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Grandview Reserve  
Master Traffic Impact Analysis  
PCD No.: SKP-20-001  
(LSC #184840)  
September 16, 2020

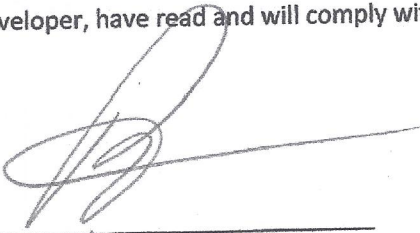
**Traffic Engineer's Statement**

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.



**Developer's Statement**

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

  
Paul Howard as mNR:  
4 Site Investments LLC

09/17/20  
Date

# **Grandview Reserve**

## **Updated Master Traffic Impact Analysis**

Prepared for:  
4 Site Investments LLC  
1271 Kelly Johnson Boulevard, Suite 100  
Colorado Springs, CO 80920

Contacts: Mr. Paul Howard & Mr. Peter Martz

SEPTEMBER 16, 2020

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LSC Transportation Consultants, Inc.

Prepared by: Jeffrey C. Hodsdon, P.E. and Kirstin D. Ferrin, P.E.

LSC #184840



## CONTENTS

REPORT CONTENTS .....	1
PREVIOUS TRAFFIC REPORTS COMPLETED IN THE AREA.....	2
LAND USE AND ACCESS .....	2
Site Plan .....	2
Site Access.....	2
Pedestrian and Bicycle Accommodations.....	2
ROADWAY AND TRAFFIC CONDITIONS.....	3
Area Roadways.....	3
Existing (2018) Traffic Volumes .....	4
Existing Levels of Service .....	5
US Hwy 24/Stapleton .....	6
Eastonville/Stapleton .....	6
Eastonville/Londonderry .....	6
Eastonville/Meridian Ranch/Judge Orr .....	6
Eastonville/McLaughlin .....	6
SHORT-TERM (YEAR 2028) BACKGROUND TRAFFIC .....	6
2040 BACKGROUND TRAFFIC .....	7
TRIP GENERATION.....	8
DIRECTIONAL DISTRIBUTION AND ASSIGNMENT .....	9
TOTAL TRAFFIC.....	9
PROJECTED LEVELS OF SERVICE .....	10
Rex/Eastonville.....	10
Rex Road Site Access Points .....	10
Rex/US Hwy 24.....	10
Eastonville Site Access Point .....	11
Londonderry/Eastonville .....	11
Stapleton/Eastonville .....	11
Stapleton/US Hwy 24 .....	11
Judge Orr/Meridian Ranch/Eastonville .....	12
McLaughlin/Eastonville .....	12
QUEUING ANALYSIS .....	12
TRAFFIC SIGNAL WARRANT ANALYSIS.....	12

Stapleton/Eastonville .....	13
Stapleton/US Hwy 24 .....	13
FUNCTIONAL CLASSIFICATIONS AND LANEAGE.....	13
MULTI-MODAL AND PEDESTRIAN/BIKE TRANSPORTATION .....	13
TRANSPORTATION IMPROVEMENT FEE PROGRAM .....	14
CONCLUSIONS AND RECOMMENDATIONS .....	14
Trip Generation .....	14
Required Improvements .....	14
Traffic Signals .....	14
Auxiliary Turn Lanes .....	15
Access Control Plan Modification .....	16
Enclosures: .....	16
Tables 2-5	
Appendix Table 1	
Figures 1-13	
Appendix Map - 2040 MTCP Roadway Plan	
MTCP Maps	
MTCP-Adopted-Report-12-6-2016	
Map 15 Bicycle and Pedestrian Network Improvements	
NCHRP Report 684 Internal Trip Capture Estimation Tool	
PPACG Model Output	
Traffic Count Reports	
Colorado Department of Transportation Straight Line Diagram	
Level of Service Reports	
Queuing Reports	
MSTA School Traffic Calculations	
Memorandum RE: Request for Amendment to the US Highway 24 Access	
Control Plan Modification to the Rex Road Intersection Location with	
Grandview Estates	





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September 16, 2020

Mr. Paul Howard &  
Mr. Peter Martz  
4 Site Investments LLC  
1271 Kelly Johnson Boulevard, Suite 100  
Colorado Springs, CO 80920

RE: Grandview Reserve  
El Paso County, Colorado  
Master Traffic Impact Analysis  
PCD No.: SKP-20-001  
LSC #184840

Dear Peter:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated master traffic impact analysis for the Grandview Reserve Sketch Plan in El Paso County, Colorado. As shown in Figure 1, the 768-acre site is located west of the intersection of US Highway 24 (US Hwy 24) and Elbert Road in El Paso County, Colorado.

## **REPORT CONTENTS**

This report is being prepared as part of a submittal to El Paso County. It identifies the traffic impacts of the Grandview Reserve 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 key intersections; and
- Findings and recommendations.

## **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. The previous area studies generally assumed Rex Road would not extend from Eastonville Road to US Hwy 24 in the 20-year horizon as is now planned. The previous studies also assumed fewer dwelling units on this site.

## **LAND USE AND ACCESS**

### **Site Plan**

Figure 2 shows the proposed Grandview Reserve sketch plan. Phase 1 of the development is planned to include up to 1,585 lots for single-family homes in Parcels I, J, K, and L. Buildout of Phase 1 is anticipated to be completed in five to seven years. At buildout, the site is planned to be developed with up to 3,260 residential dwelling units, 17 acres of commercial uses, a school site, and a church. This report assumes full buildout of the site by 2040.

### **Site Access**

Two full-movement access points are proposed to Eastonville Road and seven full-movement access points are proposed to an extension of Rex Road through the site. Figure 2 shows the proposed spacing of the access points. The sketch plan also shows a future street connection to planned Phase 3 of the Waterbury development.

The site access points to Rex Road and Eastonville Road will need to meet County standards for intersection and stopping sight distance. Based on the criteria contained in the El Paso County *Engineering Criteria Manual* (ECM), the required intersection spacing for an Urban Minor Arterial is  $\frac{1}{4}$  mile (1,320 feet). Additional access may be permitted, if entering sight distance requirements are met. Both proposed site access points to Eastonville Road meet the intersection spacing criteria. The spacing of the proposed residential collector between Eastonville Road and US Hwy 24 meets the  $\frac{1}{4}$  mile spacing criteria. However, the intermediary access points are all less than  $\frac{1}{4}$  mile apart. Intersection and stopping sight distance should be evaluated at the PUD, Preliminary Plan, and/or subdivision level, as applicable. The roads and access points shown in the Sketch Plan are conceptual and may change during the subdivision process.

### **Pedestrian and Bicycle Accommodations**

There are two existing school sites located within two miles of the site, Falcon High School and Meridian Ranch Elementary. A future K-8 school is planned just north of Falcon High School. These schools are located north of Londonderry Drive and west of Eastonville Road. There is also a regional park located just west of the site.

The likely pedestrian path to the school and park sites is Eastonville Road to Londonderry Drive. There are currently sidewalks and school crossings on Londonderry Drive. There are currently no sidewalks on Eastonville Road. However, the *2016 Major Transportation Corridors Plan* (MTCP) shows a proposed primary regional trail along this corridor. Figure 2 shows the proposed trails within the Grandview Reserve development. Detailed pedestrian plans for the internal school and connections to the schools mentioned above should be evaluated at the Preliminary Plan/PUD/subdivision level.

The Rock Island Regional Trail extends southwest to northeast along the US Highway 24 site frontage (on the north side of the highway).

## 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 the 2016 El Paso County *Major Transportation Corridors Plan* (MTCP) *2040 Roadway Plan*, and 2016 MTCP *2060 Corridor Preservation Plan* (CPP) with the site location identified on them have been attached to this report.

