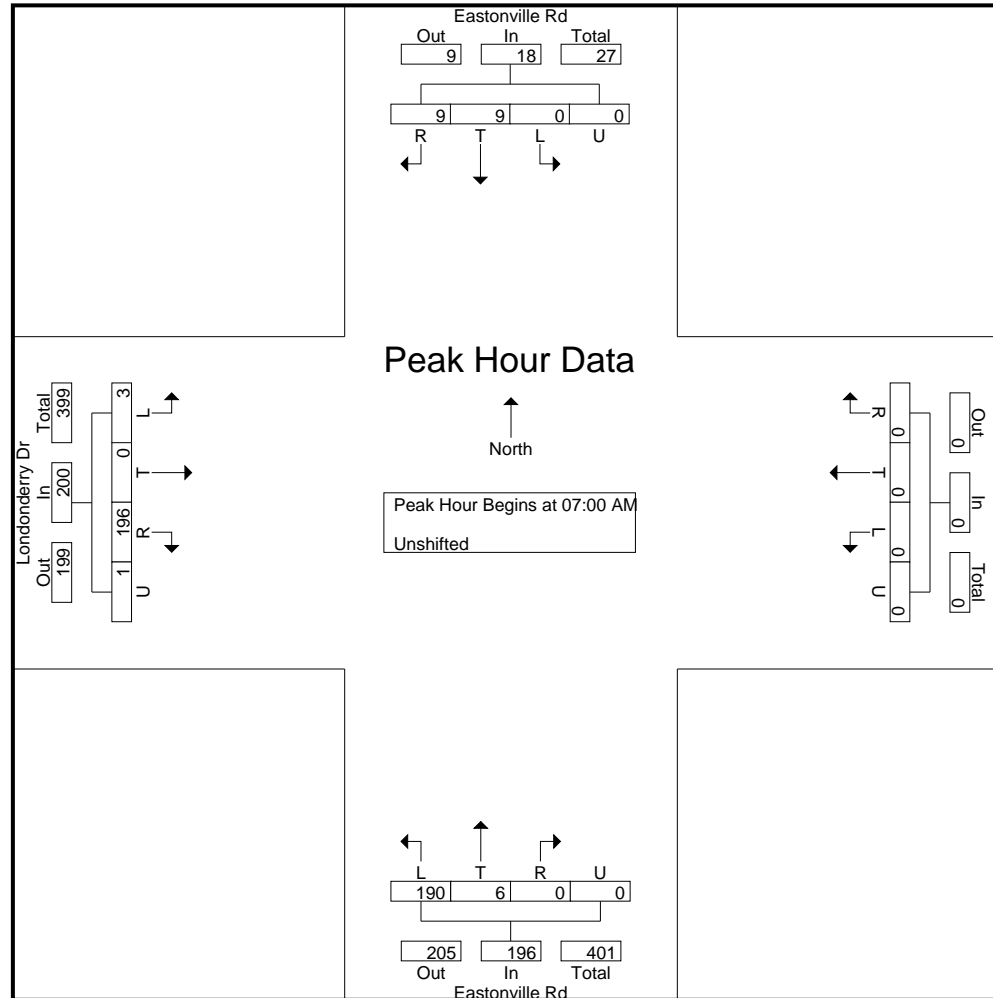
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719-633-2868

File Name : Eastonville Rd -Londonderry Dr AM

Site Code : S214250

Start Date : 4/15/2021

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

File Name : Eastonville Rd -Londonderry Dr PM
Site Code : S214250
Start Date : 4/15/2021
Page No : 1

Groups Printed- Unshifted

	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
04:00 PM	0	2	1	0	3	0	0	0	0	0	47	1	0	0	48	2	0	27	0	29	80
04:15 PM	0	1	0	0	1	0	0	0	0	0	36	3	0	0	39	2	0	19	0	21	61
04:30 PM	0	1	1	0	2	0	0	0	0	0	40	2	0	0	42	0	0	15	0	15	59
04:45 PM	0	1	1	0	2	0	0	0	0	0	36	7	0	0	43	2	0	13	0	15	60
Total	0	5	3	0	8	0	0	0	0	0	159	13	0	0	172	6	0	74	0	80	260
05:00 PM	0	2	2	0	4	0	0	0	0	0	36	1	0	0	37	0	0	12	0	12	53
05:15 PM	0	4	0	0	4	0	0	0	0	0	31	1	0	0	32	1	0	8	0	9	45
05:30 PM	0	1	0	0	1	0	0	0	0	0	35	3	0	1	39	0	0	7	0	7	47
05:45 PM	0	2	0	0	2	0	0	0	0	0	24	2	0	0	26	0	0	15	0	15	43
Total	0	9	2	0	11	0	0	0	0	0	126	7	0	1	134	1	0	42	0	43	188
Grand Total	0	14	5	0	19	0	0	0	0	0	285	20	0	1	306	7	0	116	0	123	448
Apprch %	0	73.7	26.3	0		0	0	0	0		93.1	6.5	0	0.3		5.7	0	94.3	0		
Total %	0	3.1	1.1	0	4.2	0	0	0	0	0	63.6	4.5	0	0.2	68.3	1.6	0	25.9	0	27.5	

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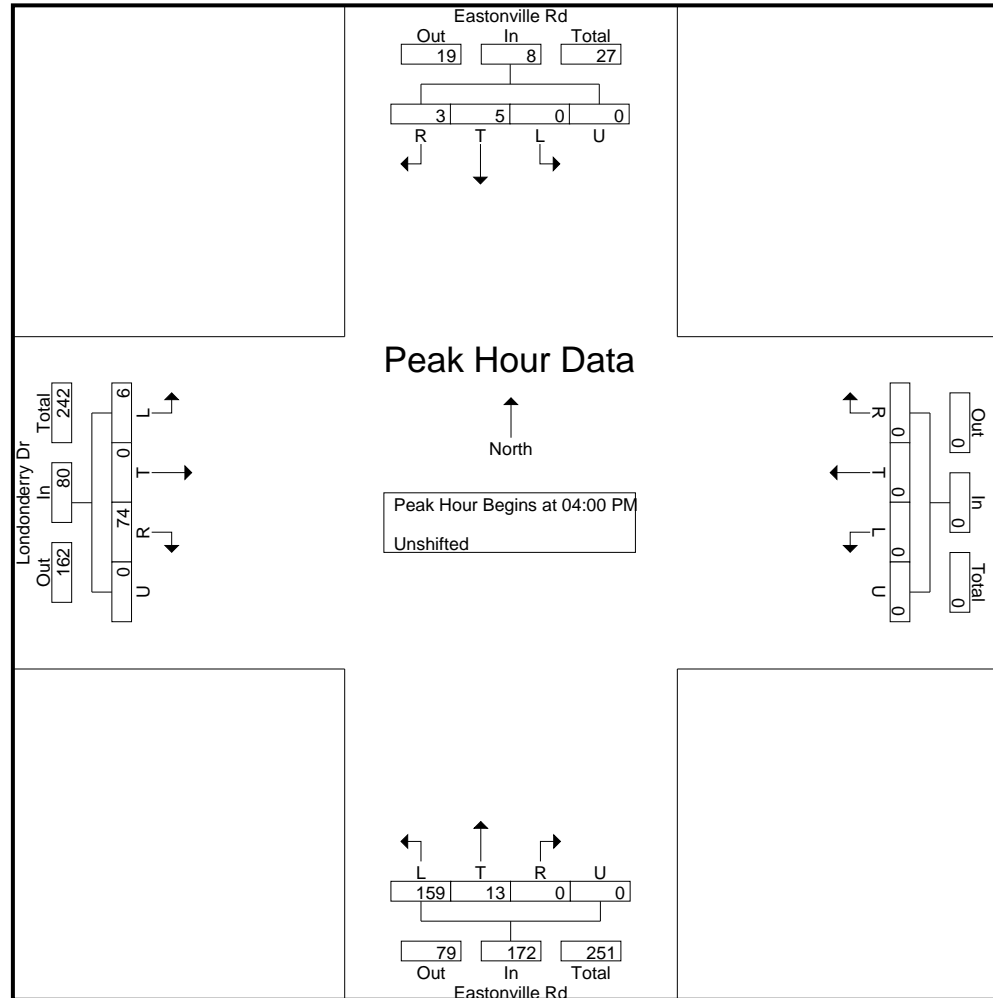
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File Name : Eastonville Rd -Londonderry Dr PM

Site Code : S214250

Start Date : 4/15/2021

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File Name : Eastonville Rd -Stapleton Dr AM
Site Code : S214250
Start Date : 4/14/2021
Page No : 1

Groups Printed- Unshifted

	Eastonville Rd Southbound					Stapleton Dr Westbound					Eastonville Rd Northbound					Stapleton Dr Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
07:00 AM	15	16	1	0	32	0	11	6	0	17	10	20	1	0	31	0	31	6	0	37	117
07:15 AM	32	13	3	0	48	2	38	11	0	51	13	21	3	0	37	1	39	6	0	46	182
07:30 AM	33	29	2	0	64	0	49	4	0	53	20	22	4	0	46	2	48	11	0	61	224
07:45 AM	19	21	0	0	40	3	19	9	0	31	17	25	1	0	43	0	30	13	0	43	157
Total	99	79	6	0	184	5	117	30	0	152	60	88	9	0	157	3	148	36	0	187	680
08:00 AM	18	10	2	0	30	0	19	14	0	33	6	10	1	0	17	2	22	6	0	30	110
08:15 AM	16	12	0	0	28	0	21	11	0	32	6	7	2	0	15	0	24	6	0	30	105
08:30 AM	16	5	1	0	22	1	17	4	0	22	4	13	1	0	18	1	16	1	0	18	80
08:45 AM	8	0	1	0	9	0	20	6	0	26	1	7	0	0	8	0	15	2	0	17	60
Total	58	27	4	0	89	1	77	35	0	113	17	37	4	0	58	3	77	15	0	95	355
Grand Total	157	106	10	0	273	6	194	65	0	265	77	125	13	0	215	6	225	51	0	282	1035
Apprch %	57.5	38.8	3.7	0		2.3	73.2	24.5	0		35.8	58.1	6	0		2.1	79.8	18.1	0		
Total %	15.2	10.2	1	0	26.4	0.6	18.7	6.3	0	25.6	7.4	12.1	1.3	0	20.8	0.6	21.7	4.9	0	27.2	

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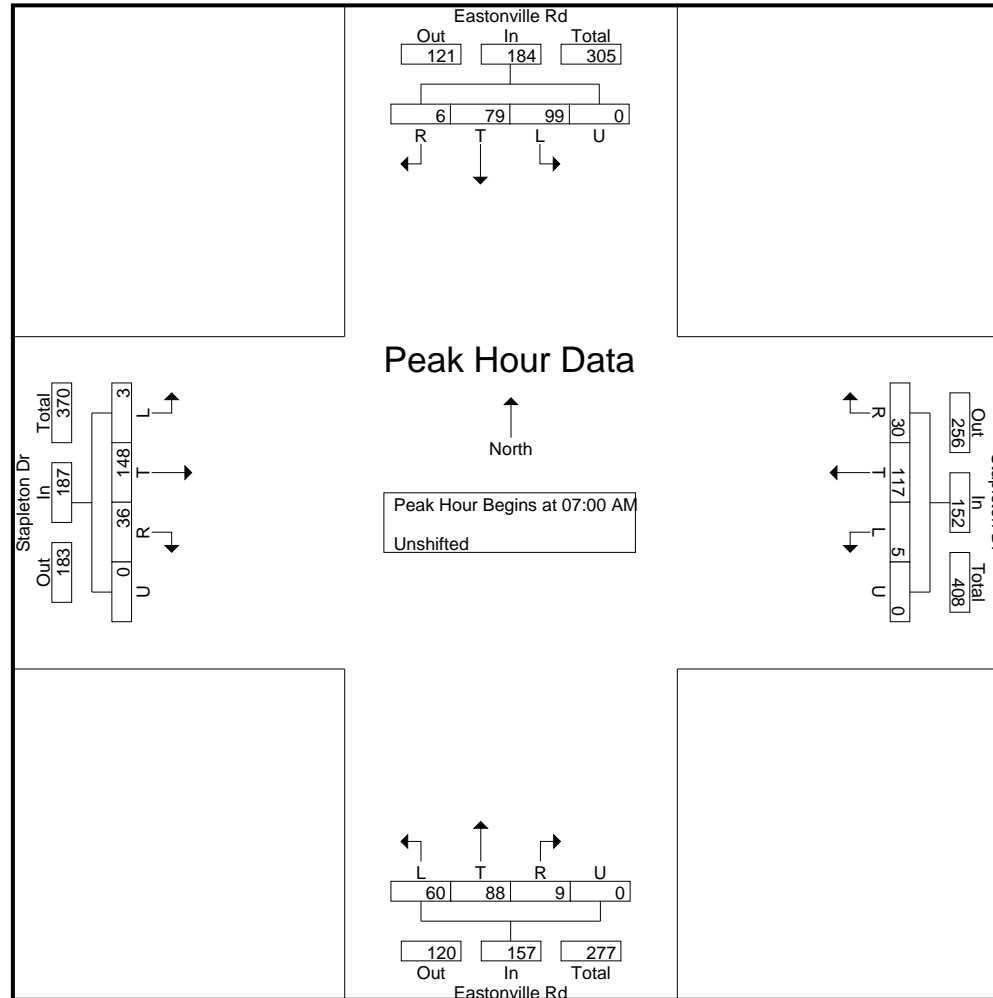
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File Name : Eastonville Rd -Stapleton Dr AM

Site Code : S214250

Start Date : 4/14/2021

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File Name : Eastonville Rd -Stapleton Dr PM
Site Code : S214250
Start Date : 4/13/2021
Page No : 1

Groups Printed- Unshifted

	Eastonville Rd Southbound					Stapleton Dr Westbound					Eastonville Rd Northbound					Stapleton Dr Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
04:00 PM	12	13	2	0	27	2	28	14	0	44	5	23	0	0	28	2	19	5	0	26	125
04:15 PM	8	5	0	0	13	1	38	27	0	66	11	27	4	0	42	0	24	5	0	29	150
04:30 PM	7	14	2	0	23	0	39	26	0	65	14	18	6	0	38	1	29	1	0	31	157
04:45 PM	10	24	2	0	36	0	43	22	0	65	10	31	5	0	46	3	24	8	0	35	182
Total	37	56	6	0	99	3	148	89	0	240	40	99	15	0	154	6	96	19	0	121	614
05:00 PM	11	11	1	0	23	4	33	26	0	63	14	13	4	0	31	1	19	4	0	24	141
05:15 PM	11	16	0	0	27	0	32	22	0	54	15	22	2	0	39	0	20	6	0	26	146
05:30 PM	12	5	1	0	18	1	27	29	0	57	10	16	0	0	26	0	25	8	0	33	134
05:45 PM	4	10	1	0	15	2	32	23	0	57	4	21	1	0	26	1	12	1	0	14	112
Total	38	42	3	0	83	7	124	100	0	231	43	72	7	0	122	2	76	19	0	97	533
Grand Total	75	98	9	0	182	10	272	189	0	471	83	171	22	0	276	8	172	38	0	218	1147
Apprch %	41.2	53.8	4.9	0		2.1	57.7	40.1	0		30.1	62	8	0		3.7	78.9	17.4	0		
Total %	6.5	8.5	0.8	0	15.9	0.9	23.7	16.5	0	41.1	7.2	14.9	1.9	0	24.1	0.7	15	3.3	0	19	

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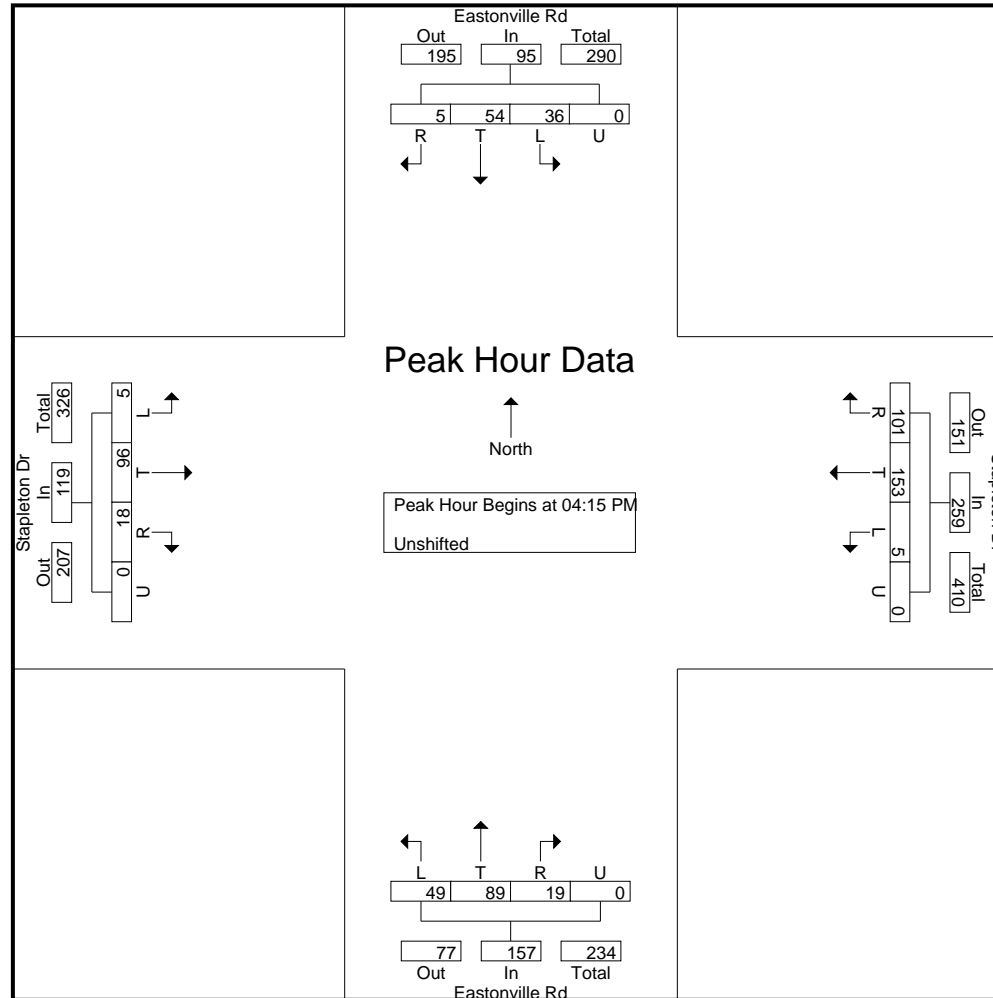
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File Name : Eastonville Rd -Stapleton Dr PM

Site Code : S214250

Start Date : 4/13/2021









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Levels of Service

HCM 6th TWSC
1: Meridian Rd & Rex Rd













Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	73.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	5	79	105	51	41	201	317	30	19	430	6
Future Vol, veh/h	2	5	79	105	51	41	201	317	30	19	430	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	390	-	390	465	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	86	86	86	87	87	87	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	6	101	122	59	48	231	364	34	20	457	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1397	1360	460	1380	1329	364	463	0	0	398	0	0
Stage 1	500	500	-	826	826	-	-	-	-	-	-	-
Stage 2	897	860	-	554	503	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	118	148	601	~ 122	155	681	1098	-	-	1161	-	-
Stage 1	553	543	-	366	387	-	-	-	-	-	-	-
Stage 2	334	373	-	517	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	57	115	601	~ 81	120	681	1098	-	-	1161	-	-
Mov Cap-2 Maneuver	57	115	-	~ 81	120	-	-	-	-	-	-	-
Stage 1	437	534	-	289	306	-	-	-	-	-	-	-
Stage 2	198	295	-	417	532	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17		\$ 446		3.4		0.3					
HCM LOS	C		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1098	-	-	409 91 681 1161	-	-	-					
HCM Lane V/C Ratio	0.21	-	-	0.27 1.993 0.07 0.017	-	-	-					
HCM Control Delay (s)	9.2	-	-	17\$ 560.4 10.7 8.2	-	-	-					
HCM Lane LOS	A	-	-	C F B A	-	-	-					
HCM 95th %tile Q(veh)	0.8	-	-	1.1 15.6 0.2 0.1	-	-	-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

