



LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: <http://www.lsctrans.com>

The Estates at Rolling Hills Ranch
Filing No. 1
Traffic Impact Analysis
(LSC #194750)
September 25, 2019

PCD File No.
PUDSP-19-007 &
SF-19-019

Traffic Engineer's

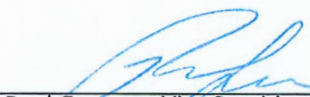
This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Developer's Statement

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

GTL, INC.


Raul Guzman, Vice President

September 25, 2019
Date



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September 25, 2019
Mr. Raul Guzman
Tech Contractors
P.O. Box 80036
San Diego, CA 92138

RE: Estates at Rolling
Hills Ranch Filing 1
El Paso County, Colorado
Traffic Impact Analysis
LSC #194750

Dear Mr. Guzman:

In response to your request, LSC Transportation Consultants, Inc. has prepared this traffic impact analysis for the Estates at Rolling Hills Ranch Filing 1 in El Paso County, Colorado. As shown in Figure 1, the site is located generally north of Rex Road and west of Eastonville Road in El Paso County, Colorado. LSC completed a study for the recently approved Meridian Ranch Sketch Plan amendment. The supporting traffic report date is October 3, 2017.

REPORT CONTENTS

This report is being prepared as part of a submittal to El Paso County. It identifies the traffic impacts of the Estates at Rolling Hills Ranch at Meridian Ranch residential development. The report contains the following:

- The traffic count data and street conditions;
- Short-term and 2040 baseline/background traffic volume estimates;
- The projected average weekday and peak-hour vehicle-trips to be generated by the site;
- The assignment of the site's projected traffic volumes to the key area streets and intersections for the short and long term and the resulting total traffic volumes for the short and long term;
- The resulting traffic impacts including level of service analysis at the intersection of Rex Road/Meridian Road and the future intersections of Rex Road/Sunrise Ridge Drive and Rex Road/Eastonville Road and the site access to Rex Road;
- Recommendations for auxiliary turn lanes;
- A traffic signal warrant analysis at Meridian Road/Rex Road;
- The recommended street classifications for the internal streets within the proposed development.

Previous Traffic Reports Completed in the Area

A list of other traffic studies in the area of study completed within the past five years (that LSC is aware of) is attached for reference. 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 site plan for the Estates at Rolling Hills Ranch Filing 1. The site is planned to include a total of 16 lots for single family homes. As part of this development, Rex Road is planned to be constructed from its existing terminus just east of Pyramid Peak Drive to Sunrise Ridge Drive. Furthermore, Sunrise Ridge Drive is planned to be extended from its current terminus to north of Rex Road to serve the currently proposed filing.

Conformance to the 2017 Sketch Plan Amendment

The currently proposed land use, internal circulation, connectivity, and access for this project is generally comparable to the 2017 Sketch Plan Amendment and the associated LSC traffic report dated October 3, 2017.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

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

- **Rex Road** extends east from Goodson Road to Pyramid Peak Drive within the Meridian Ranch development. Rex Road will be extended east to Eastonville Road and ultimately will be extended to US Highway 24. Rex Road is classified as a Minor Arterial roadway by El Paso County.
- **Meridian Road** extends north from South Blaney Road to County Line Road. 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 *Major Transportation Corridors Plan (MTCP)*.
- **Eastonville Road** is shown as a two-lane Minor Arterial on the El Paso County *Major Transportation Corridors Plan (MTCP)*. Eastonville Road is a two-lane roadway extending northeast from Meridian Road past Hodgen Road. 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,



Include both the MTCP 2040 Roadway Plan (Classification and Lanes) and Corridor Preservation Plan in the appendix with the project location shown/labeled on both maps.
Please include these for all future Traffic Impact Study to help expedite review of the TIS.
Attached is an example

1. Provide background history on when and why the existing section of Rex Rd between Mt Gateway Dr and Pyramid Peak (or Sunrise Ridge Dr) was reduced to a residential collector classification.

Double check. The current MTCP does not show Rex Road extending to Hwy 24

State the MTCP's lane and classification. (4-lane Minor Arterial.

Please indicate the year(2016) of the MTCP

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 existing traffic volumes at the intersection of Meridian Road and Rex Road. These volumes are based on manual intersection turning movement counts conducted by LSC in March 2019. The count data sheets are attached for reference.

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	≤ 10.0
B	10.1 - 20.0	10.1 - 15.0
C	20.1 - 35.0	15.1 - 25.0
D	35.1 - 55.0	25.1 - 35.0
E	55.1 - 80.0	35.1 - 50.0
F	≥ 80.1	≥ 50.1
¹ For unsignalized intersections, if v/c is > 1.00, then LOS is LOS F, regardless of the projected average control delay per vehicle		

Figure 3 presents the results of the existing intersection level of service analysis. Levels of service 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.

BACKGROUND TRAFFIC

Background traffic is the traffic estimated to be on the study area streets without consideration of the proposed development. It includes through traffic and traffic generated by adjacent/nearby developments.

Figure 4 shows the projected background traffic volumes for the short term. These background traffic volumes have been based on the existing traffic volumes (from Figure 3) plus estimates of additional traffic due to buildout of the approved residential filings within Meridian Ranch including Meridian Ranch Filing 9 and Meridian Ranch Estates. The short-term background traffic volumes do not include traffic from the Estates at Rolling Hills Ranch Filing 1. The short-term background analysis assumes Rex Road has been extended east to Sunrise Ridge Drive only.

Figure 5 shows the projected 20-year background traffic volumes for the year 2040. The 2040 background/baseline traffic volumes are based on the *Meridian Ranch Sketch Plan Amendment Traffic Impact Analysis* dated October 3, 2017 and assume buildout of the Meridian Ranch development. The 2040 background traffic volumes do not include traffic from the Estates at Rolling Hills Ranch Filing 1.

TRIP GENERATION

The site-generated vehicle-trips were estimated using the nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). Table 2 shows the trip generation estimates by phase.

The Estates at Rolling Hills Ranch Filing 1 is expected to generate about 151 vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, which generally occurs for one hour between 6:30 a.m. and 8:30 a.m., about three vehicles would enter and nine vehicles would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15p.m. and 6:15 p.m., about ten vehicles would enter and six vehicles would exit the site.

DIRECTIONAL DISTRIBUTION

The directional distribution of the site-generated traffic volumes on the area roadways is an important factor in determining the site's traffic impacts. Figure 6 shows the short-term and long-term external directional distribution estimates for the site-generated traffic volumes. The estimates have been based on the following factors: the recent traffic count data; the site's location with respect to the nearby employment, commercial, and activity centers and the balance of the Falcon and Colorado Springs metropolitan area; the site's proposed land use; the site's proposed access points; and the phasing of the existing and future roadway system serving the site. The short-term distribution assumes the existing area street network with Rex Road extended east to Sunrise Ridge Drive only. The long-term distribution is based on the distribution estimate shown in the study for the most recent Meridian Ranch Sketch Plan amendment dated October 3, 2017 and takes into account the future extension of Stapleton Drive west to Briargate Parkway and extension of Rex Road east to Eastonville Road.

SITE-GENERATED TRAFFIC

The site-generated traffic volumes were calculated by applying the directional distribution percentages (from Figure 6) to the trip generation estimates from Table 2. Internal trips within the overall Meridian Ranch development have been assigned separately based on the location of the neighborhood commercial parcel, schools, parks, and community centers. Figures 7 and 8 show the projected short-term and long-term site-generated traffic volumes, respectively.

TOTAL TRAFFIC

Figure 9 shows the projected short-term total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4) plus the short-term site-generated traffic volumes from Figure 7.

Figure 10 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 5) plus the 2040 site-generated traffic volumes from Figure 8.

PROJECTED LEVELS OF SERVICE

The key area intersections and site access points have been analyzed to determine the projected future levels of service based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6th Edition* by the Transportation Research Board and Synchro signalized intersection procedures. Figures 4, 5, 9, and 10 show the level of service analysis results. The laneage and traffic control assumed in the analysis are depicted in the figures. The level of service reports are attached.

Meridian/Rex

The intersection of Meridian/Rex is currently two-way, Stop-sign controlled. The westbound left-turn movement at this intersection is currently operating at a LOS F during the morning and afternoon peak hours. If this intersection were to be converted to signal control, all movements are projected to operate at LOS D or better during the peak hours based on the projected short-term and 2040 total traffic volumes.

Sunrise Ridge/Rex

The intersection of Sunrise Ridge/Rex is projected to operate at a LOS C or better for all movements as a two-way, stop sign-controlled intersection based on the projected short-term and 2040 total peak-hour traffic volumes.

Eastonville/Rex

Rex Road is planned to be extended east to Sunrise Ridge Drive only in the short-term. By 2040 it was assumed that Rex Road would be extended east to Eastonville Road but not further east to US 24. The intersection of Eastonville/Rex is projected to operate at LOS D or better for all movements as a stop sign-controlled "T" intersection based on the projected 2040 total peak hour traffic volumes.

TRAFFIC SIGNAL WARRANT ANALYSIS

Rex/Meridian

The intersection of Rex Road and Meridian Road was analyzed to determine if a traffic signal warrant, based on either vehicular volume or crash history, is either currently met or would be met in the short term.

Update the sentence. Missing a word

Note: The County a contract with AECOM approved in July to prepare a preliminary design and traffic study for the Rex Road-Meridian Road Intersection. The services include project coordination, project management, traffic study update, concept update and preliminary design. Optional/Additional services may include final design, property acquisition and/or engineering support during the construction phase.

Vehicular Volume Traffic Signal Warrants

The combination of major street approach volumes (includes the sum of northbound and southbound approach volumes) and minor street volumes (eastbound and westbound approaches analyzed separately) at the subject intersection were analyzed to determine if the combination currently exceeds or would exceed the threshold criteria for Eight-Hour and/or Four-Hour Vehicular Volume Traffic Signal Warrants in the *2009 Manual on Uniform Traffic Control Devices* (MUTCD). Table 3 shows the warrant evaluation.

Five of the eight hours analyzed currently meet the thresholds for both a Four-Hour Vehicular Volume Warrant. These same five hours currently meet the criteria for an Eight Hour Vehicular Volume Warrant based on Condition B – Interruption of Continuous Traffic. All eight hours analyzed could potentially meet the Condition B criteria with growth of through traffic on Meridian Road and the projected additional traffic on Rex Road due to buildout of the approved Meridian Ranch residential filings.

Warrant 7 Analysis (Crash Experience)

The following is from the MUTCD:

In the conclusions and recommendations section, identify alternatives that can be taken by the developer to bring the east leg of the intersection to a satisfactory LOS

Support:

01 The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

Standard:

02 The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

The Colorado State Patrol provided LSC with crash data for the intersection of Rex Road and Meridian Road from 2016 through 2018. There were five reported crashes at this intersection in 2018. Four of the crashes would clearly be considered susceptible to correction by a traffic control signal. The 5th crash was a rear end crash involving two eastbound vehicles that could potentially also be susceptible to correction by a traffic control signal. A sixth crash occurred 2 weeks outside of the 12-month window that would be susceptible to correction by a traffic control signal. A copy of these data are attached for reference.

Based on analysis of the available data, item B above has likely been satisfied as five crashes susceptible to correction by a traffic control signal were reported in a twelve-month period. Item C is also currently satisfied. Item A would likely be reviewed by AECOM as part of their contracted work with El Paso County. Based on the analysis contained in this report, this would be the final remaining item before the warrant is satisfied.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

- The estates at Rolling Hills Ranch Filing 1 is expected to generate about 151 vehicle-trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour about three vehicles would enter and nine vehicles would exit the site. During the afternoon peak hour about ten vehicles would enter and six vehicles would exit the site.

Required Improvements

- A list of all improvements in the vicinity of the site is presented in Table 4.

Street Classifications

- Figure 11 shows the recommended internal street classifications.

Intersection Traffic Control

- The intersection of Rex/Meridian is likely close to meeting a traffic signal. Please refer to the "Traffic Signal Warrant Analysis" section above for details. Also, the County approved a contract with AECOM in July to prepare a preliminary design and traffic study for the Rex Road-Meridian Road Intersection.

Transportation Improvement Fee Program

- The Estates Rolling Hills Ranch Filing 1 will not be required to participate in the Countywide Transportation Improvement Fee Program as Meridian Ranch is located within **the Woodmen Road Metropolitan District**. Woodmen Road district fees would apply.

* * * * *

List all deviations that the applicant will be making.

Please state what the sight distance is for the proposed intersections and whether they can be met. Provide an exhibit also.

Provide recommendations for crosswalks/stop-bars at the intersection of Rex Rd and Sunrise Ridge Dr.

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

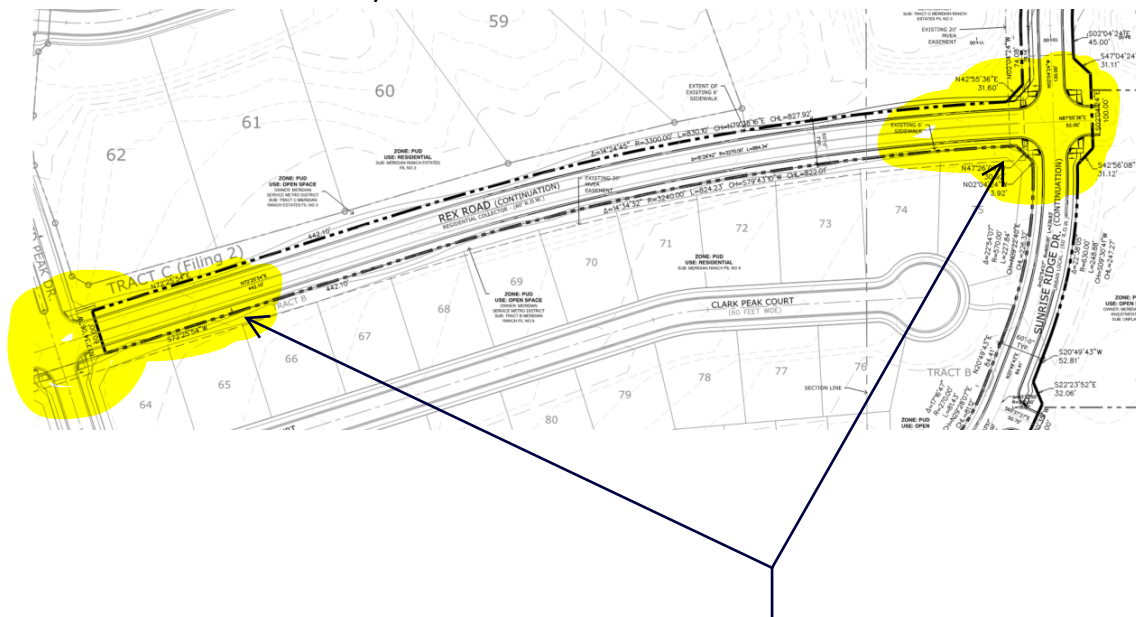
Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:jas

Enclosures: Tables 2-4
Figures 1-11
List of Recent Traffic Studies in the Area
Traffic Count Reports
Level of Service Reports
Crash History



Rex Road is being extended to Sunrise Ridge Dr. Provide analysis/conclusion/recommendation for auxiliary lanes at these intersection. Based on the overall development plan and anticipated traffic of future planning would turn lanes be required on Rex Road? If so, it seems prudent to construct the intersections to accommodate these future turn lanes.

