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The Estates at Rolling Hills Ranch
Filing No. 1
Traffic Impact Analysis
PUDSP-19-007
SF-19-019
(LSC #194750)
February 6, 2020

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.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
2-6-20
PROFESSIONAL ENGINEER

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

February 7, 2020
Date

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February 6, 2020

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 intersections of Rex Road/Meridian Road, Rex Road/Pyramid Peak Drive and Rex Road/Sunrise Ridge Drive;
- 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.

Sight Distance

Figure 3 shows a sight distance analysis at the intersection of Rex Road/Sunrise Ridge Drive and the site access point to Sunrise Ridge Drive. Based on a design speed of 40 miles per hour (mph) on Rex Road and the criteria contained in Table 2-21 of the ECM, the required intersection sight distance at the intersection of Rex/Sunrise Ridge points is 445 feet. Based on the criteria contained in Table 2-17 of the ECM, the required stopping sight distance approaching this intersection is 305 feet. Based on a design speed of 25 mph on Sunrise Ridge Drive and the criteria contained in Table 2-21 of the ECM, the required intersection sight distance at the site access is 280 feet. Based on the criteria contained in Table 2-17 of the ECM, the required stopping sight distance approaching access point is 155 feet. As shown on Figure 3 these criteria can be met for both intersections

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown in Figure 1 and are described below. Copies of Map 14 2040 Roadway Plan (Classification and Lanes) and Map 17 2060 Corridor Preservation

Plan from the *El Paso County 2016 Major Transportation Corridors Plan Update* (2016 MTCP) with the site location identified are included in the appendix.

- **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 in the intermediate term as shown on the 2016 MTCP 2040 Roadway Plan and may ultimately be extended to US Highway 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. Rex Road is classified as a 4-Lane Minor Arterial roadway by El Paso County.

  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 east of Meridian, didn't need to be carried farther east. As such, an agreement was reached to construct a County-standard Urban Residential Collector cross section.

- **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 *2016 MTCP*.

- **Eastonville Road** is shown as a two-lane Minor Arterial on the *2016 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 2016 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 4 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 4 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 peak-hour factors used for each approach are based on the traffic volumes for the peak fifteen minutes of the entire intersection. If the peak 15 minutes for an approach occurs during an interval other than the peak fifteen minutes of the entire intersection, the suggested peak-hour value based on the total approach volume from Table 9-1 of the *Synchro Studio 10 User Guide* was used instead. 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 5 shows the projected background traffic volumes for the short term. These background traffic volumes have been based on the existing traffic volumes (from Figure 4) 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 6 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 7 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 7) 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 8 and 9 show the projected short-term and long-term site-generated traffic volumes, respectively.

TOTAL TRAFFIC

Figure 10 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 5) plus the short-term site-generated traffic volumes from Figure 8.

Figure 11 shows the projected 2040 total traffic volumes. The 2040 total traffic volumes are the sum of the 2040 background traffic volumes (from Figure 6) plus the 2040 site-generated traffic volumes from Figure 9.

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 5, 6, 10 and 11 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. Detailed analysis of intersection improvement options which could potentially achieve acceptable level of service for the westbound left-turn movement at this intersection in the short-term will be provided with the Rolling Hills Ranch PUD traffic impact study that is currently in the review process.

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. The planning of Rex Road east of Eastonville Road is currently in progress as part of the Grandview Reserve development to be located southeast of the future intersection of Rex/Eastonville. This intersection will be analyzed with the Rolling Hills Ranch PUD traffic impact study that is currently in the review process.

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.

Note: The County approved a contract with AECOM 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. As shown on Table 3, the Condition A criteria is projected to be met once about 471 single family homes beyond what is currently approved and proposed are constructed adjacent to Rex Road

Warrant 7 Analysis (Crash Experience)

The following is from the MUTCD:

> *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. Currently six of the eight hours analyzed meet the Condition A criteria for item C. One additional hour is projected to meet the criteria with the addition of site-generated traffic. It is projected that the final hour analyzed would meet the criteria once an additional 19 single family homes beyond what is currently approved and proposed are constructed adjacent to Rex Road. The existing minor street volumes currently exceed the condition B criteria for all eight hours analyzed. Condition B could be met by a seven percent growth of traffic on Meridian Road and no additional traffic on Rex Road. Item A 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.