HCM 6th AWSC
7: Lambert Rd & Londonderry Dr

Existing Traffic
AM Peak Hour

Intersection												
Intersection Delay, s/veh	15											
Intersection LOS	B											





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	150	13	18	65	68	13	49	40	62	45	89
Future Vol, veh/h	82	150	13	18	65	68	13	49	40	62	45	89
Peak Hour Factor	0.51	0.51	0.51	0.48	0.48	0.48	0.48	0.48	0.48	0.50	0.50	0.50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	161	294	25	38	135	142	27	102	83	124	90	178
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	18.6	13.2	12.6	13.5
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	49	40	82	150	13	18	65	68	62	45
LT Vol	13	0	0	82	0	0	18	0	0	62	0
Through Vol	0	49	0	0	150	0	0	65	0	0	45
RT Vol	0	0	40	0	0	13	0	0	68	0	0
Lane Flow Rate	27	102	83	161	294	25	38	135	142	124	90
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.065	0.232	0.173	0.356	0.61	0.048	0.087	0.297	0.283	0.284	0.194
Departure Headway (Hd)	8.691	8.191	7.491	7.969	7.469	6.769	8.383	7.883	7.183	8.259	7.759
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	438	477	452	482	528	427	455	499	435	462
Service Time	6.456	5.956	5.256	5.722	5.222	4.522	6.141	5.641	4.941	6.016	5.516
HCM Lane V/C Ratio	0.066	0.233	0.174	0.356	0.61	0.047	0.089	0.297	0.285	0.285	0.195
HCM Control Delay	12.1	13.4	11.8	15.1	21.3	9.9	11.9	14	12.8	14.3	12.4
HCM Lane LOS	B	B	B	C	C	A	B	B	B	B	B
HCM 95th-tile Q	0.2	0.9	0.6	1.6	4	0.2	0.3	1.2	1.2	1.2	0.7

HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Existing Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	8.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	196	190	6	9	9
Future Vol, veh/h	3	196	190	6	9	9
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	67	67	51	51	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	293	373	12	10	10






Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	773	15	20	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	758	-	-	-	-	-
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	367	1065	1596	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	281	1065	1596	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	7.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1596	-	281	1065	-	-
HCM Lane V/C Ratio	0.233	-	0.016	0.275	-	-
HCM Control Delay (s)	7.9	0	18	9.7	-	-
HCM Lane LOS	A	A	C	A	-	-
HCM 95th %tile Q(veh)	0.9	-	0	1.1	-	-










HCM 6th TWSC
9: Eastonville Rd & Stapleton Dr

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	11.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	148	36	5	117	30	60	88	9	99	79	6
Future Vol, veh/h	3	148	36	5	117	30	60	88	9	99	79	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	83	83	83	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	154	38	6	141	36	69	101	10	114	91	7
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	656	572	95	663	570	106	98	0	0	111	0	0
Stage 1	323	323	-	244	244	-	-	-	-	-	-	-
Stage 2	333	249	-	419	326	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	379	430	962	375	431	948	1495	-	-	1479	-	-
Stage 1	689	650	-	760	704	-	-	-	-	-	-	-
Stage 2	681	701	-	612	648	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	235	375	962	223	376	948	1495	-	-	1479	-	-
Mov Cap-2 Maneuver	235	375	-	223	376	-	-	-	-	-	-	-
Stage 1	655	597	-	723	670	-	-	-	-	-	-	-
Stage 2	492	667	-	400	595	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	20.8		18.9		2.9		4.1					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1495	-	-	420 366 948	1479	-	-					
HCM Lane V/C Ratio	0.046	-	-	0.464 0.402 0.038	0.077	-	-					
HCM Control Delay (s)	7.5	0	-	20.8 21.3 8.9	7.6	0	-					
HCM Lane LOS	A	A	-	C C A	A	A	-					
HCM 95th %tile Q(veh)	0.1	-	-	2.4 1.9 0.1	0.2	-	-					

HCM 6th TWSC
1: Meridian Rd & Rex Rd













Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	50	160	58	4	9	91	296	122	19	256	1
Future Vol, veh/h	2	50	160	58	4	9	91	296	122	19	256	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	390	-	390	465	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	89	89	89	90	90	90	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	59	188	65	4	10	101	329	136	20	269	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	916	977	270	964	841	329	270	0	0	465	0	0
Stage 1	310	310	-	531	531	-	-	-	-	-	-	-
Stage 2	606	667	-	433	310	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	253	251	769	235	301	712	1293	-	-	1096	-	-
Stage 1	700	659	-	532	526	-	-	-	-	-	-	-
Stage 2	484	457	-	601	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	228	227	769	132	272	712	1293	-	-	1096	-	-
Mov Cap-2 Maneuver	228	227	-	132	272	-	-	-	-	-	-	-
Stage 1	645	647	-	491	485	-	-	-	-	-	-	-
Stage 2	436	421	-	405	647	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	20		50		1.4		0.6					
HCM LOS	C		F									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1293	-	-	485 137 712	1096	-	-					
HCM Lane V/C Ratio	0.078	-	-	0.514 0.508 0.014	0.018	-	-					
HCM Control Delay (s)	8	-	-	20 55.8 10.1	8.3	-	-					
HCM Lane LOS	A	-	-	C F B	A	-	-					
HCM 95th %tile Q(veh)	0.3	-	-	2.9 2.4 0	0.1	-	-					

HCM 6th AWSC
7: Lambert Rd & Londonderry Dr

Existing Traffic
PM Peak Hour

Intersection												
Intersection Delay, s/veh	9.1											
Intersection LOS	A											





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	77	8	18	181	9	17	9	15	4	8	9
Future Vol, veh/h	4	77	8	18	181	9	17	9	15	4	8	9
Peak Hour Factor	0.77	0.77	0.77	0.87	0.87	0.87	0.73	0.73	0.73	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	100	10	21	208	10	23	12	21	5	9	10
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	8.7	9.5	8.4	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	9	15	4	77	8	18	181	9	4	8
LT Vol	17	0	0	4	0	0	18	0	0	4	0
Through Vol	0	9	0	0	77	0	0	181	0	0	8
RT Vol	0	0	15	0	0	8	0	0	9	0	0
Lane Flow Rate	23	12	21	5	100	10	21	208	10	5	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.039	0.019	0.027	0.008	0.145	0.013	0.032	0.288	0.012	0.008	0.014
Departure Headway (Hd)	6.007	5.507	4.807	5.725	5.225	4.525	5.491	4.991	4.291	6.074	5.574
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	596	649	743	626	687	791	653	720	834	589	642
Service Time	3.744	3.244	2.544	3.452	2.952	2.252	3.216	2.716	2.016	3.812	3.312
HCM Lane V/C Ratio	0.039	0.018	0.028	0.008	0.146	0.013	0.032	0.289	0.012	0.008	0.014
HCM Control Delay	9	8.4	7.7	8.5	8.8	7.3	8.4	9.7	7.1	8.9	8.4
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.1	0	0.5	0	0.1	1.2	0	0	0

HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	7.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	74	159	13	5	3
Future Vol, veh/h	6	74	159	13	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	90	90	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	107	177	14	7	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	377	9	11	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	368	-	-	-	-	-
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	625	1073	1608	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	556	1073	1608	-	-	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	6.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1608	-	556	1073	-	-
HCM Lane V/C Ratio	0.11	-	0.016	0.1	-	-
HCM Control Delay (s)	7.5	0	11.6	8.7	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.4	-	0	0.3	-	-

HCM 6th TWSC
9: Eastonville Rd & Stapleton Dr

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	16	50	13	8	126	127	29	112	6	29	72	8
Future Vol, veh/h	16	50	13	8	126	127	29	112	6	29	72	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	91	91	91	88	88	88	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	61	16	9	138	140	33	127	7	35	87	10



















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	498	362	92	398	364	131	97	0	0	134	0	0
Stage 1	162	162	-	197	197	-	-	-	-	-	-	-
Stage 2	336	200	-	201	167	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	483	565	965	562	564	919	1496	-	-	1451	-	-
Stage 1	840	764	-	805	738	-	-	-	-	-	-	-
Stage 2	678	736	-	801	760	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	316	537	965	486	536	919	1496	-	-	1451	-	-
Mov Cap-2 Maneuver	316	537	-	486	536	-	-	-	-	-	-	-
Stage 1	820	744	-	786	720	-	-	-	-	-	-	-
Stage 2	453	718	-	704	740	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		12		1.5		2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1496	-	-	502 533 919	1451	-	-
HCM Lane V/C Ratio	0.022	-	-	0.192 0.276 0.152	0.024	-	-
HCM Control Delay (s)	7.5	0	-	13.9 14.3 9.6	7.5	0	-
HCM Lane LOS	A	A	-	B B A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7 1.1 0.5	0.1	-	-

Timings
1: Meridian Rd & Rex Rd

Short-Term Background Traffic
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	2	17	260	88	70	236	368	79	28	495
Future Volume (vph)	2	17	260	88	70	236	368	79	28	495
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	4	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0
Total Split (s)	21.0	21.0	22.0	43.0	43.0	20.0	47.0	47.0	10.0	37.0
Total Split (%)	21.0%	21.0%	22.0%	43.0%	43.0%	20.0%	47.0%	47.0%	10.0%	37.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effect Green (s)		37.8		37.8	37.8	51.2	45.3	45.3	37.0	32.0
Actuated g/C Ratio		0.38		0.38	0.38	0.52	0.46	0.46	0.37	0.32
v/c Ratio		0.21		0.83	0.12	0.80	0.50	0.12	0.08	0.89
Control Delay		6.5		44.3	1.2	37.6	22.6	1.6	13.4	50.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		6.5		44.3	1.2	37.6	22.6	1.6	13.4	50.8
LOS		A		D	A	D	C	A	B	D
Approach Delay		6.5		37.1			25.3			48.8
Approach LOS		A		D			C			D

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 33.5

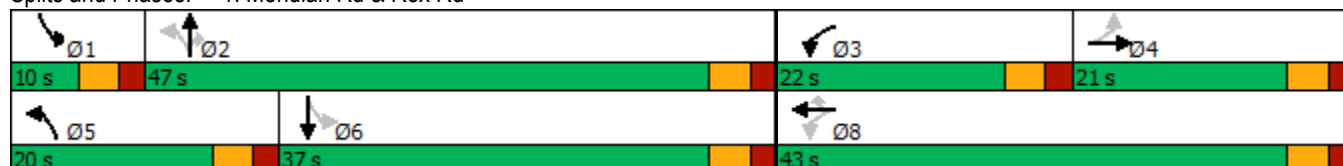
Intersection LOS: C

Intersection Capacity Utilization 77.7%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd







HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road













Short-Term Background Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	5.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	31	31	16	51	86	52
Future Vol, veh/h	31	31	16	51	86	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	36	19	60	101	61
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	134	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	98	-
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	-	-	1528	-	860	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	850	1037
Mov Cap-2 Maneuver	-	-	-	-	850	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	915	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.8		9.8	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	912	-	-	1528	-	
HCM Lane V/C Ratio	0.178	-	-	0.012	-	
HCM Control Delay (s)	9.8	-	-	7.4	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0.6	-	-	0	-	

HCM 6th TWSC
3: Rex Road & Estates Ridge Dr

Short-Term Background Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	77	49	5	15	18
Future Vol, veh/h	6	77	49	5	15	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	91	58	6	18	21
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	64	0	-	0	166	61
Stage 1	-	-	-	-	61	-
Stage 2	-	-	-	-	105	-
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	1538	-	-	-	824	1004
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	820	1004
Mov Cap-2 Maneuver	-	-	-	-	820	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	919	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1538	-	-	-	911	
HCM Lane V/C Ratio	0.005	-	-	-	0.043	
HCM Control Delay (s)	7.4	-	-	-	9.1	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	5	81	20	16	2	27	23	19	1	51	11
Future Vol, veh/h	6	5	81	20	16	2	27	23	19	1	51	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	205	200	-	-	250	-	205	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	2	1	2	2	2	1	2	2	2	2	1
Mvmt Flow	6	5	85	21	17	2	28	24	20	1	54	12







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	156	156	54	187	148	24	66	0	0	44	0	0
Stage 1	56	56	-	80	80	-	-	-	-	-	-	-
Stage 2	100	100	-	107	68	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.52	6.21	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.018	3.309	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	813	736	1016	774	743	1052	1542	-	-	1564	-	-
Stage 1	959	848	-	929	828	-	-	-	-	-	-	-
Stage 2	909	812	-	898	838	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	785	722	1016	695	729	1052	1542	-	-	1564	-	-
Mov Cap-2 Maneuver	785	722	-	695	729	-	-	-	-	-	-	-
Stage 1	942	847	-	912	813	-	-	-	-	-	-	-
Stage 2	872	797	-	817	837	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		10.1		2.9		0.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1542	-	-	785	722	1016	695	755	1564	-	-
HCM Lane V/C Ratio	0.018	-	-	0.008	0.007	0.084	0.03	0.025	0.001	-	-
HCM Control Delay (s)	7.4	-	-	9.6	10	8.9	10.3	9.9	7.3	-	-
HCM Lane LOS	A	-	-	A	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0	0.3	0.1	0.1	0	-	-



















HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Short-Term Background Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	299	224	149	437	37
Future Vol, veh/h	15	299	224	149	437	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	0	250	-	-	205
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	352	264	175	514	44
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1217	-	558	0	-	0
Stage 1	514	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	200	0	1013	-	-	-
Stage 1	600	0	-	-	-	-
Stage 2	491	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	-	1013	-	-	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	443	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.7	5.9		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1013	-	280	-	-	-
HCM Lane V/C Ratio	0.26	-	0.063	-	-	-
HCM Control Delay (s)	9.8	-	18.7	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	1	-	0.2	-	-	-

Timings 9: Eastonville Rd & Stapleton Dr

Short-Term Background Traffic
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	24	201	24	158	124	71	225	325	353	59
Future Volume (vph)	24	201	24	158	124	71	225	325	353	59
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		2		6		3	8	7	4	
Permitted Phases	2		6		6	8		4		4
Detector Phase	2	2	6	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	10.0	25.0	20.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	11.1%	27.8%	22.2%	38.9%	38.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		16.4		16.4	16.4	19.4	14.2	34.3	26.7	26.7
Actuated g/C Ratio		0.27		0.27	0.27	0.32	0.23	0.56	0.44	0.44
v/c Ratio		0.69		0.46	0.27	0.22	0.66	0.60	0.51	0.09
Control Delay		27.5		22.6	5.2	10.7	29.7	12.8	17.3	3.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		27.5		22.6	5.2	10.7	29.7	12.8	17.3	3.1
LOS		C		C	A	B	C	B	B	A
Approach Delay		27.5		15.6			25.3		14.2	
Approach LOS		C		B			C		B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 61

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.9

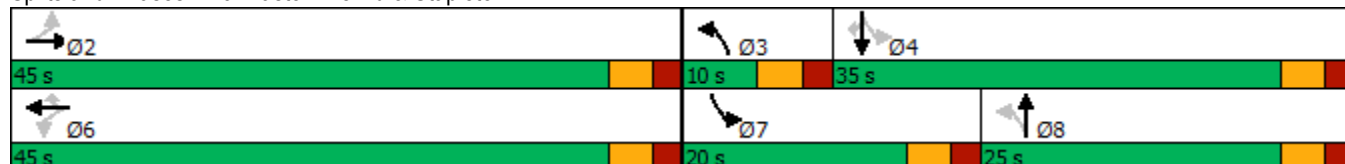
Intersection LOS: B

Intersection Capacity Utilization 72.5%

ICU Level of Service C




















Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings
1: Meridian Rd & Rex Rd

Short-Term Background Traffic
PM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	2	93	166	29	30	108	343	309	53	299	
Future Volume (vph)	2	93	166	29	30	108	343	309	53	299	
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		
Detector Phase	4	4	3	8	8	5	2	2	1	6	
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	21.0	21.0	27.0	48.0	48.0	10.0	42.0	42.0	10.0	42.0	
Total Split (%)	21.0%	21.0%	27.0%	48.0%	48.0%	10.0%	42.0%	42.0%	10.0%	42.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	
Act Effect Green (s)		41.1		41.1	41.1	43.2	39.2	39.2	42.1	37.1	
Actuated g/C Ratio		0.42		0.42	0.42	0.44	0.40	0.40	0.43	0.38	
v/c Ratio		0.44		0.60	0.05	0.30	0.51	0.41	0.15	0.45	
Control Delay		16.7		30.2	0.4	17.6	26.8	4.0	15.8	26.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		16.7		30.2	0.4	17.6	26.8	4.0	15.8	26.0	
LOS		B		C	A	B	C	A	B	C	
Approach Delay		16.7		26.2			16.2			24.5	
Approach LOS		B		C			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 98.2

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 19.4








Intersection LOS: B

Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd

			
10 s	42 s	27 s	21 s
			
10 s	42 s	48 s	





HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road













Short-Term Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	74	101	63	57	57	39
Future Vol, veh/h	74	101	63	57	57	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	119	74	67	67	46
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	206	0	302	87
Stage 1	-	-	-	-	87	-
Stage 2	-	-	-	-	215	-
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	-	-	1365	-	690	971
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	821	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1365	-	653	971
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	777	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		4.1		10.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	753	-	-	1365	-	
HCM Lane V/C Ratio	0.15	-	-	0.054	-	
HCM Control Delay (s)	10.6	-	-	7.8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-	

HCM 6th TWSC
3: Rex Road & Estates Ridge Dr

Short-Term Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	92	108	17	9	12
Future Vol, veh/h	22	92	108	17	9	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	108	127	20	11	14
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	147	0	-	0	297	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	160	-
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	1435	-	-	-	694	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1435	-	-	-	682	911
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	869	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.5	0		9.7		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1435	-	-	-	796	
HCM Lane V/C Ratio	0.018	-	-	-	0.031	
HCM Control Delay (s)	7.6	-	-	-	9.7	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	18	60	21	15	1	96	60	40	2	34	12
Future Vol, veh/h	18	18	60	21	15	1	96	60	40	2	34	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	205	200	-	-	250	-	205	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	2	1	2	2	2	1	2	2	2	2	1
Mvmt Flow	19	19	63	22	16	1	101	63	42	2	36	13







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	335	347	36	353	318	63	49	0	0	105	0	0
Stage 1	40	40	-	265	265	-	-	-	-	-	-	-
Stage 2	295	307	-	88	53	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.52	6.21	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.018	3.309	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	621	576	1039	602	598	1002	1564	-	-	1486	-	-
Stage 1	977	862	-	740	689	-	-	-	-	-	-	-
Stage 2	716	661	-	920	851	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	576	538	1039	523	559	1002	1564	-	-	1486	-	-
Mov Cap-2 Maneuver	576	538	-	523	559	-	-	-	-	-	-	-
Stage 1	913	861	-	692	644	-	-	-	-	-	-	-
Stage 2	653	618	-	844	850	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.8		11.9		3.7		0.3	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1564	-	-	576	538	1039	523	575	1486	-	-
HCM Lane V/C Ratio	0.065	-	-	0.033	0.035	0.061	0.042	0.029	0.001	-	-
HCM Control Delay (s)	7.5	-	-	11.5	11.9	8.7	12.2	11.5	7.4	-	-
HCM Lane LOS	A	-	-	B	B	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.1	0.2	0.1	0.1	0	-	-



















HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Short-Term Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	161	306	479	285	28
Future Vol, veh/h	53	161	306	479	285	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	0	250	-	-	205
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	189	360	564	335	33
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1619	-	368	0	-	0
Stage 1	335	-	-	-	-	-
Stage 2	1284	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	114	0	1191	-	-	-
Stage 1	725	0	-	-	-	-
Stage 2	260	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	80	-	1191	-	-	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	506	-	-	-	-	-
Stage 2	260	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	33.2	3.6		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1191	-	189	-	-	-
HCM Lane V/C Ratio	0.302	-	0.33	-	-	-
HCM Control Delay (s)	9.3	-	33.2	0	-	-
HCM Lane LOS	A	-	D	A	-	-
HCM 95th %tile Q(veh)	1.3	-	1.4	-	-	-

Timings 9: Eastonville Rd & Stapleton Dr

Short-Term Background Traffic
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	63	150	18	220	349	74	373	183	223	41
Future Volume (vph)	63	150	18	220	349	74	373	183	223	41
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		2		6		3	8	7	4	
Permitted Phases	2		6		6	8		4		4
Detector Phase	2	2	6	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	10.0	32.0	13.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	11.1%	35.6%	14.4%	38.9%	38.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		16.7		16.7	16.7	27.2	22.1	33.9	27.8	27.8
Actuated g/C Ratio		0.27		0.27	0.27	0.44	0.35	0.54	0.45	0.45
v/c Ratio		0.81		0.58	0.64	0.16	0.75	0.52	0.32	0.06
Control Delay		39.5		25.6	10.8	8.5	26.4	12.4	14.6	1.5
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		39.5		25.6	10.8	8.5	26.4	12.4	14.6	1.5
LOS		D		C	B	A	C	B	B	A
Approach Delay		39.5		16.8			23.7		12.5	
Approach LOS		D		B			C		B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 62.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 20.8

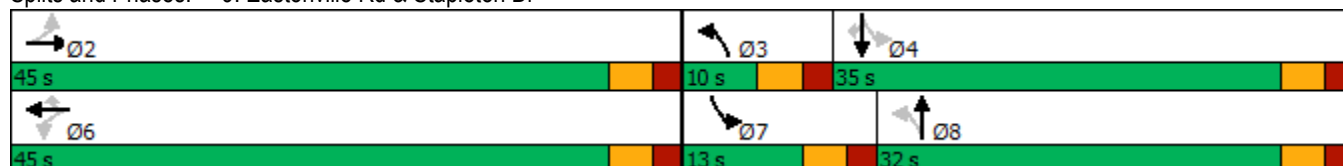
Intersection LOS: C

Intersection Capacity Utilization 74.8%

ICU Level of Service D




















Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings 1: Meridian Rd & Rex Rd

Short-Term Total Traffic
AM Peak Hour

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	2	23	451	107	88	236	368	138	33	495	
Future Volume (vph)	2	23	451	107	88	236	368	138	33	495	
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases		4	3	8		5	2		1	6	
Permitted Phases	4		8		8	2		2	6		
Detector Phase	4	4	3	8	8	5	2	2	1	6	
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	
Total Split (s)	21.0	21.0	22.0	43.0	43.0	20.0	47.0	47.0	10.0	37.0	
Total Split (%)	21.0%	21.0%	22.0%	43.0%	43.0%	20.0%	47.0%	47.0%	10.0%	37.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	
Act Effect Green (s)		38.0		38.0	38.0	51.3	45.3	45.3	37.0	32.0	
Actuated g/C Ratio		0.38		0.38	0.38	0.52	0.46	0.46	0.37	0.32	
v/c Ratio		0.23		1.37	0.15	0.80	0.50	0.20	0.09	0.89	
Control Delay		7.1		208.3	2.4	38.2	22.7	3.6	13.6	51.2	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		7.1		208.3	2.4	38.2	22.7	3.6	13.6	51.2	
LOS		A		F	A	D	C	A	B	D	
Approach Delay		7.1		180.3			24.1			48.9	
Approach LOS		A		F			C			D	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.3

Natural Cycle: 100

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 78.9








Intersection LOS: E

Intersection Capacity Utilization 89.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd





















			
10 s	47 s	22 s	21 s
			
20 s	37 s	43 s	

Timings

1: Meridian Rd & Rex Rd

Short-Term Total Traffic With Potential Improvements

AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	2	23	451	107	88	236	368	138	33	495
Future Volume (vph)	2	23	451	107	88	236	368	138	33	495
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	12.0	20.0	29.0	37.0	37.0	18.0	42.0	42.0	9.0	33.0
Total Split (%)	12.0%	20.0%	29.0%	37.0%	37.0%	18.0%	42.0%	42.0%	9.0%	33.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	-1.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effect Green (s)	13.7	8.1	36.7	34.6	34.6	46.0	41.7	40.7	32.0	29.0
Actuated g/C Ratio	0.15	0.09	0.40	0.37	0.37	0.50	0.45	0.44	0.35	0.31
v/c Ratio	0.01	0.59	0.95	0.18	0.14	0.85	0.51	0.20	0.10	0.92
Control Delay	19.5	21.8	54.1	21.3	0.4	46.5	22.7	2.8	15.0	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	21.8	54.1	21.3	0.4	46.5	22.7	2.8	15.0	54.3
LOS	B	C	D	C	A	D	C	A	B	D
Approach Delay		21.7		41.4			26.6			51.9
Approach LOS		C		D			C			D

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 92.7

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 37.2

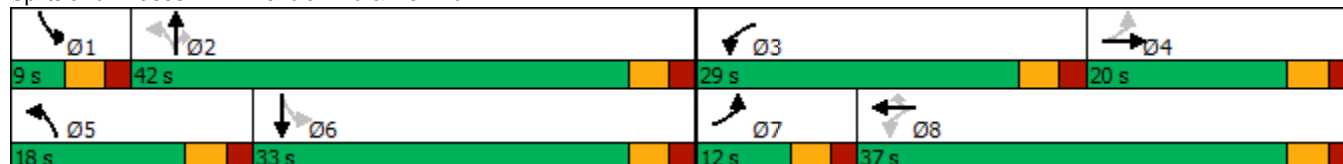
Intersection LOS: D

Intersection Capacity Utilization 82.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd







HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	107	31	22	293	86	55
Future Vol, veh/h	107	31	22	293	86	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	36	26	345	101	65
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	162	0	523	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	397	-
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	-	-	1417	-	514	924
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1417	-	505	924
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	667	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		13	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	614	-	-	1417	-	
HCM Lane V/C Ratio	0.27	-	-	0.018	-	
HCM Control Delay (s)	13	-	-	7.6	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.1	-	






HCM 6th TWSC
3: Rex Road & Estates Ridge Dr

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	122	189	17	57	125
Future Vol, veh/h	40	122	189	17	57	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	144	222	20	67	147
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	242	0	-	0	470	232
Stage 1	-	-	-	-	232	-
Stage 2	-	-	-	-	238	-
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	1324	-	-	-	552	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1324	-	-	-	533	807
Mov Cap-2 Maneuver	-	-	-	-	533	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	802	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		12.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1324	-	-	-	695	
HCM Lane V/C Ratio	0.036	-	-	-	0.308	
HCM Control Delay (s)	7.8	-	-	-	12.5	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3	








HCM 6th TWSC
4: West Amend Area Access & Rex Road

Short-Term Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	162	17	8	152	54	19
Future Vol, veh/h	162	17	8	152	54	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	191	20	9	179	64	22
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	211	0	398	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	197	-
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	-	-	1360	-	607	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1360	-	603	840
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	830	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		11.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	651	-	-	1360	-	
HCM Lane V/C Ratio	0.132	-	-	0.007	-	
HCM Control Delay (s)	11.4	-	-	7.7	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

HCM 6th TWSC
5: East Amend Area Access & Rex Road

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	153	6	22	74	20	20	0	64	62	0	66
Future Vol, veh/h	22	153	6	22	74	20	20	0	64	62	0	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	180	7	26	87	24	24	0	75	73	0	78













Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	111	0	0	187	0	0	426	399	184	412	378	87
Stage 1	-	-	-	-	-	-	236	236	-	139	139	-
Stage 2	-	-	-	-	-	-	190	163	-	273	239	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1479	-	-	1387	-	-	539	539	858	550	554	971
Stage 1	-	-	-	-	-	-	767	710	-	864	782	-
Stage 2	-	-	-	-	-	-	812	763	-	733	708	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1479	-	-	1387	-	-	482	519	858	488	534	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	482	519	-	488	534	-
Stage 1	-	-	-	-	-	-	753	697	-	848	767	-
Stage 2	-	-	-	-	-	-	733	749	-	657	695	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.4			10.8			12.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	724	1479	-	-	1387	-	-	656
HCM Lane V/C Ratio	0.136	0.017	-	-	0.019	-	-	0.23
HCM Control Delay (s)	10.8	7.5	-	-	7.6	-	-	12.1
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.9

HCM 6th TWSC
6: Eastonville Rd & Rex Road

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	5	265	20	16	2	88	23	19	1	51	11
Future Vol, veh/h	8	5	265	20	16	2	88	23	19	1	51	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	205	200	-	-	250	-	205	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	2	1	2	2	2	1	2	2	2	2	1
Mvmt Flow	8	5	279	21	17	2	93	24	20	1	54	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	286	286	54	414	278	24	66	0	0	44	0	0
Stage 1	56	56	-	210	210	-	-	-	-	-	-	-
Stage 2	230	230	-	204	68	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.52	6.21	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.018	3.309	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	668	623	1016	549	630	1052	1542	-	-	1564	-	-
Stage 1	959	848	-	792	728	-	-	-	-	-	-	-
Stage 2	775	714	-	798	838	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	622	585	1016	377	592	1052	1542	-	-	1564	-	-
Mov Cap-2 Maneuver	622	585	-	377	592	-	-	-	-	-	-	-
Stage 1	901	847	-	744	684	-	-	-	-	-	-	-
Stage 2	709	671	-	575	837	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	13.2	5.1	0.1
HCM LOS	B	B		







Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1542	-	-	622	585	1016	377	622	1564	-	-
HCM Lane V/C Ratio	0.06	-	-	0.014	0.009	0.275	0.056	0.03	0.001	-	-
HCM Control Delay (s)	7.5	-	-	10.9	11.2	9.9	15.1	11	7.3	-	-
HCM Lane LOS	A	-	-	B	B	A	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0	0	1.1	0.2	0.1	0	-	-

HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic
AM Peak Hour

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	299	224	197	601	58
Future Vol, veh/h	28	299	224	197	601	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	0	250	-	-	205
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	352	264	232	707	68



















Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1467	- 775	0 - 0
Stage 1	707	- -	- - -
Stage 2	760	- -	- - -
Critical Hdwy	6.42	- 4.12	- - -
Critical Hdwy Stg 1	5.42	- -	- - -
Critical Hdwy Stg 2	5.42	- -	- - -
Follow-up Hdwy	3.518	- 2.218	- - -
Pot Cap-1 Maneuver	141	0 841	- - -
Stage 1	489	0 -	- - -
Stage 2	462	0 -	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	97	- 841	- - -
Mov Cap-2 Maneuver	220	- -	- - -
Stage 1	335	- -	- - -
Stage 2	462	- -	- - -

Approach	EB	NB	SB
HCM Control Delay, s	24.2	6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	841	- 220	-	-	-	-
HCM Lane V/C Ratio	0.313	- 0.15	-	-	-	-
HCM Control Delay (s)	11.2	- 24.2	0	-	-	-
HCM Lane LOS	B	- C	A	-	-	-
HCM 95th %tile Q(veh)	1.3	- 0.5	-	-	-	-

Timings 9: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic
AM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	25	201	24	158	150	71	247	413	424	63
Future Volume (vph)	25	201	24	158	150	71	247	413	424	63
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		2		6		3	8	7	4	
Permitted Phases	2		6		6	8		4		4
Detector Phase	2	2	6	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	10.0	25.0	20.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	11.1%	27.8%	22.2%	38.9%	38.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		16.8		16.8	16.8	20.6	15.5	35.9	28.2	28.2
Actuated g/C Ratio		0.27		0.27	0.27	0.33	0.25	0.57	0.45	0.45
v/c Ratio		0.70		0.47	0.32	0.23	0.68	0.78	0.60	0.10
Control Delay		28.3		23.2	5.1	10.7	30.3	21.1	18.9	3.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		28.3		23.2	5.1	10.7	30.3	21.1	18.9	3.4
LOS		C		C	A	B	C	C	B	A
Approach Delay		28.3		15.0			26.1		18.8	
Approach LOS		C		B			C		B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 62.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 20.9

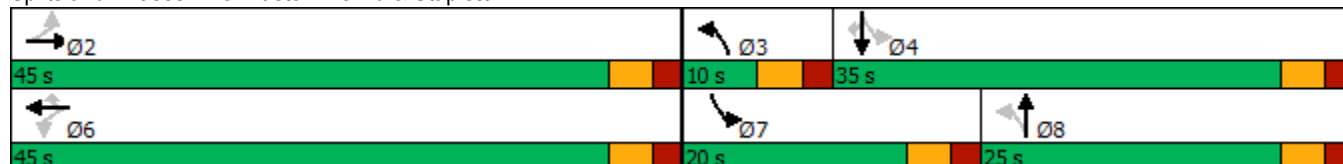
Intersection LOS: C

Intersection Capacity Utilization 78.6%

ICU Level of Service D



















Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings
1: Meridian Rd & Rex Rd

Short-Term Total Traffic
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	2	115	298	42	42	108	343	540	74	299
Future Volume (vph)	2	115	298	42	42	108	343	540	74	299
Turn Type	Perm	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	4	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0
Total Split (s)	21.0	21.0	27.0	48.0	48.0	10.0	42.0	42.0	10.0	42.0
Total Split (%)	21.0%	21.0%	27.0%	48.0%	48.0%	10.0%	42.0%	42.0%	10.0%	42.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effect Green (s)		43.0		43.0	43.0	43.0	39.0	39.0	42.0	37.0
Actuated g/C Ratio		0.43		0.43	0.43	0.43	0.39	0.39	0.42	0.37
v/c Ratio		0.47		1.06	0.06	0.31	0.52	0.61	0.22	0.46
Control Delay		18.4		95.6	1.8	17.9	27.4	4.9	16.5	26.6
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		18.4		95.6	1.8	17.9	27.4	4.9	16.5	26.6
LOS		B		F	A	B	C	A	B	C
Approach Delay		18.4		85.3			14.1			24.6
Approach LOS		B		F			B			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 70

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 30.0








Intersection LOS: C

Intersection Capacity Utilization 75.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd





















			
Ø1	Ø2	Ø3	Ø4
10 s	42 s	27 s	21 s
			
Ø5	Ø6	Ø8	
10 s	42 s	48 s	

Timings

1: Meridian Rd & Rex Rd

Short-Term Total Traffic With Potential Improvements

PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	2	115	298	42	42	108	343	540	74	299
Future Volume (vph)	2	115	298	42	42	108	343	540	74	299
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0
Total Split (s)	10.0	30.0	20.0	40.0	40.0	10.0	40.0	40.0	10.0	40.0
Total Split (%)	10.0%	30.0%	20.0%	40.0%	40.0%	10.0%	40.0%	40.0%	10.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effect Green (s)	25.4	20.4	40.4	38.5	38.5	41.2	37.3	37.3	40.1	35.1
Actuated g/C Ratio	0.27	0.21	0.42	0.40	0.40	0.43	0.39	0.39	0.42	0.37
v/c Ratio	0.01	0.85	0.90	0.06	0.07	0.31	0.52	0.61	0.22	0.46
Control Delay	16.5	46.7	48.9	18.7	0.2	18.4	27.5	5.1	17.1	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	46.7	48.9	18.7	0.2	18.4	27.5	5.1	17.1	26.7
LOS	B	D	D	B	A	B	C	A	B	C
Approach Delay		46.5		40.2			14.3			24.8
Approach LOS		D		D			B			C

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 95.5

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 26.1

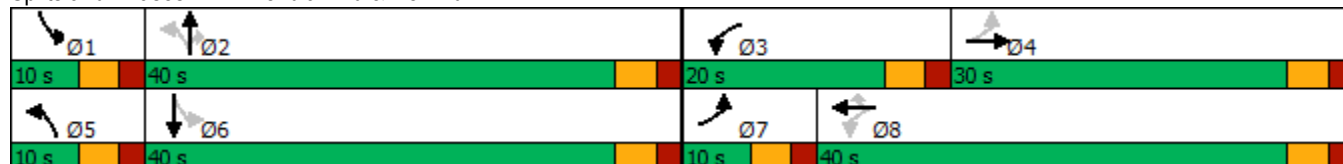
Intersection LOS: C

Intersection Capacity Utilization 73.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd







HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	354	101	65	220	57	41
Future Vol, veh/h	354	101	65	220	57	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	416	119	76	259	67	48
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	535	0	827	416
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	411	-
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	-	-	1033	-	341	637
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	669	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1033	-	316	637
Mov Cap-2 Maneuver	-	-	-	-	316	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	619	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2		17.6	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	400	-	-	1033	-	
HCM Lane V/C Ratio	0.288	-	-	0.074	-	
HCM Control Delay (s)	17.6	-	-	8.8	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-	






HCM 6th TWSC
3: Rex Road & Estates Ridge Dr

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	139	256	203	68	39	82
Future Vol, veh/h	139	256	203	68	39	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	301	239	80	46	96
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	319	0	-	0	908	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	629	-
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	1241	-	-	-	306	760
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1241	-	-	-	266	760
Mov Cap-2 Maneuver	-	-	-	-	266	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	531	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.9	0		15.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1241	-	-	-	475	
HCM Lane V/C Ratio	0.132	-	-	-	0.3	
HCM Control Delay (s)	8.3	-	-	-	15.8	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.5	-	-	-	1.2	








HCM 6th TWSC
4: West Amend Area Access & Rex Road

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	66	21	234	37	13
Future Vol, veh/h	229	66	21	234	37	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	269	78	25	275	44	15
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	347	0	633	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	325	-
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	-	-	1212	-	444	732
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	732	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1212	-	435	732
Mov Cap-2 Maneuver	-	-	-	-	435	-
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	717	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.7		13.4		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	486	-	-	1212	-	
HCM Lane V/C Ratio	0.121	-	-	0.02	-	
HCM Control Delay (s)	13.4	-	-	8	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-	

HCM 6th TWSC
5: West Amend Area Access & Rex Road

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	143	25	65	197	70	14	0	41	40	0	44
Future Vol, veh/h	73	143	25	65	197	70	14	0	41	40	0	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	0	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	86	168	29	76	232	82	16	0	48	47	0	52













Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	197	0	0	806	821	183	763	753	232
Stage 1	-	-	-	-	-	-	355	355	-	384	384	-
Stage 2	-	-	-	-	-	-	451	466	-	379	369	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1246	-	-	1376	-	-	300	309	859	321	339	807
Stage 1	-	-	-	-	-	-	662	630	-	639	611	-
Stage 2	-	-	-	-	-	-	588	562	-	643	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	1376	-	-	255	272	859	275	298	807
Mov Cap-2 Maneuver	-	-	-	-	-	-	255	272	-	275	298	-
Stage 1	-	-	-	-	-	-	616	587	-	595	577	-
Stage 2	-	-	-	-	-	-	520	531	-	565	578	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.5			1.5			12.6			16.2		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	536	1246	-	-	1376	-	-	420
HCM Lane V/C Ratio	0.121	0.069	-	-	0.056	-	-	0.235
HCM Control Delay (s)	12.6	8.1	-	-	7.8	-	-	16.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.2	-	-	0.2	-	-	0.9