Tables and Figures



<p style="text-align: center;">Table 1 Trip Generation Estimate The Estates at Rolling Hills Filing 1</p>

Land Use Code		Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾				Total Trips Generated					
				Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
					In	Out	In	Out		In	Out	In	Out
210	Single-Family Detached Housing	16 DU ⁽²⁾	9.44	0.19	0.56	0.62	0.37	151	3	9	10	6	

Notes:
(1) Source: " <i>Trip Generation, 10th Edition, 2017</i> " by the Institute of Transportation Engineers (ITE)
(2) DU = dwelling units

(1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE)

(2) DU = dwelling units

Source: LSC Transportation Consultants, Inc.

Table 3
The Estates at Rolling Hills Filing 1
Traffic Signal Warrant Analysis of Rex Road/Meridian Road

Hour	Traffic Volumes															Warrant 1, Eight Hour Vehicular Volume Evaluation ⁽⁵⁾										Warrant 2, Four Hour Vehicular Volume Evaluation ⁽⁵⁾					Warrant 7, Crash Experience ⁽⁶⁾															
	Existing ⁽¹⁾			Short-Term Background Traffic						Short-Term Total Traffic						Warrant Thresholds				Warrant Threshold Met?						Warrant Threshold Met?			Warrant Threshold Met?				Warrant Volume Thresholds				Warrant Threshold Met?									
				Buildout of Meridian Ranch Estates Fil 3 and Meridian Ranch Fil 9			Existing + Approved			The Estates at Rolling Hills Ranch Fil 1			Existing + Approved + Currently Proposed			Condition A (70%)		Condition B (70%)		Existing		Short-Term Background		Short-Term Total					Warrant Threshold Minor Minimum		Existing		Existing + Approved + Currently Proposed		Short-Term Future		Condition A (56%)		Condition B (56%)		Existing		Existing + Approved + Currently Proposed		Short-Term Future	
				Fil 9																																										
	Major ⁽²⁾	EB ⁽³⁾	WB ⁽⁴⁾	Major	EB	WB	Major	EB	WB	Major	EB	WB	Major	EB	WB	Major	Minor	Major	Minor	A	B	A	B	A	B	Warrant Threshold Minor Minimum	Existing	Existing + Approved + Currently Proposed	Short-Term Future	Condition A (56%) Major	Condition A (56%) Minor	Condition B (56%) Major	Condition B (56%) Minor	A	B	A	B	A	B							
6:30 AM	783	80	192	5	2	18	788	85	210	2	0	5	790	82	215	350	105	525	53	Yes	Yes	Yes	Yes	Yes	Yes	62	Yes	Yes	Yes	336	84	504	42	Yes	Yes	Yes	Yes	Yes	Yes							
7:30 AM	809	75	93	9	3	30	818	84	123	3	0	9	821	78	132	350	105	525	53	No	Yes	Yes	Yes	Yes	Yes	60	Yes	Yes	Yes	336	84	504	42	Yes	Yes	Yes	Yes	Yes	Yes							
11:30 AM	472	82	75	16	5	13	488	98	88	5	1	4	493	88	92	350	105	525	53	No	No	No	No	No	No	135	No	No	No	336	84	504	42	No	No	Yes	No	Yes	No							
12:30 PM	461	85	59	17	5	14	478	102	73	5	1	4	483	91	77	350	105	525	53	No	No	No	No	No	No	139	No	No	No	336	84	504	42	Yes	No	Yes	No	Yes	No							
1:45 PM	471	71	51	21	6	16	492	92	67	6	1	5	498	78	72	350	105	525	53	No	No	No	No	No	No	135	No	No	No	336	84	504	42	No	No	Yes	No	No	No							
2:45 PM	852	129	80	25	7	15	877	154	95	7	1	5	884	137	100	350	105	525	53	Yes	Yes	Yes	Yes	Yes	Yes	60	Yes	Yes	Yes	336	84	504	42	Yes	Yes	Yes	Yes	Yes	Yes							
4:00 PM	693	159	61	31	9	19	724	190	80	9	1	6	733	169	86	350	105	525	53	Yes	Yes	Yes	Yes	Yes	Yes	71	Yes	Yes	Yes	336	84	504	42	Yes	Yes	Yes	Yes	Yes	Yes							
5:00 PM	769	204	65	31	9	19	800	235	84	9	1	6	809	214	90	350	105	525	53	Yes	Yes	Yes	Yes	Yes	Yes	63	Yes	Yes	Yes	336	84	504	42	Yes	Yes	Yes	Yes	Yes	Yes							
																				4	5	5	5	5	5	5		5	5	5		5	5	5						6	5	8	5	7	5	
																				No	No	No	No	No	No	No		No	Yes	Yes		Yes	Yes	No						No	Yes	No	No	No		

Notes:

(1) Based on counts by LSC in March 2019.

(2) Meridian Road northbound and southbound left-turn, through, and right-turn volumes.

(3) Rex Road Eastbound left-turn, through, and right-turn volumes.

(4) Rex Road Westbound left-turn and through volumes only. Right-Turn volumes have been excluded as there is an existing exclusive lane for this turning movement

(5) Thresholds are based on 1 lane on the major approach and 1 lane on the minor approach with the 70% factor used as the major street speed exceeds 40 mph.

(6) Note: The traffic volume threshold evaluation is only one of several elements of Warrant No. 7. Please refer to the report narrative for details.

Source: LSC Transportation Consultants, Inc.

Provide an estimate (# of DUs) for when the 8hr warrant would be met.

Table 4 The Estates at Rolling Hills Ranch Filing No. 1 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 ⁽²⁾
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 ⁽²⁾
4	Construct Rex Road from Pyramid Peak Drive to Sunrise Ridge Drive with a street cross section matching the ECOM-standard Urban Residential Collector cross section. This cross section will fit within the existing 60-foot right-of way. Despite this cross section due to constrained right-of-way through this segment, Rex Road in its entirety through Meridian Ranch will likely remain classified as an Minor Arterial by El Paso County.	With this subdivision	Meridian Ranch
5	Construct Rex Road as a Minor Arterial half-section from Pyramid Peak Drive to Eastonville Road	With future Meridian Ranch subdivisions	Meridian Ranch
6	Rex Road from Eastonville Road to US 24 - Corridor Preservation	Beyond 2040 - Shown on the MTCP 2060 Corridor Preservation Plan	Corridor Preservation Through Grandview Estates
7	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
Rex/Meridian Intersection			
8	Rex/Meridian intersection traffic control	Currently under study by El Paso County	El Paso County
9	Potentially Improve the west leg of this intersection to improve lane alignment, potentially reduce the skew, provide separate left and right-turn lanes, and potentially other improvements (depending on the selected traffic control option). Restripe/reconfigure the east leg as needed.	Currently under study by El Paso County	El Paso County
Rex/Eastonville Intersection			
10	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
11	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
12	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
13	Reserve ROW for 155' eastbound right-turn deceleration lane plus 160 foot taper on Rex Road approaching Eastonville Road	Needed for ultimate extension of Rex Road east of Eastonville Road. Beyond 2040 - Shown on the MTCP 2060 Corridor Preservation Plan	ROW Preservation ONLY - with development projects
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. (9/25/2019)			

Revise the re developer.

The contract the sight dist of the interse warrant and c

Since Warrant installation of and Meridian criteria. How "the satisfact warrant or wa itself require traffic control discussion w Engineer, sho construction this filing. St additional gu County Engin

Review the c Impact Fee p if this is an el improvement under the roa

program.

Update the conclusion to identify if improvements at the east leg of Rex/Meridian is needed based on the development (independent of the AECOM study)



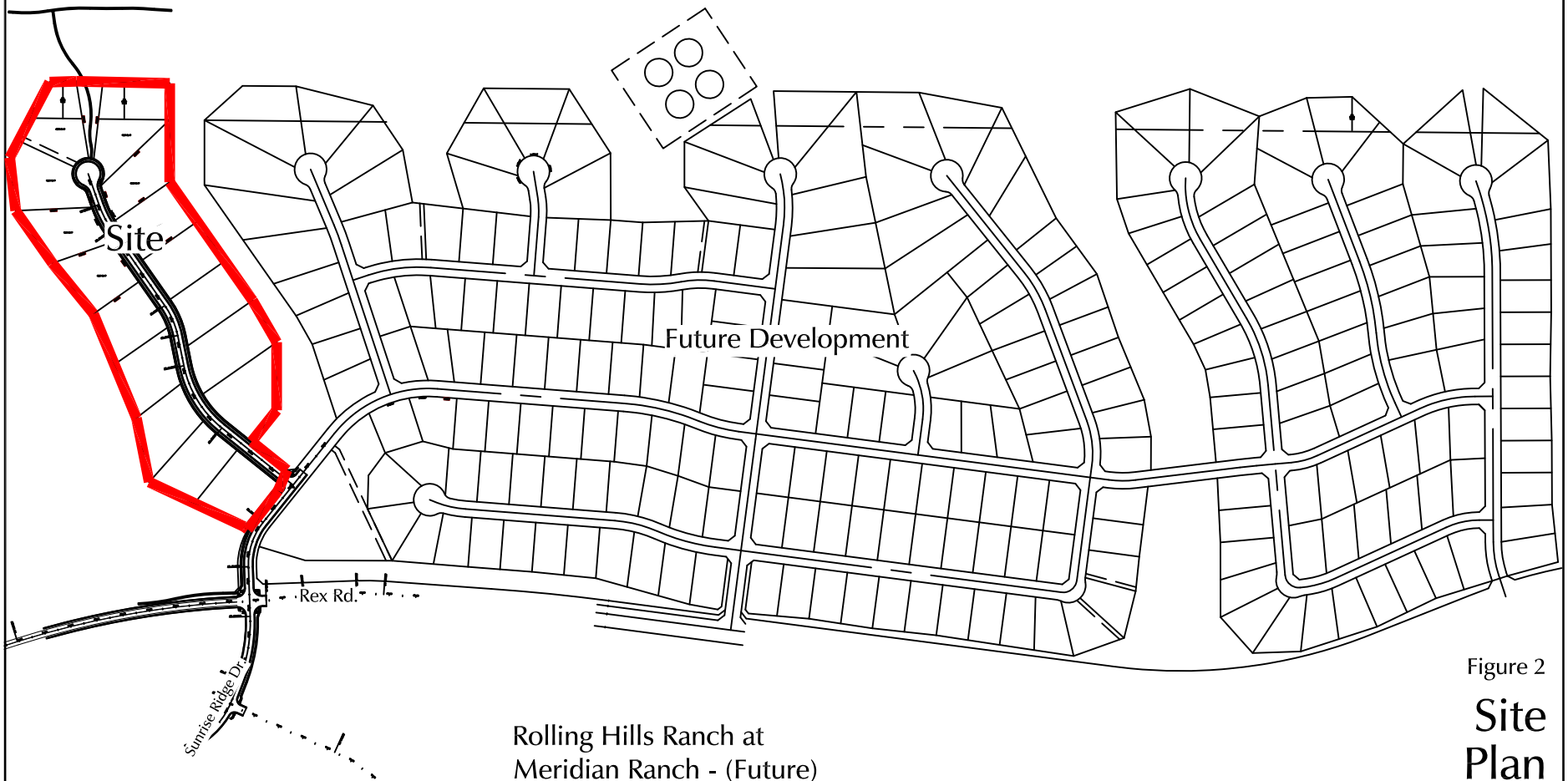
Approximate Scale
Scale: 1" = 2,000'

Figure 1
**Vicinity
Map**

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



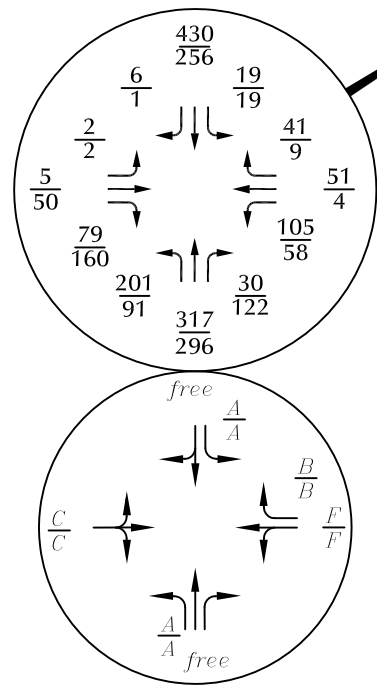
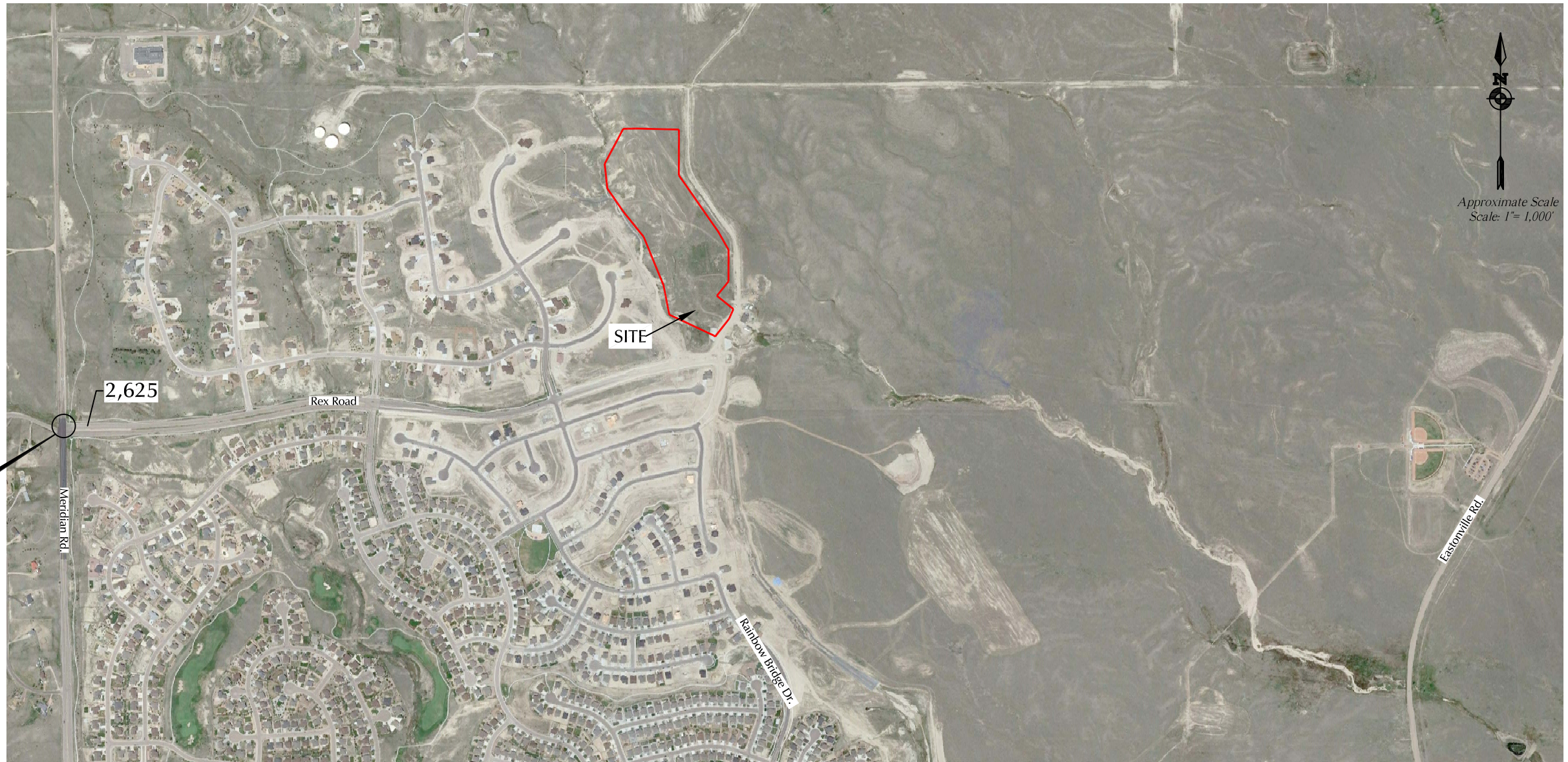
Approximate Scale
Scale: 1" = 600'