- **US Highway 24 (US Hwy 24)** is generally a two-lane State Highway extending east/west across Colorado connecting the Buena Vista, Colorado Springs, and Limon areas. US Hwy 24 is planned to be widened to four lanes through the Falcon area. The US Hwy 24 PEL identifies this widening as a high priority with a timeline of less than 10 years. US Hwy 24 in the vicinity is classified as an EX – Expressway/Major Bypass by the Colorado Department of Transportation (CDOT). US Hwy 24 is shown as a four-lane Principal Arterial on the *MTCP* and the *Preserved Corridor Network Plan*. The posted speed limit on US Hwy 24 adjacent to the site is 65 miles per hour (mph).
- **Eastonville Road** extends northeast from Meridian Road to past Hodgen Road. It is shown as a two-lane Minor Arterial on the El Paso County *Major Transportation Corridors Plan* and the *Preserved Corridor Network Plan*. Eastonville Road has a three-lane cross-section (one through lane in each direction plus a center two-way, left-turn lane) from Woodmen Hills Drive to Snaffle Bit Road (approximately midway between Judge Orr Road and Stapleton Road). Eastonville Road is a two-lane roadway north and south of this section. Eastonville Road is currently unpaved north of Londonderry Drive. Pikes Peak Rural Transportation Authority (PPRTA)-funded improvements are anticipated in the future at the intersection of Eastonville Road and Stapleton Drive that would likely add northbound and southbound left-turn lanes. The posted speed limit north of Stapleton Drive is 35 mph.
- **Rex Road** extends east from Goodson Road to Pyramid Peak Drive within the Meridian Ranch development. The posted speed limit on Rex Road is 45 mph between Meridian

Road and Mt. Gateway Drive and 35 mph east of Mt. Gateway Drive. The future section of Rex Road between Eastonville Road and US Hwy 24 is classified as a 4-Lane Minor Arterial roadway on the *2016 MTCP 2060 Corridor Preservation Plan (CPP)*. The CPP shows Rex Road extending east from Eastonville Road along the north boundary of the site and terminating at Elbert Road just north of US Hwy 24. However, the Colorado Department of Transportation *US Hwy 24 Planning and Environmental Linkages Study Final Corridor Conditions Report (PEL)* dated December 2016 labels the future roadway intersecting US Hwy 24 at mile post 324.72 (about one mile southwest of Elbert Road) as “Rex Road.” As shown in Figure 2, Rex Road is planned to be constructed southeast through the currently proposed Grandview Reserve sketch plan area and will intersect US Hwy 24 about 4,255 feet south of Elbert Road and 6,407 feet north of Stapleton Drive. This change will require approval from the Colorado Department of Transportation.

- **Stapleton Drive** is shown as an Urban four-lane Principal Arterial on the El Paso County *Major Transportation Corridors Plan* and El Paso County *Corridor Preservation Plan (CPP)*. Stapleton Drive extends east from Towner Drive to US Hwy 24. Stapleton continues southeast, then south as Curtis Road. It is planned to be ultimately extended west to connect with the Briargate Parkway extension. Stapleton Drive currently is a half-section of a four-lane Principal Arterial street (one through lane in each direction) between Meridian Road and US Hwy 24. The posted speed limit between Eastonville Road and US Hwy 24 is 45 mph.

### Existing (2018) Traffic Volumes

Figure 3a shows the existing morning and afternoon peak-hour traffic volumes at key intersections in the vicinity of the site. The morning peak hour was assumed to occur for one hour between 6:30 a.m. and 8:30 a.m. The afternoon peak hour was assumed to occur for one hour between 4:00 p.m. and 6:00 p.m. These volumes are based on manual intersection turning-movement counts conducted by LSC in May 2017, November 2018, December 2018, October 2019, and July 2020. The count data sheets are attached for reference.

Turning-movement counts were conducted at the intersection of US Hwy 24/Stapleton at the following times:

- Thursday, November 15, 2018 – 6:30 to 8:30 a.m.
- Wednesday, November 28, 2018 – 4:00 to 6:00 p.m.

Turning movement counts were conducted at the intersection of Eastonville/Stapleton at the following times:

- Thursday, May 23, 2017 – 6:30 to 8:30 a.m.
- Thursday, May 11, 2017 – 4:00 to 6:00 p.m.

Turning movement counts were conducted at the intersection of Eastonville/Londonderry at the following times:

- Tuesday, December 11, 2018 – 6:30 to 8:30 a.m.
- Tuesday, December 11, 2018 – 4:00 to 6:00 p.m.

Turning movement counts were conducted at the intersection of Eastonville/Judge Orr at the following times:

- Wednesday, October 2, 2019 – 6:30 to 8:30 a.m.
- Wednesday, October 2, 2019 – 4:00 to 6:00 p.m.

Turning movement counts were conducted at the intersection of Eastonville/McLaughlin at the following times:

- Tuesday, July 30, 2020 – 6:30 to 8:30 a.m.
- Tuesday, July 30, 2020 – 4:00 to 6:00 p.m.

Figure 3a also shows the Colorado Department of Transportation Average Annual Daily Traffic volumes (AADT) on US Hwy 24 in the vicinity of the site and an estimate of the average weekday traffic volumes on key street segments, based on the peak-hour counts, assuming the afternoon peak hour represents 11 percent of the daily traffic volume. This is based on the design-hour volume on US Hwy 24 adjacent to the site. The design-hour volume is the 30<sup>th</sup> highest annual hourly traffic volume reported as a percentage of the average annual daily traffic volume. A copy of the CDOT data for US Hwy 24 adjacent to the site has been attached.

### Existing Levels of Service

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

**Table 1: Intersection Levels of Service Delay Ranges**

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle) <sup>(1)</sup>
A	10 sec or less	10 sec or less
B	10-20 sec	10-15 sec
C	20-35 sec	15-25 sec
D	35-55 sec	25-35 sec
E	55-80 sec	35-50 sec
F	80 sec or more	50 sec or more
(1) For unsignalized intersections if V/C ratio is greater than 1.0 the level of service is LOS F regardless of the projected average control delay per vehicle.		

Figure 3b presents the results of the existing intersection level of service analysis. The intersections of US Hwy 24/Stapleton, Eastonville/Stapleton, and Londonderry/Eastonville were analyzed based on the unsignalized method of analysis procedures from the *Highway Capacity Manual, 6<sup>th</sup> 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 15 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.

#### **US Hwy 24/Stapleton**

The southeast-bound left-turn and through movements and the northwest-bound left-turn and through movements at the two-way, stop sign-controlled intersection of Stapleton/US Hwy 24 are currently operating at LOS F during the morning peak hour. The southeast-bound left-turn movement and the northwest-bound through movement are currently operating at LOS F during the afternoon peak hour.

#### **Eastonville/Stapleton**

The eastbound approach at the two-way stop sign-controlled intersection of Stapleton/Eastonville is currently operating at LOS F during the morning peak hour. All other movements are currently operating at a LOS D or better during the peak hours.

#### **Eastonville/Londonderry**

The eastbound left-turn movement at the two-way, stop sign-controlled intersection of Eastonville/Londonderry is currently operating at a LOS D during the morning peak hour.

#### **Eastonville/Meridian Ranch/Judge Orr**

All movements at the all-way, stop-sign controlled intersection of Eastonville/Meridian Ranch/Judge Orr are currently operating at LOS C or better during the peak hours.

#### **Eastonville/McLaughlin**

All movements at the two-way, stop-sign controlled intersection of Eastonville/McLaughlin are currently operating at LOS D or better during the peak hours.

#### **SHORT-TERM (YEAR 2028) BACKGROUND TRAFFIC**

Background traffic is the traffic estimated to be on the adjacent roadways and at adjacent intersections without the proposed development's trip generation of site-generated traffic volumes. Background traffic includes the through traffic and the traffic generated by nearby developments, but assumes zero traffic generated by the site. Figure 4a shows the projected background traffic volumes one year following the anticipated buildout of Phase 1 (2028).

The addition of new roadways (notably the completion of Lambert Road between Stapleton Drive and Londonderry Drive and the completion of Rex Road between Meridian Road and Eastonville Road) will greatly impact the existing traffic patterns. In lieu of a general/“blanket” growth rate, LSC has developed small area traffic models for Meridian Ranch, Waterbury, and the Trails as part of previous work completed in the area. The results of these modeling efforts have been combined to estimate the background traffic volumes. These background traffic volumes have been based on the existing traffic volumes (from Figure 3a) plus increases in traffic due to regional growth, including buildout of the following subdivisions in the vicinity of the site:

- The existing and currently proposed subdivisions within Waterbury (located just south of the Grandview Reserve);
- Meridian Ranch Filings 1-3 and Filings 6-8;
- Meridian Ranch Estates Filings 2-3;
- Meridian Ranch Filing 11;
- Stonebridge at Meridian Ranch Filings 1, 2, and 3;
- Meridian Ranch Filing 9;
- The Vistas at Meridian Ranch Filing 1;
- WindingWalk at Meridian Ranch Filing 1;
- The Enclave at Stonebridge at Meridian Ranch;
- The Estates at Rolling Hills Ranch Filing No. 1; and
- The Rolling Hills Ranch at Meridian Ranch PUD.