HCM 6th TWSC
6: Eastonville Rd & Rex Road

Short-Term Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	18	174	21	15	1	297	60	40	2	34	15
Future Vol, veh/h	21	18	174	21	15	1	297	60	40	2	34	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	205	200	-	-	250	-	205	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	2	1	2	2	2	1	2	2	2	2	1
Mvmt Flow	22	19	183	22	16	1	313	63	42	2	36	16







Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	759	771	36	838	745	63	52	0	0	105	0	0
Stage 1	40	40	-	689	689	-	-	-	-	-	-	-
Stage 2	719	731	-	149	56	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.52	6.21	7.12	6.52	6.22	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.018	3.309	3.518	4.018	3.318	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	324	331	1039	286	342	1002	1560	-	-	1486	-	-
Stage 1	977	862	-	436	446	-	-	-	-	-	-	-
Stage 2	421	427	-	854	848	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	262	264	1039	188	273	1002	1560	-	-	1486	-	-
Mov Cap-2 Maneuver	262	264	-	188	273	-	-	-	-	-	-	-
Stage 1	781	861	-	348	356	-	-	-	-	-	-	-
Stage 2	321	341	-	687	847	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.2		23.1		5.9		0.3	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1560	-	-	262	264	1039	188	286	1486	-	-
HCM Lane V/C Ratio	0.2	-	-	0.084	0.072	0.176	0.118	0.059	0.001	-	-
HCM Control Delay (s)	7.9	-	-	20	19.7	9.2	26.7	18.4	7.4	-	-
HCM Lane LOS	A	-	-	C	C	A	D	C	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.3	0.2	0.6	0.4	0.2	0	-	-



















HCM 6th TWSC
8: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	62	161	306	672	391	37
Future Vol, veh/h	62	161	306	672	391	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	0	0	250	-	-	205
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	189	360	791	460	44
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1971	-	504	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	1511	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	~ 69	0	1061	-	-	-
Stage 1	636	0	-	-	-	-
Stage 2	201	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 46	-	1061	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	54.5	3.2		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1061	-	142	-	-	-
HCM Lane V/C Ratio	0.339	-	0.514	-	-	-
HCM Control Delay (s)	10.1	-	54.5	0	-	-
HCM Lane LOS	B	-	F	A	-	-
HCM 95th %tile Q(veh)	1.5	-	2.5	-	-	-
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

Timings 9: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic
PM Peak Hour

										
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	66	150	18	220	453	74	458	240	269	44
Future Volume (vph)	66	150	18	220	453	74	458	240	269	44
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases		2		6		3	8	7	4	
Permitted Phases	2		6		6	8		4		4
Detector Phase	2	2	6	6	6	3	8	7	4	4
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	9.0	21.0	9.0	21.0	21.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	10.0	32.0	13.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	11.1%	35.6%	14.4%	38.9%	38.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		21.9		21.9	21.9	32.5	27.5	39.1	32.9	32.9
Actuated g/C Ratio		0.30		0.30	0.30	0.45	0.38	0.54	0.45	0.45
v/c Ratio		0.71		0.52	0.81	0.17	0.84	0.87	0.37	0.07
Control Delay		30.9		23.7	22.1	11.6	36.5	42.9	18.4	2.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		30.9		23.7	22.1	11.6	36.5	42.9	18.4	2.1
LOS		C		C	C	B	D	D	B	A
Approach Delay		30.9		22.6			33.3		27.7	
Approach LOS		C		C			C		C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 72.7

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 27.9

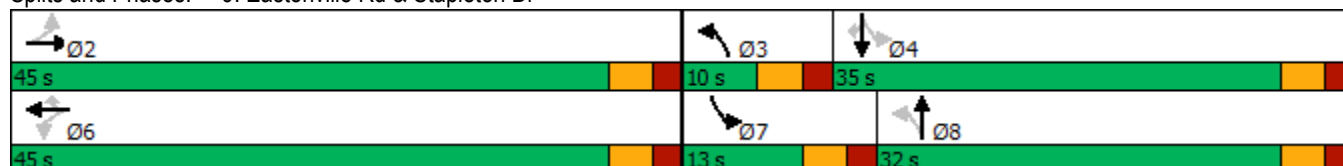
Intersection LOS: C

Intersection Capacity Utilization 82.6%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings
1: Meridian Rd & Rex Rd

2041 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	46	132	239	146	108	324	521	68	52	697	9
Future Volume (vph)	3	46	132	239	146	108	324	521	68	52	697	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	9.0	23.0	23.0	22.0	36.0	36.0	15.0	40.0	40.0	15.0	40.0	40.0
Total Split (%)	9.0%	23.0%	23.0%	22.0%	36.0%	36.0%	15.0%	40.0%	40.0%	15.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	11.7	7.7	7.7	27.2	25.5	25.5	48.5	40.6	40.6	41.8	35.1	35.1
Actuated g/C Ratio	0.13	0.09	0.09	0.31	0.29	0.29	0.56	0.47	0.47	0.48	0.40	0.40
v/c Ratio	0.02	0.29	0.45	0.58	0.28	0.21	0.86	0.33	0.09	0.12	0.52	0.01
Control Delay	21.7	42.7	7.4	29.9	26.1	4.8	36.0	17.2	0.2	10.3	21.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	42.7	7.4	29.9	26.1	4.8	36.0	17.2	0.2	10.3	21.9	0.0
LOS	C	D	A	C	C	A	D	B	A	B	C	A
Approach Delay		16.5			23.3			22.6			20.9	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 87.3

Natural Cycle: 65

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 21.7

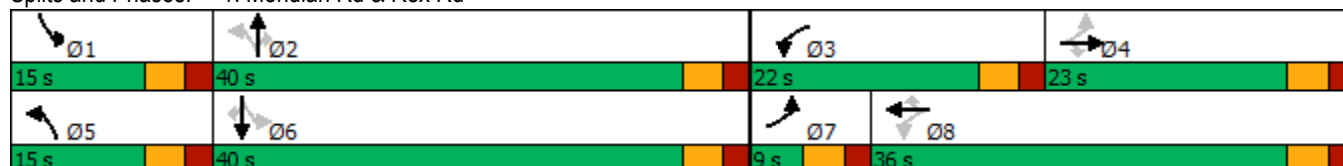
Intersection LOS: C







Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15





Splits and Phases: 1: Meridian Rd & Rex Rd



Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	256	39	16	268	85	56
Future Vol, veh/h	256	39	16	268	85	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	269	41	17	282	89	59
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	310	0	585	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	316	-
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	-	-	1250	-	473	770
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1250	-	466	770
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	729	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		13.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	553	-	-	1250	-	
HCM Lane V/C Ratio	0.268	-	-	0.013	-	
HCM Control Delay (s)	13.9	-	-	7.9	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0	-	

























HCM 6th TWSC
3: Rex Road & Estates Ridge Dr

2041 Background Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	305	265	4	14	19
Future Vol, veh/h	6	305	265	4	14	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	321	279	4	15	20
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	283	0	-	0	614	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	333	-
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	1279	-	-	-	455	758
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1279	-	-	-	453	758
Mov Cap-2 Maneuver	-	-	-	-	453	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	726	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		11.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1279	-	-	-	590	
HCM Lane V/C Ratio	0.005	-	-	-	0.059	
HCM Control Delay (s)	7.8	-	-	-	11.5	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Timings
6: Eastonville Rd & Rex Road

2041 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	148	148	499	116	32	96	100	249	38	201	57
Future Volume (vph)	23	148	148	499	116	32	96	100	249	38	201	57
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	30.0	30.0	25.0	45.0	45.0	15.0	35.0	35.0	10.0	30.0	30.0
Total Split (%)	10.0%	30.0%	30.0%	25.0%	45.0%	45.0%	15.0%	35.0%	35.0%	10.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	17.0	11.7	11.7	35.3	32.0	32.0	23.2	18.4	18.4	17.4	13.7	13.7
Actuated g/C Ratio	0.24	0.17	0.17	0.51	0.46	0.46	0.33	0.26	0.26	0.25	0.20	0.20
v/c Ratio	0.07	0.50	0.37	0.77	0.14	0.04	0.27	0.21	0.43	0.11	0.58	0.13
Control Delay	13.9	35.7	6.1	23.8	15.9	0.1	18.1	23.6	5.9	16.9	34.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	35.7	6.1	23.8	15.9	0.1	18.1	23.6	5.9	16.9	34.9	0.6
LOS	B	D	A	C	B	A	B	C	A	B	C	A
Approach Delay		20.4			21.2			12.5			26.0	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 69.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 19.6

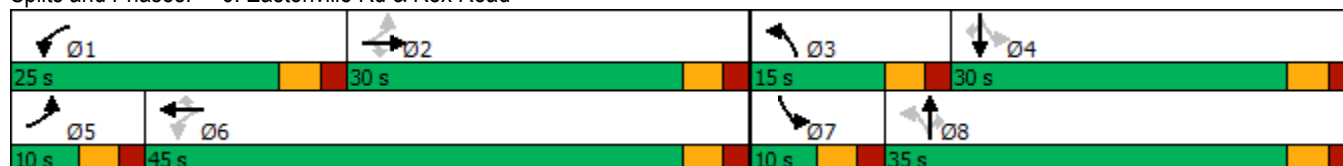
Intersection LOS: B

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15













Splits and Phases: 6: Eastonville Rd & Rex Road



Intersection						
Intersection Delay, s/veh	10.0					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	336		681		468	
Demand Flow Rate, veh/h	341		695		476	
Vehicles Circulating, veh/h	792		233		224	
Vehicles Exiting, veh/h	287		467		909	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	8.3		12.3		5.0	
Approach LOS	A		B		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.537	0.463	1.000	0.439	0.561	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	183	158	695	209	267	318
Cap Entry Lane, veh/h	691	691	1088	1158	1158	635
Entry HV Adj Factor	0.983	0.987	0.979	0.985	0.981	0.980
Flow Entry, veh/h	180	156	681	206	262	312
Cap Entry, veh/h	679	682	1065	1141	1137	623
V/C Ratio	0.265	0.229	0.639	0.180	0.231	0.501
Control Delay, s/veh	8.5	8.0	12.3	4.8	5.3	13.9
LOS	A	A	B	A	A	B
95th %tile Queue, veh	1	1	5	1	1	3

Timings
8: Eastonville Rd & Londonderry Dr

2041 Background Traffic
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	88	316	235	365	1047	172
Future Volume (vph)	88	316	235	365	1047	172
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	21.0
Total Split (s)	25.0	25.0	20.0	75.0	55.0	55.0
Total Split (%)	25.0%	25.0%	20.0%	75.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	10.1	10.1	49.6	49.6	30.8	30.8
Actuated g/C Ratio	0.14	0.14	0.71	0.71	0.44	0.44
v/c Ratio	0.37	0.69	0.53	0.15	0.71	0.23
Control Delay	34.9	14.8	13.9	3.7	19.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	14.8	13.9	3.7	19.0	2.9
LOS	C	B	B	A	B	A
Approach Delay	19.2			7.7	16.7	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 70.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 14.7
 Intersection LOS: B
 Intersection Capacity Utilization 59.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: Eastonville Rd & Londonderry Dr



























HCM 6th Roundabout
8: Eastonville Rd & Londonderry Dr

2041 Background Traffic
AM Peak Hour

Intersection					
Intersection Delay, s/veh	11.7				
Intersection LOS	B				
Approach	EB		NB		SB
Entry Lanes	2		2		2
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	426		631		1283
Demand Flow Rate, veh/h	435		644		1309
Vehicles Circulating, veh/h	1124		95		252
Vehicles Exiting, veh/h	437		1464		487
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	18.2		8.8		10.9
Approach LOS	C		A		B
Lane	Left	Right	Left	Left	Right
Designated Moves	L	TR	LT	LT	TR
Assumed Moves	L	TR	LT	LT	TR
RT Channelized					
Lane Util	0.218	0.782	1.000	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.645	4.328
Entry Flow, veh/h	95	340	644	615	694
Cap Entry Lane, veh/h	480	546	1237	1071	1146
Entry HV Adj Factor	0.979	0.979	0.980	0.980	0.980
Flow Entry, veh/h	93	333	631	603	680
Cap Entry, veh/h	470	535	1213	1050	1123
V/C Ratio	0.198	0.623	0.521	0.574	0.605
Control Delay, s/veh	10.5	20.3	8.8	10.8	11.0
LOS	B	C	A	B	B
95th %tile Queue, veh	1	4	3	4	4

Timings
9: Eastonville Rd & Stapleton Dr

2041 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	704	224	144	595	116	196	325	168	294	687	383
Future Volume (vph)	158	704	224	144	595	116	196	325	168	294	687	383
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	12.0	29.0	29.0	12.0	29.0	29.0	13.0	45.0	45.0	14.0	46.0	46.0
Total Split (%)	12.0%	29.0%	29.0%	12.0%	29.0%	29.0%	13.0%	45.0%	45.0%	14.0%	46.0%	46.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	7.8	23.3	23.3	32.4	23.4	23.4	47.0	39.0	39.0	49.0	40.0	40.0
Actuated g/C Ratio	0.08	0.24	0.24	0.33	0.24	0.24	0.48	0.40	0.40	0.50	0.41	0.41
v/c Ratio	0.61	0.88	0.43	0.69	0.74	0.26	0.94	0.46	0.24	0.65	0.95	0.50
Control Delay	54.3	50.0	6.8	39.8	41.1	7.3	69.8	24.5	3.9	21.1	52.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	50.0	6.8	39.8	41.1	7.3	69.8	24.5	3.9	21.1	52.8	9.8
LOS	D	D	A	D	D	A	E	C	A	C	D	A
Approach Delay		41.7			36.3			32.3			33.9	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 98.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 36.3

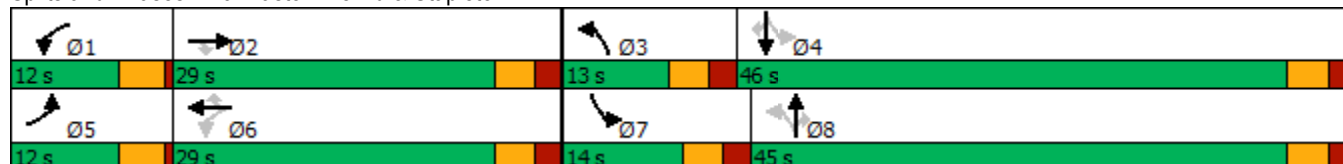
Intersection LOS: D

Intersection Capacity Utilization 90.3%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings
1: Meridian Rd & Rex Rd

2041 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	157	257	158	68	57	147	471	294	102	412	2
Future Volume (vph)	3	157	257	158	68	57	147	471	294	102	412	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	9.0	23.0	23.0	22.0	36.0	36.0	12.0	41.0	41.0	14.0	43.0	43.0
Total Split (%)	9.0%	23.0%	23.0%	22.0%	36.0%	36.0%	12.0%	41.0%	41.0%	14.0%	43.0%	43.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	17.0	13.0	13.0	29.6	28.0	28.0	45.4	39.9	39.9	45.9	38.2	38.2
Actuated g/C Ratio	0.19	0.14	0.14	0.33	0.31	0.31	0.51	0.44	0.44	0.51	0.42	0.42
v/c Ratio	0.01	0.62	0.59	0.43	0.12	0.10	0.31	0.32	0.35	0.22	0.29	0.00
Control Delay	20.3	46.8	10.3	25.4	23.2	0.4	13.3	19.2	3.8	12.1	18.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	46.8	10.3	25.4	23.2	0.4	13.3	19.2	3.8	12.1	18.7	0.0
LOS	C	D	B	C	C	A	B	B	A	B	B	A
Approach Delay		24.1			19.8			13.3			17.3	
Approach LOS		C			B			B			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 17.3

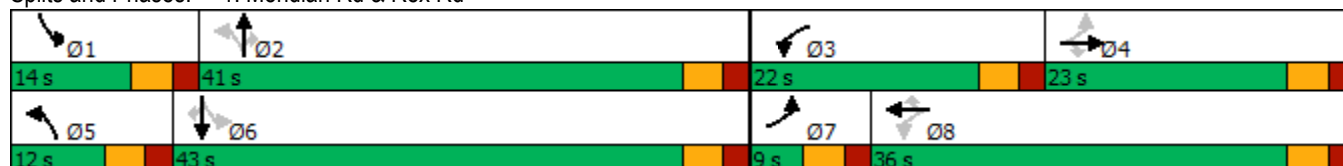
Intersection LOS: B

Intersection Capacity Utilization 53.2%

ICU Level of Service A

Analysis Period (min) 15





Splits and Phases: 1: Meridian Rd & Rex Rd



HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road

2041 Background Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	293	100	73	216	58	44
Future Vol, veh/h	293	100	73	216	58	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	308	105	77	227	61	46
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	413	0	689	308
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	381	-
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	-	-	1146	-	412	732
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1146	-	384	732
Mov Cap-2 Maneuver	-	-	-	-	384	-
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	645	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		14.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	483	-	-	1146	-	
HCM Lane V/C Ratio	0.222	-	-	0.067	-	
HCM Control Delay (s)	14.6	-	-	8.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-	

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	315	277	17	9	12
Future Vol, veh/h	22	315	277	17	9	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	332	292	18	9	13

























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	310	0	0 679 301
Stage 1	-	-	- 301 -
Stage 2	-	-	- 378 -
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	1250	-	- 417 739
Stage 1	-	-	- 751 -
Stage 2	-	-	- 693 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1250	-	- 409 739
Mov Cap-2 Maneuver	-	-	- 409 -
Stage 1	-	-	- 737 -
Stage 2	-	-	- 693 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1250	-	-	-	549
HCM Lane V/C Ratio	0.019	-	-	-	0.04
HCM Control Delay (s)	7.9	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Timings
6: Eastonville Rd & Rex Road

2041 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	172	70	302	177	39	77	242	494	35	159	47
Future Volume (vph)	74	172	70	302	177	39	77	242	494	35	159	47
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	30.0	30.0	25.0	45.0	45.0	15.0	35.0	35.0	10.0	30.0	30.0
Total Split (%)	10.0%	30.0%	30.0%	25.0%	45.0%	45.0%	15.0%	35.0%	35.0%	10.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	17.9	12.5	12.5	31.7	24.3	24.3	22.7	18.4	18.4	17.6	13.9	13.9
Actuated g/C Ratio	0.27	0.19	0.19	0.48	0.37	0.37	0.34	0.28	0.28	0.27	0.21	0.21
v/c Ratio	0.21	0.52	0.16	0.54	0.27	0.06	0.19	0.49	0.64	0.11	0.43	0.10
Control Delay	14.8	33.5	0.8	16.3	19.6	0.2	16.3	26.3	6.6	16.2	29.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	33.5	0.8	16.3	19.6	0.2	16.3	26.3	6.6	16.2	29.7	0.4
LOS	B	C	A	B	B	A	B	C	A	B	C	A
Approach Delay		21.8			16.2			13.4			22.0	
Approach LOS		C			B			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 66.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 16.7