Rolling Hills Ranch at
Meridian Ranch - (Future)

Figure 2
**Site
Plan**

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



LEGEND:

- ⊥ = Stop Sign
- $\frac{XX}{XX}$ = $\frac{\text{AM Weekday Peak-Hour Traffic (vehicles per hour)}}{\text{PM Weekday Peak-Hour Traffic (vehicles per hour)}}$ Base on counts by LSC March 2019
- $\frac{A}{B}$ = $\frac{\text{AM Individual Movement Peak-Hour Level of Service}}{\text{PM Individual Movement Peak-Hour Level of Service}}$
- X,XXX= Average Daily Traffic (vehicles per day)

Figure 3

Existing Traffic, Lane Geometry, Traffic Control, and Level of Service

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



LEGEND:

┤ = Stop Sign

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

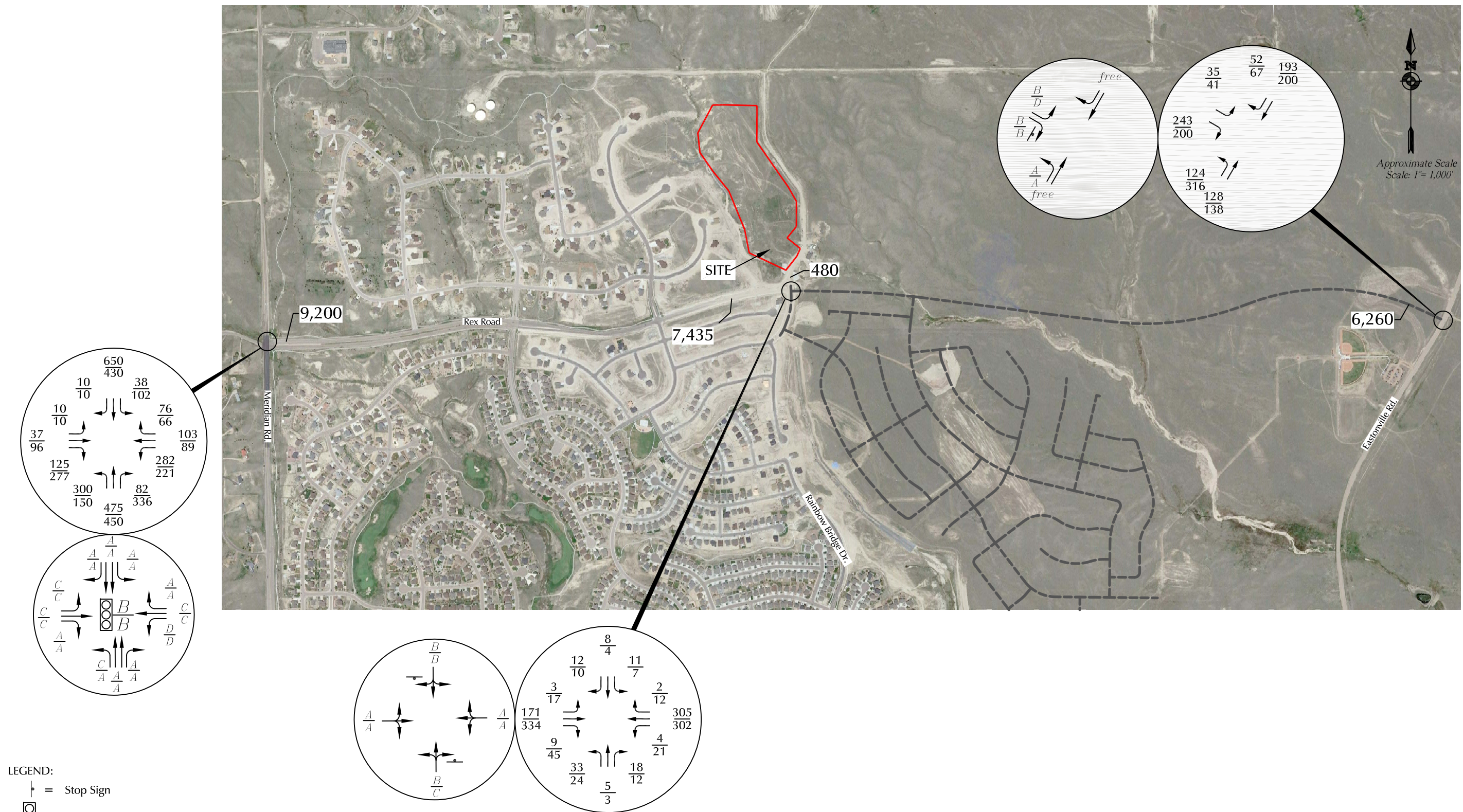
$\frac{A}{B}$ = AM Individual Movement Peak-Hour Level of Service
PM Individual Movement Peak-Hour Level of Service

X,XXX= Average Daily Traffic (vehicles per day)

Figure 4

Short-Term Background Traffic, Lane Geometry, Traffic Control and Level of Service

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



LEGEND:

⊥ = Stop Sign

⊞ = Traffic Signal

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

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

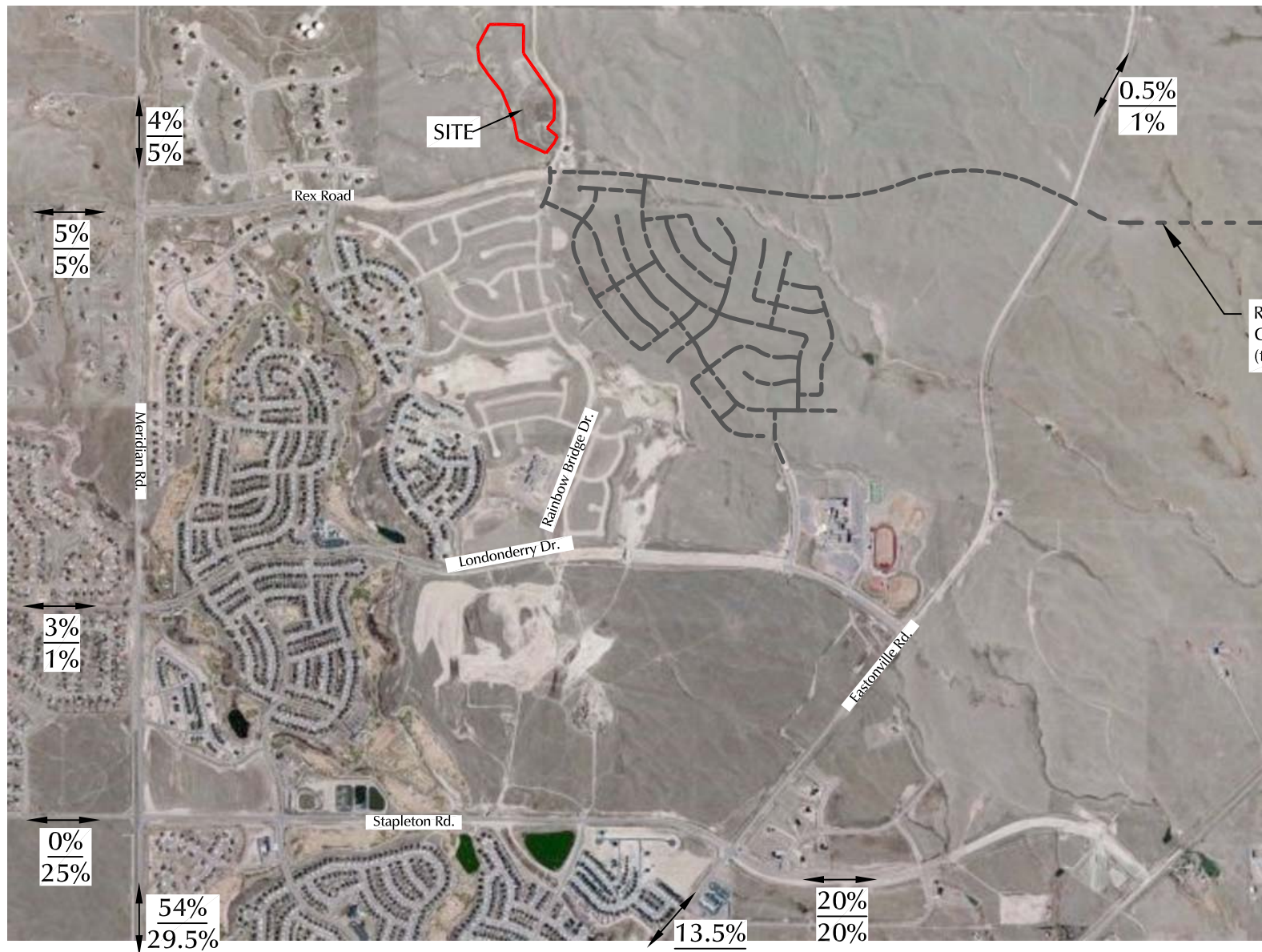
$\frac{C}{C}$ = AM Entire Intersection Peak-Hour Level of Service
 PM Entire Intersection Peak-Hour Level of Service


X,XXX= Average Daily Traffic (vehicles per day)

Figure 5

Year 2040 Background Traffic, Lane Geometry, Traffic Control and Level of Service

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)




 Approximate Scale
 Scale: 1" = 2,000'

Rex Road
 Corridor Preservation
 (to US Highway 24)

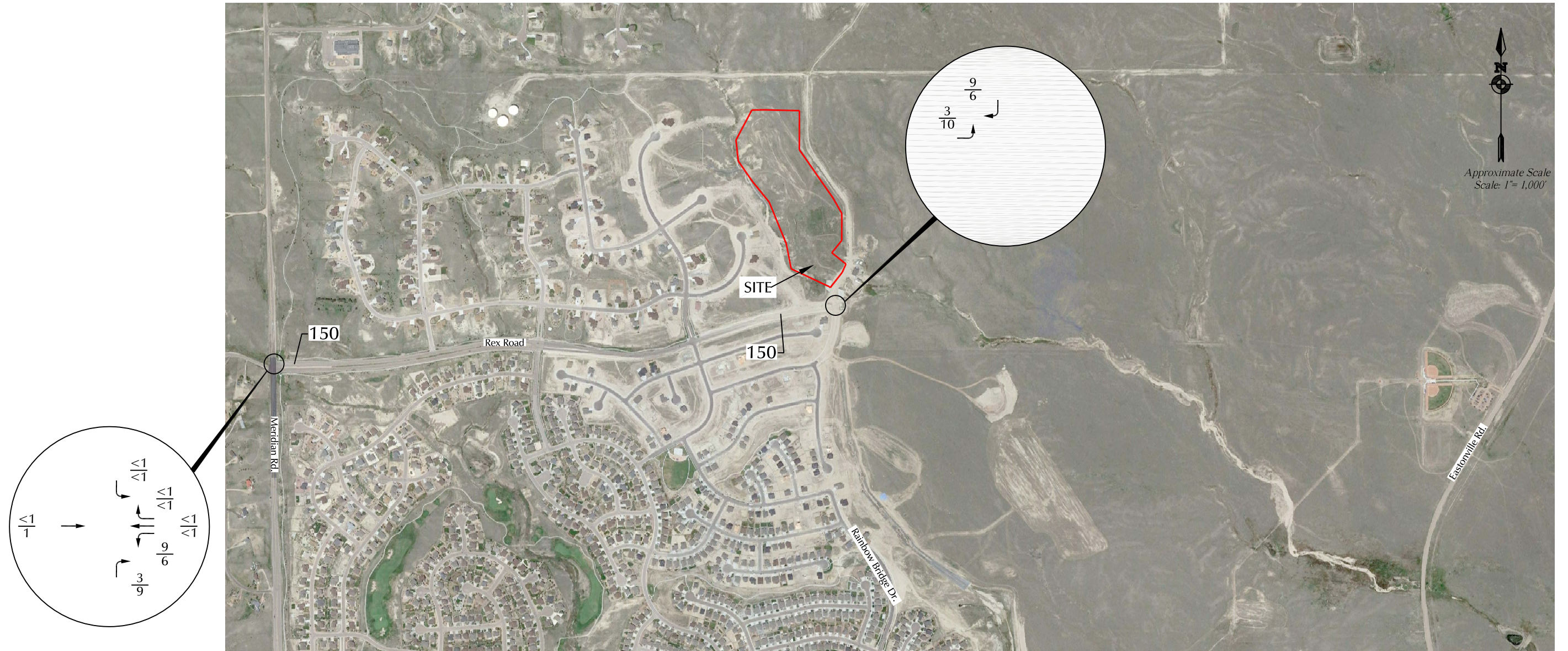
LEGEND:

$$\frac{\text{Short-Term Percent Directional Distribution}}{\text{2040 Percent Directional Distribution}} = \frac{\text{XX\%}}{\text{XX\%}}$$

Figure 6

Directional Distribution of Site-Generated Traffic

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



LEGEND:

$\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX= Average Daily Traffic (vehicles per day)

Figure 7

Assignment of Short-Term Site-Generated Traffic

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



LEGEND:
 $\frac{XX}{XX}$ = AM Weekday Peak-Hour Traffic (vehicles per hour)
 $\frac{XX}{XX}$ = PM Weekday Peak-Hour Traffic (vehicles per hour)
 X,XXX= Average Daily Traffic (vehicles per day)

Figure 8
**Assignment of
 2040 Site-Generated Traffic**
 The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)