Increases in through traffic on US Hwy 24 were estimated based a yearly growth rate of 2 percent per year. This growth rate was calculated from the CDOT 20-year growth factor for US Hwy 24 adjacent to the site. The short-term background traffic volumes assume Rex Road has been extended from its existing terminus to the Rolling Hills Ranch at Meridian Ranch PUD access, but **not** further east to Eastonville Road. The background traffic scenarios also hypothetically assume Rex Road has been constructed from Eastonville Road through the site to US Hwy 24, but the background traffic scenarios include only the non-site traffic.

Figure 3b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term background volumes.

## **2040 BACKGROUND TRAFFIC**

Figure 5a shows the projected 20-year background traffic volumes for the year 2040. The 2040 background/baseline traffic volumes are based on the *Colorado Department of Transportation US Hwy 24 Planning and Environmental Linkages Study Final Corridor Conditions Report* dated December 2016 and on previous work completed by LSC in the area, including work done for the Meridian Ranch and Waterbury developments. The 2040 traffic volumes shown in the PEL were based on the PPACG traffic demand model. The projected volume on US Hwy 24 adjacent to the site was shown to increase from 9,500 vehicles per day to 23,000 vehicles per day. This represents a 20-year growth rate of about 4.5 percent per year. The background traffic scenarios hypothetically assume Rex Road through the site, but the background traffic scenarios include only

the non-site traffic. In general, through traffic volumes and volumes to and from Curtis Road were based on the PEL report and all other background volumes were based on previous work completed by LSC. The 2040 background traffic volumes do not include traffic from Grandview Reserve.

Figure 5b shows the lane geometry, traffic control, and level of service at the key area intersections, based on the 2040 background volumes.

## **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. It is currently unknown if the school site will be developed as a neighborhood school, a charter school, or some other type of educational use. To be conservative (at the request of County staff), the trip generation estimate for the school site was based on the ITE trip generation rates for a private K-8 school for the daily traffic volumes and the afternoon peak hour. The morning trip generation estimate was calculated using the Municipal and School Transportation School Traffic Calculator provided by the Traffic Management Unit, Transportation Mobility and Safety Division of Highway, North Carolina Department of Transportation.

The total number of vehicle trips generated by the land uses has been reduced to account for the internal vehicle trips made within the site between land uses, without use of the external streets surrounding the site. Table 2 shows the number of internal trips assumed for each land use. The internal trip reduction for the commercial parcels is an estimate by LSC, based on National Highway Cooperative Highway Research Program (NCHRP) Report 684 *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. The results of the spreadsheet model are attached. An additional 10 percent of the school trips were also assumed to be internal to the site. The internal trip reduction assumes the school site is developed as a charter school with a small percentage of the students coming from the Grandview Reserve neighborhood.

The total number of vehicle trips generated has also been reduced to take into account the “pass-by” phenomena. A pass-by trip is made by a motorist who would already be on the adjacent roadways regardless of the proposed development, but who stops in at the site while passing by. The motorist would then continue on his or her way to a final destination in the original direction. The pass-by percentages shown in Table 2 are from the *Trip Generation Handbook - An ITE Proposed Recommended Practice, 3rd Edition, 2017* by ITE.

Phase 1 is planned to include buildout of up to 1,585 residential dwelling units in Parcels I, J K, and L. This phase is estimated to be completed in five to seven years. The short-term horizon year of 2028 was selected to occur one year after buildout. Following Phase 1, Grandview Reserve is expected to generate about 13,212 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 and 8:30 a.m., about 283 vehicles would enter and 848 vehicles



would exit the site. During the afternoon peak hour, which generally occurs for one hour between 4:15 and 6:15 p.m., about 908 vehicles would enter and 533 vehicles would exit the site.

At buildout, Grandview Reserve is expected to generate about 32,240 new external vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, about 970 vehicles would enter and 2,033 vehicles would exit the site. During the afternoon peak hour, about 2,201 vehicles would enter and 1,450 vehicles would exit the site.

## **DIRECTIONAL DISTRIBUTION AND ASSIGNMENT**

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 directional distribution estimates for the site-generated traffic volumes. The estimates have been based on the following factors: the recent traffic count data; the Pikes Peak Area Council of Governments' (PPACG) 2040 traffic projections, the site's location with respect to the nearby employment, commercial and activity centers, and the balance of the Falcon and Colorado Springs metropolitan areas; 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. An initial trip distribution estimate based on data from the PPACG travel demand model was calculated by running a select zone analysis for the zone that includes this site (661) and a nearby zone that includes more retail uses (637) and then comparing those results to the 2040 model volumes. Engineering judgement and LSC estimates were then applied using the other factors listed to modify these percentages. The PPACG model output is attached.

When the distribution percentages (from Figure 7) were applied to the trip generation estimates (from Table 2), the site-generated traffic volumes on the area roadways were determined. Figure 7 shows the site-generated traffic volumes following Phase 1. Figure 8 shows the site-generated traffic volumes at buildout of Grandview Reserve.

## **TOTAL TRAFFIC**

Figure 9a shows the projected short-term (Year 2028) total traffic volumes. The short-term total traffic volumes are the sum of the short-term background traffic volumes (from Figure 4a) plus the Phase 1 site-generated traffic volumes (from Figure 7).

Figures 9b-9d show the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term (Year 2028) total volumes.

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

Figures 10b-10e show the lane geometry, traffic control, and level of service at the key area intersections, based on the short-term (Year 2028) total volumes.

## **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, 6<sup>th</sup> Edition* by the Transportation Research Board and Synchro signalized intersection procedures. Based on the criteria contained in the ECM, a peak hour factor of 0.85 was used for the short-term (Year 2028) analysis except for those intersections whose existing peak hour factor calculated from traffic counts conducted by LSC was higher than 0.85. In those cases, the existing peak hour factor was used. A peak hour factor of 0.95 was used for the long-term (Year 2040) analysis, except for the southbound through traffic on US Hwy 24 during the morning peak hour and the northbound through traffic on US Hwy 24 in the afternoon peak hour. Based on the existing peak hour factor and high traffic volumes projected for these movements, a future peak hour factor of 0.98 was used. The results of the analysis are contained in Figures 4b, 5b, 9b-9d, and 10b-10e. The level of service reports are attached.

### **Rex/Eastonville**

In the short term, it was assumed that a new section of Rex Road would be constructed from Eastonville Road through the Grandview Reserve sketch plan area to US Hwy 24. It was assumed that the section of Rex Road just west of Eastonville Road through the Meridian Ranch development was not yet constructed. The intersection of Rex/Eastonville is projected to operate at LOS B or better for all movements during the peak hours as a stop sign-controlled "T" intersection, based on the projected short-term total traffic volumes.

By 2040, it was assumed that Rex Road would be completed between Meridian Road and US Hwy 24. Based on the projected 2040 total traffic volumes, the intersection of Rex/Meridian is projected to operate at LOS F for some of the minor approach volumes, if it is stop sign-controlled. If this intersection is constructed as a one-lane modern roundabout or if it is traffic-signal-controlled, all movements are projected to operate at LOS D or better during the peak hours.

### **Rex Road Site Access Points**

The site access points to Rex Road were analyzed as two-way, stop-controlled intersections and one-lane modern roundabouts. The intersection of the proposed residential collector and the access point for the commercial parcels were also analyzed as assuming traffic-signal control. The first three intersections east of Eastonville Road (intersections 2, 3, and 4) are projected to operate at a satisfactory level of service as two-way, stop sign-controlled intersections. The remaining access points will likely need alternate traffic control to achieve an acceptable level of service.

### **Rex/US Hwy 24**

The southeast bound left-turn movement at the intersection of Rex/US Hwy 24 is projected to operate at LOS D during the morning peak hour and LOS E during the afternoon peak hour, based on

the projected short-term total traffic volumes. The analysis assumes the intersection is a stop sign-controlled "T" intersection with left-turn and right-turn deceleration and acceleration lanes on US Hwy 24. By 2040, this intersection was assumed to be traffic-signal-controlled. All movements are projected to operate at LOS D or better, based on the projected 2040 total traffic volumes.