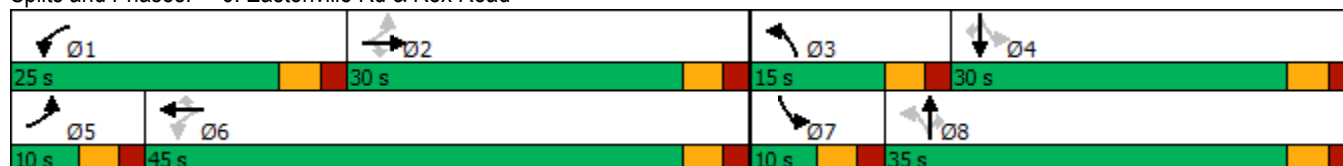
Intersection LOS: B

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15













Splits and Phases: 6: Eastonville Rd & Rex Road



Intersection						
Intersection Delay, s/veh	9.5					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	333		545		856	
Demand Flow Rate, veh/h	339		556		872	
Vehicles Circulating, veh/h	532		421		302	
Vehicles Exiting, veh/h	321		753		569	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	6.9		13.6		8.1	
Approach LOS	A		B		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.779	0.221	1.000	0.392	0.608	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	264	75	556	342	530	257
Cap Entry Lane, veh/h	875	875	898	1079	1079	751
Entry HV Adj Factor	0.982	0.987	0.981	0.982	0.981	0.983
Flow Entry, veh/h	259	74	545	336	520	253
Cap Entry, veh/h	860	863	881	1060	1058	739
V/C Ratio	0.302	0.086	0.619	0.317	0.491	0.342
Control Delay, s/veh	7.5	5.0	13.6	6.6	9.1	9.1
LOS	A	A	B	A	A	A
95th %tile Queue, veh	1	0	4	1	3	2

Timings
8: Eastonville Rd & Londonderry Dr

2041 Background Traffic
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	189	169	324	1006	593	114
Future Volume (vph)	189	169	324	1006	593	114
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	21.0
Total Split (s)	25.0	25.0	20.0	75.0	55.0	55.0
Total Split (%)	25.0%	25.0%	20.0%	75.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	11.8	11.8	35.9	35.9	17.2	17.2
Actuated g/C Ratio	0.20	0.20	0.62	0.62	0.30	0.30
v/c Ratio	0.55	0.38	0.58	0.48	0.59	0.22
Control Delay	28.7	6.9	10.4	7.1	20.4	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	6.9	10.4	7.1	20.4	4.9
LOS	C	A	B	A	C	A
Approach Delay	18.4			7.9	17.9	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 58.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 12.4
 Intersection LOS: B
 Intersection Capacity Utilization 57.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: Eastonville Rd & Londonderry Dr



























HCM 6th Roundabout
8: Eastonville Rd & Londonderry Dr

2041 Background Traffic
PM Peak Hour

Intersection						
Intersection Delay, s/veh	9.6					
Intersection LOS	A					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	377		1400		744	
Demand Flow Rate, veh/h	385		1428		758	
Vehicles Circulating, veh/h	636		203		348	
Vehicles Exiting, veh/h	470		818		1283	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	7.5		11.2		7.6	
Approach LOS	A		B		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.527	0.473	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	203	182	671	757	356	402
Cap Entry Lane, veh/h	752	827	1120	1195	980	1056
Entry HV Adj Factor	0.980	0.978	0.981	0.980	0.982	0.980
Flow Entry, veh/h	199	178	658	742	349	394
Cap Entry, veh/h	737	809	1098	1171	962	1036
V/C Ratio	0.270	0.220	0.599	0.633	0.363	0.381
Control Delay, s/veh	8.0	6.8	11.0	11.4	7.7	7.5
LOS	A	A	B	B	A	A
95th %tile Queue, veh	1	1	4	5	2	2

Timings
9: Eastonville Rd & Stapleton Dr

2041 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	402	538	165	180	761	300	270	628	182	152	367	243
Future Volume (vph)	402	538	165	180	761	300	270	628	182	152	367	243
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	17.0	32.0	32.0	12.0	27.0	27.0	17.0	45.0	45.0	11.0	39.0	39.0
Total Split (%)	17.0%	32.0%	32.0%	12.0%	27.0%	27.0%	17.0%	45.0%	45.0%	11.0%	39.0%	39.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	13.0	27.1	27.1	31.1	22.0	22.0	48.4	37.6	37.6	38.0	32.0	32.0
Actuated g/C Ratio	0.13	0.28	0.28	0.32	0.23	0.23	0.50	0.38	0.38	0.39	0.33	0.33
v/c Ratio	0.93	0.58	0.31	0.62	1.00	0.60	0.70	0.92	0.27	0.86	0.63	0.37
Control Delay	70.5	33.7	6.0	31.7	72.0	16.6	25.3	48.8	5.7	59.5	33.3	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	33.7	6.0	31.7	72.0	16.6	25.3	48.8	5.7	59.5	33.3	4.7
LOS	E	C	A	C	E	B	C	D	A	E	C	A
Approach Delay		42.9			52.8			35.6			29.4	
Approach LOS		D			D			D			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 97.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 41.5

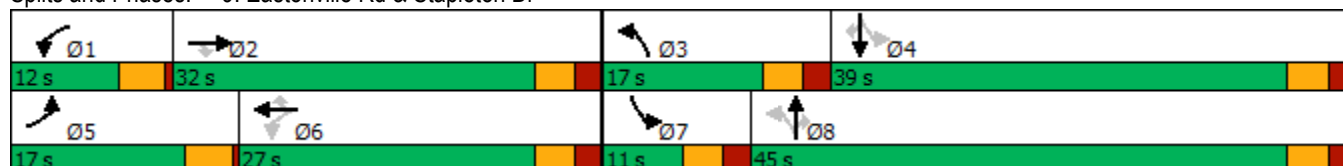
Intersection LOS: D

Intersection Capacity Utilization 89.8%

ICU Level of Service E

























Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Timings
1: Meridian Rd & Rex Rd

2041 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	50	132	394	164	126	324	521	107	57	697	9
Future Volume (vph)	3	50	132	394	164	126	324	521	107	57	697	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	9.0	23.0	23.0	22.0	36.0	36.0	15.0	40.0	40.0	15.0	40.0	40.0
Total Split (%)	9.0%	23.0%	23.0%	22.0%	36.0%	36.0%	15.0%	40.0%	40.0%	15.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	11.9	7.9	7.9	29.8	28.0	28.0	48.2	40.2	40.2	41.9	35.0	35.0
Actuated g/C Ratio	0.13	0.09	0.09	0.33	0.31	0.31	0.54	0.45	0.45	0.47	0.39	0.39
v/c Ratio	0.02	0.32	0.45	0.89	0.30	0.23	0.90	0.35	0.14	0.13	0.53	0.01
Control Delay	21.7	43.6	7.3	49.2	26.0	5.9	42.5	18.2	0.8	10.8	23.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	43.6	7.3	49.2	26.0	5.9	42.5	18.2	0.8	10.8	23.1	0.0
LOS	C	D	A	D	C	A	D	B	A	B	C	A
Approach Delay		17.4			35.6			24.5			21.9	
Approach LOS		B			D			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 89.8

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 26.2

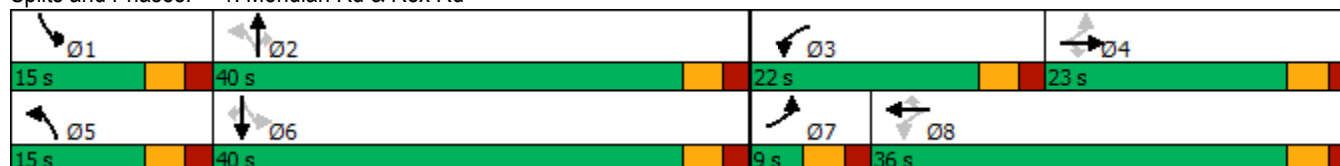
Intersection LOS: C

Intersection Capacity Utilization 78.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd







HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road





2041 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	
Traffic Vol, veh/h	314	39	51	475	85	91
Future Vol, veh/h	314	39	51	475	85	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	41	54	500	89	96
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	939	331
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	608	-
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	-	-	1186	-	293	711
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	543	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1186	-	280	711
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	518	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.8		21	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	408	-	-	1186	-	
HCM Lane V/C Ratio	0.454	-	-	0.045	-	
HCM Control Delay (s)	21	-	-	8.2	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	2.3	-	-	0.1	-	

HCM 6th TWSC
3: Rex Road & Estates Ridge Dr






2041 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	44	361	397	13	53	129
Future Vol, veh/h	44	361	397	13	53	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	380	418	14	56	136
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	432	0	-	0	897	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	472	-
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	1128	-	-	-	310	629
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1128	-	-	-	297	629
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	628	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		17.6		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1128	-	-	-	475	
HCM Lane V/C Ratio	0.041	-	-	-	0.403	
HCM Control Delay (s)	8.3	-	-	-	17.6	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.9	

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	369	418	11	44	104
Future Vol, veh/h	36	369	418	11	44	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	388	440	12	46	109
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	452	0	-	0	910	446
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	464	-
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	1109	-	-	-	305	612
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	633	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1109	-	-	-	295	612
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	633	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		16.6		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1109	-	-	-	464	
HCM Lane V/C Ratio	0.034	-	-	-	0.336	
HCM Control Delay (s)	8.4	-	-	-	16.6	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.5	






HCM 6th TWSC
4: West Amend Area Access & Rex Road

2041 Total Traffic
AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	392	23	6	353	57	19
Future Vol, veh/h	392	23	6	353	57	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	413	24	6	372	60	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	437	0	809	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	384	-
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	-	-	1123	-	350	629
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1123	-	348	629
Mov Cap-2 Maneuver	-	-	-	-	348	-
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	685	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		16.5		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	392	-	-	1123	-	
HCM Lane V/C Ratio	0.204	-	-	0.006	-	
HCM Control Delay (s)	16.5	-	-	8.2	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	








HCM 6th TWSC
4: West Amend Area Access & Rex Road

2041 Total Traffic With Maximum Density South of Rex Rd
AM Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	32	8	349	80	27
Future Vol, veh/h	381	32	8	349	80	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	401	34	8	367	84	28
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	435	0	801	418
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	383	-
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	-	-	1125	-	354	635
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	689	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1125	-	352	635
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	684	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		17.6		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	397	-	-	1125	-	
HCM Lane V/C Ratio	0.284	-	-	0.007	-	
HCM Control Delay (s)	17.6	-	-	8.2	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0	-	

HCM 6th TWSC
5: West Amend Area Access & Rex Road








2041 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	377	10	15	284	18	24	0	58	77	0	51
Future Vol, veh/h	24	377	10	15	284	18	24	0	58	77	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	0	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	397	11	16	299	19	25	0	61	81	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	408	0	0	821	803	403	814	789	299
Stage 1	-	-	-	-	-	-	453	453	-	331	331	-
Stage 2	-	-	-	-	-	-	368	350	-	483	458	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1242	-	-	1151	-	-	293	317	647	297	323	741
Stage 1	-	-	-	-	-	-	586	570	-	682	645	-
Stage 2	-	-	-	-	-	-	652	633	-	565	567	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1242	-	-	1151	-	-	265	306	647	262	312	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	306	-	262	312	-
Stage 1	-	-	-	-	-	-	574	559	-	668	636	-
Stage 2	-	-	-	-	-	-	596	624	-	501	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.4	14.8	21.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	455	1242	-	-	1151	-	-	353
HCM Lane V/C Ratio	0.19	0.02	-	-	0.014	-	-	0.382
HCM Control Delay (s)	14.8	8	-	-	8.2	-	-	21.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	1.7

























Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	376	13	21	284	14	33	0	82	59	0	40
Future Vol, veh/h	19	376	13	21	284	14	33	0	82	59	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	0	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	396	14	22	299	15	35	0	86	62	0	42
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	410	0	0	815	801	403	829	793	299
Stage 1	-	-	-	-	-	-	443	443	-	343	343	-
Stage 2	-	-	-	-	-	-	372	358	-	486	450	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1246	-	-	1149	-	-	296	318	647	290	321	741
Stage 1	-	-	-	-	-	-	594	576	-	672	637	-
Stage 2	-	-	-	-	-	-	648	628	-	563	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	1149	-	-	272	307	647	245	310	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	307	-	245	310	-
Stage 1	-	-	-	-	-	-	584	567	-	661	625	-
Stage 2	-	-	-	-	-	-	599	616	-	480	563	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.5			15.5			20.5		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	464	1246	-	-	1149	-	-	336				
HCM Lane V/C Ratio	0.261	0.016	-	-	0.019	-	-	0.31				
HCM Control Delay (s)	15.5	7.9	-	-	8.2	-	-	20.5				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	1.3				

Timings

6: Eastonville Rd & Rex Road

2041 Total Traffic

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	241	244	499	138	32	120	100	249	38	201	58
Future Volume (vph)	27	241	244	499	138	32	120	100	249	38	201	58
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	30.0	30.0	25.0	45.0	45.0	15.0	35.0	35.0	10.0	30.0	30.0
Total Split (%)	10.0%	30.0%	30.0%	25.0%	45.0%	45.0%	15.0%	35.0%	35.0%	10.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	21.7	16.5	16.5	42.3	38.9	38.9	25.1	19.9	19.9	18.3	14.6	14.6
Actuated g/C Ratio	0.28	0.21	0.21	0.54	0.50	0.50	0.32	0.26	0.26	0.23	0.19	0.19
v/c Ratio	0.07	0.64	0.48	0.81	0.16	0.04	0.36	0.22	0.44	0.12	0.61	0.14
Control Delay	13.5	37.8	7.1	26.4	15.2	0.1	22.1	26.4	6.2	19.6	39.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	37.8	7.1	26.4	15.2	0.1	22.1	26.4	6.2	19.6	39.2	0.6
LOS	B	D	A	C	B	A	C	C	A	B	D	A
Approach Delay		21.9			22.9			14.6			29.1	
Approach LOS		C			C			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 78

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.6

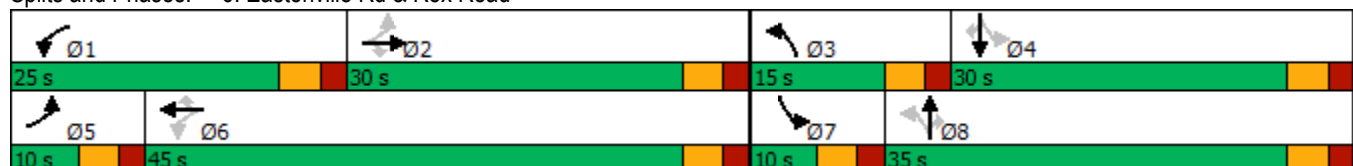
Intersection LOS: C

Intersection Capacity Utilization 74.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Eastonville Rd & Rex Road



HCM 6th Roundabout
6: Eastonville Rd & Rex Road

2041 Total Traffic
AM Peak Hour













Intersection						
Intersection Delay, s/veh	11.3					
Intersection LOS	B					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	539		704		493	
Demand Flow Rate, veh/h	547		719		501	
Vehicles Circulating, veh/h	792		262		328	
Vehicles Exiting, veh/h	337		567		1011	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	10.7		14.0		5.8	
Approach LOS	B		B		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.525	0.475	1.000	0.467	0.533	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	287	260	719	234	267	319
Cap Entry Lane, veh/h	691	691	1056	1054	1054	604
Entry HV Adj Factor	0.982	0.988	0.979	0.987	0.981	0.980
Flow Entry, veh/h	282	257	704	231	262	313
Cap Entry, veh/h	678	683	1034	1040	1034	592
V/C Ratio	0.416	0.376	0.681	0.222	0.253	0.528
Control Delay, s/veh	11.1	10.3	14.0	5.6	5.9	15.3
LOS	B	B	B	A	A	C
95th %tile Queue, veh	2	2	6	1	1	3

Timings

8: Eastonville Rd & Londonderry Dr

2041 Total Traffic

AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	96	316	235	381	1116	199
Future Volume (vph)	96	316	235	381	1116	199
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	21.0
Total Split (s)	25.0	25.0	20.0	75.0	55.0	55.0
Total Split (%)	25.0%	25.0%	20.0%	75.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	10.6	10.6	52.4	52.4	33.5	33.5
Actuated g/C Ratio	0.14	0.14	0.71	0.71	0.46	0.46
v/c Ratio	0.40	0.70	0.56	0.16	0.73	0.25
Control Delay	36.5	15.9	16.9	3.8	19.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	15.9	16.9	3.8	19.5	2.8
LOS	D	B	B	A	B	A
Approach Delay	20.7			8.8	17.0	
Approach LOS	C			A	B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 73.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 15.5

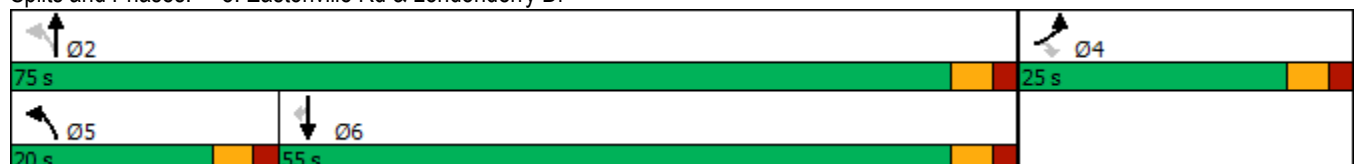
Intersection LOS: B

Intersection Capacity Utilization 61.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Eastonville Rd & Londonderry Dr



























HCM 6th Roundabout
8: Eastonville Rd & Londonderry Dr

2041 Total Traffic
AM Peak Hour

Intersection					
Intersection Delay, s/veh	12.8				
Intersection LOS	B				
Approach	EB		NB		SB
Entry Lanes	2		2		2
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	434		648		1384
Demand Flow Rate, veh/h	443		661		1411
Vehicles Circulating, veh/h	1198		103		252
Vehicles Exiting, veh/h	465		1538		512
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	20.7		9.1		12.1
Approach LOS	C		A		B
Lane	Left	Right	Left	Left	Right
Designated Moves	L	TR	LT	LT	TR
Assumed Moves	L	TR	LT	LT	TR
RT Channelized					
Lane Util	0.233	0.767	1.000	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.645	4.328
Entry Flow, veh/h	103	340	661	663	748
Cap Entry Lane, veh/h	448	513	1228	1071	1146
Entry HV Adj Factor	0.981	0.979	0.980	0.981	0.980
Flow Entry, veh/h	101	333	648	650	733
Cap Entry, veh/h	440	502	1204	1050	1124
V/C Ratio	0.230	0.663	0.538	0.619	0.653
Control Delay, s/veh	11.8	23.5	9.1	11.9	12.3
LOS	B	C	A	B	B
95th %tile Queue, veh	1	5	3	4	5

Timings
9: Eastonville Rd & Stapleton Dr

2041 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	704	224	144	595	116	196	341	168	294	754	384
Future Volume (vph)	158	704	224	144	595	116	196	341	168	294	754	384
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	12.0	29.0	29.0	12.0	29.0	29.0	13.0	45.0	45.0	14.0	46.0	46.0
Total Split (%)	12.0%	29.0%	29.0%	12.0%	29.0%	29.0%	13.0%	45.0%	45.0%	14.0%	46.0%	46.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	7.9	23.4	23.4	32.6	23.6	23.6	48.0	40.0	40.0	50.0	41.0	41.0
Actuated g/C Ratio	0.08	0.24	0.24	0.33	0.24	0.24	0.48	0.40	0.40	0.50	0.41	0.41
v/c Ratio	0.61	0.89	0.43	0.69	0.75	0.26	0.95	0.48	0.24	0.66	1.04	0.50
Control Delay	54.8	50.9	6.8	40.3	41.5	7.3	73.2	24.8	3.9	21.7	72.1	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	50.9	6.8	40.3	41.5	7.3	73.2	24.8	3.9	21.7	72.1	9.8
LOS	D	D	A	D	D	A	E	C	A	C	E	A
Approach Delay		42.4			36.7			33.3			45.1	
Approach LOS		D			D			C			D	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 99.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 40.6