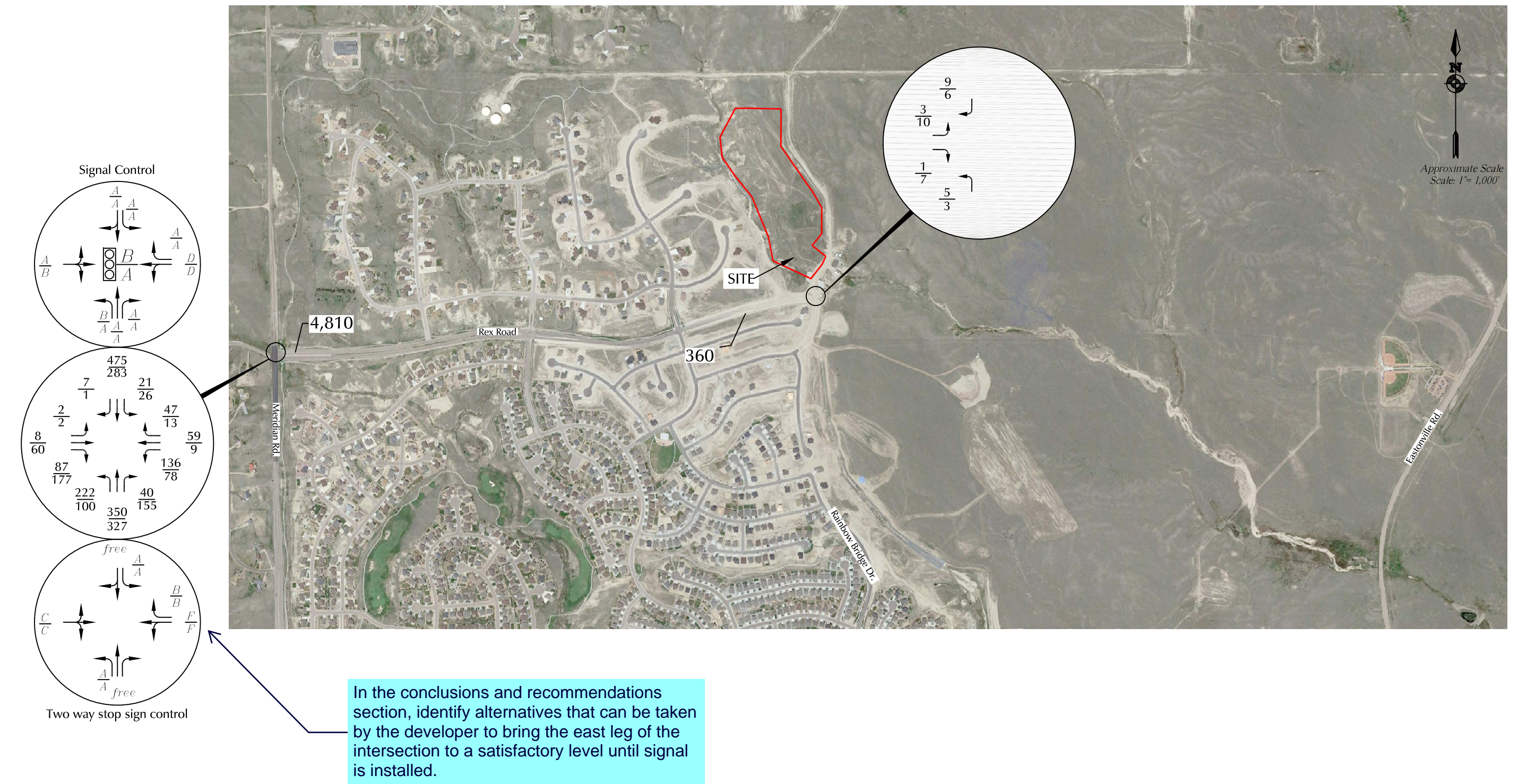


Figure 9

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

The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)

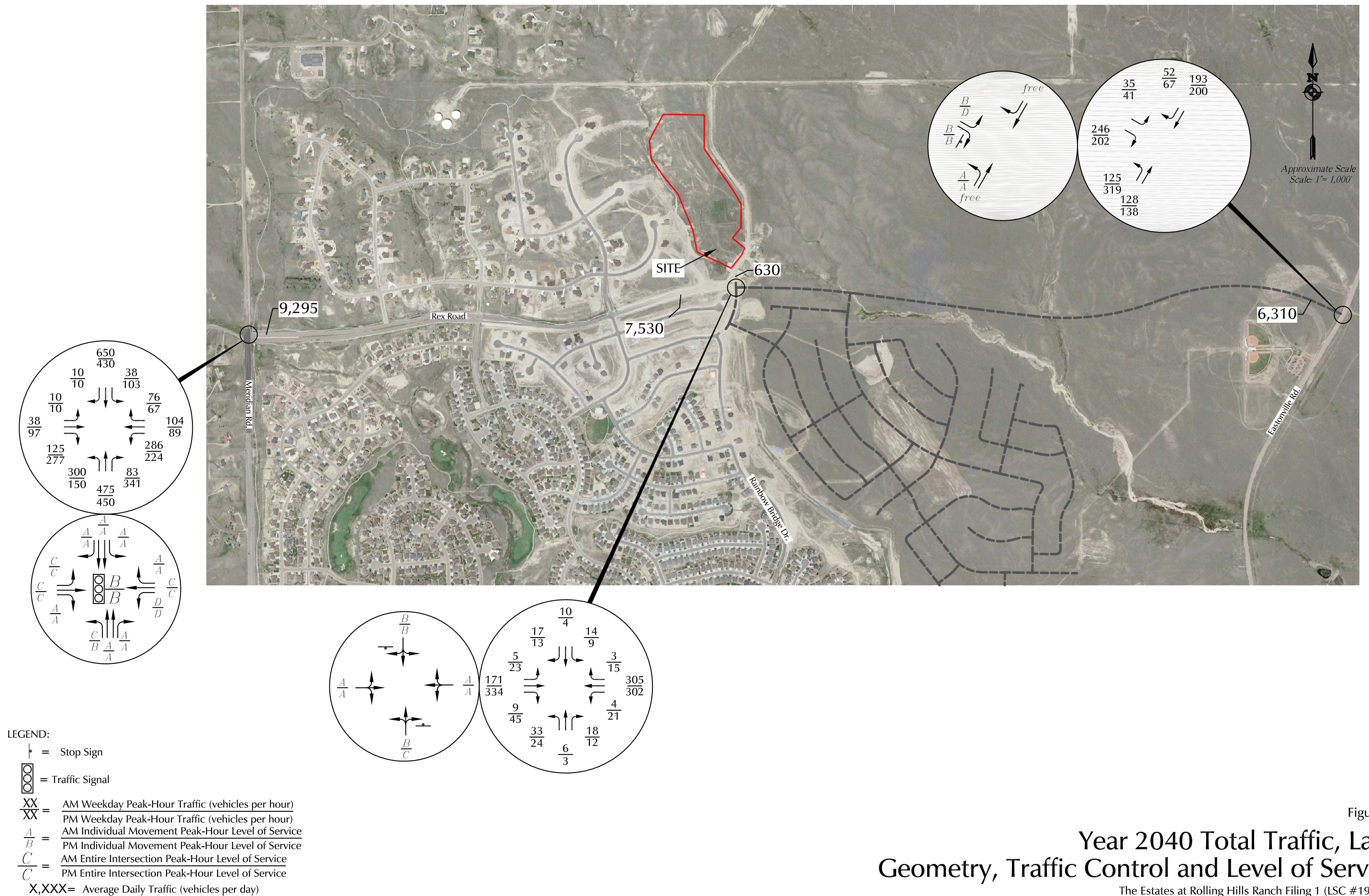
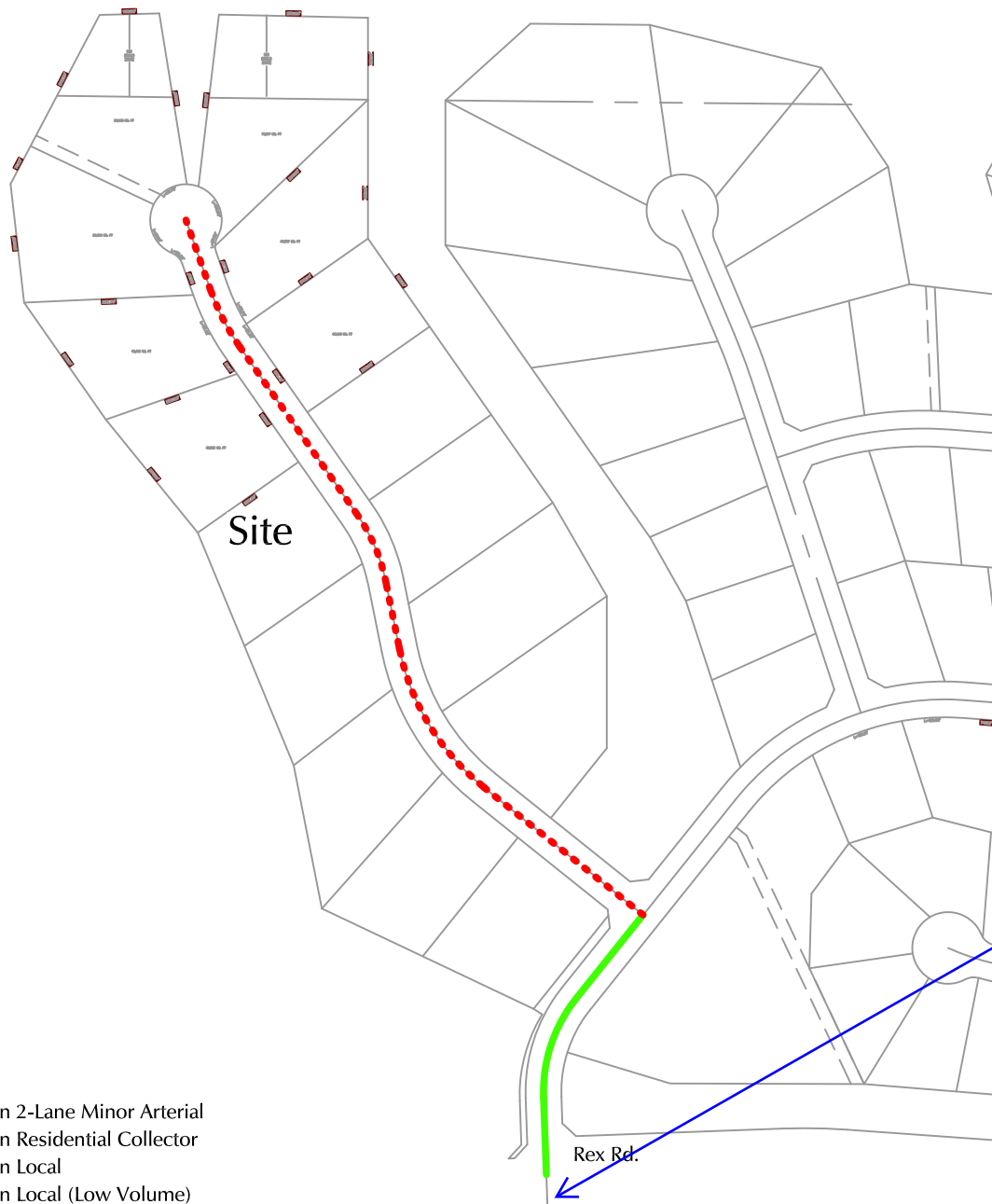


Figure 10
**Year 2040 Total Traffic, Lane
 Geometry, Traffic Control and Level of Service**
 The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)



Approximate Scale
Scale: 1" = 300'

Provide classification
of sunrise ridge rd
south of Rex road (to
Rolling Mesa drive)

- LEGEND:
- = Urban 2-Lane Minor Arterial
 - = Urban Residential Collector
 - = Urban Local
 - ... = Urban Local (Low Volume)

Figure 11
**Recommended
Street Classifications**
The Estates at Rolling Hills Ranch Filing 1 (LSC #194750)

List of Recent Traffic Studies in the Area



Appendix Table 1
Area Traffic Impact Studies by LSC
Rolling Hills Ranch Filing Nos. 1-3

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
Waterbury/4-Way Ranch	
Waterbury PUD Development Plan Updated TIA	January 10, 2013
Waterbury Preliminary Plan No. 1 Updated TIA	June 5, 2013
Waterbury Phase 2 Preliminary Plan	August 3, 2017
Waterbury Phase 1 Filing Nos. 2 and 3	October 16, 2017
Grandview Reserve Traffic Impact Analysis	January 11, 2019
<i>Source: LSC Transportation Consultants, Inc.</i>	

Traffic Counts



LSC Transportation Consultants, Inc.

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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	

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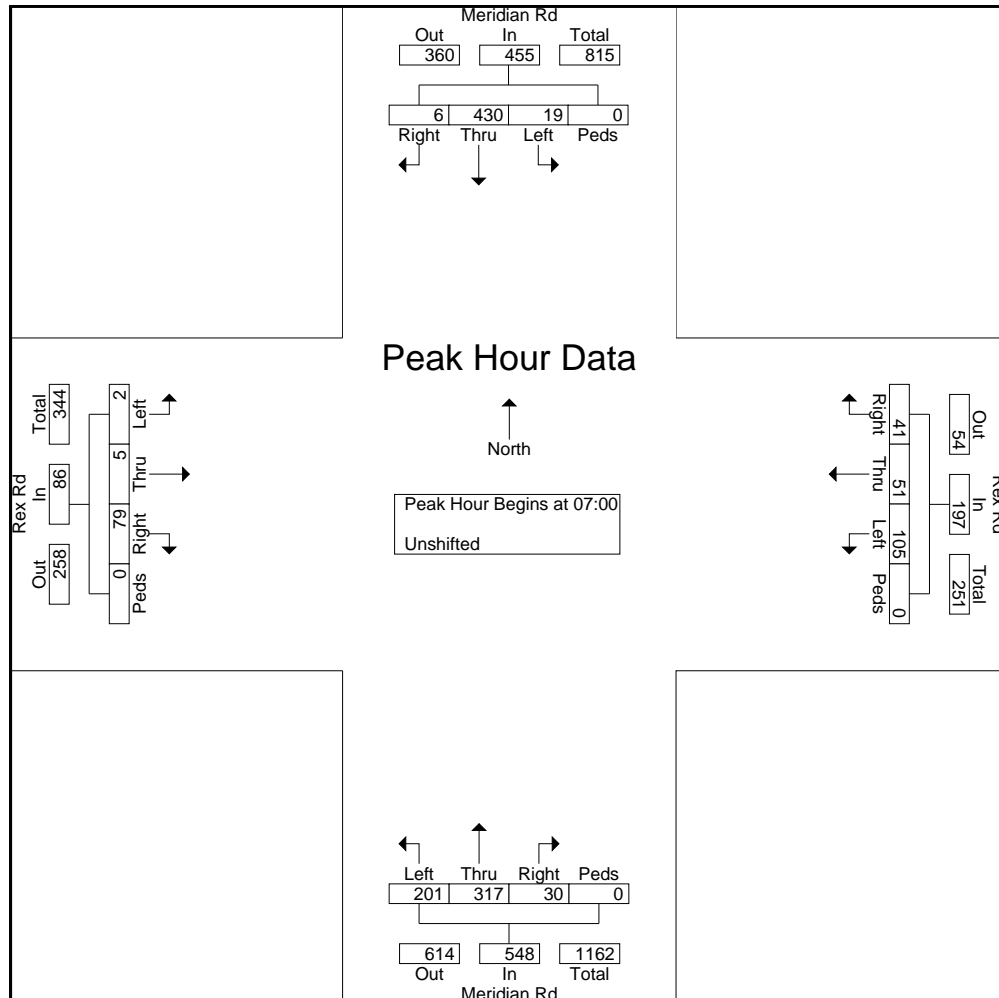
File Name : Meridian Rd-Rex Rd AM

Site Code : 194180

Start Date : 3/5/2019

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	Meridian Rd Southbound					Rex Rd Westbound					Meridian Rd Northbound					Rex Rd Eastbound					
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