#### **Eastonville Site Access Point**

The two site access points to Eastonville Road are planned beyond Phase 1. Based on the projected 2040 total traffic volumes, the westbound approach at the north site access is projected to operate at LOS E during the morning peak hour. If this access were constructed as a modern one-lane roundabout, all approaches are projected to operate at a satisfactory level of service. The south site access is projected to operate at LOS D or better for all movements during the peak hours as a stop sign-controlled "T" intersection.

#### **Londonderry/Eastonville**

The eastbound left-turn movement at the stop-sign-controlled intersection of Londonderry/Eastonville is projected to operate at LOS F during the afternoon peak hour, based on the projected short-term total traffic volumes. All movements at this intersection are projected to operate at a satisfactory level of service, if it is reconstructed as a modern roundabout or traffic-signal-controlled. By 2040, it will likely be necessary to provide two northbound and southbound through lanes to achieve an acceptable level of service.

#### **Stapleton/Eastonville**

The eastbound approach at the intersection of Stapleton/Eastonville is currently operating at LOS F during the morning peak hour. A PPRTA project is currently planned to improve Eastonville Road in the vicinity of the site. However, the timing of this project is unknown. To maintain an acceptable level of service, these PPRTA improvements will need to be completed and the intersection will need to be converted to traffic-signal control.

By 2040, it was assumed that Stapleton Drive would be constructed to its full cross section. Even with improvements to Stapleton Drive, it may not be possible to maintain an acceptable level of service at this intersection without also widening Eastonville Road to provide two northbound and southbound through lanes.

#### **Stapleton/US Hwy 24**

The intersection of US Hwy 24/Stapleton is currently stop sign-controlled. The northbound and southbound left-turn movements and the northbound through movements are currently operating at LOS F during the peak hours. This intersection is planned to be signalized in the future. Once signalized, all movements are projected to operate at LOS D or better during the peak hours, based on the projected short-term total traffic volumes. By 2040, some movements at this intersection are projected to operate at LOS E or F during the peak hours. To maintain an overall LOS D or better

as a “conventional” four-leg signalized intersection, it would be necessary to provide three through lanes in all directions. Alternate traffic-control options were presented in the US Hwy 24 PEL Study. Alternatives to a “conventional” four-leg signalized intersection may include a jug handle intersection, a continuous flow intersection (or partial/half CFI), or a junior interchange. An alternate intersection design may be needed long-term to maintain an acceptable level of service.

#### **Judge Orr/Meridian Ranch/Eastonville**

The intersection of Judge Orr/Meridian Ranch/Eastonville is currently all-way, stop sign-controlled. The level of service for several of the approach lanes are projected to degrade to LOS E or LOS F during the peak hours, based on the projected 2028 background traffic volumes. If this intersection were to be converted to traffic-signal control, all movements are projected to operate at LOS D or better during peak hours, based on the projected 2028 and 2040 total traffic volumes.

#### **McLaughlin/Eastonville**

The intersection of McLaughlin/Eastonville is currently two-way, stop-sign controlled. Based on the projected 2028 background afternoon peak-hour traffic volumes, the northbound left-turn movement is projected to operate at LOS F and the northbound through and right-turn lane and the southbound approach are projected to operate at LOS E. If this intersection were to be converted to traffic-signal control, all movements are projected to operate at LOS D or better during peak hours based on the projected 2028 and 2040 total traffic volumes.

#### **QUEUING ANALYSIS**

A queuing analysis was performed using Synchro/SimTraffic for Rex Road between Eastonville and US Hwy 24. The 2040 total morning and afternoon peak-hour traffic volumes were entered into the Synchro model. Each simulation was run five times and the results were averaged. Please refer to the attached SimTraffic queuing reports for queuing results for intersection numbers 1, 6, 8, and 9.

The projected maximum northeast-bound left-turn queue on US Hwy 24 approaching Rex Road is 238 feet during the morning peak hour and 549 feet during the afternoon peak hour.

#### **TRAFFIC SIGNAL WARRANT ANALYSIS**

The intersections of Stapleton/Eastonville and Stapleton/US Hwy 24 were analyzed to determine when Four-Hour Vehicular Volume Traffic-Signal Warrant thresholds would be reached or exceeded, based on the projected peak-hour traffic volumes. This “cursory”/planning-level analysis has been provided at the Sketch Plan level, as previous reports completed by LSC in the area indicate that these intersections may be close to meeting Traffic-Signal Warrant(s). Detailed analysis of all applicable signal warrants should be evaluated with each Preliminary Plan or Subdivision plan submitted. The satisfaction of warrants does not indicate that a signal must be installed. The decision to require a signal to be installed rests with the County.

### **Stapleton/Eastonville**

Table 3 shows the results of the analysis for the intersection of Stapleton/Eastonville. The minor approach volumes were assumed to include either the eastbound left-turn, through, and right-turn movements or the westbound left-turn and through movements (the right-turn movements were excluded, as there is an exclusive right-turn lane). Even if the threshold is met, based on both the eastbound and westbound approaches, it would only be considered to be met once for that hour. As shown in the Table 4, the thresholds for a Four-Hour Vehicular Volume Traffic-Signal Warrant are projected to be met, based on the projected short-term (Year 2028) total traffic volumes.

### **Stapleton/US Hwy 24**

Table 4 shows the signal warrant analysis for the intersection of Stapleton/US Hwy 24, based on the existing traffic volumes. The analysis assumes the minor approach includes the higher of either the southbound (Stapleton Drive) left-turn and through movements or northbound (Curtis Road) left-turn and through movements. This intersection currently meets the thresholds for a Four-Hour Vehicular Volume Traffic Signal Warrant for three of the four hours. A fourth hour is projected to meet the thresholds based on the short-term (Year 2028) background traffic volumes.

## **FUNCTIONAL CLASSIFICATIONS AND LANEAGE**

Figure 11 shows the recommended functional classifications for the roadways in the vicinity of the site. The functional classifications and number of through lanes are consistent with the current El Paso County *MTCP*. Figure 12 shows the recommended number of through lanes on the roadways in the vicinity of the site.

Figure 13 shows a comparison of the projected average weekday traffic volume (ADT) and the design ADT from the ECM for the key street segments in the vicinity of the site.

The projected ADT volume on Rex Road is about 13,695 vehicles per day (vpd) just east of Eastonville Road and about 21,955 vpd just west of US Hwy 24. The design ADT for an Urban Minor Arterial is 20,000 per day.

The projected average weekday traffic volume (ADT) on Eastonville Road is about 22,100 vpd just north of Stapleton Drive. The design ADT for an Urban Minor Arterial is 20,000 per day.

## **MULTI-MODAL AND PEDESTRIAN/BIKE TRANSPORTATION**

- A park n' ride facility is planned for a site near Meridian Road and US Highway 24.
- The Rock Island Regional Trail passes adjacent to the site.

- Many of the area County roads have been or will be upgraded to provide paved shoulders for cyclists. Stapleton and Elbert Road are shown as future “bike routes.”
- The MTCP shows a future primary regional trail along Eastonville Road. Another future primary regional trail is shown extending west from Eastonville Road through Meridian Ranch.
- The Highway 24 PEL study also includes multi-modal elements.

## **TRANSPORTATION IMPROVEMENT FEE PROGRAM**

The Grandview Reserve development will be required to participate in the Countywide Transportation Improvement Fee Program. The fees will be determined at the subdivision stage and payable following plat recording and/or building permit issuance.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Trip Generation**

- At buildout, Grandview Reserve is expected to generate about 32,240 new external vehicle trips on the average weekday, with about half entering and half exiting the site during a 24-hour period. During the morning peak hour, about 970 vehicles would enter and 2,033 vehicles would exit the site. During the afternoon peak hour, about 2,201 vehicles would enter and 1,450 vehicles would exit the site.

### **Required Improvements**

Table 5 contains a summary of the recommended improvements.