Improvements

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

- Based on the projected 2040 total traffic volumes shown in Figure 10 and the criteria contained in the ECM, no auxiliary turns lanes are anticipated to be required on Rex Road approaching Sunrise Ridge Drive and Pyramid Peak Drive.

Street Classifications

- Figure 12 shows the recommended internal street classifications.

Pedestrian Access

- In general, crosswalk bars should - be used at marked, designated pedestrian crossing locations. If it is determined that a pedestrian crossing is needed at the intersection of Sunrise Ridge Road/Rex Road consideration should be given to constructing a raised center island refuge.

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. Detailed analysis of intersection improvement options which could potentially achieve acceptable level of service for the westbound left-turn movement at this intersection in the short-term will be provided with the Rolling Hills Ranch PUD traffic impact study that is currently in the review process. 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. Potential implementation of results/recommendations of that study could result in reduced delay for the side street, or a reduction in the crash rate.

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.

Deviations

The following is a list of deviations associated with this application. Please refer to the separate deviation request documents prepared by Tech Contractors.

- Length of Cul-de-sac

- Proposed cross section for Rex Road, between Pyramid Peak Drive and Sunrise Ridge Drive
- Broken back curve street alignment

* * * * *

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
Appendix Table 1
Figures 1-12
List of Recent Traffic Studies in the Area
Map 14 2040 Roadway Plan and (Classification and Lanes) Map 17 2060 Corridor Preservation Plan from the *El Paso County 2016 Major Transportation Corridors Plan Update*
Traffic Count Reports
Level of Service Reports
Crash History

Table 1
Trip Generation Estimate
The Estates at Rolling Hills Filing 1

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: "*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]									
				Short-Term Background Traffic						Short-Term Total Traffic						Warrant Thresholds				Warrant Threshold Met?							Warrant Threshold Met?			Warrant Volume Thresholds				Warrant Threshold Met?					
	Existing [1]			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	
	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					Major	Minor	Major	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					6	5	8	5	7	5
																				No	No	No	No	No	No		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.

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 ECM-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	To be determined as part of the Rolling Ranch PUD traffic impact study currently under review	
9	Rex/Meridian intersection improvements	To be determined as part of the Rolling Ranch PUD traffic impact study currently under review	
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	Design of the future eastbound and westbound approaches	The design of Rex Road east of Eastonville Road is currently in progress as part of the Grandview Reserve development to be located southeast of the future intersection of Rex/Eastonville. This intersection will be analyzed in more detail with the Rolling Hills Ranch PUD traffic impact study that is currently in the review process.	

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. (1-23-2020)

Approximate Scale
Scale: 1"= 2,000'

Figure 1

Vicinity Map

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

Figure 2

Site Plan

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

Figure 3

Sight Distances Analysis

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

LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour) — Base on counts by LSC March 2019

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

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

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

LEGEND:

= Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

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 5

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

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

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 6

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

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

Figure 7

Directional Distribution of Site-Generated Traffic

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

LEGEND:

XX% / XX% = Short-Term Percent Directional Distribution / 2040 Percent Directional Distribution

LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

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

Figure 8

Assignment of Short-Term Site-Generated Traffic

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

LEGEND:

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

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

Figure 9

Assignment of 2040 Site-Generated Traffic

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

Modern Roundabout

Signal Control

Two way stop sign control

Left-Turn Accel Lane

LEGEND:

| = Stop Sign

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

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 10

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

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

LEGEND:

= Stop Sign

= Traffic Signal

XX/XX = AM Weekday Peak-Hour Traffic (vehicles per hour) / PM Weekday Peak-Hour Traffic (vehicles per hour)

A/B = AM Individual Movement Peak-Hour Level of Service / PM Individual Movement Peak-Hour Level of Service

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 11

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

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

Figure 12

Recommended Street Classifications

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

LEGEND:

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

Appendix Table 1
Peak Hour Factor Calculations
Meridian Road and Rex Road
The Estates at Rolling Hills Filing 1

Existing Traffic Volumes[1]
(vehicles per hour)