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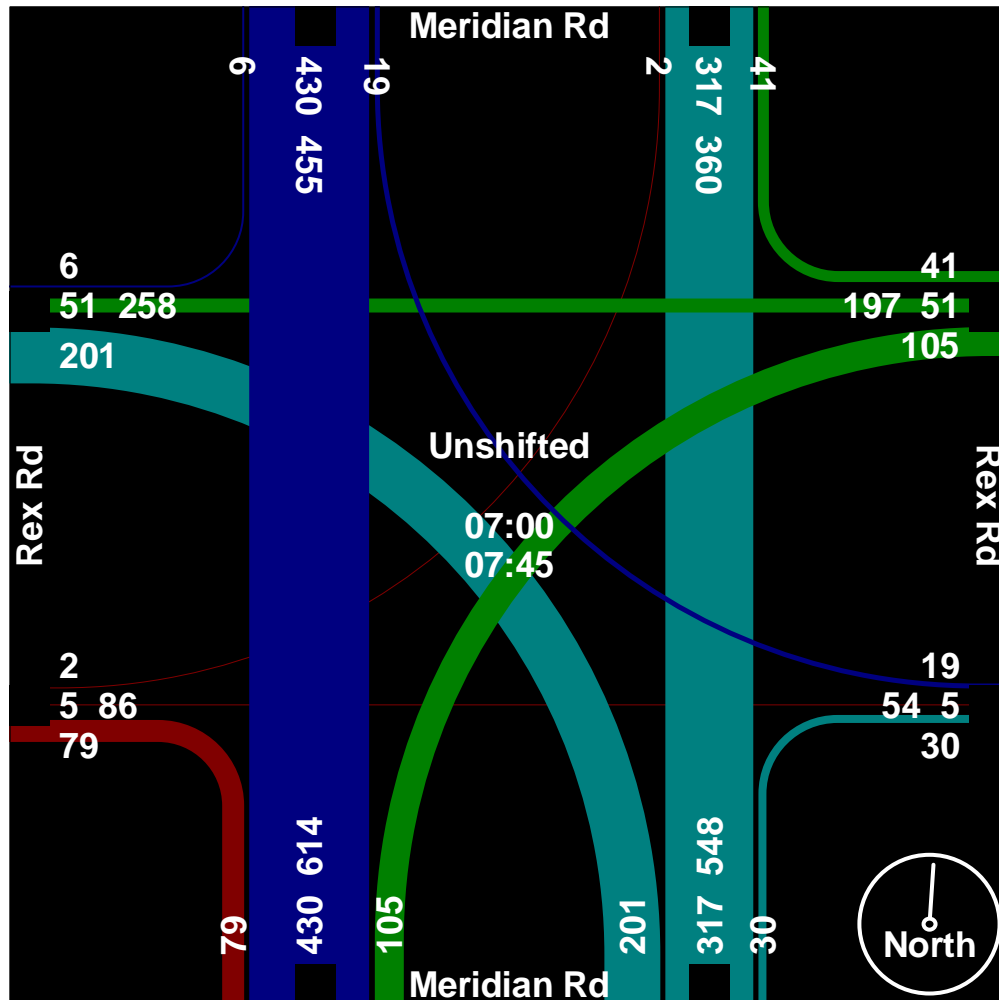
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File Name : Meridian Rd-Rex Rd AM

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File Name : Meridian Rd - Rex Rd Mid

Site Code : 00194180

Start Date : 3/12/2019

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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	
13:45	2	39	0	0	9	1	0	0	12	39	9	0	0	7	11	0	129
Total	2	39	0	0	9	1	0	0	12	39	9	0	0	7	11	0	129
14:00	3	24	1	0	9	4	4	0	10	50	19	0	0	3	9	0	136
14:15	2	52	1	0	10	4	5	0	22	54	16	0	1	4	16	0	187
14:30	3	37	0	0	12	2	1	0	18	45	13	0	0	4	16	0	151
14:45	2	47	0	0	21	5	4	0	20	116	16	0	1	4	24	0	260
Total	10	160	2	0	52	15	14	0	70	265	64	0	2	15	65	0	734
15:00	0	56	1	0	14	7	10	1	19	74	28	0	0	4	28	0	242
15:15	3	84	1	0	11	6	12	0	19	101	16	0	0	6	29	0	288
15:30	14	103	1	0	13	3	6	1	22	88	21	0	0	4	29	0	305
Grand Total	29	442	5	0	99	32	42	2	142	567	138	0	2	36	162	0	1698
Apprch %	6.1	92.9	1.1	0	56.6	18.3	24	1.1	16.8	66.9	16.3	0	1	18	81	0	
Total %	1.7	26	0.3	0	5.8	1.9	2.5	0.1	8.4	33.4	8.1	0	0.1	2.1	9.5	0	

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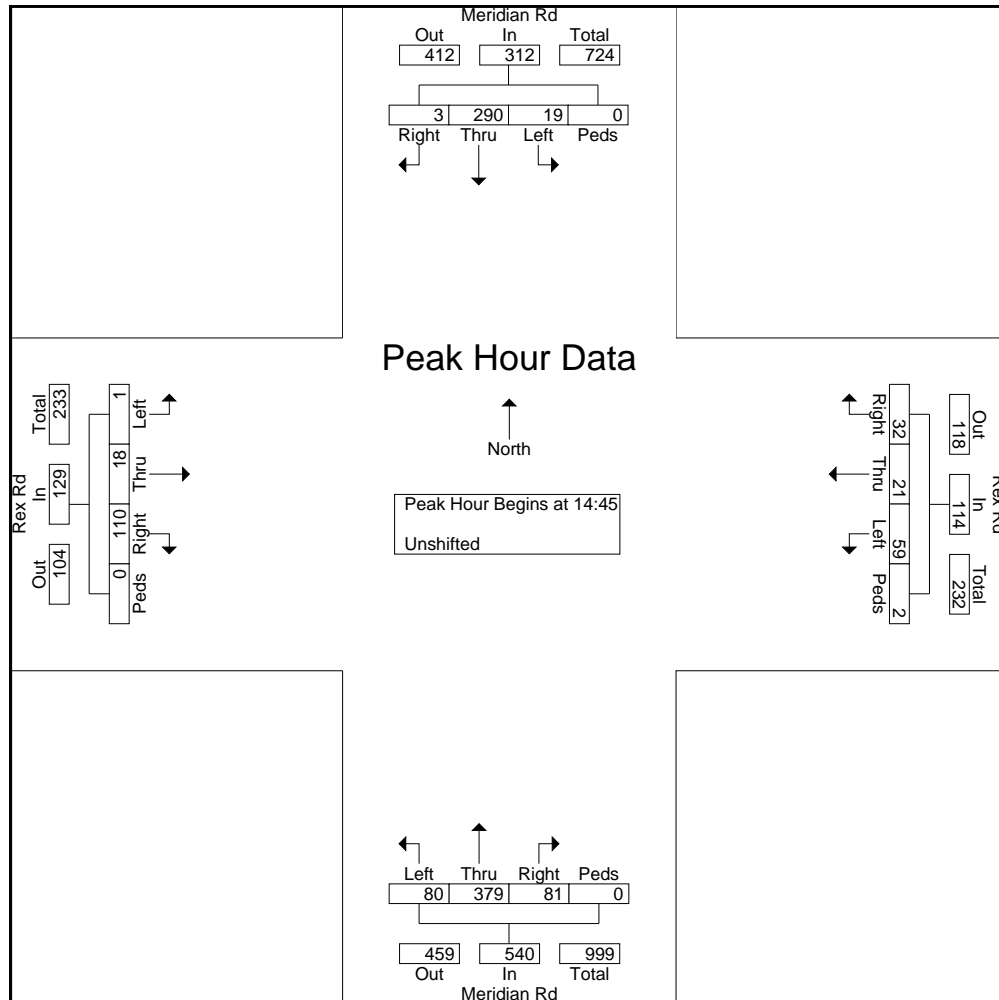
File Name : Meridian Rd - Rex Rd Mid

Site Code : 00194180

Start Date : 3/12/2019

Page No : 2

	Meridian Rd Southbound					Rex Rd Westbound					Meridian Rd Northbound					Rex Rd Eastbound					
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 13:45 to 15:30 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 14:45																					
14:45	2	47	0	0	49	21	5	4	0	30	20	116	16	0	152	1	4	24	0	29	260
15:00	0	56	1	0	57	14	7	10	1	32	19	74	28	0	121	0	4	28	0	32	242
15:15	3	84	1	0	88	11	6	12	0	29	19	101	16	0	136	0	6	29	0	35	288
15:30	14	103	1	0	118	13	3	6	1	23	22	88	21	0	131	0	4	29	0	33	305
Total Volume	19	290	3	0	312	59	21	32	2	114	80	379	81	0	540	1	18	110	0	129	1095
% App. Total	6.1	92.9	1	0		51.8	18.4	28.1	1.8		14.8	70.2	15	0		0.8	14	85.3	0		
PHF	.339	.704	.750	.000	.661	.702	.750	.667	.500	.891	.909	.817	.723	.000	.888	.250	.750	.948	.000	.921	.898



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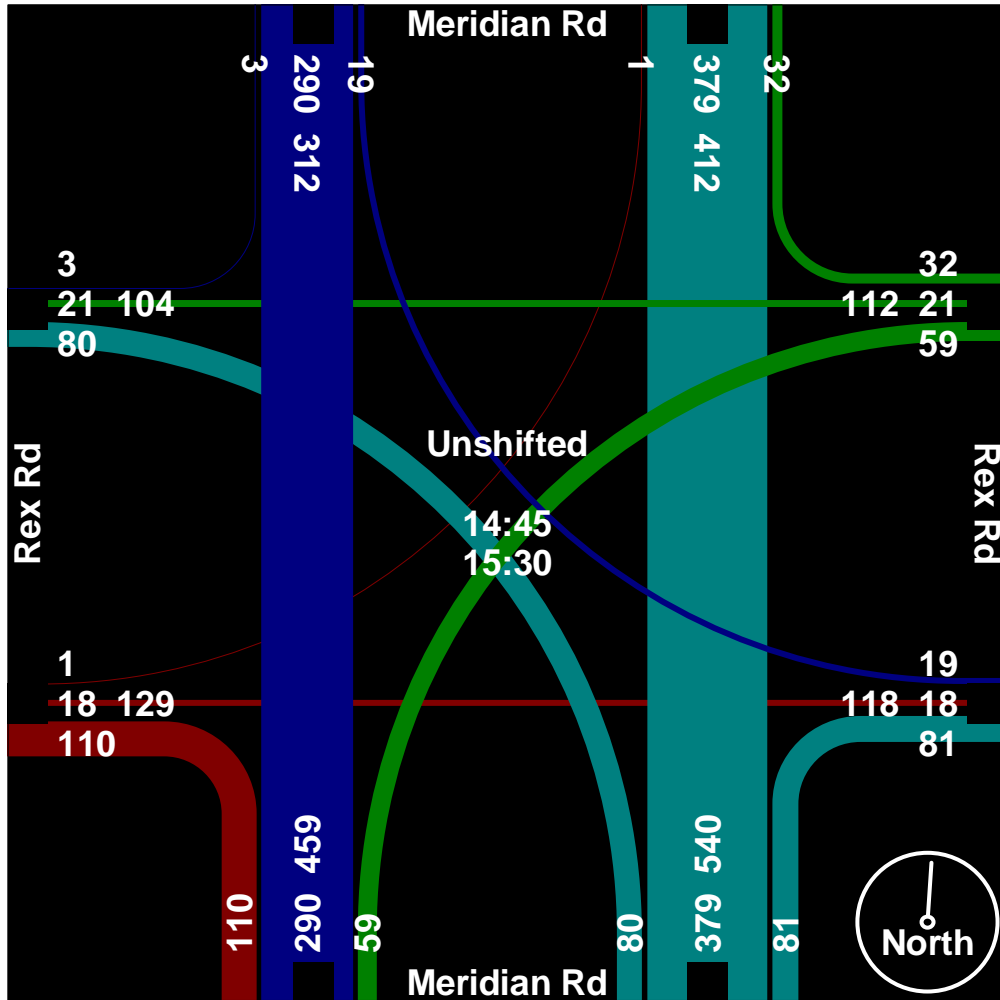
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File Name : Meridian Rd - Rex Rd Mid

Site Code : 00194180

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File Name : Meridian Rd - Rex Rd Noon

Site Code : 00194180

Start Date : 3/12/2019

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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	
11:30	2	43	0	0	19	5	3	0	15	37	16	0	0	1	17	0	158
11:45	3	36	0	0	9	2	4	0	15	64	10	0	0	6	19	0	168
Total	5	79	0	0	28	7	7	0	30	101	26	0	0	7	36	0	326
12:00	6	53	0	0	20	3	3	0	11	34	16	0	0	2	16	0	164
12:15	2	44	0	0	14	3	5	0	14	40	11	0	0	0	21	0	154
12:30	2	42	0	0	17	0	2	0	12	45	6	0	0	1	25	0	152
12:45	4	60	0	0	13	1	0	0	16	43	12	0	0	2	14	0	165
Total	14	199	0	0	64	7	10	0	53	162	45	0	0	5	76	0	635
13:00	1	46	1	0	10	2	3	0	19	38	10	0	0	3	17	0	150
13:15	5	42	0	0	13	3	2	0	19	28	10	0	0	3	20	0	145
Grand Total	25	366	1	0	115	19	22	0	121	329	91	0	0	18	149	0	1256
Apprch %	6.4	93.4	0.3	0	73.7	12.2	14.1	0	22.4	60.8	16.8	0	0	10.8	89.2	0	
Total %	2	29.1	0.1	0	9.2	1.5	1.8	0	9.6	26.2	7.2	0	0	1.4	11.9	0	

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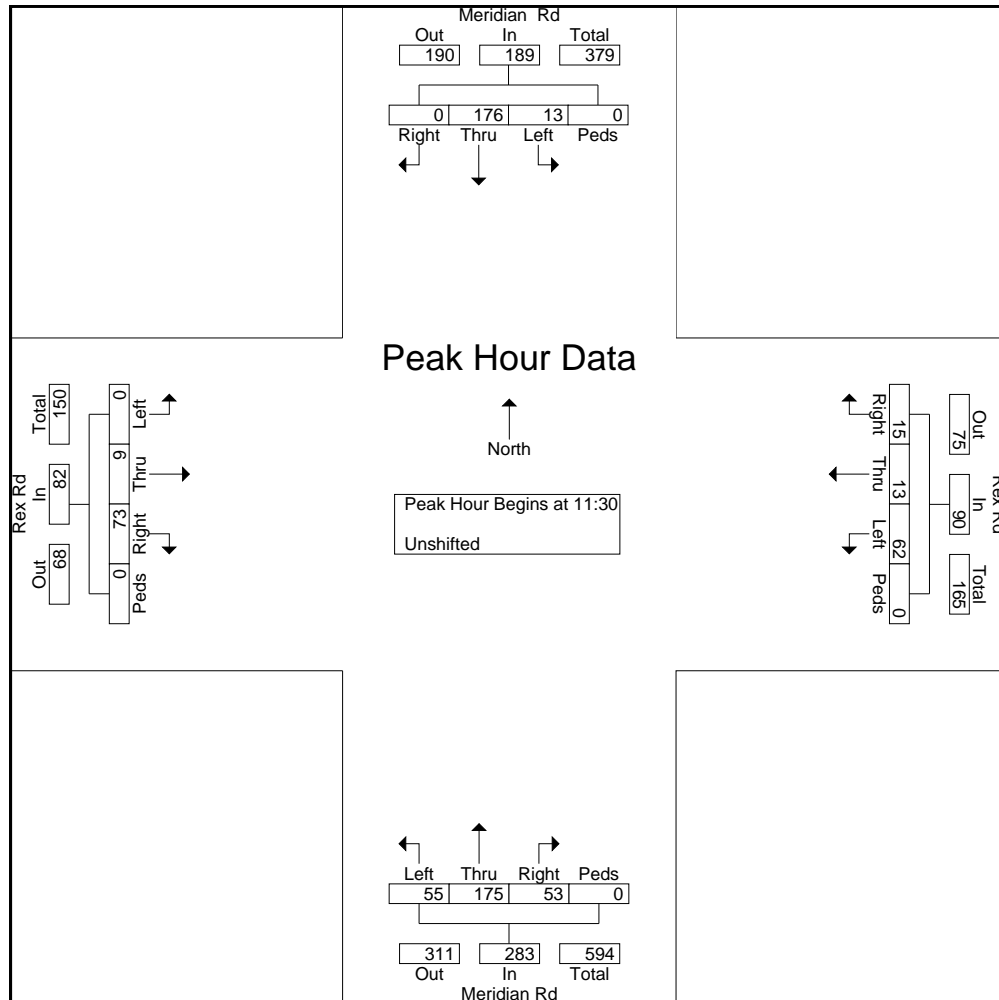
File Name : Meridian Rd - Rex Rd Noon