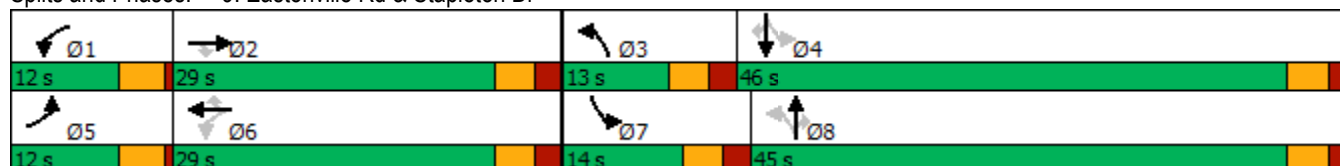
Intersection LOS: D

Intersection Capacity Utilization 93.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



























Timings

9: Eastonville Rd & Stapleton Dr

2041 Total Traffic (2 NB&SB Thru Lanes)

AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	704	224	144	595	116	196	341	168	294	754	384
Future Volume (vph)	158	704	224	144	595	116	196	341	168	294	754	384
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	12.0	30.0	30.0	12.0	30.0	30.0	12.0	45.0	45.0	13.0	46.0	46.0
Total Split (%)	12.0%	30.0%	30.0%	12.0%	30.0%	30.0%	12.0%	45.0%	45.0%	13.0%	46.0%	46.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	7.8	22.7	22.7	31.8	22.8	22.8	34.9	27.8	27.8	36.9	28.8	28.8
Actuated g/C Ratio	0.09	0.26	0.26	0.37	0.27	0.27	0.41	0.32	0.32	0.43	0.34	0.34
v/c Ratio	0.53	0.79	0.40	0.60	0.67	0.24	0.75	0.31	0.28	0.66	0.67	0.57
Control Delay	46.5	37.6	6.5	29.6	33.1	6.9	34.1	22.4	4.4	23.2	27.4	10.6
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	46.5	37.6	6.5	29.6	33.1	6.9	34.1	22.4	4.4	23.2	27.4	10.6
LOS	D	D	A	C	C	A	C	C	A	C	C	B
Approach Delay		32.5			29.0			21.3			22.0	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 26.1









Intersection LOS: C

Intersection Capacity Utilization 75.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr

























			
Ø1	Ø2	Ø3	Ø4
12 s	30 s	12 s	46 s
			
Ø5	Ø6	Ø7	Ø8
12 s	30 s	13 s	45 s

Timings

1: Meridian Rd & Rex Rd

2041 Total Traffic

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	179	257	273	80	69	147	471	498	124	412	2
Future Volume (vph)	3	179	257	273	80	69	147	471	498	124	412	2
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	9.0	23.0	23.0	22.0	36.0	36.0	12.0	41.0	41.0	14.0	43.0	43.0
Total Split (%)	9.0%	23.0%	23.0%	22.0%	36.0%	36.0%	12.0%	41.0%	41.0%	14.0%	43.0%	43.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	18.2	14.2	14.2	34.5	32.8	32.8	43.9	36.9	36.9	46.3	38.1	38.1
Actuated g/C Ratio	0.19	0.15	0.15	0.36	0.35	0.35	0.46	0.39	0.39	0.49	0.40	0.40
v/c Ratio	0.01	0.67	0.58	0.67	0.13	0.12	0.33	0.36	0.56	0.30	0.30	0.00
Control Delay	20.0	50.8	10.1	30.8	22.4	0.9	15.3	22.5	4.7	14.5	20.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	50.8	10.1	30.8	22.4	0.9	15.3	22.5	4.7	14.5	20.9	0.0
LOS	B	D	B	C	C	A	B	C	A	B	C	A
Approach Delay		26.7			24.3			13.6			19.3	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 94.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 18.9

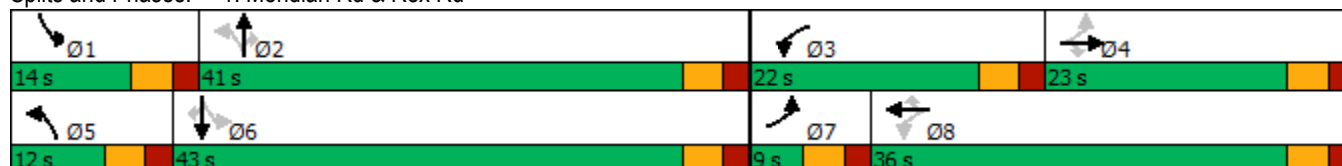
Intersection LOS: B

Intersection Capacity Utilization 61.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Meridian Rd & Rex Rd



HCM 6th TWSC
2: Rolling Ranch Dr & Rex Road

2041 Total Traffic
PM Peak Hour

Intersection

Int Delay, s/veh 3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	546	100	82	362	58	57
Future Vol, veh/h	546	100	82	362	58	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	190	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	575	105	86	381	61	60





Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	680
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	912
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	912
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-





Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	25.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	-	-	912	-
HCM Lane V/C Ratio	0.413	-	-	0.095	-
HCM Control Delay (s)	25.7	-	-	9.4	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.3	-

HCM 6th TWSC
3: Rex Road & Estates Ridge Dr






2041 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	137	466	364	68	40	80
Future Vol, veh/h	137	466	364	68	40	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	144	491	383	72	42	84
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	455	0	-	0	1198	419
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	779	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1106	-	-	-	205	634
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	452	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1106	-	-	-	178	634
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	452	-
Approach	EB	WB		SB		
HCM Control Delay, s	2	0		21.6		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1106	-	-	-	342	
HCM Lane V/C Ratio	0.13	-	-	-	0.369	
HCM Control Delay (s)	8.7	-	-	-	21.6	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.4	-	-	-	1.7	

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	110	485	376	56	32	64
Future Vol, veh/h	110	485	376	56	32	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	185	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	511	396	59	34	67
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	455	0	-	0	1169	426
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	743	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1106	-	-	-	213	628
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1106	-	-	-	191	628
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	470	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.6	0		19.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1106	-	-	-	356	
HCM Lane V/C Ratio	0.105	-	-	-	0.284	
HCM Control Delay (s)	8.6	-	-	-	19.1	
HCM Lane LOS	A	-	-	-	C	
HCM 95th %tile Q(veh)	0.3	-	-	-	1.1	






HCM 6th TWSC
4: West Amend Area Access & Rex Road

2041 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	446	60	24	397	35	14
Future Vol, veh/h	446	60	24	397	35	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	469	63	25	418	37	15
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	532	0	969	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	468	-
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	-	-	1036	-	281	570
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	630	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1036	-	274	570
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	615	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.5		18.3		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	322	-	-	1036	-	
HCM Lane V/C Ratio	0.16	-	-	0.024	-	
HCM Control Delay (s)	18.3	-	-	8.6	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-	








HCM 6th TWSC
4: West Amend Area Access & Rex Road

2041 Total Traffic With Maximum Density South of Rex Rd
PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	433	85	33	382	50	19
Future Vol, veh/h	433	85	33	382	50	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	456	89	35	402	53	20
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	545	0	973	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	472	-
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	-	-	1024	-	280	570
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1024	-	270	570
Mov Cap-2 Maneuver	-	-	-	-	270	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	607	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		19.8	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	316	-	-	1024	-	
HCM Lane V/C Ratio	0.23	-	-	0.034	-	
HCM Control Delay (s)	19.8	-	-	8.6	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-	

HCM 6th TWSC
5: West Amend Area Access & Rex Road








2041 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	66	369	25	69	368	79	15	0	41	47	0	38
Future Vol, veh/h	66	369	25	69	368	79	15	0	41	47	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	0	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	69	388	26	73	387	83	16	0	43	49	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	414	0	0	1134	1155	401	1094	1085	387
Stage 1	-	-	-	-	-	-	539	539	-	533	533	-
Stage 2	-	-	-	-	-	-	595	616	-	561	552	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1092	-	-	1145	-	-	180	197	649	191	217	661
Stage 1	-	-	-	-	-	-	527	522	-	531	525	-
Stage 2	-	-	-	-	-	-	491	482	-	512	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1092	-	-	1145	-	-	153	173	649	162	190	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	173	-	162	190	-
Stage 1	-	-	-	-	-	-	494	489	-	498	491	-
Stage 2	-	-	-	-	-	-	432	451	-	448	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	1.1	17.5	27.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	347	1092	-	-	1145	-	-	245
HCM Lane V/C Ratio	0.17	0.064	-	-	0.063	-	-	0.365
HCM Control Delay (s)	17.5	8.5	-	-	8.4	-	-	27.9
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0.2	-	-	1.6

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	367	35	96	366	61	21	0	58	36	0	29
Future Vol, veh/h	50	367	35	96	366	61	21	0	58	36	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	0	-	205	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	386	37	101	385	64	22	0	61	38	0	31

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	449	0	0	423	0	0	1146	1162	405	1128	1116	385
Stage 1	-	-	-	-	-	-	511	511	-	587	587	-
Stage 2	-	-	-	-	-	-	635	651	-	541	529	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1111	-	-	1136	-	-	176	195	646	181	208	663
Stage 1	-	-	-	-	-	-	545	537	-	496	497	-
Stage 2	-	-	-	-	-	-	467	465	-	525	527	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1111	-	-	1136	-	-	151	169	646	147	180	663
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	169	-	147	180	-
Stage 1	-	-	-	-	-	-	519	511	-	472	453	-
Stage 2	-	-	-	-	-	-	406	424	-	453	502	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			1.6			18.7			27.8		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1111	-	-	1136	-	-	225
HCM Lane V/C Ratio	0.241	0.047	-	-	0.089	-	-	0.304
HCM Control Delay (s)	18.7	8.4	-	-	8.5	-	-	27.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.3	-	-	1.2

Timings
6: Eastonville Rd & Rex Road

2041 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	236	125	302	296	39	170	242	494	35	159	52
Future Volume (vph)	79	236	125	302	296	39	170	242	494	35	159	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	10.0	30.0	30.0	25.0	45.0	45.0	15.0	35.0	35.0	10.0	30.0	30.0
Total Split (%)	10.0%	30.0%	30.0%	25.0%	45.0%	45.0%	15.0%	35.0%	35.0%	10.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	20.8	15.5	15.5	34.9	27.2	27.2	27.8	22.4	22.4	18.5	13.2	13.2
Actuated g/C Ratio	0.28	0.21	0.21	0.48	0.37	0.37	0.38	0.31	0.31	0.25	0.18	0.18
v/c Ratio	0.23	0.63	0.27	0.61	0.45	0.06	0.40	0.45	0.61	0.11	0.50	0.12
Control Delay	14.8	35.5	3.0	18.1	21.3	0.2	20.3	26.9	6.2	18.1	34.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	35.5	3.0	18.1	21.3	0.2	20.3	26.9	6.2	18.1	34.2	0.6
LOS	B	D	A	B	C	A	C	C	A	B	C	A
Approach Delay		22.5			18.5			14.4			24.8	
Approach LOS		C			B			B			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 73.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 18.3

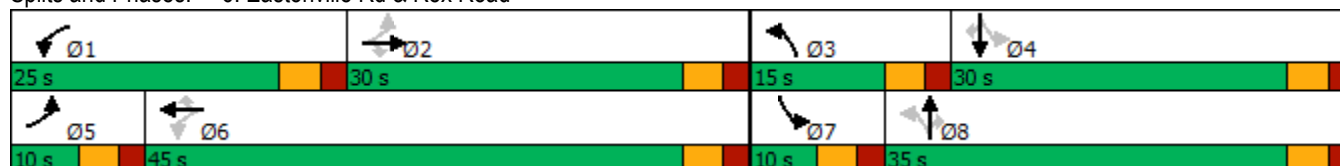
Intersection LOS: B

Intersection Capacity Utilization 63.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 6: Eastonville Rd & Rex Road



HCM 6th Roundabout
6: Eastonville Rd & Rex Road

2041 Total Traffic
PM Peak Hour













Intersection						
Intersection Delay, s/veh	15.0					
Intersection LOS	B					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	463		671		954	
Demand Flow Rate, veh/h	470		684		971	
Vehicles Circulating, veh/h	532		525		375	
Vehicles Exiting, veh/h	555		821		627	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	7.8		28.3		9.5	
Approach LOS	A		D		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.717	0.283	1.000	0.454	0.546	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	337	133	684	441	530	264
Cap Entry Lane, veh/h	875	875	808	1009	1009	596
Entry HV Adj Factor	0.982	0.992	0.981	0.984	0.981	0.980
Flow Entry, veh/h	331	132	671	434	520	259
Cap Entry, veh/h	860	868	792	993	990	584
V/C Ratio	0.385	0.152	0.847	0.437	0.525	0.443
Control Delay, s/veh	8.7	5.6	28.3	8.6	10.2	13.2
LOS	A	A	D	A	B	B
95th %tile Queue, veh	2	1	10	2	3	2

Timings

8: Eastonville Rd & Londonderry Dr

2041 Total Traffic

PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	194	169	324	1093	640	121
Future Volume (vph)	194	169	324	1093	640	121
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	9.0	21.0	21.0	21.0
Total Split (s)	25.0	25.0	20.0	75.0	55.0	55.0
Total Split (%)	25.0%	25.0%	20.0%	75.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	12.3	12.3	37.3	37.3	18.7	18.7
Actuated g/C Ratio	0.21	0.21	0.62	0.62	0.31	0.31
v/c Ratio	0.56	0.38	0.60	0.52	0.61	0.22
Control Delay	29.6	7.0	11.6	7.6	20.5	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	7.0	11.6	7.6	20.5	4.7
LOS	C	A	B	A	C	A
Approach Delay	19.1			8.5	18.0	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 59.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 58.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Eastonville Rd & Londonderry Dr



























HCM 6th Roundabout
8: Eastonville Rd & Londonderry Dr

2041 Total Traffic
PM Peak Hour

Intersection						
Intersection Delay, s/veh	10.5					
Intersection LOS	B					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	382		1492		801	
Demand Flow Rate, veh/h	390		1522		817	
Vehicles Circulating, veh/h	687		208		348	
Vehicles Exiting, veh/h	478		869		1382	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	8.0		12.5		8.0	
Approach LOS	A		B		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	LT	TR	LT	TR
Assumed Moves	L	TR	LT	TR	LT	TR
RT Channelized						
Lane Util	0.533	0.467	0.470	0.530	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	208	182	715	807	384	433
Cap Entry Lane, veh/h	718	792	1115	1190	980	1056
Entry HV Adj Factor	0.981	0.978	0.981	0.980	0.980	0.980
Flow Entry, veh/h	204	178	701	791	376	424
Cap Entry, veh/h	704	775	1093	1166	960	1035
V/C Ratio	0.290	0.230	0.641	0.678	0.392	0.410
Control Delay, s/veh	8.6	7.2	12.2	12.7	8.1	7.9
LOS	A	A	B	B	A	A
95th %tile Queue, veh	1	1	5	6	2	2

Timings 9: Eastonville Rd & Stapleton Dr

2041 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	403	538	165	180	761	300	270	714	182	152	413	244
Future Volume (vph)	403	538	165	180	761	300	270	714	182	152	413	244
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	17.0	32.0	32.0	12.0	27.0	27.0	17.0	45.0	45.0	11.0	39.0	39.0
Total Split (%)	17.0%	32.0%	32.0%	12.0%	27.0%	27.0%	17.0%	45.0%	45.0%	11.0%	39.0%	39.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	13.0	27.0	27.0	31.0	22.0	22.0	50.9	40.0	40.0	40.3	34.3	34.3
Actuated g/C Ratio	0.13	0.27	0.27	0.31	0.22	0.22	0.51	0.40	0.40	0.40	0.34	0.34
v/c Ratio	0.95	0.59	0.31	0.65	1.03	0.61	0.75	1.01	0.26	0.88	0.68	0.36
Control Delay	76.2	34.7	6.1	33.6	79.3	16.9	28.2	66.5	5.6	64.3	34.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.2	34.7	6.1	33.6	79.3	16.9	28.2	66.5	5.6	64.3	34.8	4.6
LOS	E	C	A	C	E	B	C	E	A	E	C	A
Approach Delay		45.6			57.6			48.1			31.2	
Approach LOS		D			E			D			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 47.0

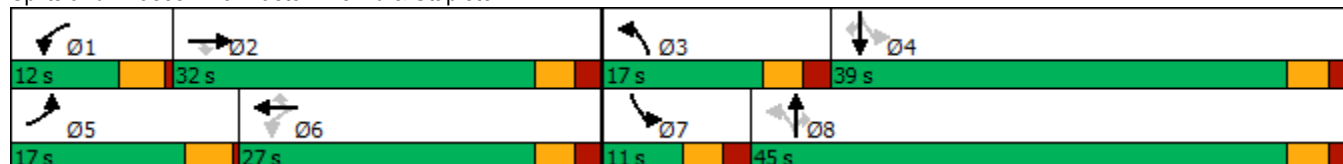
Intersection LOS: D

Intersection Capacity Utilization 94.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



























Timings

9: Eastonville Rd & Stapleton Dr

2041 Total Traffic (2 NB&SB Thur Lanes)

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	403	538	165	180	761	300	270	714	182	152	413	244
Future Volume (vph)	403	538	165	180	761	300	270	714	182	152	413	244
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	8.0	21.0	21.0	8.0	21.0	21.0	9.0	21.0	21.0	9.0	21.0	21.0
Total Split (s)	18.0	29.0	29.0	16.0	27.0	27.0	16.0	45.0	45.0	10.0	39.0	39.0
Total Split (%)	18.0%	29.0%	29.0%	16.0%	27.0%	27.0%	16.0%	45.0%	45.0%	10.0%	39.0%	39.0%
Yellow Time (s)	3.5	3.0	3.0	3.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.5	2.0	2.0	0.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	13.7	25.6	25.6	33.3	22.1	22.1	35.4	25.4	25.4	24.6	19.6	19.6
Actuated g/C Ratio	0.16	0.30	0.30	0.39	0.26	0.26	0.42	0.30	0.30	0.29	0.23	0.23
v/c Ratio	0.77	0.53	0.29	0.47	0.87	0.59	0.73	0.71	0.32	0.75	0.54	0.46
Control Delay	46.2	28.6	5.9	18.9	43.6	18.2	29.7	30.6	4.8	42.4	31.1	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.2	28.6	5.9	18.9	43.6	18.2	29.7	30.6	4.8	42.4	31.1	6.3
LOS	D	C	A	B	D	B	C	C	A	D	C	A
Approach Delay		31.6			33.9			26.4			25.7	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85.3

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 29.8

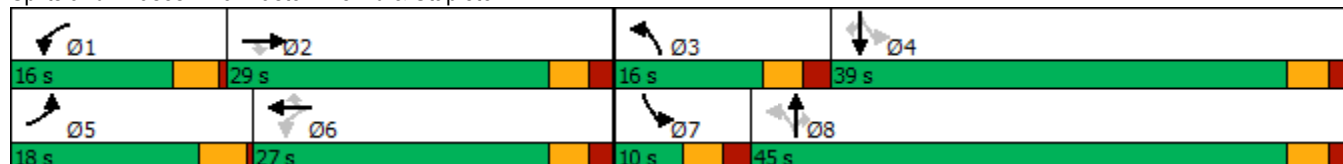
Intersection LOS: C

Intersection Capacity Utilization 76.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 9: Eastonville Rd & Stapleton Dr