AM Peak Hour

Time	Southbound					Westbound					Northbound					Eastbound					Total
	SBL	SBT	SBR	SBU	SB Total	WBL	WBT	WBR	WBU	WB Total	NBL	NBT	NBR	NBU	NB Total	EBL	EBT	EBR	EBU	EB Total	
7:00 AM	1	97	1	0	99	41	20	7	0	68	59	58	6	0	123	1	0	19	0	20	**310**
7:15 AM	6	102	0	0	108	31	14	8	0	53	64	75	9	0	148	0	2	20	0	22	**331**
7:30 AM	6	113	2	0	121	16	9	14	0	39	52	98	9	0	159	1	0	19	0	20	**339**
7:45 AM	6	118	3	0	127	17	8	12	0	37	26	86	6	0	118	0	3	21	0	24	**306**
TOTAL	**19**	**430**	**6**	**0**	**455**	**105**	**51**	**41**	**0**	**197**	**201**	**317**	**30**	**0**	**548**	**2**	**5**	**79**	**0**	**86**	**1286**
Peak-15	121					39					159					20					339
4x Peak-15	484					156					636					80					1356
60 Total	455					197					548					86					1286
PHF	**0.94**					**1.26**					**0.86**					**1.08**					0.95
Approach	**SB**					**WB**					**NB**					**EB**					
PHF -- USE[2]	**0.94**					**0.95**					**0.86**					**0.95**					

PM Peak Hour

Time	Southbound					Westbound					Northbound					Eastbound					Total
	SBL	SBT	SBR	SBU	SB Total	WBL	WBT	WBR	WBU	WB Total	NBL	NBT	NBR	NBU	NB Total	EBL	EBT	EBR	EBU	EB Total	
4:30 PM	3	43	0	0	46	15	0	0	0	15	23	78	26	0	127	1	7	43	0	51	**239**
4:45 PM	7	57	0	0	64	13	0	2	0	15	23	63	34	0	120	1	14	30	0	45	**244**
5:00 PM	5	88	0	0	93	16	1	4	0	21	21	72	27	0	120	0	15	39	0	54	**288**
5:15 PM	4	68	1	0	73	14	3	3	0	20	24	83	35	0	142	0	14	48	0	62	**297**
TOTAL	**19**	**256**	**1**	**0**	**276**	**58**	**4**	**9**	**0**	**71**	**91**	**296**	**122**	**0**	**509**	**2**	**50**	**160**	**0**	**212**	**1068**
Peak-15	73					20					142					62					297
4x Peak-15	292					80					568					248					1188
60 Total	276					71					509					212					1068
PHF	**0.95**					**0.89**					**0.90**					**0.85**					0.90
Approach	**SB**					**WB**					**NB**					**EB**					
PHF -- USE	**0.95**					**0.89**					**0.90**					**0.85**					

Notes:
(1) Based on manual turning movement counts by LSC in March 2019
(2) The calculated peak hour factor for each approach is for the peak 15 minues of the entire intersection. If the calculated peak hour factor is greater than or equal to one then the peak hour factor for the entire intersection is used in the analysis

Source: LSC Transportation Consultants, Inc.

Map 14: 2040 Roadway Plan (Classification and Lanes)

Map 17: 2060 Corridor Preservation

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.

Appendix Table 1
Area Trafffic 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

Source: LSC Transportation Consultants, Inc.

LSC Transportation Consultants, Inc.

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719-633-2868

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	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
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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	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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File Name : Meridian Rd - Rex Rd Mid
Site Code : 00194180
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	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
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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	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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File Name : Meridian Rd - Rex Rd Noon
Site Code : 00194180
Start Date : 3/12/2019
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
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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	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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Site Code : 194180
Start Date : 3/5/2019
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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	

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
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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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File Name : Meridian Rd-Rex Rd PM
Site Code : 194180
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Intersection	
Int Delay, s/veh	73.5