### **Traffic Signals**

- This Master TIS identifies intersections potentially needing traffic signal (or roundabout) control in the future. Several key area intersections including Eastonville/Stapleton, US Hwy 24/Stapleton, Eastonville/Meridian Ranch/Judge Orr, and Eastonville/McLaughlin are projected to operate at LOS E or F for some movements in the short-term, if these intersections remain stop sign-controlled. As the Grandview Reserve subdivision develops, evaluation of these intersections will occur with each Preliminary Plan/plat submittal. Each study, as applicable, would project if, based on short-term baseline plus site-generated traffic projections, a signal(s) would likely be warranted or would be close to meeting warrants. Studies would estimate timing, based on occupied dwelling units, and subsequently recommend a monitoring program for traffic volumes, crash history, and other factors such that a signal construction could commence once warrants are met, based on actual data in the field. Following the acceptance of the final plat traffic report finding that a signal is likely to meet warrants in the short term, the applicant will begin the design plans for the traffic control signal(s) and obtain County approval. Therefore, once warrants are met in the field,

the signal(s) can be installed. The study should make a recommendation regarding the timing for placing order(s) for materials such as signal poles, which may have long lead times.

#### Auxiliary Turn Lanes

- Based on the short-term total traffic volumes shown in Figure 9a and the criteria contained in the *State of Colorado Highway Access Code*, an eastbound left-turn lane is projected to be warranted on US Hwy 24 approaching Rex Road. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the deceleration lane is 1,400 feet (including 600 feet of stacking distance) plus a 300-foot taper, for a total speed change lane length of 1,700 feet. In the future, it will be necessary to provide dual eastbound left-turn lanes. Based on the queueing analysis of the intersection of Rex Road/US Hwy 24, 600 feet of stacking distance will be adequate for the projected maximum northeast-bound left-turn queue.
- Based on the short-term total traffic volumes shown in Figure 9a and the criteria contained in the *State of Colorado Highway Access Code*, a westbound right-turn acceleration lane is projected to be warranted on US Hwy 24 at Rex Road. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the acceleration lane is 1,380 feet plus a 300-foot taper, for a total speed change lane length of 1,680 feet.
- Based on the short-term total traffic volumes shown in Figure 9a and the criteria contained in the *State of Colorado Highway Access Code*, a westbound right-turn deceleration lane is projected to be warranted on US Hwy 24 approaching Rex Road. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the deceleration lane is 800 feet plus a 300-foot taper, for a total speed change lane length of 1,100 feet.
- Based on the short-term total traffic volumes and the level of service analysis results, an eastbound left-turn acceleration lane on US Hwy 24 at Rex Road would reduce the delay for the left turn from Rex onto eastbound US Hwy 24. This lane may be required by CDOT at some point as development progresses. Based on a posted speed limit of 65 miles per hour (mph), the prescribed lane length for the acceleration lane is 1,380 feet plus a 300-foot taper, for a total speed change lane length of 1,680 feet. A channelized-T configuration (with raised center median channelization) may be part of the traffic-control phasing over time at this intersection.
- Based on the 2040 total traffic volumes shown in Figure 10a and the criteria contained in the *El Paso County Engineering Criteria Manual (ECM)*, the new section of Rex Road between Eastonville and US Hwy 24 should anticipate the need for right-turn and left-turn deceleration lanes approaching all access points and intersections.

- Based on the 2040 total traffic volumes shown in Figure 10a and the criteria contained in the El Paso County Engineering Criteria Manual (ECM), northbound and southbound left-turn lanes will be needed on Eastonville approaching Rex Road and the site access points. These auxiliary lanes would not be needed if these intersections are designed as modern roundabouts.

Access Control Plan Modification

- A request for a change to the US Highway 24 Access Control Plan, to allow the location of Rex/US Hwy 24 as shown in Figure 2, has been submitted to CDOT as per meetings with and direction from EPC and CDOT. A copy of the memorandum has been attached.

\* \* \* \* \*

Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

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

JCH:KDF:jas

Enclosures: Tables 2-5  
Appendix Table 1  
Figures 1-13  
Appendix Map - 2040 MTCP Roadway Plan  
MTCP Maps  
MTCP-Adopted-Report-12-6-2016  
Map 15 Bicycle and Pedestrian Network Improvements  
NCHRP Report 684 Internal Trip Capture Estimation Tool  
PPACG Model Output  
Traffic Count Reports  
Colorado Department of Transportation Straight Line Diagram  
Level of Service Reports  
Queuing Reports  
MSTA School Traffic Calculations  
Memorandum RE: Request for Amendment to the US Highway 24 Access  
Control Plan Modification to the Rex Road Intersection Location  
with Grandview Estates



# Tables

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Table 2 Trip Generation Estimate Grandview Reserve																								
Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>				Total Trips Generated				Internal Trips Generated <sup>(2)</sup>				External Trips Generated				Pass-By Trips <sup>(3)</sup>	New External Trips Generated				
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic		Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic
				In	Out	In	Out		In	Out	In	Out		In	Out	In	Out			In	Out	In	Out	
<b>Short-Term Trip Generation Estimate</b>																								
210	Single-Family Detached Housing	1,585 DU <sup>(4)</sup>	8.34	0.18	0.53	0.57	0.34	13,212	283	848	908	533	0	0	0	0	0	13,212	283	848	908	533	0%	13,212
<b>Buildout Trip Generation Estimate</b>																								
534	Private School (K-8) <sup>(5)</sup>	500 Students	4.11	- - -	- - -	0.12	0.14	2,055	292	226	60	70	206	29	11	3	7	1,849	263	215	57	63	0%	1,849
820	Shopping Center	133 KSF <sup>(6)</sup>	54.88	1.02	0.62	2.42	2.62	7,299	135	83	322	349	599	18	12	3	40	6,700	117	71	319	309	34%	4,422
560	Church	49 KSF	6.49	0.21	0.14	0.20	0.25	318	10	7	10	12	0	0	0	0	0	318	10	7	10	12	0%	318
210	Single-Family Detached Housing	3,260 DU	7.87	0.18	0.53	0.56	0.33	25,651	580	1,740	1,815	1,066	0	0	0	0	0	25,651	580	1,740	1,815	1,066	0%	25,651
		3,260 DU						35,323	1,017	2,056	2,207	1,497	805	47	23	6	47	34,518	970	2,033	2,201	1,450		32,240
Notes: (1) Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE). The trip generation rates shown were calculated using on the fitted curve equations. (2) Internal trips to and from the commercial parcels were based on the attached NCHRP 684 Internal Trip Capture Estimation Tool. About 10 percent the school trips were assumed to be internal to the site. (3) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, Third Edition September 2017" by ITE (4) KSF = one thousand square feet of floor space (5) The morning peak hour trips for the school site was estimated using the Municipal and School Transportation School Traffic Calculator provided by the Traffic Management Unit, Transportation Mobility and Safety Division of Highway, North Carolina Department of Transportation (see attached). (6) DU = dwelling unit																								
Source: LSC Transportation Consultants, Inc.																								
July 2020																								

**Table 3**  
**Grandview Reserve**  
**Traffic Signal Warrant Analysis of Eastonville/Stapleton**  
**Peak-Hour Four-Hour Vehicular Volume Evaluation**

Time	2017 Traffic Volumes						2028 Background Traffic						2028 Total Traffic					
	2017 Traffic Volumes <sup>(1)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation <sup>(2)</sup>			2028 Background Traffic Volumes <sup>(3)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation			2028 Total Traffic Volumes <sup>(3)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation		
	Major <sup>(4)</sup>	Minor		Minor St Minimum	EB Met?	WB Met?	Major	Minor		Minor St Minimum	EB Met?	WB Met?	Major	Minor		Minor St Minimum	EB Met?	WB Met?
		EB <sup>(5)</sup>	WB <sup>(6)</sup>					EB	WB					EB	WB			
6:30 AM - 7:30 AM	536	101	39	322	No	No	842	381	190	190	Yes	Yes	1136	419	190	113	Yes	Yes
7:30 AM - 8:30 AM	155	97	67	513	No	No	394	179	89	393	No	No	532	196	89	324	No	No
3:00 PM - 4:00 PM	---	---	---	---	---	---	543	239	298	319	No	No	787	341	298	207	Yes	Yes
4:00 PM - 5:00 PM	213	61	119	484	No	No	650	286	357	270	Yes	Yes	943	408	357	164	Yes	Yes
5:00 PM - 6:00 PM	215	56	82	483	No	No	588	259	323	296	No	Yes	852	369	323	187	Yes	Yes

Notes:

(1) The volumes are based on manual turning movements counts conducted by LSC in May 2017

(2) Based on 2 lanes on major approach and 1 lane on minor approach.