Site Code : 00194180

Start Date : 3/12/2019

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	Meridian Rd Southbound					Rex Rd Westbound					Meridian Rd Northbound					Rex Rd Eastbound					
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 11:30 to 13:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30																					
11:30	2	43	0	0	45	19	5	3	0	27	15	37	16	0	68	0	1	17	0	18	158
11:45	3	36	0	0	39	9	2	4	0	15	15	64	10	0	89	0	6	19	0	25	168
12:00	6	53	0	0	59	20	3	3	0	26	11	34	16	0	61	0	2	16	0	18	164
12:15	2	44	0	0	46	14	3	5	0	22	14	40	11	0	65	0	0	21	0	21	154
Total Volume	13	176	0	0	189	62	13	15	0	90	55	175	53	0	283	0	9	73	0	82	644
% App. Total	6.9	93.1	0	0		68.9	14.4	16.7	0		19.4	61.8	18.7	0		0	11	89	0		
PHF	.542	.830	.000	.000	.801	.775	.650	.750	.000	.833	.917	.684	.828	.000	.795	.000	.375	.869	.000	.820	.958



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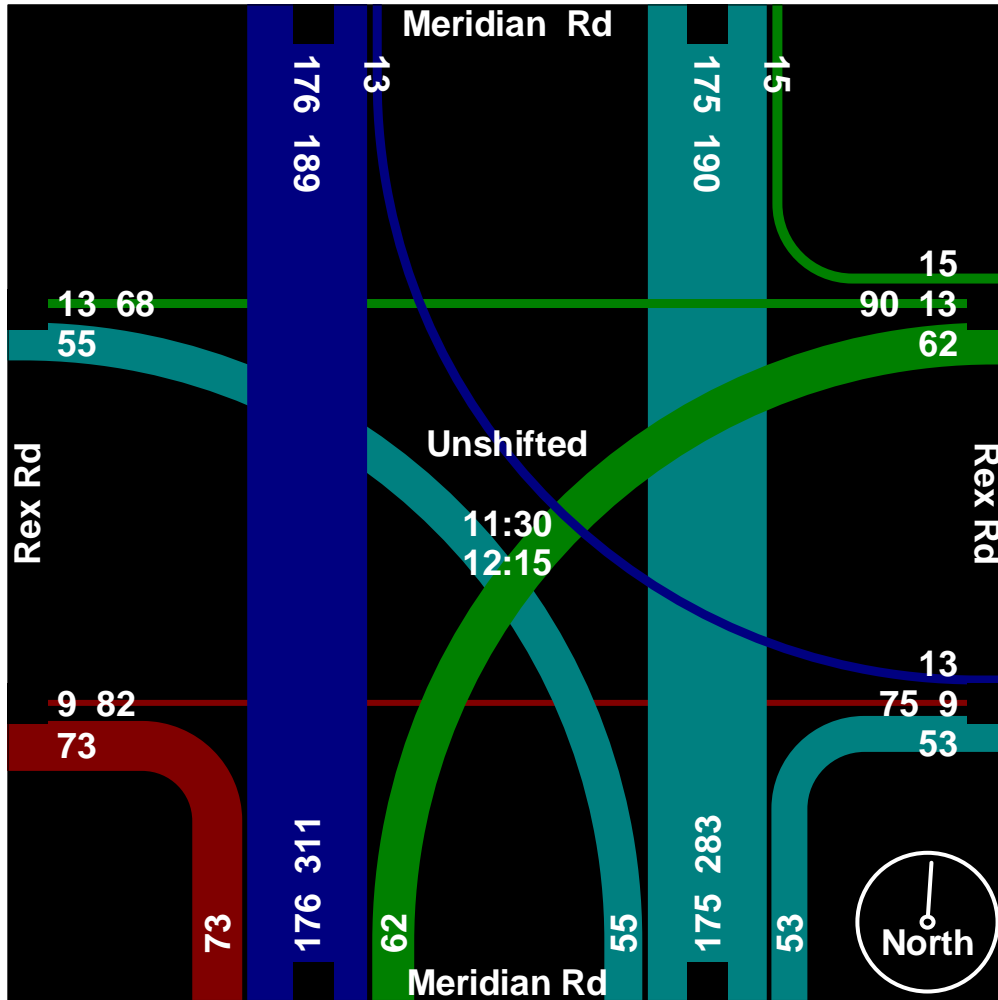
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File Name : Meridian Rd - Rex Rd Noon

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File Name : Meridian Rd-Rex Rd PM

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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	

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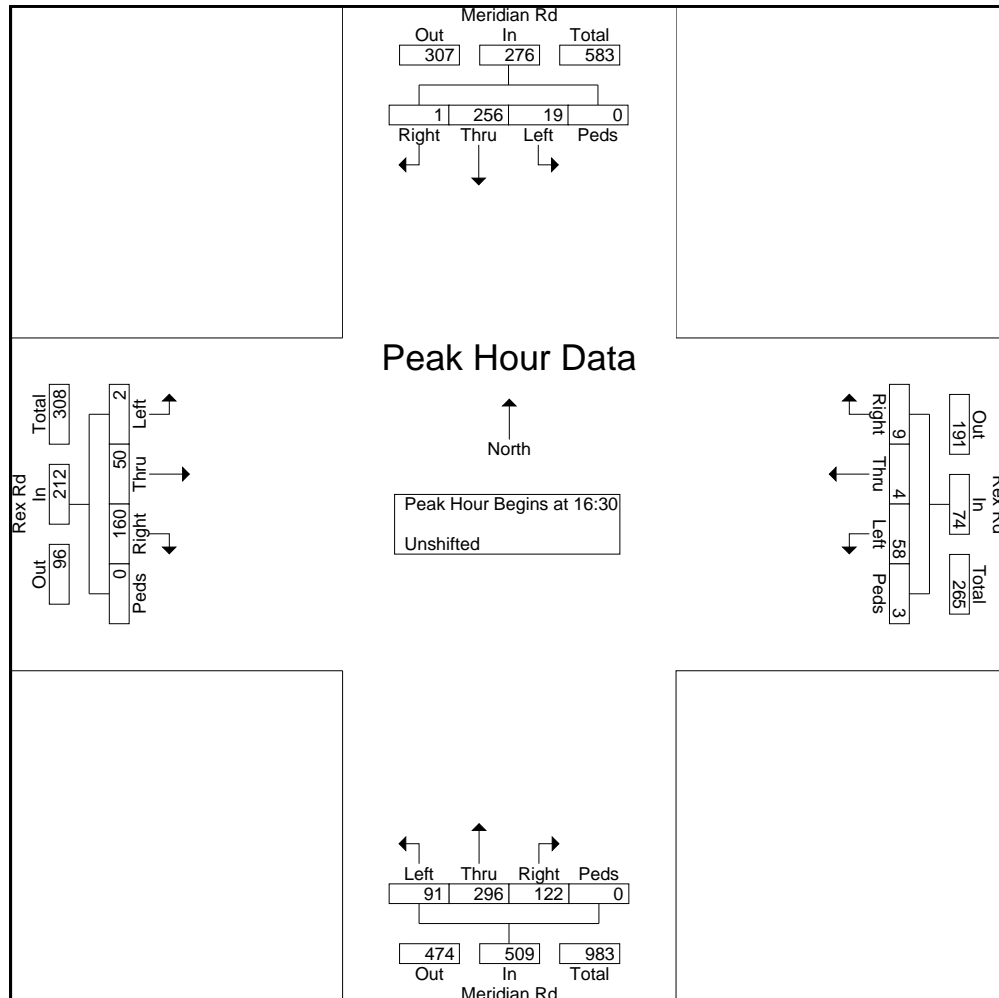
File Name : Meridian Rd-Rex Rd PM

Site Code : 194180

Start Date : 3/5/2019

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	Meridian Rd Southbound					Rex Rd Westbound					Meridian Rd Northbound					Rex Rd Eastbound					
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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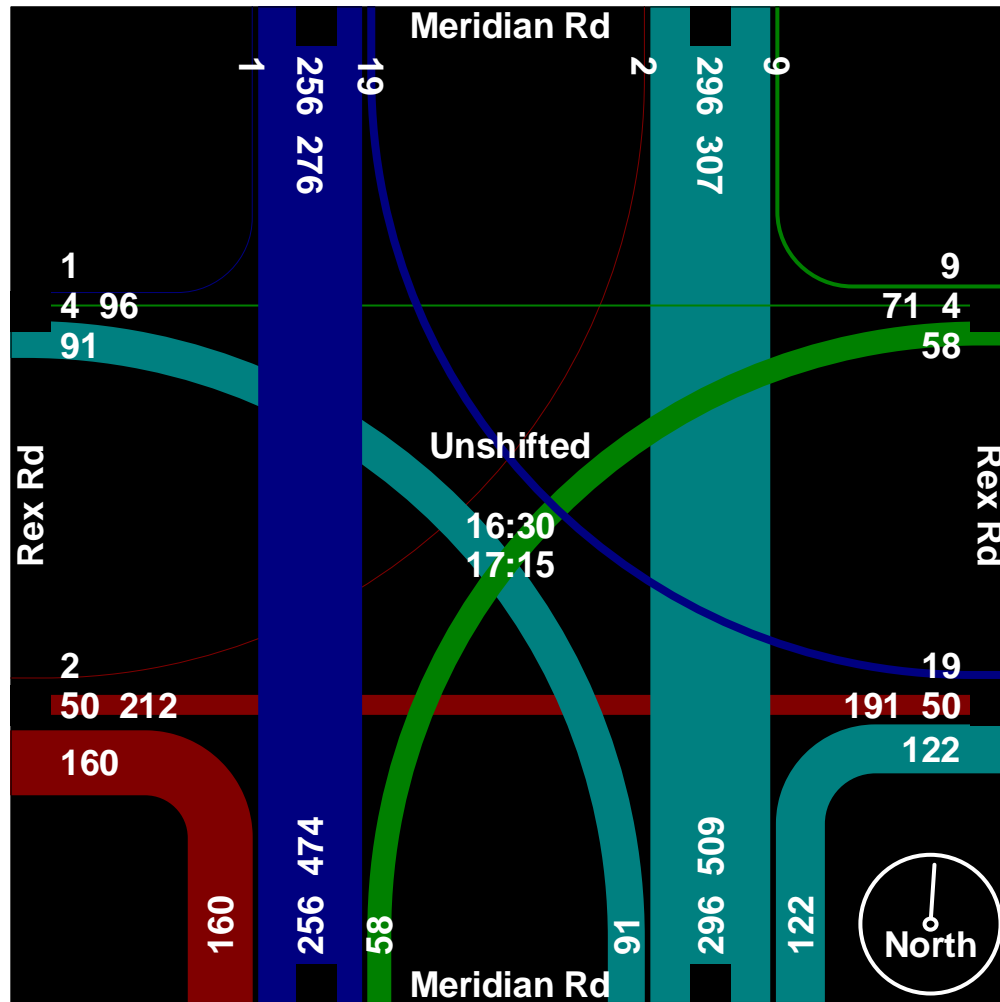
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719-633-2868

File Name : Meridian Rd-Rex Rd PM

Site Code : 194180

Start Date : 3/5/2019

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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	50.9											
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	100	100	100	86	86	86	100	100	100	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	5	79	122	59	48	201	317	30	20	457	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1288	1249	460	1261	1222	317	463	0	0	347	0	0
Stage 1	500	500	-	719	719	-	-	-	-	-	-	-
Stage 2	788	749	-	542	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	141	173	601	147	180	724	1098	-	-	1212	-	-
Stage 1	553	543	-	420	433	-	-	-	-	-	-	-
Stage 2	384	419	-	525	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	77	139	601	~ 106	145	724	1098	-	-	1212	-	-
Mov Cap-2 Maneuver	77	139	-	~ 106	145	-	-	-	-	-	-	-
Stage 1	452	534	-	343	354	-	-	-	-	-	-	-
Stage 2	244	342	-	444	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	285.3	3.3	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1098	-	-	445 116 724	1212	-	-
HCM Lane V/C Ratio	0.183	-	-	0.193 1.564 0.066	0.017	-	-
HCM Control Delay (s)	9	-	-	15 357.6 10.3	8	-	-
HCM Lane LOS	A	-	-	C F B	A	-	-
HCM 95th %tile Q(veh)	0.7	-	-	0.7 13.3 0.2	0.1	-	-

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

HCM 6th TWSC
1: Meridian Rd & Rex Rd

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	8.5											
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	11
Future Vol, veh/h	2	50	160	58	4	9	91	296	122	19	256	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	-	-	-	-	-	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	12

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	921	982	275	970	852	329	281	0	0	465	0	0
Stage 1	315	315	-	531	531	-	-	-	-	-	-	-
Stage 2	606	667	-	439	321	-	-	-	-	-	-	-
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	251	249	764	233	297	712	1282	-	-	1096	-	-
Stage 1	696	656	-	532	526	-	-	-	-	-	-	-
Stage 2	484	457	-	597	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	226	225	764	130	268	712	1282	-	-	1096	-	-
Mov Cap-2 Maneuver	226	225	-	130	268	-	-	-	-	-	-	-
Stage 1	641	644	-	490	484	-	-	-	-	-	-	-
Stage 2	435	421	-	401	640	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB				
HCM Control Delay, s	20.3		51.8		1.4			0.6				
HCM LOS	C		F									

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1282	-	-	481 134 712	1096	-	-
HCM Lane V/C Ratio	0.079	-	-	0.519 0.52 0.014	0.018	-	-
HCM Control Delay (s)	8	-	-	20.3 57.8 10.1	8.3	-	-
HCM Lane LOS	A	-	-	C F B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.9 2.5 0	0.1	-	-

HCM 6th TWSC
101: Meridian Rd & Rex Rd

Short-Term Background Traffic

Per ECM B.3.1.B.1 use calculated PHF or 0.85, AM Peak Hour whichever is higher. The traffic count PHF does not match the model. Add a section in the narrative explaining the PHF used.