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	87	87	87	86	86	86	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	6	101	121	59	47	234	369	35	20	457	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1408	1372	460	1391	1340	369	463	0	0	404	0	0
Stage 1	500	500	-	837	837	-	-	-	-	-	-	-
Stage 2	908	872	-	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	116	146	601	~ 120	153	677	1098	-	-	1155	-	-
Stage 1	553	543	-	361	382	-	-	-	-	-	-	-
Stage 2	330	368	-	517	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	55	113	601	~ 79	118	677	1098	-	-	1155	-	-
Mov Cap-2 Maneuver	55	113	-	~ 79	118	-	-	-	-	-	-	-
Stage 1	435	534	-	284	301	-	-	-	-	-	-	-
Stage 2	195	290	-	417	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.1	$ 455	3.4	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1098	-	-	406	89	677	1155	-	-
HCM Lane V/C Ratio	0.213	-	-	0.272	2.015	0.07	0.018	-	-
HCM Control Delay (s)	9.2	-	-	17.1	$ 571.8	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

Intersection	
Int Delay, s/veh	8.6

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	85	85	85	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	68	5	11	101	329	136	20	269	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	917	977	270	964	841	329	270	0	0	465	0	0
Stage 1	310	310	-	531	531	-	-	-	-	-	-	-
Stage 2	607	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	483	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	434	421	-	405	647	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	51.8	1.4	0.6
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1293	-	-	485	137	712	1096	-	-
HCM Lane V/C Ratio	0.078	-	-	0.514	0.532	0.015	0.018	-	-
HCM Control Delay (s)	8	-	-	20	57.8	10.1	8.3	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	2.9	2.6	0	0.1	-	-

Intersection	
Int Delay, s/veh	159.3

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	78	78	78	87	87	87	86	86	86	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	10	112	146	68	54	258	407	43	22	505	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1559	1519	509	1537	1479	407	512	0	0	450	0	0
Stage 1	553	553	-	923	923	-	-	-	-	-	-	-
Stage 2	1006	966	-	614	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	91	119	564	~ 95	126	644	1053	-	-	1110	-	-
Stage 1	517	514	-	323	349	-	-	-	-	-	-	-
Stage 2	291	333	-	479	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	88	564	~ 56	93	644	1053	-	-	1110	-	-
Mov Cap-2 Maneuver	28	88	-	~ 56	93	-	-	-	-	-	-	-
Stage 1	390	504	-	244	263	-	-	-	-	-	-	-
Stage 2	149	251	-	369	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.6	$ 951.7	3.5	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	306	64	644	1110	-	-
HCM Lane V/C Ratio	0.245	-	-	0.406	3.341	0.084	0.02	-	-
HCM Control Delay (s)	9.5	-	-	24.3	$ 1189.4	11.1	8.3	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	1	-	-	1.9	22.3	0.3	0.1	-	-

Notes

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

Intersection	
Int Delay, s/veh	17.8

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	85	85	85	85	85	85	90	90	90	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	69	208	85	11	15	111	363	162	27	298	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1032	1100	299	1076	938	363	299	0	0	525	0	0
Stage 1	353	353	-	585	585	-	-	-	-	-	-	-
Stage 2	679	747	-	491	353	-	-	-	-	-	-	-
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	211	212	741	197	264	682	1262	-	-	1042	-	-
Stage 1	664	631	-	497	498	-	-	-	-	-	-	-
Stage 2	441	420	-	559	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	182	188	741	93	234	682	1262	-	-	1042	-	-
Mov Cap-2 Maneuver	182	188	-	93	234	-	-	-	-	-	-	-
Stage 1	606	615	-	453	454	-	-	-	-	-	-	-
Stage 2	384	383	-	347	615	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.8	135.1	1.4	0.7
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	422	100	682	1042	-	-
HCM Lane V/C Ratio	0.088	-	-	0.664	0.953	0.022	0.026	-	-
HCM Control Delay (s)	8.1	-	-	28.8	155.1	10.4	8.5	-	-
HCM Lane LOS	A	-	-	D	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.7	5.7	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	175.2