Queuing Reports

Queuing and Blocking Report

Intersection: 2: Rolling Ranch Dr & Rex Road

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	39	107
Average Queue (ft)	11	47
95th Queue (ft)	36	86
Link Distance (ft)		408
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	190	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Rex Road & Estates Ridge Dr

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	40	116
Average Queue (ft)	12	51
95th Queue (ft)	36	92
Link Distance (ft)		305
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	185	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Queuing and Blocking Report

Intersection: 2: Rolling Ranch Dr & Rex Road

Movement	EB	WB	NB
Directions Served	R	L	LR
Maximum Queue (ft)	4	66	116
Average Queue (ft)	0	26	45
95th Queue (ft)	3	55	91
Link Distance (ft)			408
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	200	190	
Storage Blk Time (%)			
Queuing Penalty (veh)			

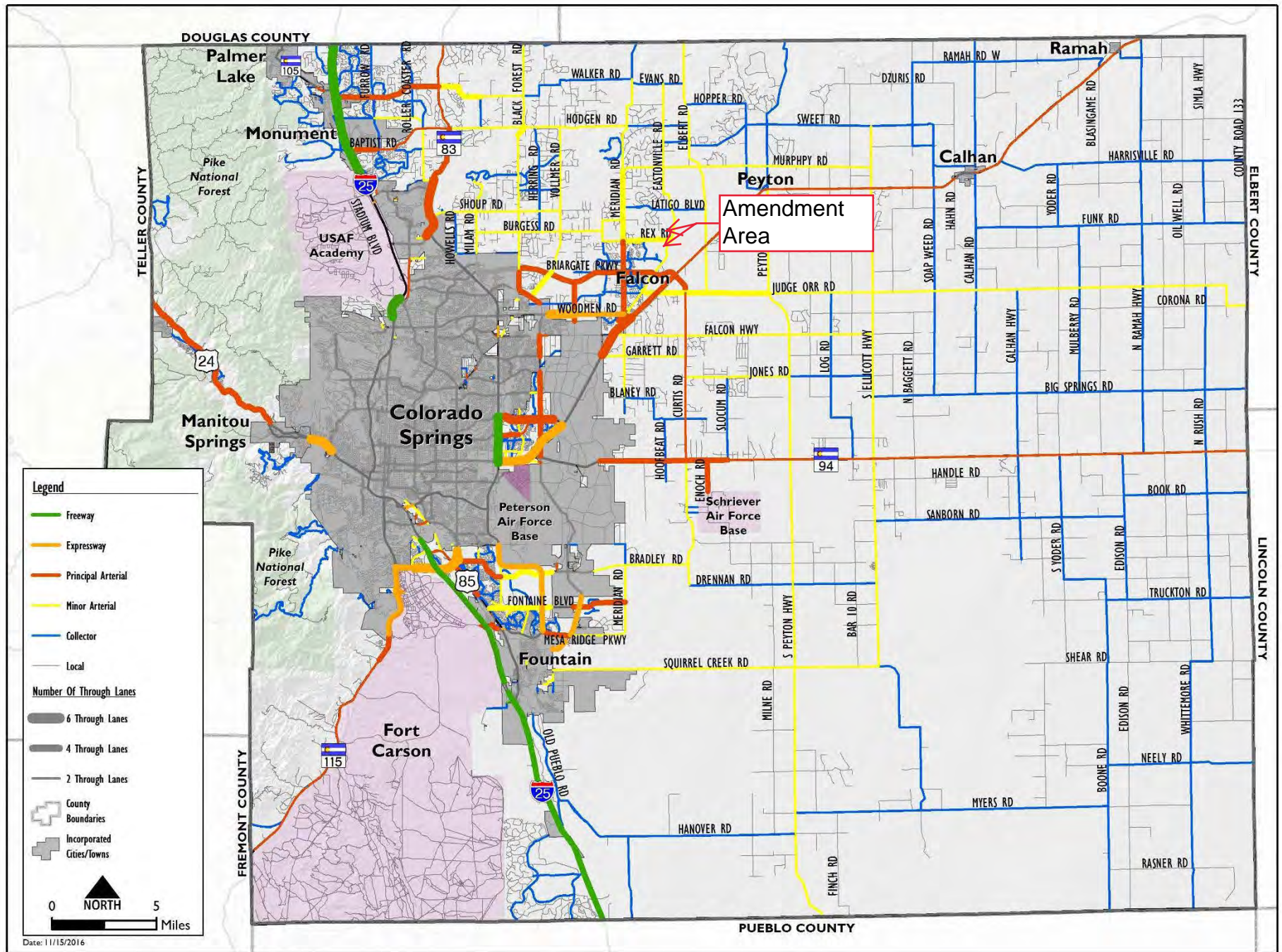
Intersection: 3: Rex Road & Estates Ridge Dr

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	67	4	91
Average Queue (ft)	27	0	41
95th Queue (ft)	57	3	70
Link Distance (ft)		1772	305
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	185		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

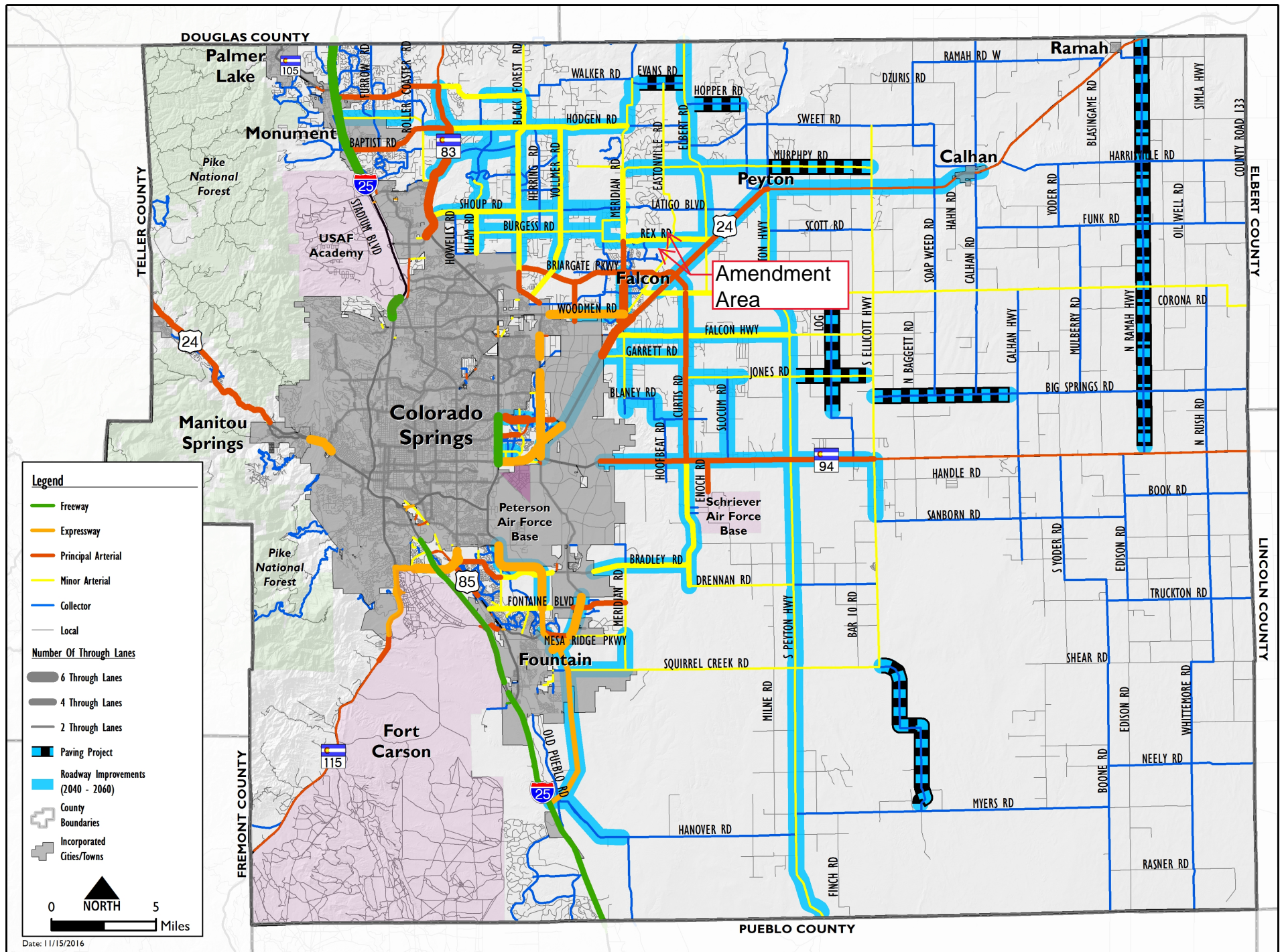
Zone wide Queuing Penalty: 0

MTCP Maps



Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation



Appendix Table 1

Appendix Table 1
Area Traffic Impact Studies by LSC
Meridian Ranch 2021 Sketch Plan Amendment

Study	Date
Meridian Ranch	
Meridian Ranch Sketch Plan TIA	April 11, 2011
Meridian Ranch Filing 11 Updated TIA	November 26, 2013
Stonebridge at Meridian Ranch Filing No. 1 Updated TIA	April 23, 2014
Stonebridge at Meridian Ranch Transportation Memorandum	July 28, 2015
Meridian Ranch Filing 8 Updated TIA	December 23, 2014
Meridian Ranch Filing 9 Updated TIA	May 21, 2015
Meridian Ranch Sketch Plan 2015 Amendment TIA	July 30, 2015
The Vistas at Meridian Ranch TIA	March 24, 2016
Meridian Ranch Estates Filing No. 2 Transportation Memorandum	August 27, 2015
The Vistas at Meridian Ranch Updated Transportation Memorandum	June 20, 2017
Londonderry Drive Pedestrian Operations and Safety Study	February 8, 2017
Stonebridge Filing 3 at Meridian Ranch Updated TIA	March 20, 2017
Meridian Ranch Sketch Plan 2017 Amendment TIA	October 3, 2017
WindingWalk at Meridian Ranch and The Enclave at Stonebridge at Meridian Ranch Updated Traffic Impact Analysis	May 10, 2018
Rolling Hills Ranch at Meridian Ranch PUDSP Traffic Impact Analysis	June 29, 2020
The Estates at Rolling Hills Ranch Filing No. 1 Traffic Impact Analysis	May 13, 2020
Rolling Hills Ranch at Meridian Ranch Filing No. 1 Traffic Impact Analysis	July 14, 2020
The Estates at Rolling Hills Ranch Filing No. 2 Traffic Impact Study	October 8, 2020
Rolling Hills Ranch at Meridian Ranch Filing No. 2 Transportation Memorandum	December 29, 2020
Rolling Hills Ranch at Meridian Ranch Filing No. 3 Transportation Memorandum	March 22, 2021
Grandview Reserve	
Grandview Reserve Updated Master TIA	December 5, 2020
Waterbury/4-Way Ranch	
Waterbury PUD Development Plan Updated TIA	January 10, 2013
Waterbury Filing Nos. 1 and 2 TIA	December 18, 2020
Meadowlake Ranch	
Meadowlake Ranch Traffic Impact Analysis	May 29, 2019
Trails	
Trails Filing Nos. 9, 10 and 11	February 12, 2007
<i>Source: LSC Transportation Consultants, Inc. (April 2021)</i>	

Approved Deviation



Planning and Community
Development Department
2880 International Circle
Colorado Springs, Colorado 80910
Phone: 719.520.6300
Fax: 719.520.6695
Website www.elpasoco.com

DEVIATION REQUEST AND DECISION FORM

Updated: 6/26/2019

PROJECT INFORMATION

Project Name : Estates at Rolling Hills Ranch Filing 2

Schedule No.(s) : 4200000407 & 4219100001

Legal Description : See attached

APPLICANT INFORMATION

Company : Tech Contractors

Name : Tom Kerby

☐ Owner ☒ Consultant ☐ Contractor

Mailing Address : 11886 Stapleton Drive
Falcon, CO 80831

Phone Number : 719.495.7444

FAX Number : n/a

Email Address : tom@meridianranch.com

ENGINEER INFORMATION

Company : Tech Contractors

Name : Tom Kerby

Colorado P.E. Number : 31429

Mailing Address : tom@meridianranch.com

Phone Number : 719.495.7444

FAX Number : n/a

Email Address : tom@meridianranch.com

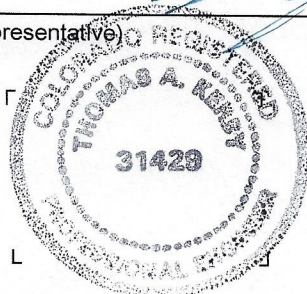
OWNER, APPLICANT, AND ENGINEER DECLARATION

To the best of my knowledge, the information on this application and all additional or supplemental documentation is true, factual and complete. I am fully aware that any misrepresentation of any information on this application may be grounds for denial. I have familiarized myself with the rules, regulations and procedures with respect to preparing and filing this application. I also understand that an incorrect submittal will be cause to have the project removed from the agenda of the Planning Commission, Board of County Commissioners and/or Board of Adjustment or delay review until corrections are made, and that any approval of this application is based on the representations made in the application and may be revoked on any breach of representation or condition(s) of approval.

Signature of owner (or authorized representative)

Date

Engineer's Seal, Signature
And Date of Signature



DEVIATION REQUEST (Attach diagrams, figures, and other documentation to clarify request)

A deviation from the standards of or in Section **2.2.4.B.3 Urban Minor Arterial & 2.3.2 Design Standards by Functional Classification, Table 2-6** of the Engineering Criteria Manual (ECM) is requested.

Identify the specific ECM standard which a deviation is requested:

The specific ECM standard a deviation is requested is the criteria to construct Rex Road east of Sunrise Ridge Dr as a half section Urban 4-lane Minor Arterial based on the 2016 MTCP Map I4: 2040 Roadway Plan classification

State the reason for the requested deviation:

The portion of Rex Road between Mt Gateway Drive and Sunrise Ridge Drive has been planned and constructed as an Urban Residential Collector with a standard right of way width of 60 feet. The projected long term (2040) total ADT is estimated to be 7,470 vehicles per day (this project plus background traffic) which is below the threshold for an Urban Residential Collector.

With the projected low traffic volume and adjacent existing 60' right of way width logic dictates to construct the half section roadway within an 80-foot right of way until such time as the full width section is deemed necessary. This roadway is listed on the 2040 Major Transportation Plan and therefore fully reimbursable by the County, this move will shift available funds to other higher priority roadways.

Explain the proposed alternative and compare to the ECM standards (May provide applicable regional or national standards used as basis):

The roadway design standards for Urban Minor Arterial roads will be used to design and construct Rex Road east of Sunrise Ridge Dr. Except that intersection spacing between Sunrise Ridge Dr and Eastonville Rd will be less than the ECM standard as shown in the attached Exhibit B, The proposed intersection spacing matches that of a Residential Collector since the roadway will operate similar to this class of roadway in the short term and projected long term. The intersection spacing of Residential Collectors with Residential Street is 330 feet. The proposed alternative road right of way matches the existing Rex Road right of way west of Sunrise Ridge Drive.

The proposed roadway will be the half section of the El Paso County standard section for Urban Minor Arterial road as shown in the attached Exhibit C.

The alternative design is to construct Rex Road east of Sunrise Ridge Drive as a half section of the Urban Minor Arterial. Transition from a Residential Urban Collector to the half section east of Sunrise Ridge Dr for approximately 400 feet, continuing east to proposed Estate Ridge Drive. The half section will be constructed per the attached drawing depicting the half section from centerline south to southerly right of way line. A 80 foot right of way will be dedicated with an additional 20 foot wide reservation within the adjacent Tract D as shown on the Estates at Rolling Hills Ranch Filing 2 PUD in order to accommodate the future full width section when the County determines it is necessary for the County to construct the full width section.

The southern ROW line along Rex Road will match east and west of Sunrise Ridge Drive with additional ROW to be acquired by the County along the northern portion of the roadway west of Sunrise Ridge Drive from adjacent open space and private land owners at such time as when El Paso County deems it necessary to construct the full width Urban Minor Arterial roadway section from Eastonville Road west to near Mt. Gateway Drive.

LIMITS OF CONSIDERATION

(At least one of the conditions listed below must be met for this deviation request to be considered.)

- ☐ The ECM standard is inapplicable to the particular situation.
- ✓ Topography, right-of-way, or other geographical conditions or impediments impose an undue hardship and an equivalent alternative that can accomplish the same design objective is available and does not compromise public safety or accessibility.
- ☐ A change to a standard is required to address a specific design or construction problem, and if not modified, the standard will impose an undue hardship on the applicant with little or no material benefit to the public.

Provide justification:

The previously recorded final plats for Estates at Meridian Ranch Filing 2 and Meridian Ranch Filing 9, located west of this project create a corridor of only 60' wide. This restriction provides sufficient room for an Urban Residential Collector and restricts the ability to construct the Urban Minor Arterial in this section west of the proposed project. This portion of Rex Road would require Rex Road to be constructed with lane tapers and redirects which could create confusion for the driver and pose unnecessary risk to future accidents. Any other alternative would require the acquisition of property for public and private entities in order to secure sufficient land to construct the Urban Minor Arterial west of the project and additional cost to the County as this roadway is identified in the 2040 Major Transportation Corridor Plan making Rex Road construction a reimbursable project.

CRITERIA FOR APPROVAL

Per ECM section 5.8.7 the request for a deviation may be considered if the request is **not based exclusively on financial considerations**. The deviation must not be detrimental to public safety or surrounding property. The applicant must include supporting information demonstrating compliance with **all of the following criteria**:

The deviation will achieve the intended result with a comparable or superior design and quality of improvement.

The deviation will provide a comparable design in that the estimated ADTs for this section fall more than 50% below the threshold for an Urban Minor Arterial roadway section.

The design provides the southern half of the roadway (centerline to southern curb. This provides a better design in that when and if the roadway is widened to the full width Urban Minor Arterial, all of the improvements south of the centerline will provide a future cost savings without the need to redesign and/or remove/replace large portions of the roadway.

The deviation will not adversely affect safety or operations.

The Engineering Criteria Manual identifies 20,000 ADTs as the maximum volume of traffic that can be safely conveyed on an Urban Minor Arterial Street section, the estimated 2040 ADT is sufficiently below at 7,470 to justify a half section. Constructing a full width Urban Minor Arterial would require lane drop, tapers and redirects to accommodate the existing narrower section to the west of Sunrise Ridge Dr. The design will have the travel lanes east and west of Sunrise Ridge match eliminating the need to include lane drops east of Sunrise Ridge Dr.

Merging traffic at lane drops and redirects create a potential risk for accidents east of the intersection. The half section will safely carry the anticipated total traffic volume from Eastonville Road to Mt. Gateway at the projected total traffic volume.

The deviation will not adversely affect maintenance and its associated cost.

The proposed deviation will not adversely impact maintenance for this street section in that it will not receive traffic higher than normal for this type of roadway classification

The deviation will not adversely affect aesthetic appearance.

The deviation will not adversely affect the aesthetics of the area as it will match an already established street section.

The deviation meets the design intent and purpose of the ECM standards.

The proposed deviation and design allows for the accommodation of the future widening of Rex Road to full width Urban Minor Arterial if and when it is deemed necessary due to any unforeseen increase traffic volume closer to the 20,000 ADTs.

The deviation meets the control measure requirements of Part I.E.3 and Part I.E.4 of the County's MS4 permit, as applicable.

The proposed deviation is not different than any other proposed roadway within El Paso County matching all other requirements for similarly classified roads and meets all requirements associated with the MS4 permit.