(3) The 6:30 AM - 7:30 AM and 7:30 AM - 8:30 AM volumes are based on the projected AM peak hour volumes times the ratio of the same time period from the 2017 count and the AM peak hour (6:35 AM -7:35 AM) from the 2017 count

The 4:00 PM - 5:00 PM and 5:00 P-M - 6:00 PM volumes are based on the projected PM peak hour volumes times the ratio of the same time period from the 2017 count and the PM peak hour (4:30 PM -5:30 PM) from the 2017 count

The 3:00 PM - 4:00 PM volumes are based on 80% of the projected PM peak hour volumes. This is an estimate by LSC based on the hourly distribution of entering and exiting vehicle trips by land use published by the Institute of Transportation Engineers (ITE) in August 2018 for Single-Family Detached Housing

(4) The major street volumes include all (left/through/right) movements on Eastonville Road.

(5) The EB minor street volumes include all easbound movements (left, through, and right) on Stapleton Drive.

(6) The WB minor street volumes include only the left and through westbound movements on Stapleton Dr. The right-turn movements have been excluded because there is an existing exclusive right-turn lane on this approach.

Source: LSC Transportation Consultants, Inc.

**Table 4**  
**Grandview Reserve**  
**Traffic Signal Warrant Analysis of Stapleton/US Hwy 24**  
**Peak-Hour Four-Hour Vehicular Volume Evaluation**

Time	2018 Traffic Volumes <sup>(1)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation <sup>(2)</sup>			2028 Background Traffic Volumes <sup>(3)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation			2028 Total Traffic Volumes <sup>(3)</sup>			Warrant 2, Four-Hour Vehicular Volume Evaluation		
	Major <sup>(4)</sup>	Minor		Minor St Minimum	SEB Met?	NWB Met?	Major	Minor		Minor St Minimum	SEB Met?	NWB Met?	Major	Minor		Minor St Minimum	SEB Met?	NWB Met?
		SEB <sup>(5)</sup>	NWB <sup>(6)</sup>					SEB	NWB					SEB	NWB			
<b>6:30 AM - 7:30 AM</b>	838	166	75	96	Yes	No	1,086	215	91	80	Yes	Yes	1714	215	91	80	Yes	Yes
<b>7:30 AM - 8:30 AM</b>	691	77	63	143	No	No	883	98	69	84	Yes	No	1388	98	69	80	Yes	No
<b>3:00 PM - 4:00 PM</b>	802	87	49	105	No	No	1,388	69	106	80	No	Yes	2,063	69	106	80	No	Yes
<b>4:00 PM - 5:00 PM</b>	882	43	109	85	No	Yes	1,571	64	133	80	No	Yes	2310	64	133	80	No	Yes
<b>5:00 PM - 6:00 PM</b>	932	57	87	80	No	Yes	1,538	79	106	80	No	Yes	2344	79	106	80	No	Yes

Notes:

- (1) The volumes are based on manual turning movements counts conducted by LSC in November 2018, except the 3:00-4:00 PM volumes which are an estimate by LSC (see note 3)
- (2) Based on 2 or more lanes on the major approach and 2 or more lanes on the minor approach (70% Factor).
- (3) The 6:30 AM - 7:30 AM and 7:30 AM - 8:30 AM volumes are based on the projected AM peak hour volumes times the ratio of the same time period from the 2018 count and the AM peak hour (6:45 AM -7:45 AM) from the 2017 count  
The 4:00 PM - 5:00 PM and 5:00 P-M - 6:00 PM volumes are based on the projected PM peak hour volumes times the ratio of the same time period from the 2018 count and the PM peak hour (4:45 PM -5:45 PM) from the 2018 count  
The 3:00 PM - 4:00 PM volumes are based on 86% of the projected PM peak hour volumes. This is an estimate by LSC based on 48 hour continuous traffic counts conducted by CDOT on US Hwy 24 Northeast of Judge Orr Road in July 2017
- (4) The major street volumes include all (left/through/right) movements on US Hwy 24
- (5) The SEB minor street volumes include only the easbound left-turn and through movements on Stapleton Dr. The right-turn movements have been excluded
- (6) The NWB minor street volumes include only the left and through westbound movements on Curtis Rd. The right-turn movements have been excluded

Source: LSC Transportation Consultants, Inc.

Table 5 Grandview Reserve Roadway Improvements				
Item #	Improvement	Trigger	Timing	Responsibility
Roadway Segment Improvements				
1	Eastonville - Stapleton to Latigo final grading and paving	dependent on PPRTA funding priorities	TBD by EPC; PPRTA "A-List" Project	PPRTA
2	Eastonville - Stapleton to Londonderry upgrade to Rural Minor Arterial (per MUTCD)	average daily traffic > 6,000 vehicles per day	dependent on PPRTA funding priorities	PPRTA
3	Eastonville - Londonderry to Latigo upgrade from unimproved roadway to Rural Minor Arterial (per MUTCD)	average daily traffic > 300 vehicles per day	With initial Grandview Reserve filing	PPRTA
4	Eastonville - Stapleton to Grandview Reserve south boundary upgrade to 4-Lane Rural Minor Arterial (per MUTCD)	average daily traffic > 20,000 vehicles per day	dependent on PPRTA funding priorities	PPRTA
5	Construct Rex from Eastonville to US Hwy 24 Adequate right-of-way should be reserved to allow for the construction of left-turn and right-turn deceleration lanes at all potential future access points	With Grandview Reserve development	With initial Grandview Reserve filing	Grandview Reserve
6	Construct Rex from Sunrise Ridge to Eastonville	With adjacent Meridian Ranch development	With future Meridian Ranch filings	Meridian Ranch
7	Stapleton Drive - US Hwy 24 to Eastonville Road complete southern (eastbound) half	average daily traffic > 18,000 vehicles per day	Shown in 2040 MTCP	El Paso County west of Eastonville Road; Waterbury Metro District east of Eastonville Road.
8	Widen US Hwy 24 to provide two lanes in each direction west of Stapleton.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
9	Widen US Hwy 24 to provide two lanes in each direction between Stapleton and Rex.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
10	Widen US Hwy 24 to provide two lanes in each direction east of Rex.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
Stapleton/US Hwy 24 Intersection				
11	Convert from Two-Way, Stop-Sign Control to Signal Control	When Traffic Signal Warrant(s) are met. The decision on timing of traffic signal installation rests with the Colorado Department of Transportation	anticipated in the short-term	CDOT; along with any available escrow collected from area developments through the access permitting process.
12	Potential long-term capacity upgades (jughandle, a Jr Interchange, etc.)	When level of service degrades below acceptable levels	Shown in US Highway 24 PEL Study;	CDOT; along with any available escrow collected from area developments through the access permitting process.
Eastonville/Stapleton				
13	Construct northbound and southbound left-turn lanes on Eastonville Rd. approaching Stapleton Dr.	- - -	Short-Term	PPRTA/EI Paso County <sup>(1)</sup>
14	Signalization of the intersection of Stapleton/Eastonville.	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	anticipated in the short-term	eligible intersection under the free impact program
US Hwy 24/Rex Intersection				
15	Construct a northeastbound left-turn deceleration lane on US Hwy 24 approaching Rex	With the opening of the access	With initial Grandview Reserve filing	Grandview Reserve
16	Construct a second northeastbound left-turn deceleration lane on US Hwy 24 approaching Rex	Once the intersection is traffic signal controlled and level of service and/or queueing issues arise	Future	Grandview Reserve
17	Construct a southwestbound right-turn deceleration lane on US Hwy 24 approaching Rex	southwestbound right-turn volume > 10 vph	With initial Grandview Reserve filing	Grandview Reserve
18	Construct a southwestbound right-turn acceleration lane on US Hwy 24 at Rex	southeastbound right-turn volume >10 vph	With initial Grandview Reserve filing	Grandview Reserve
19	Signalization of the intersection of US Hwy 24/Rex	When Traffic Signal Warrant(s) are met. The decision on timing of traffic signal installation rests with the Colorado Department of Transportation	Long-Term Future (to be evaluated with each filing)	Grandview Reserve
Eastonville/Rex Intersection				
20	Construct a northbound right-turn deceleration lane on Eastonville approaching Rex Road (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 1 development	Grandview Reserve
21	Construct a southbound left-turn deceleration lane on Eastonville approaching Rex Road (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	NOT REQUIRED but will be needed once Eastonville is constructed to the west by Meridian Ranch to match a northbound left-turn lane that will be required	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
22	Convert to traffic signal control (not needed if constructed as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	With Phase 2 development	likely to be considered an "eligible intersection" under the free impact program
Eastonville/Meridian Ranch/Judge Orr Intersection				
23	Convert to traffic signal control (or reconstruct as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Future	likely to be considered an "eligible intersection" under the free impact program
Eastonville/McLaughlin Intersection				
24	Convert to traffic signal control (or reconstruct as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Future	likely to be considered an "eligible intersection" under the free impact program
Eastonville/North Site Access Intersection				
25	Construct a northbound right-turn deceleration lane on Eastonville approaching the north site access (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 2 development	Grandview Reserve
26	Construct a southbound left-turn deceleration lane on Eastonville approaching the north site access (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	With Phase 2 development or potentially in conjunction with the Eastonville PPRTA project.	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
Eastonville/South Site Access Intersection				
27	Construct a northbound right-turn deceleration lane on Eastonville approaching the south site access (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 2 development	Grandview Reserve
28	Construct a southbound left-turn deceleration lane on Eastonville approaching the south site access (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	With Phase 2 development or potentially in conjunction with the Eastonville PPRTA project.	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
Notes:				
(1) The design of Eastonville Road will be performed by the Meridian Ranch developer. LSC anticipates that these turn lanes will be included in the project design. The project will be constructed by El Paso County as PPRTA project.				
Source: LSC Transportation Consultants, Inc. (1-11-19)				