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	78	78	78	87	87	87	86	86	86	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	10	112	156	68	54	258	407	47	22	505	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1561	1523	509	1537	1479	407	512	0	0	454	0	0
Stage 1	553	553	-	923	923	-	-	-	-	-	-	-
Stage 2	1008	970	-	614	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	91	118	564	~ 95	126	644	1053	-	-	1107	-	-
Stage 1	517	514	-	323	349	-	-	-	-	-	-	-
Stage 2	290	331	-	479	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	87	564	~ 56	93	644	1053	-	-	1107	-	-
Mov Cap-2 Maneuver	28	87	-	~ 56	93	-	-	-	-	-	-	-
Stage 1	390	504	-	244	263	-	-	-	-	-	-	-
Stage 2	149	250	-	369	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.7	$ 1018.3	3.5	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	305	64	644	1107	-	-
HCM Lane V/C Ratio	0.245	-	-	0.408	3.502	0.084	0.02	-	-
HCM Control Delay (s)	9.5	-	-	24.3	$ 1261.1	11.1	8.3	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	1	-	-	1.9	23.6	0.3	0.1	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	2	8	87	136	59	47	222	350	40	21	475	7
Future Volume (vph)	2	8	87	136	59	47	222	350	40	21	475	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.78	0.78	0.78	0.87	0.87	0.87	0.86	0.86	0.86	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	3	10	112	156	68	54	258	407	47	22	505	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	224	54	258	407	47	22	512	0

Intersection Summary

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 Effct Green (s)		19.1		19.1	19.1	55.2	55.2	55.2	55.2	55.2
Actuated g/C Ratio		0.23		0.23	0.23	0.65	0.65	0.65	0.65	0.65
v/c Ratio		0.27		0.75	0.14	0.51	0.33	0.04	0.04	0.42
Control Delay		8.1		46.7	7.9	13.5	8.4	2.5	7.1	9.3
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		8.1		46.7	7.9	13.5	8.4	2.5	7.1	9.3
LOS		A		D	A	B	A	A	A	A
Approach Delay		8.1		39.1			9.8			9.2
Approach LOS		A		D			A			A

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 84.4
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 14.4 — 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	20.7

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	85	85	85	85	85	85	90	90	90	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	71	208	92	11	15	111	363	172	27	298	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1037	1110	299	1077	938	363	299	0	0	535	0	0
Stage 1	353	353	-	585	585	-	-	-	-	-	-	-
Stage 2	684	757	-	492	353	-	-	-	-	-	-	-
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	209	209	741	197	264	682	1262	-	-	1033	-	-
Stage 1	664	631	-	497	498	-	-	-	-	-	-	-
Stage 2	439	416	-	558	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	186	741	92	234	682	1262	-	-	1033	-	-
Mov Cap-2 Maneuver	181	186	-	92	234	-	-	-	-	-	-	-
Stage 1	606	615	-	453	454	-	-	-	-	-	-	-
Stage 2	382	379	-	346	615	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.7	161	1.4	0.7
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	417	98	682	1033	-	-
HCM Lane V/C Ratio	0.088	-	-	0.674	1.044	0.022	0.026	-	-
HCM Control Delay (s)	8.1	-	-	29.7	183.5	10.4	8.6	-	-
HCM Lane LOS	A	-	-	D	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.8	6.5	0.1	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	2	60	177	78	9	13	100	327	155	26	283	1
Future Volume (vph)	2	60	177	78	9	13	100	327	155	26	283	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	71	208	92	11	15	111	363	172	27	298	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	281	0	0	103	15	111	363	172	27	299	0

Intersection Summary

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 Effct Green (s)		20.1		20.1	20.1	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		0.55		0.62	0.04	0.16	0.30	0.16	0.04	0.25
Control Delay		16.9		48.0	8.6	6.7	7.4	1.3	5.8	7.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.9		48.0	8.6	6.7	7.4	1.3	5.8	7.0
LOS		B		D	A	A	A	A	A	A
Approach Delay		16.9		43.0			5.7			6.9
Approach LOS		B		D			A			A

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 85.1
Natural Cycle: 50
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 11.5 — Intersection LOS: B
Intersection Capacity Utilization 70.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 101: Meridian Rd & Rex Rd