REVIEW AND RECOMMENDATION:

Approved by the ECM Administrator

This request has been determined to have met the criteria for approval. A deviation from Section 2.2.4 B3, 2.3.2 of the ECM is hereby granted based on the justification provided.

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APPROVED
Engineering Department
11/25/2020 10:02:19 AM
dsdnijkamp
EPC Planning & Community
Development Department

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Denied by the ECM Administrator

This request has been determined not to have met criteria for approval. A deviation from Section _____ of the ECM is hereby denied.

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ECM ADMINISTRATOR COMMENTS/CONDITIONS:

KNOW ALL MEN BY THESE PRESENTS:

THAT GTL, INC. DBA GTL DEVELOPMENT, INC., THEODORE TCHANG, PRESIDENT AND MERIDIAN SERVICE METROPOLITAN DISTRICT BEING THE OWNERS OF THE FOLLOWING DESCRIBED TRACTS OF LAND:

A PARCEL OF LAND LOCATED IN A PORTIONS OF SECTION 19 AND 20,
IN TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH PRINCIPAL MERIDIAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEASTERN MOST CORNER OF TRACT B OF THE ESTATES AT ROLLING HILLS RANCH FILING NO. 1, RECORDED WITH RECEPTION NO. _____ IN THE RECORDS OF EL PASO COUNTY, POINT BEING ON THE NORTHEAST 1/4 OF SAID SECTION 19;

1. THENCE S89°18'07"E ALONG SAID SECTION 19 A DISTANCE OF 40.70 FEET TO THE NORTHWEST CORNER OF SAID SECTION 20;
2. THENCE S89°25'43"E, ALONG THE NORTHERN LINE OF SAID SECTION 20 A DISTANCE OF 2532.88 FEET;
3. THENCE S00°34'17"W A DISTANCE OF 340.00 FEET;
4. THENCE S06°47'53"E A DISTANCE OF 290.00 FEET;
5. THENCE S11°14'55"E A DISTANCE OF 525.00 FEET;
6. THENCE N82°33'58"W A DISTANCE OF 235.05 FEET;
7. THENCE S07°26'02"W A DISTANCE OF 480.00 FEET;
8. THENCE N82°33'58"W A DISTANCE OF 168.00 FEET;
9. THENCE S07°26'02"W A DISTANCE OF 60.00 FEET;
10. THENCE S52°26'02"W A DISTANCE OF 31.11 FEET;
11. THENCE S07°26'02"W A DISTANCE OF 336.00 FEET;
12. THENCE S37°33'58"E A DISTANCE OF 31.11 FEET;
13. THENCE S07°26'02"W A DISTANCE OF 60.00 FEET;
14. THENCE S52°26'02"W A DISTANCE OF 31.11 FEET;
15. THENCE S07°26'02"W A DISTANCE OF 196.00 FEET;
16. THENCE S37°33'58"E A DISTANCE OF 31.11 FEET;
17. THENCE S07°26'02"W A DISTANCE OF 80.00 FEET;
18. THENCE N82°33'58"W A DISTANCE OF 518.76 FEET TO A CURVE TO THE LEFT;
19. THENCE ON THE ARC OF SAID CURVE, HAVING A RADIUS OF 7440.00 FEET, A DELTA ANGLE OF 00°18'41", AN ARC LENGTH OF 40.44 FEET, WHOSE LONG CHORD BEARS N82°43'19"W A DISTANCE OF 40.44 FEET;
20. THENCE S51°52'47"W A DISTANCE OF 31.03 FEET;
21. THENCE N83°16'41"W A DISTANCE OF 60.00 FEET;
22. THENCE N38°26'09"W A DISTANCE OF 31.03 FEET TO A NON-TANGENT CURVE TO THE LEFT;
23. THENCE ON THE ARC OF SAID CURVE, HAVING A RADIUS OF 7440.00 FEET, A DELTA ANGLE OF 02°14'02", AN ARC LENGTH OF 290.08 FEET, WHOSE LONG CHORD BEARS N84°47'44"W A DISTANCE OF 290.06 FEET;
24. THENCE N85°54'45"W A DISTANCE OF 400.64 FEET TO A CURVE TO THE LEFT;
25. THENCE ON THE ARC OF SAID CURVE, HAVING A RADIUS OF 900.00 FEET, A DELTA ANGLE OF 06°09'39", AN ARC LENGTH OF 96.77 FEET, WHOSE LONG CHORD BEARS N88°59'34"W A DISTANCE OF 96.73 FEET;
26. THENCE S87°55'36"E A DISTANCE OF 348.00 FEET TO A POINT ON THE EASTERLY BOUNDARY OF SAID THE ESTATES AT ROLLING HILLS RANCH FILING NO. 1;

THE FOLLOWING FOURTEEN (14) COURSES ARE ON SAID BOUNDARY LINE:

27. THENCE N02°04'24"W A DISTANCE OF 100.00 FEET;
28. THENCE N47°04'24"W A DISTANCE OF 31.11 FEET;
29. THENCE N02°04'24"W A DISTANCE OF 45.00 FEET TO A CURVE TO THE RIGHT;
30. THENCE ON THE ARC OF SAID CURVE, HAVING A RADIUS OF 220.00 FEET, A DELTA ANGLE OF 40°46'08", AN ARC LENGTH OF 156.54 FEET, WHOSE LONG CHORD BEARS N18°18'40"E A DISTANCE OF 153.26 FEET;
31. THENCE N38°41'44"E A DISTANCE OF 231.44 FEET;
32. THENCE N51°18'16"W A DISTANCE OF 60.00 FEET;
33. THENCE S83°41'44"W A DISTANCE OF 31.11 FEET;
34. THENCE N51°18'16"W A DISTANCE OF 170.23 FEET;
35. THENCE N38°41'44"E A DISTANCE OF 150.00 FEET;
36. THENCE N00°00'00"E A DISTANCE OF 254.85 FEET;
37. THENCE N30°02'34"W A DISTANCE OF 180.68 FEET;
38. THENCE N35°00'00"W A DISTANCE OF 540.00 FEET;
39. THENCE N00°00'00"E A DISTANCE OF 232.89 FEET;
40. THENCE N00°00'00"E A DISTANCE OF 108.00 FEET;
41. THENCE N00°00'00"E A DISTANCE OF 332.03 FEET TO THE POINT OF BEGINNING.

THE ABOVE PARCEL OF LAND CONTAINS 117.211 ACRES, MORE OR LESS.

BEARINGS ARE BASED ON THE SOUTH LINE OF THE SW ¼ OF SECTION 29, TOWNSHIP 12 SOUTH, RANGE 64 WEST OF THE 6TH P.M., ASSUMED TO BEAR S89°25'42"E FROM THE SOUTHWEST CORNER OF SAID SECTION 29 (A STONE W/SCRIBED "X") TO THE SOUTH QUARTER CORNER OF SAID SECTION 29 (3.25" ALUM. CAP LS #30087).

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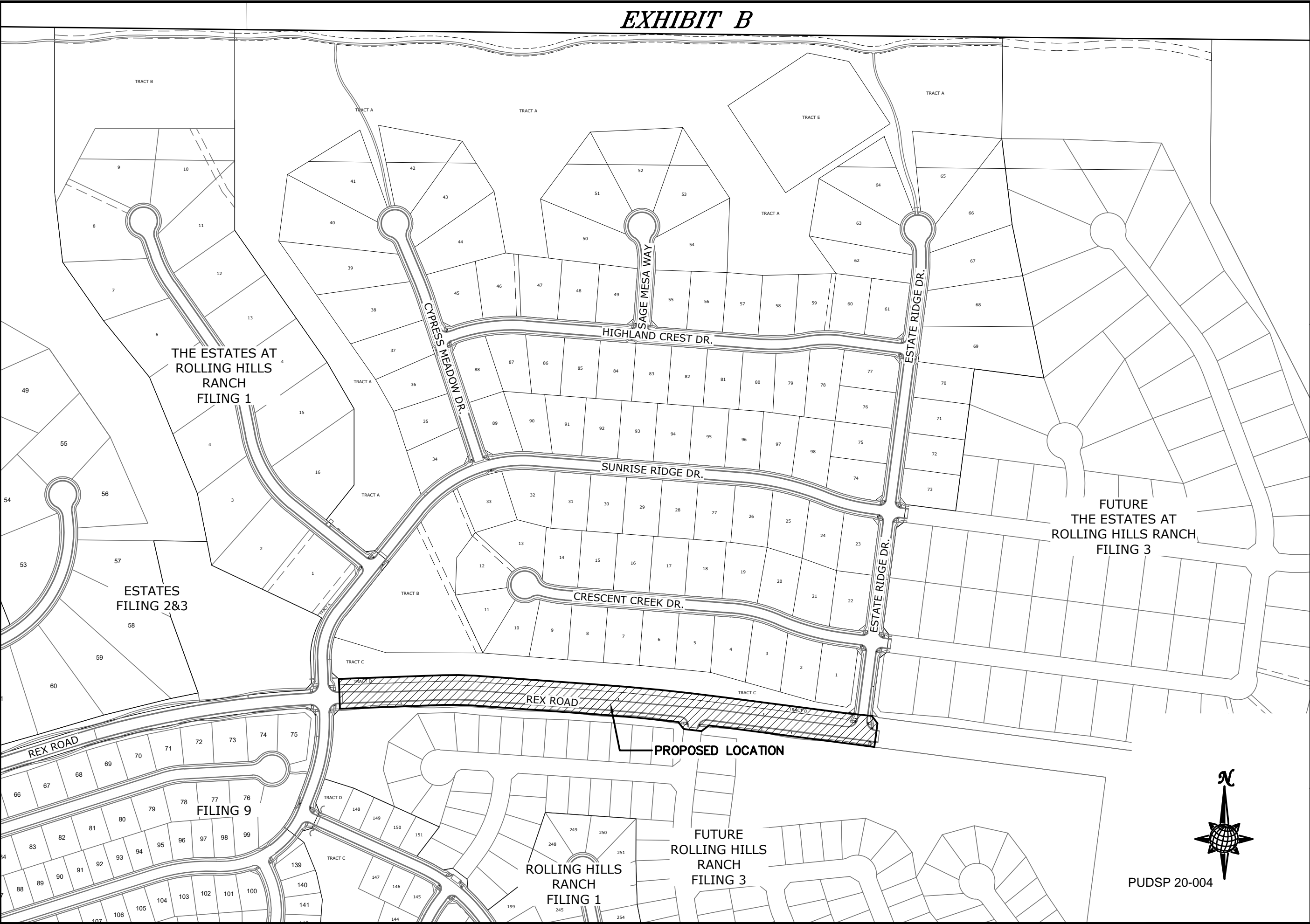
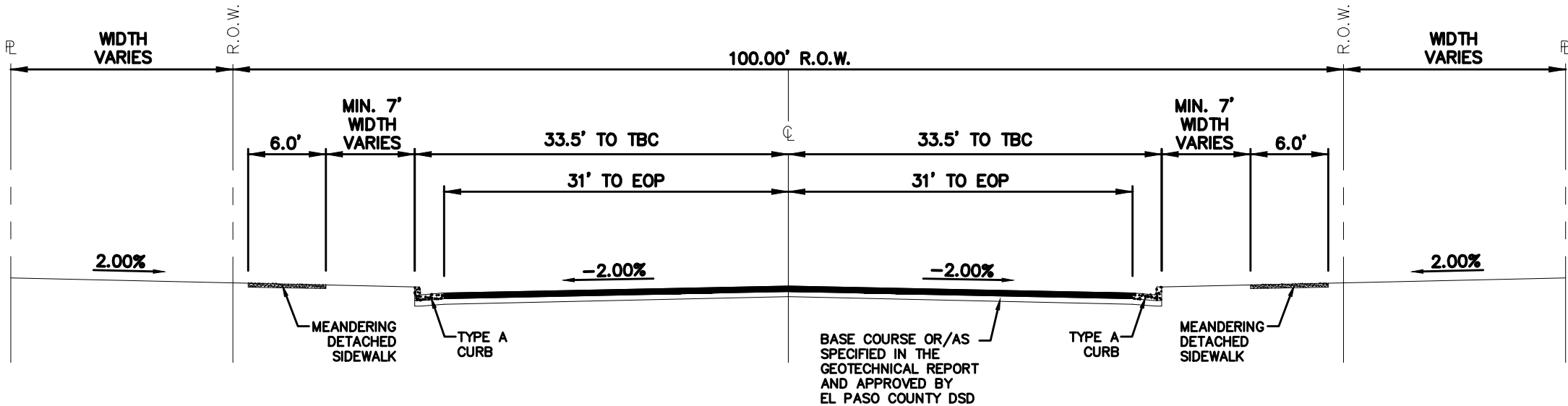


EXHIBIT B

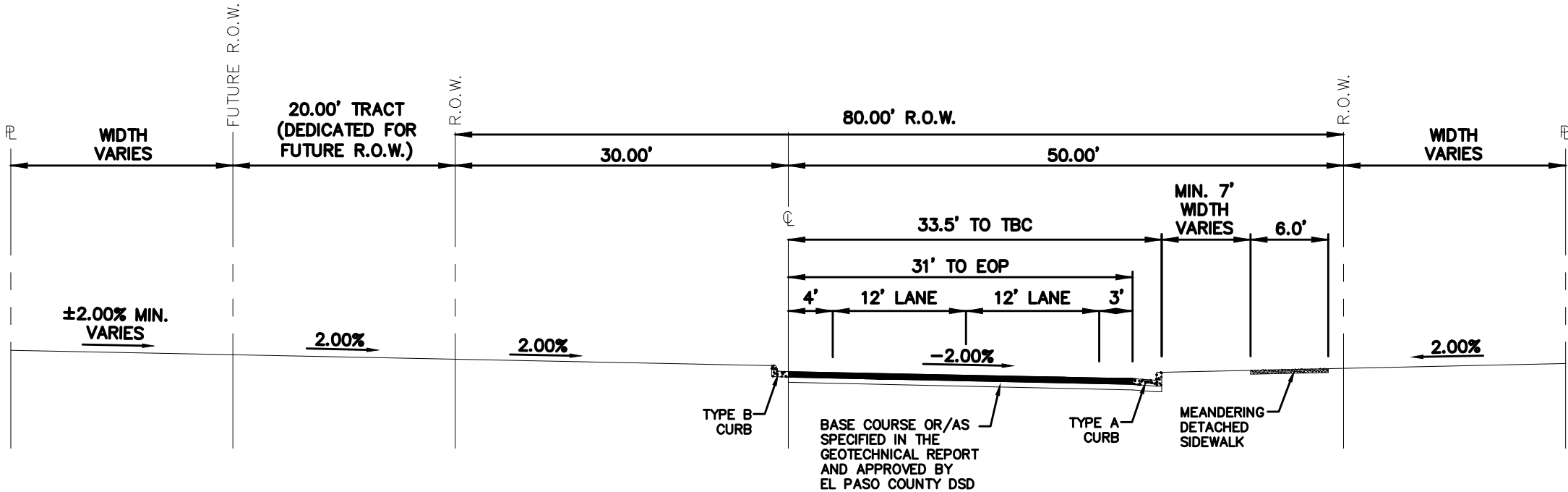
Scale 1"=300'		Sheet Number EXHIBIT B		Drawn by LGA		Checked by TAK		Date APRIL 2020		ESTATES AT ROLLING HILLS RANCH FILING 2 DEVIATION EXHIBIT REX ROAD		TECH CONTRACTORS 11886 STAPLETON DRIVE FALCON, CO 80831 TELEPHONE: 719.495.7444 FAX: 719.495.3349	
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EXHIBIT C



REX ROAD
MINOR ARTERIAL
SCALE : N.T.S.



REX ROAD
TEMP. MINOR ARTERIAL
SCALE : N.T.S.

PUDSP 20-004

TECH CONTRACTORS
11886 STAPLETON DRIVE
FALCON, CO 80831
TELEPHONE: 719.495.7444
FAX: 719.495.3349

ESTATES AT ROLLING HILLS RANCH FILING 2
DEVIATION EXHIBIT
REX ROAD

Drawn by
Log
Checked by
TAK
Date
APRIL 2020

Scale
AS SHOWN
Sheet Number
EXHIBIT C

APPENDIX - Meeting Minutes from Fee Committee





ROAD IMPACT FEE ADVISORY COMMITTEE
MEETING MINUTES

Date: November 18, 2020 (10:00 PM – 12:00 PM)

Where: Remote meeting

Members Present: Jeff Mark, Jennifer Irvine, Craig Dossey, Randy Case, Steve Hicks, Jerry Novak, Nikki Simmons

Others Present: Victoria Chavez, Lori Seago, Jeff Hodsdon, Tom Kerby, Elizabeth Nijkamp,

1. Call to order

Mr. Case called the meeting to order at 10:02 AM.

2. Introductions

3. Fee Advisory Committee Approved the Agenda

Ms. Irvine moved, and Mr. Dossey seconded the motion to approve and the Fee Committee unanimously approved the agenda.

4. Approval of minutes, April 23 Meeting – Vote

Ms. Simmons moved, and Mr. Hicks seconded the motion to approve the April meeting minutes as amended. The vote was unanimous.

5. Rex and Meridian Signal Request– Discussion/Vote – Tom Kerby – Discussion/Vote

Mr. Kerby presented the request to make the signal at Rex Road and Meridian Road eligible for credit in the road impact fee program. He provided background data, signal warrant information, traffic counts, traffic projections and signal inclusion criteria. The committee asked questions about functional classification, nearby developments, future road connections and to review the development per the criteria in the Implementation Document. Mr. Dossey moved and Mr. Novak seconded the motion to include the Rex Road and Meridian Road intersection as an Eligible Intersection Improvement. The motion was unanimous.

6. Finance Report – Information – Nikki Simmons

Ms. Simmons reviewed the September Finance Reports. She noted that staff will review the finances in January and request reimbursement for Central Marksheffel Metro District (CMMD) and Glen Development. Per the vote of the committee at the January meeting and subsequent IGA amendment, there is no vote of the committee needed to reimburse 50% of the revenues to CMMD and 50% to Glen Development until their credits are reimbursed.



Preliminary Budget for the Fee Program for 2021 is being requested to include \$2.5 million in revenues.

7. Draft Credit Request Presentation Template – Comments from Members

Ms. Chavez reviewed the draft template. The committee requested to have it formatted like other PCD checklists, adding a purpose paragraph with unit costs, adding date, applicant, contact information, file numbers, etc.

8. Memos from the Fee Administrator – Information

Ms. Chavez reviewed the memos that allow for the Fee Program Manager to determine trip rates or the fee categories for non-standard land uses. Committee members commented that this will reduce the administrative burden of implementing the program and making the process faster for applicants.

9. Public comments on items not on the agenda

Mr. Dossey provided an update on the EPC Master Plan, expected to be passed early next year. The committee asked for a presentation in January/February of 2021.

Mr. Case asked about the upcoming change in the Woodmen Road Metro District (WRMD) IGA. Ms. Seago summarized the change coming on January 1, 2021. Mr. Case asked about what may happen if the district bonds are retired and impact on vacant land. This has not been determined yet. WRMD may retire bonds in 2024. Ms. Seago agreed to provide the committee with a summary of the WRMD IGA.

Mr. Case also asked about an update to the bylaws to allow for virtual meetings and if any members terms are expiring. Ms. Chavez will look into this.

10. Items for Future Agendas

The committee would like to discuss the EPC Master Plan update, finalizing the format for presentation of improvement requests to the committee, potential bylaw updates, and bringing credit agreements to the committee as an information item.

11. Adjourn

Mr. Case closed the meeting at 11:03 AM.