## Appendix Table 1

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

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

# Figures

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Approximate Scale  
Scale: 1" = 4,000'

Figure 1  
**Vicinity  
Map**

Grandview Reserve (LSC #184840)

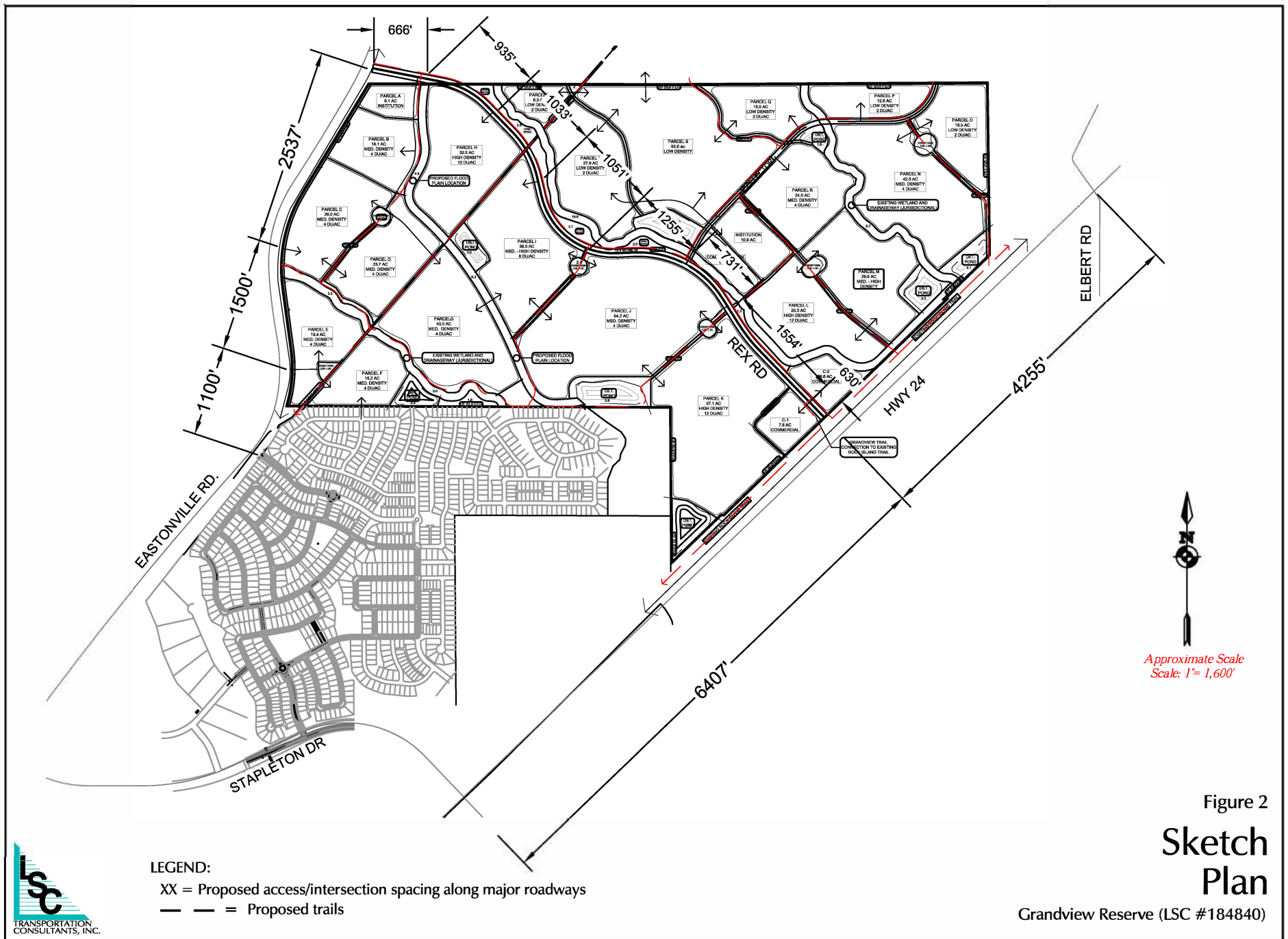
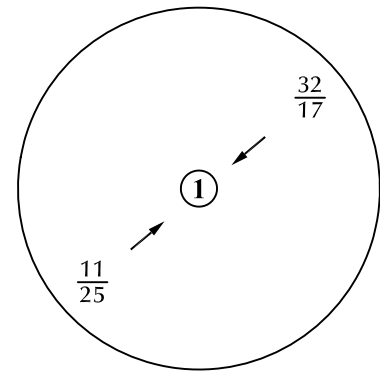


Figure 2  
**Sketch  
Plan**

Grandview Reserve (LSC #184840)