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	7	249	12	7	339	2	30	1	21	5	2	19
Future Vol, veh/h	7	249	12	7	339	2	30	1	21	5	2	19
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	262	13	7	357	2	32	1	22	5	2	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	359	0	0	275	0	0	666	656	269	666	661	358
Stage 1	-	-	-	-	-	-	283	283	-	372	372	-
Stage 2	-	-	-	-	-	-	383	373	-	294	289	-
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	1200	-	-	1288	-	-	373	385	770	373	383	686
Stage 1	-	-	-	-	-	-	724	677	-	648	619	-
Stage 2	-	-	-	-	-	-	640	618	-	714	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1200	-	-	1288	-	-	357	380	770	358	378	686
Mov Cap-2 Maneuver	-	-	-	-	-	-	357	380	-	358	378	-
Stage 1	-	-	-	-	-	-	719	672	-	643	615	-
Stage 2	-	-	-	-	-	-	615	614	-	688	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	14	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	456	1200	-	-	1288	-	-	554
HCM Lane V/C Ratio	0.12	0.006	-	-	0.006	-	-	0.049
HCM Control Delay (s)	14	8	0	-	7.8	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	263	9	4	303	2	33	5	18	11	8	12
Future Vol, veh/h	3	263	9	4	303	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	277	9	4	319	2	35	5	19	12	8	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	321	0	0	286	0	0	627	617	282	628	620	320
Stage 1	-	-	-	-	-	-	288	288	-	328	328	-
Stage 2	-	-	-	-	-	-	339	329	-	300	292	-
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	1245	-	-	1276	-	-	396	405	757	397	404	723
Stage 1	-	-	-	-	-	-	720	674	-	687	647	-
Stage 2	-	-	-	-	-	-	676	646	-	711	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1245	-	-	1276	-	-	381	402	757	381	401	723
Mov Cap-2 Maneuver	-	-	-	-	-	-	381	402	-	381	401	-
Stage 1	-	-	-	-	-	-	718	672	-	685	644	-
Stage 2	-	-	-	-	-	-	653	643	-	686	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	14.1	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	456	1245	-	-	1276	-	-	474
HCM Lane V/C Ratio	0.129	0.003	-	-	0.003	-	-	0.069
HCM Control Delay (s)	14.1	7.9	0	-	7.8	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

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 Effct 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	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	371	47	22	297	6	27	1	13	3	1	13
Future Vol, veh/h	20	371	47	22	297	6	27	1	13	3	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	391	49	23	313	6	28	1	14	3	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	319	0	0	440	0	0	828	823	416	827	844	316
Stage 1	-	-	-	-	-	-	458	458	-	362	362	-
Stage 2	-	-	-	-	-	-	370	365	-	465	482	-
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	1241	-	-	1120	-	-	290	309	637	291	300	724
Stage 1	-	-	-	-	-	-	583	567	-	657	625	-
Stage 2	-	-	-	-	-	-	650	623	-	578	553	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1241	-	-	1120	-	-	273	294	637	274	286	724
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	294	-	274	286	-
Stage 1	-	-	-	-	-	-	570	554	-	642	609	-
Stage 2	-	-	-	-	-	-	621	607	-	552	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6	17.4	12.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	1241	-	-	1120	-	-	525
HCM Lane V/C Ratio	0.129	0.017	-	-	0.021	-	-	0.034
HCM Control Delay (s)	17.4	8	0	-	8.3	0	-	12.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	325	45	21	291	12	24	3	12	7	4	10
Future Vol, veh/h	17	325	45	21	291	12	24	3	12	7	4	10
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	342	47	22	306	13	25	3	13	7	4	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	319	0	0	389	0	0	766	765	366	767	782	313
Stage 1	-	-	-	-	-	-	402	402	-	357	357	-
Stage 2	-	-	-	-	-	-	364	363	-	410	425	-
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	1247	-	-	1170	-	-	320	333	679	320	326	730
Stage 1	-	-	-	-	-	-	625	600	-	663	628	-
Stage 2	-	-	-	-	-	-	655	625	-	621	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1247	-	-	1170	-	-	302	319	679	302	312	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	319	-	302	312	-
Stage 1	-	-	-	-	-	-	613	589	-	650	614	-
Stage 2	-	-	-	-	-	-	626	611	-	595	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	16.1	14
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	366	1247	-	-	1170	-	-	423
HCM Lane V/C Ratio	0.112	0.014	-	-	0.019	-	-	0.052
HCM Control Delay (s)	16.1	7.9	0	-	8.1	0	-	14
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2