Please note: Address the above comment on all future TIS submitted to the County.

Intersection													
Int Delay, s/veh	112.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Vol, veh/h	2	8	87	127	59	47	222	350	37	21	475	7	
Future Vol, veh/h	2	8	87	127	59	47	222	350	37	21	475	7	
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	100	100	100	86	86	86	100	100	100	94	94	94	
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	
Mvmt Flow	2	8	87	148	69	55	222	350	37	22	505	7	

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1428	1384	509	1394	1350	350	512	0	0	387	0	0
Stage 1	553	553	-	794	794	-	-	-	-	-	-	-
Stage 2	875	831	-	600	556	-	-	-	-	-	-	-
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	113	143	564	~119	150	693	1053	-	-	1171	-	-
Stage 1	517	514	-	381	400	-	-	-	-	-	-	-
Stage 2	344	384	-	488	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	47	111	564	~79	116	693	1053	-	-	1171	-	-
Mov Cap-2 Maneuver	47	111	-	~79	116	-	-	-	-	-	-	-
Stage 1	408	504	-	301	316	-	-	-	-	-	-	-
Stage 2	196	303	-	399	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	\$ 612.7	3.4	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	361 88 693	1171	-	-
HCM Lane V/C Ratio	0.211	-	-	0.269 2.458 0.079	0.019	-	-
HCM Control Delay (s)	9.3	-	-	18.6 \$ 764.8 10.6	8.1	-	-
HCM Lane LOS	A	-	-	C F B A	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	1.1 20.1 0.2 0.1	0.1	-	-

Notes

~: Volume exceeds

File Name : Meridian Rd-Rex Rd PM
Site Code : 194180
Start Date : 3/5/2019
Page No : 2

Short-Term Backgr
AM Peak Hour

	Meridian Rd Southbound					Rex Rd Westbound					Meridian Rd Northbound					Rex Rd Eastbound					
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

Intersection												
Int Delay, s/veh	10.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	
Traffic Vol, veh/h	2	59	177	72	9	13	100	327	146	26	283	1
Future Vol, veh/h	2	59	177	72	9	13	100	327	146	26	283	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	100	100	100	92	92	92	100	100	100	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	59	177	78	10	14	100	327	146	28	301	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	970	1031	302	1003	885	327	302	0	0	473	0	0
Stage 1	358	358	-	527	527	-	-	-	-	-	-	-
Stage 2	612	673	-	476	358	-	-	-	-	-	-	-
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	233	233	738	221	284	714	1259	-	-	1089	-	-
Stage 1	660	628	-	535	528	-	-	-	-	-	-	-
Stage 2	480	454	-	570	628	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	204	209	738	122	255	714	1259	-	-	1089	-	-
Mov Cap-2 Maneuver	204	209	-	122	255	-	-	-	-	-	-	-
Stage 1	608	612	-	493	486	-	-	-	-	-	-	-
Stage 2	424	418	-	381	612	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.9		67.9		1.4		0.7	
HCM LOS	C		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1259	-	-	447	130	714	1089	-	-
HCM Lane V/C Ratio	0.079	-	-	0.532	0.677	0.02	0.025	-	-
HCM Control Delay (s)	8.1	-	-	21.9	77.2	10.1	8.4	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.1	3.7	0.1	0.1	-	-

HCM 6th TWSC
101: Meridian Rd & Rex Rd

Short-Term Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	126.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Vol, veh/h	2	8	87	136	59	47	222	350	40	21	475	7
Future Vol, veh/h	2	8	87	136	59	47	222	350	40	21	475	7
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	100	100	100	86	86	86	100	100	100	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	8	87	158	69	55	222	350	40	22	505	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1429	1387	509	1394	1350	350	512	0	0	390	0	0
Stage 1	553	553	-	794	794	-	-	-	-	-	-	-
Stage 2	876	834	-	600	556	-	-	-	-	-	-	-
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	112	143	564	~ 119	150	693	1053	-	-	1169	-	-
Stage 1	517	514	-	381	400	-	-	-	-	-	-	-
Stage 2	344	383	-	488	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	46	111	564	~ 79	116	693	1053	-	-	1169	-	-
Mov Cap-2 Maneuver	46	111	-	~ 79	116	-	-	-	-	-	-	-
Stage 1	408	504	-	301	316	-	-	-	-	-	-	-
Stage 2	196	302	-	399	503	-	-	-	-	-	-	-




















Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	\$ 671.7	3.4	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	360 87 693	1169	-	-
HCM Lane V/C Ratio	0.211	-	-	0.269 2.606 0.079	0.019	-	-
HCM Control Delay (s)	9.3	-	-	18.6 \$ 831 10.6	8.1	-	-
HCM Lane LOS	A	-	-	C F B	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	1.1 21.4 0.3	0.1	-	-

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

Timings
101: 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	8	136	59	47	222	350	40	21	475	
Future Volume (vph)	2	8	136	59	47	222	350	40	21	475	
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4		8			2			6	
Permitted Phases	4		8		8	2		2	6		
Detector Phase	4	4	8	8	8	2	2	2	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	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
Total Split (s)	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	
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											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	Max	Max	Max	Max	Max	
Act Effect Green (s)		18.6		18.6	18.6	55.2	55.2	55.2	55.2	55.2	
Actuated g/C Ratio		0.22		0.22	0.22	0.66	0.66	0.66	0.66	0.66	
v/c Ratio		0.23		0.72	0.14	0.43	0.29	0.04	0.03	0.42	
Control Delay		8.6		43.7	8.0	11.5	7.7	2.5	6.8	9.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		8.6		43.7	8.0	11.5	7.7	2.5	6.8	9.0	
LOS		A		D	A	B	A	A	A	A	
Approach Delay		8.6		36.7			8.7			8.9	
Approach LOS		A		D			A			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 83.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 14.0

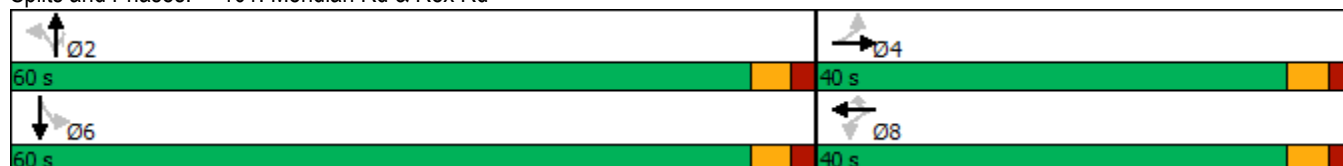
Intersection LOS: B

Intersection Capacity Utilization 67.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Rd



Intersection												
Int Delay, s/veh	11.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕	↕	↕	↕	
Traffic Vol, veh/h	2	60	177	78	9	13	100	327	155	26	283	1
Future Vol, veh/h	2	60	177	78	9	13	100	327	155	26	283	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	100	100	100	92	92	92	100	100	100	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	60	177	85	10	14	100	327	155	28	301	1



















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	975	1040	302	1003	885	327	302	0	0	482	0	0
Stage 1	358	358	-	527	527	-	-	-	-	-	-	-
Stage 2	617	682	-	476	358	-	-	-	-	-	-	-
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	231	230	738	221	284	714	1259	-	-	1081	-	-
Stage 1	660	628	-	535	528	-	-	-	-	-	-	-
Stage 2	477	450	-	570	628	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	203	206	738	120	255	714	1259	-	-	1081	-	-
Mov Cap-2 Maneuver	203	206	-	120	255	-	-	-	-	-	-	-
Stage 1	608	612	-	493	486	-	-	-	-	-	-	-
Stage 2	422	414	-	381	612	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.3		78.7		1.4		0.7	
HCM LOS	C		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1259	-	-	442 127 714	1081	-	-
HCM Lane V/C Ratio	0.079	-	-	0.541 0.745 0.02	0.026	-	-
HCM Control Delay (s)	8.1	-	-	22.3 89 10.1	8.4	-	-
HCM Lane LOS	A	-	-	C F B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.1 4.3 0.1	0.1	-	-

Timings
101: 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	60	78	9	13	100	327	155	26	283
Future Volume (vph)	2	60	78	9	13	100	327	155	26	283
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4		8			2			6
Permitted Phases	4		8		8	2		2	6	
Detector Phase	4	4	8	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	20.0	20.0	20.0	20.0	20.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%
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										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Max	Max	Max	Max	Max
Act Effect Green (s)		20.0		20.0	20.0	55.0	55.0	55.0	55.0	55.0
Actuated g/C Ratio		0.24		0.24	0.24	0.65	0.65	0.65	0.65	0.65
v/c Ratio		0.46		0.48	0.04	0.15	0.27	0.14	0.04	0.25
Control Delay		13.5		37.5	8.3	6.5	7.1	1.3	5.7	7.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		13.5		37.5	8.3	6.5	7.1	1.3	5.7	7.0
LOS		B		D	A	A	A	A	A	A
Approach Delay		13.5		33.7			5.5			6.9
Approach LOS		B		C			A			A

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85

Natural Cycle: 50

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 9.8

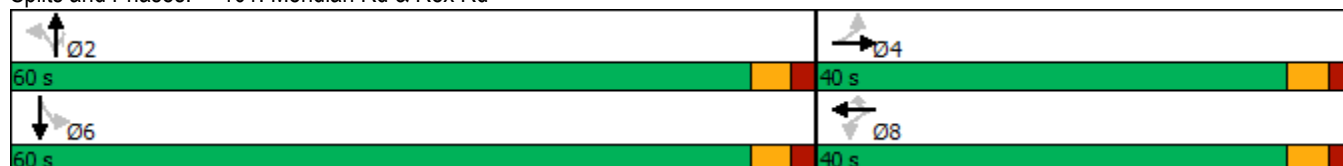
Intersection LOS: A

Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Rd



HCM 6th TWSC
24: Sunset Ridge Dr & Rex Road

2040 Background Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	171	9	4	305	2	33	5	18	11	8	12
Future Vol, veh/h	3	171	9	4	305	2	33	5	18	11	8	12
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	2	2	1	1	2	2	2	1	2	1
Mvmt Flow	3	180	9	4	321	2	35	5	19	12	8	13

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	189	0	0	532	522	185	533	525	322
Stage 1	-	-	-	-	-	-	191	191	-	330	330	-
Stage 2	-	-	-	-	-	-	341	331	-	203	195	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.11	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.309
Pot Cap-1 Maneuver	1242	-	-	1385	-	-	458	459	857	459	458	721
Stage 1	-	-	-	-	-	-	811	742	-	685	646	-
Stage 2	-	-	-	-	-	-	674	645	-	801	739	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1242	-	-	1385	-	-	441	456	857	442	455	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	456	-	442	455	-
Stage 1	-	-	-	-	-	-	809	740	-	683	643	-
Stage 2	-	-	-	-	-	-	651	642	-	775	737	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			12.7			12.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	524	1242	-	-	1385	-	-	524
HCM Lane V/C Ratio	0.112	0.003	-	-	0.003	-	-	0.062
HCM Control Delay (s)	12.7	7.9	0	-	7.6	0	-	12.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

Timings
101: Meridian Rd & Rex Road

2040 Background Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	37	125	282	103	76	300	475	82	38	650	10
Future Volume (vph)	10	37	125	282	103	76	300	475	82	38	650	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
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 Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	55.3	55.3	55.3	55.3	55.3	55.3
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
v/c Ratio	0.03	0.08	0.25	0.80	0.21	0.16	0.74	0.23	0.08	0.07	0.32	0.01
Control Delay	22.6	23.4	5.5	47.2	25.5	6.3	27.8	8.9	2.5	9.4	9.5	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	23.4	5.5	47.2	25.5	6.3	27.8	8.9	2.5	9.4	9.5	2.2
LOS	C	C	A	D	C	A	C	A	A	A	A	A
Approach Delay		10.4			35.6			14.9			9.4	
Approach LOS		B			D			B			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 89.4

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 17.2

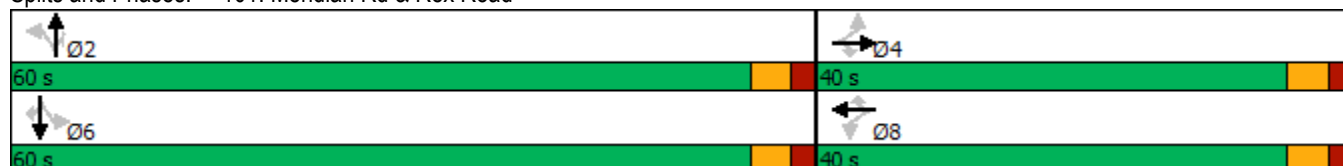
Intersection LOS: B







Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Road



Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	243	124	128	193	52
Future Vol, veh/h	35	243	124	128	193	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	37	256	131	135	203	55
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	600	203	258	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	466	840	1313	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	419	840	1313	-	-	-
Mov Cap-2 Maneuver	419	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.6	4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1313	-	419	840	-	-
HCM Lane V/C Ratio	0.099	-	0.088	0.305	-	-
HCM Control Delay (s)	8	-	14.4	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	1.3	-	-

HCM 6th TWSC
24: Sunset Ridge Dr & Rex Road

2040 Background Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	334	45	21	302	12	24	3	12	7	4	9
Future Vol, veh/h	17	334	45	21	302	12	24	3	12	7	4	9
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	2	2	1	1	2	2	2	1	2	1
Mvmt Flow	18	352	47	22	318	13	25	3	13	7	4	9

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	331	0	0	399	0	0	787	787	376	789	804	325
Stage 1	-	-	-	-	-	-	412	412	-	369	369	-
Stage 2	-	-	-	-	-	-	375	375	-	420	435	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.11	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.309
Pot Cap-1 Maneuver	1234	-	-	1160	-	-	309	324	670	310	316	718
Stage 1	-	-	-	-	-	-	617	594	-	653	621	-
Stage 2	-	-	-	-	-	-	646	617	-	613	580	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1234	-	-	1160	-	-	292	310	670	292	303	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	292	310	-	292	303	-
Stage 1	-	-	-	-	-	-	605	583	-	641	607	-
Stage 2	-	-	-	-	-	-	618	603	-	587	569	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	16.5	14.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	355	1234	-	-	1160	-	-	402
HCM Lane V/C Ratio	0.116	0.015	-	-	0.019	-	-	0.052
HCM Control Delay (s)	16.5	8	0	-	8.2	0	-	14.5
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

Timings
101: Meridian Rd & Rex Road

2040 Background Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	96	277	221	89	66	150	450	336	102	430	10
Future Volume (vph)	10	96	277	221	89	66	150	450	336	102	430	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
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 Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	20.3	20.3	20.3	20.3	20.3	20.3	55.3	55.3	55.3	55.3	55.3	55.3
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.65	0.65	0.65	0.65	0.65	0.65
v/c Ratio	0.04	0.23	0.49	0.76	0.21	0.16	0.27	0.21	0.31	0.18	0.20	0.01
Control Delay	23.8	26.7	6.1	46.1	26.4	7.2	9.4	7.4	1.7	8.6	7.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	26.7	6.1	46.1	26.4	7.2	9.4	7.4	1.7	8.6	7.3	1.9
LOS	C	C	A	D	C	A	A	A	A	A	A	A
Approach Delay		11.7			34.6			5.7			7.4	
Approach LOS		B			C			A			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 85.6

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 12.0

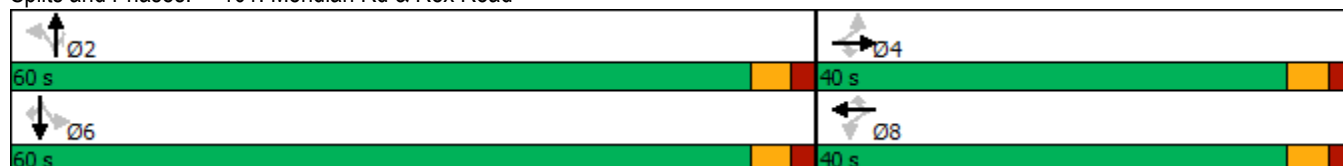
Intersection LOS: B







Intersection Capacity Utilization 53.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Road



Intersection						
Int Delay, s/veh	6.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	200	316	138	200	67
Future Vol, veh/h	41	200	316	138	200	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	43	211	333	145	211	71
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1022	211	282	0	-	0
Stage 1	211	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	263	832	1286	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	832	1286	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	613	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.8	6.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1286	-	195	832	-	-
HCM Lane V/C Ratio	0.259	-	0.221	0.253	-	-
HCM Control Delay (s)	8.8	-	28.6	10.8	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	1	-	0.8	1	-	-

























HCM 6th TWSC
24: Sunset Ridge Dr & Rex Road

2040 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	171	9	4	305	3	33	6	18	14	10	17
Future Vol, veh/h	5	171	9	4	305	3	33	6	18	14	10	17
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	2	2	1	1	2	2	2	1	2	1
Mvmt Flow	5	180	9	4	321	3	35	6	19	15	11	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	189	0	0	540	527	185	538	530	323
Stage 1	-	-	-	-	-	-	195	195	-	331	331	-
Stage 2	-	-	-	-	-	-	345	332	-	207	199	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.11	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.309
Pot Cap-1 Maneuver	1241	-	-	1385	-	-	453	456	857	456	455	720
Stage 1	-	-	-	-	-	-	807	739	-	684	645	-
Stage 2	-	-	-	-	-	-	671	644	-	797	736	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1241	-	-	1385	-	-	431	452	857	438	451	720
Mov Cap-2 Maneuver	-	-	-	-	-	-	431	452	-	438	451	-
Stage 1	-	-	-	-	-	-	803	735	-	681	642	-
Stage 2	-	-	-	-	-	-	641	641	-	769	732	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.1			12.9			12.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	514	1241	-	-	1385	-	-	527				
HCM Lane V/C Ratio	0.117	0.004	-	-	0.003	-	-	0.082				
HCM Control Delay (s)	12.9	7.9	0	-	7.6	0	-	12.4				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.3				

Timings
101: Meridian Rd & Rex Road

2040 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	38	125	286	104	76	300	475	83	38	650	10
Future Volume (vph)	10	38	125	286	104	76	300	475	83	38	650	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
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 Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	24.3	24.3	24.3	24.3	24.3	24.3	55.3	55.3	55.3	55.3	55.3	55.3
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.62	0.62	0.62	0.62	0.62	0.62
v/c Ratio	0.03	0.08	0.25	0.81	0.21	0.16	0.75	0.23	0.09	0.07	0.32	0.01
Control Delay	22.6	23.4	5.5	47.5	25.4	6.3	28.2	9.0	2.5	9.4	9.6	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	23.4	5.5	47.5	25.4	6.3	28.2	9.0	2.5	9.4	9.6	2.2
LOS	C	C	A	D	C	A	C	A	A	A	A	A
Approach Delay		10.4			35.8			15.1			9.5	
Approach LOS		B			D			B			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 89.7

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 17.4

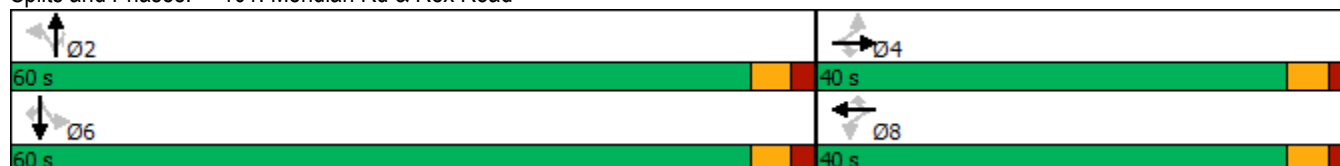
Intersection LOS: B

Intersection Capacity Utilization 69.6%

ICU Level of Service C







Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Road



Intersection

Int Delay, s/veh 5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	246	125	128	193	52
Future Vol, veh/h	35	246	125	128	193	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	37	259	132	135	203	55

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	602	203	258
Stage 1	203	-	-
Stage 2	399	-	-
Critical Hdwy	6.41	6.21	4.11
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	2.209
Pot Cap-1 Maneuver	464	840	1313
Stage 1	833	-	-
Stage 2	680	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	417	840	1313
Mov Cap-2 Maneuver	417	-	-
Stage 1	749	-	-
Stage 2	680	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1313	-	417	840	-	-
HCM Lane V/C Ratio	0.1	-	0.088	0.308	-	-
HCM Control Delay (s)	8	-	14.5	11.2	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	1.3	-	-

HCM 6th TWSC
24: Sunset Ridge Dr & Rex Road

2040 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	334	45	21	302	15	24	3	12	9	4	13
Future Vol, veh/h	23	334	45	21	302	15	24	3	12	9	4	13
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	-	-	-	-	-	-	-	-	-	-	-	-
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	1	2	2	1	1	2	2	2	1	2	1
Mvmt Flow	24	352	47	22	318	16	25	3	13	9	4	14

























Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	399	0	0	803	802	376	802	817	326
Stage 1	-	-	-	-	-	-	424	424	-	370	370	-
Stage 2	-	-	-	-	-	-	379	378	-	432	447	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.12	6.52	6.22	7.11	6.52	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.11	5.52	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.518	4.018	3.318	3.509	4.018	3.309
Pot Cap-1 Maneuver	1231	-	-	1160	-	-	302	317	670	303	311	718
Stage 1	-	-	-	-	-	-	608	587	-	652	620	-
Stage 2	-	-	-	-	-	-	643	615	-	604	573	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	1160	-	-	282	302	670	284	296	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	282	302	-	284	296	-
Stage 1	-	-	-	-	-	-	593	572	-	636	606	-
Stage 2	-	-	-	-	-	-	612	601	-	575	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	16.8	14.4
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	345	1231	-	-	1160	-	-	411
HCM Lane V/C Ratio	0.119	0.02	-	-	0.019	-	-	0.067
HCM Control Delay (s)	16.8	8	0	-	8.2	0	-	14.4
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

Timings
101: Meridian Rd & Rex Road

2040 Total Traffic
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	97	277	224	89	67	150	450	341	103	430	10
Future Volume (vph)	10	97	277	224	89	67	150	450	341	103	430	10
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	8	8	8	2	2	2	6	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)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	40.0	40.0	40.0	60.0	60.0	60.0	60.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
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 Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	Max	Max	Max	Max
Act Effect Green (s)	20.7	20.7	20.7	20.7	20.7	20.7	55.3	55.3	55.3	55.3	55.3	55.3
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.64	0.64	0.64	0.64	0.64	0.64
v/c Ratio	0.03	0.23	0.48	0.76	0.21	0.16	0.27	0.21	0.31	0.19	0.20	0.01
Control Delay	23.6	26.5	6.0	45.7	26.2	7.0	9.6	7.6	1.8	8.9	7.5	2.0
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	23.6	26.5	6.0	45.7	26.2	7.0	9.6	7.6	1.8	8.9	7.5	2.0
LOS	C	C	A	D	C	A	A	A	A	A	A	A
Approach Delay		11.6			34.3			5.8			7.7	
Approach LOS		B			C			A			A	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 86.1

Natural Cycle: 45

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 12.1

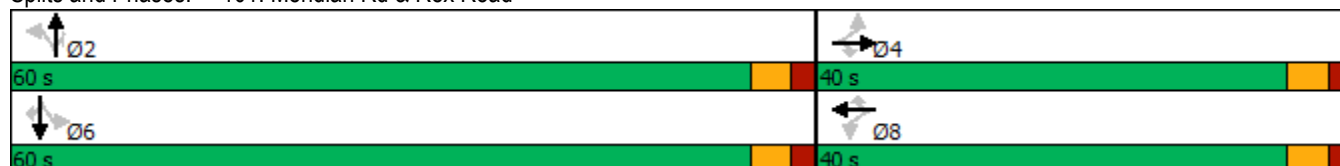
Intersection LOS: B

Intersection Capacity Utilization 53.9%

ICU Level of Service A







Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Road



Intersection

Int Delay, s/veh 6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	202	319	138	200	67
Future Vol, veh/h	41	202	319	138	200	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	250	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	43	213	336	145	211	71

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1028	211	282
Stage 1	211	-	-
Stage 2	817	-	-
Critical Hdwy	6.41	6.21	4.11
Critical Hdwy Stg 1	5.41	-	-
Critical Hdwy Stg 2	5.41	-	-
Follow-up Hdwy	3.509	3.309	2.209
Pot Cap-1 Maneuver	260	832	1286
Stage 1	827	-	-
Stage 2	436	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	192	832	1286
Mov Cap-2 Maneuver	192	-	-
Stage 1	611	-	-
Stage 2	436	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	6.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1286	-	192	832	-	-
HCM Lane V/C Ratio	0.261	-	0.225	0.256	-	-
HCM Control Delay (s)	8.8	-	29.1	10.8	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	1.1	-	0.8	1	-	-

Crash History



Year	Month	Day	AccidentTime	FIP	ReferencePointName	ReferencePointAtName	AccidentNarrative
2016	1	7	7:50:00 PM	Injury	MERIDIAN RD	REX RD	Vehicle #1 was southbound on Meridian Rd. Vehicle #2 was northbound on Meridian Rd. Driver #1 lost control of vehicle #1 on the icy roads, and it rotated counter clockwise. Vehicle #1 traveled into the northbound lane, where its front collided with the driver's side of vehicle #2. After this collision, vehicle #2 continued north, rotating counter-clockwise, and then clockwise, traveling onto the right shoulder, where it came to rest, facing south. Vehicle #1 was moved prior to investigation.
2016	10	12	2:56:00 PM	Property	MERIDIAN RD	REX RD	Vehicle 1, a pickup with trailer, was driving westbound on Rex Road, approaching the intersection with Meridian Road. Vehicle 2 was traveling northbound on Meridian Road approaching an intersection with Rex Road. After stopping, Vehicle 1 entered the intersection and was impacted by Vehicle 2. Both vehicles were moved to a safer location prior to investigation. No point or impact or final rest measurements were made due to both vehicles leaving the scene.
2017	6	9	5:40:00 PM	Property	MERIDIAN RD	REX RD	Vehicles 1 and 2 were northbound on Meridian Rd just north of Rex Rd. Vehicle 1 pulled onto the shoulder then began to make a U-turn. Vehicle 1 turned into the path of vehicle 2. Vehicle 1 collided its side with the side of vehicle 2. Both vehicles were moved prior to investigation.
2017	9	27	5:05:00 AM	Property	MERIDIAN RD	REX RD	Vehicle #1 was southbound on Meridian Rd. A deer ran into the roadway and vehicle #1 collided its front with the deer. Vehicle #1 was moved prior to investigation.
2017	11	30	7:50:00 AM	Property	MERIDIAN RD	REX RD	VEHICLE #1 WAS TRAVELING WESTBOUND ON REX RD, CROSSING THE INTERSECTION OF MERIDIAN RD, AFTER STOPPING AT THE STOP SIGN. VEHICLE #2 WAS TRAVELING SOUTHBOUND ON MERIDIAN RD, AT THE INTERSECTION OF REX RD. VEHICLE #2 COLLIDED ITS FRONT WITH THE PASSENGER REAR QUARTER PANEL OF VEHICLE #1. VEHICLE #1 AND VEHICLE #2 CAME TO REST IN THE NORTHBOUND LANE OF TRAFFIC ON MERIDIAN RD. BOTH VEHICLES WERE MOVED OUT OF TRAFFIC PRIOR TO ARRIVAL.
2018	5	22	4:03:00 PM	Property	MERIDIAN RD	REX RD	Vehicle #1 was westbound on Rex Road proceeding from a stop sign, turning left onto southbound Meridian Road. Vehicle #2 was northbound on Meridian Road. The front of vehicle #1 collided with the right front of vehicle #2 approximately 40' south of the north road edge of Rex Road and 25' west of the east road edge of Meriden Road. Vehicles were moved prior to investigation.
2018	10	7	8:21:00 PM	Injury	MERIDIAN RD	REX RD	Vehicle #1 was westbound on Rex Road. Vehicle #2 was northbound on Meridian Road. The front of vehicle #2 collided with the left front side of vehicle #1 approximately 22' west of the east road edge of Meridian Road and 34' south of the north road edge of Rex Road. Vehicle #2 continued northbound going off the right side of the road coming to final rest on all four wheels facing east. Vehicle #1 went of the right side of the road coming to final rest on all four wheels facing west. Vehicles were moved prior to investigation.
2018	10	17	5:20:00 PM	Property	MERIDIAN RD	REX RD	Vehicle #2 was stopped at a stop sign on Rex Rd at the intersection of Meridian Rd facing eastbound. Vehicle #1 was directly behind Vehicle #2. Vehicle #1 collided with Vehicle #2 with the front driver's side of the vehicle into the rear passenger side of Vehicle #2. Both vehicles moved prior to my arrival.
2018	10	24	3:29:00 PM	Property	MERIDIAN RD	REX RD	Vehicle #1 was stopped at the stop sign on Rex Rd at the intersection of Meridian Rd facing east, west of Meridian Rd. Vehicle #2 was traveling northbound on Meridian Rd crossing the intersection of Rex Rd. Vehicle #3 was stopped at the stop on Rex Rd at the intersection of Meridian Rd facing westbound on the east side of Meridian Rd. Vehicle #4 was directly behind Vehicle #3. Vehicle #1 entered the intersection of Meridian Rd causing Vehicle #2 to collide into the passenger side of Vehicle #1. Vehicle #2 rotated clockwise and went into the divided median on Rex Rd, east of Meridian Rd, striking a sign. Vehicle #1 struck Vehicle #3 with the front passenger side into the front driver's side of Vehicle #3. The collision pushed Vehicle #3 backwards causing the trailer being towed by Vehicle #3 to hit the front of Vehicle #4. Vehicle #2 came to final rest on the divided median facing eastbound. Vehicle #1 came to final rest in the eastbound lanes of Rex Rd facing eastbound. Vehicle #3 and #4 remained in their original positions.
2018	12	14	11:09:00 AM	Property	MERIDIAN RD	REX RD	Vehicle #1 was westbound on Rex Rd, approaching Meridian Rd. Vehicle #2 was southbound on Meridian Rd approaching Rex Rd. Vehicle #1 did not stop for the stop sign at Meridian and drove into the path of vehicle #2. Vehicle #2's front collided with the right side of vehicle #1. This collision forced vehicle #1 to rotate counter clockwise, and its right side collided with the left side of vehicle #2. Both vehicles were moved prior to investigation.