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 Effct 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	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	250	10	7	344	2	30	1	21	5	2	19
Future Vol, veh/h	7	250	10	7	344	2	30	1	21	5	2	19
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	263	11	7	362	2	32	1	22	5	2	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	274	0	0	671	661	269	671	665	363
Stage 1	-	-	-	-	-	-	283	283	-	377	377	-
Stage 2	-	-	-	-	-	-	388	378	-	294	288	-
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	1195	-	-	1289	-	-	370	383	770	370	381	682
Stage 1	-	-	-	-	-	-	724	677	-	644	616	-
Stage 2	-	-	-	-	-	-	636	615	-	714	674	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1195	-	-	1289	-	-	354	378	770	355	376	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	354	378	-	355	376	-
Stage 1	-	-	-	-	-	-	719	672	-	639	612	-
Stage 2	-	-	-	-	-	-	611	611	-	688	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	14	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	453	1195	-	-	1289	-	-	550
HCM Lane V/C Ratio	0.121	0.006	-	-	0.006	-	-	0.05
HCM Control Delay (s)	14	8	0	-	7.8	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	263	9	4	303	3	33	6	18	14	10	17
Future Vol, veh/h	5	263	9	4	303	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	277	9	4	319	3	35	6	19	15	11	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	286	0	0	635	622	282	633	625	321
Stage 1	-	-	-	-	-	-	292	292	-	329	329	-
Stage 2	-	-	-	-	-	-	343	330	-	304	296	-
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	1244	-	-	1276	-	-	391	403	757	394	401	722
Stage 1	-	-	-	-	-	-	716	671	-	686	646	-
Stage 2	-	-	-	-	-	-	672	646	-	708	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1276	-	-	371	399	757	377	397	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	371	399	-	377	397	-
Stage 1	-	-	-	-	-	-	712	668	-	683	643	-
Stage 2	-	-	-	-	-	-	642	643	-	680	665	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	14.3	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	1244	-	-	1276	-	-	477
HCM Lane V/C Ratio	0.135	0.004	-	-	0.003	-	-	0.09
HCM Control Delay (s)	14.3	7.9	0	-	7.8	0	-	13.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

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 Effct 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	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	377	48	22	301	6	27	1	13	3	1	13
Future Vol, veh/h	20	377	48	22	301	6	27	1	13	3	1	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, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	397	51	23	317	6	28	1	14	3	1	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	323	0	0	448	0	0	839	834	423	838	856	320
Stage 1	-	-	-	-	-	-	465	465	-	366	366	-
Stage 2	-	-	-	-	-	-	374	369	-	472	490	-
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	1237	-	-	1112	-	-	285	304	631	286	295	721
Stage 1	-	-	-	-	-	-	578	563	-	653	623	-
Stage 2	-	-	-	-	-	-	647	621	-	573	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1237	-	-	1112	-	-	269	290	631	269	281	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	269	290	-	269	281	-
Stage 1	-	-	-	-	-	-	565	550	-	638	607	-
Stage 2	-	-	-	-	-	-	618	605	-	547	536	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6	17.5	12.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	330	1237	-	-	1112	-	-	519
HCM Lane V/C Ratio	0.131	0.017	-	-	0.021	-	-	0.034
HCM Control Delay (s)	17.5	8	0	-	8.3	0	-	12.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.1

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	325	45	21	291	15	24	3	12	9	4	13
Future Vol, veh/h	23	325	45	21	291	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	342	47	22	306	16	25	3	13	9	4	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	322	0	0	389	0	0	781	780	366	780	795	314
Stage 1	-	-	-	-	-	-	414	414	-	358	358	-
Stage 2	-	-	-	-	-	-	367	366	-	422	437	-
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	1244	-	-	1170	-	-	312	327	679	314	320	729
Stage 1	-	-	-	-	-	-	616	593	-	662	628	-
Stage 2	-	-	-	-	-	-	653	623	-	611	579	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1244	-	-	1170	-	-	292	312	679	295	305	729
Mov Cap-2 Maneuver	-	-	-	-	-	-	292	312	-	295	305	-
Stage 1	-	-	-	-	-	-	601	578	-	645	614	-
Stage 2	-	-	-	-	-	-	622	609	-	581	565	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	16.4	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	1244	-	-	1170	-	-	423
HCM Lane V/C Ratio	0.115	0.019	-	-	0.019	-	-	0.065
HCM Control Delay (s)	16.4	8	0	-	8.1	0	-	14.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

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 Effct 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