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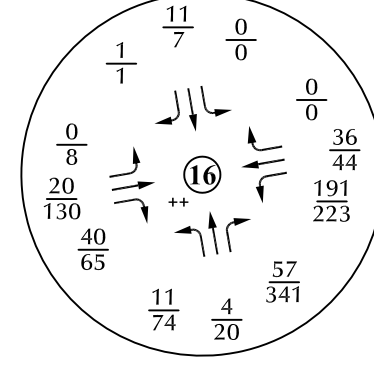
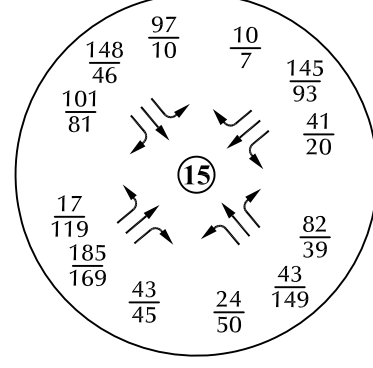
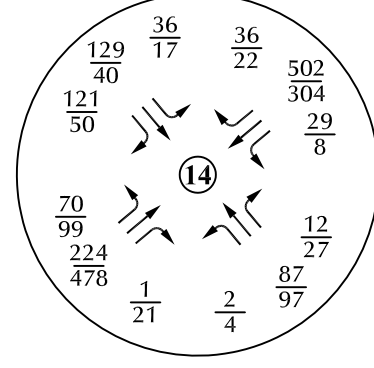
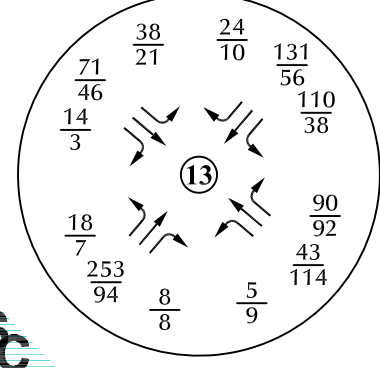
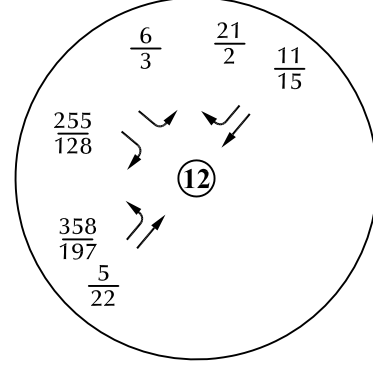
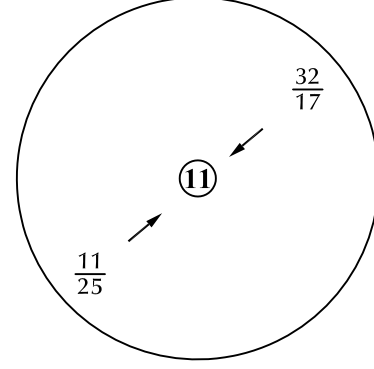
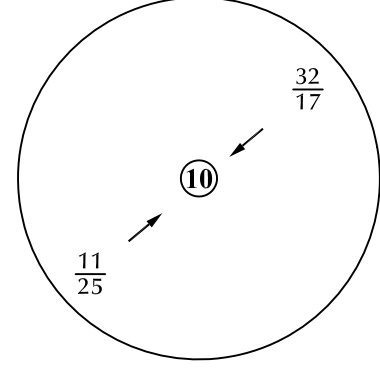
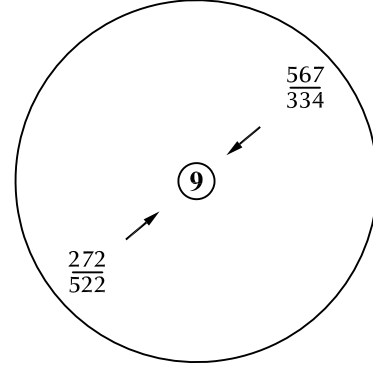
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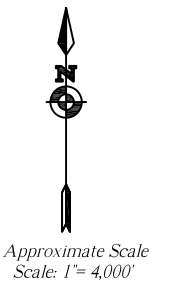
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LEGEND:

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



\* Estimate by LSC

\*\* CDOT 2018 Average Annual Daily Traffic

++ Traffic counts may have been impacted by COVID-19 restrictions

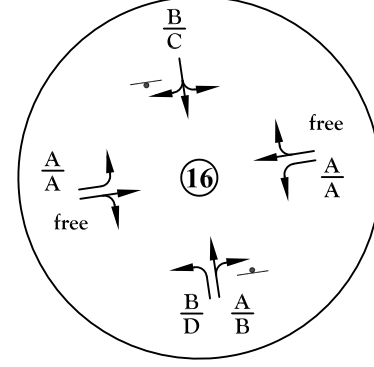
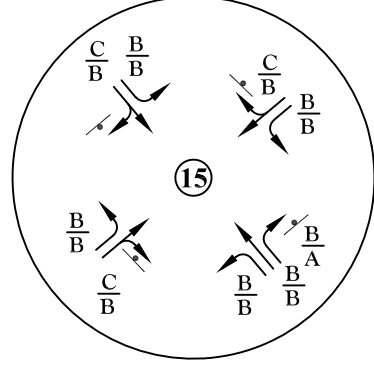
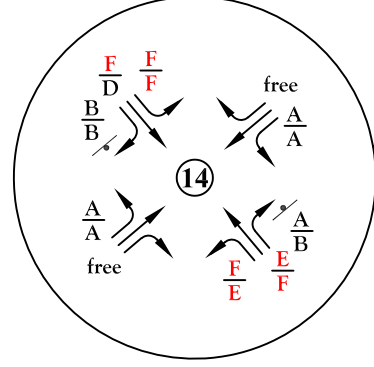
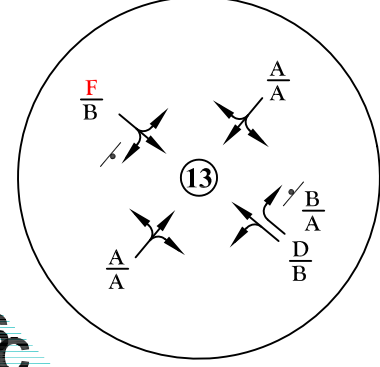
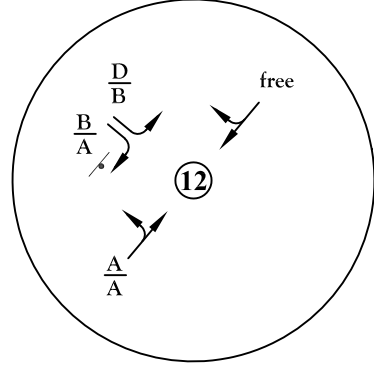
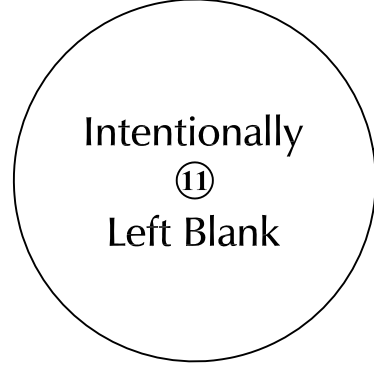
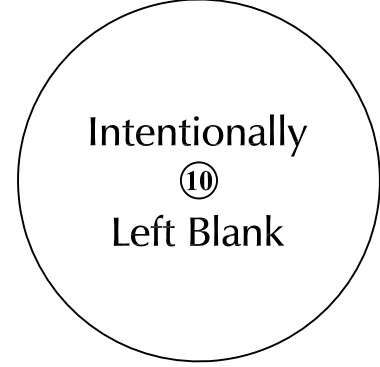
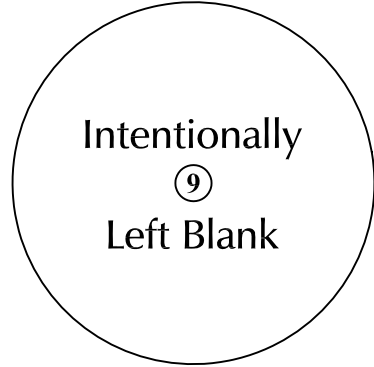
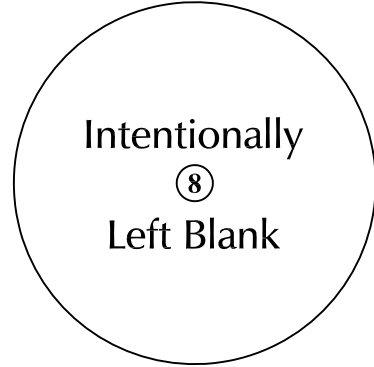
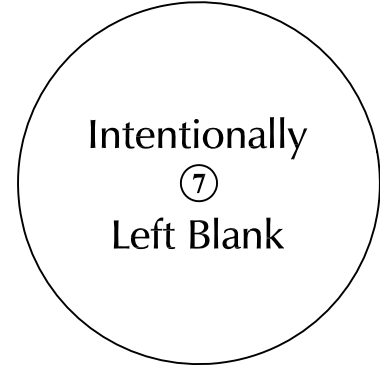
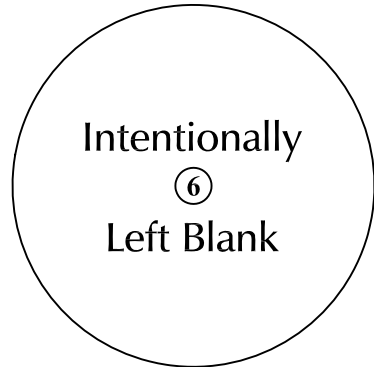
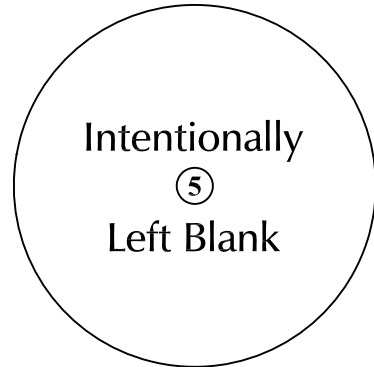
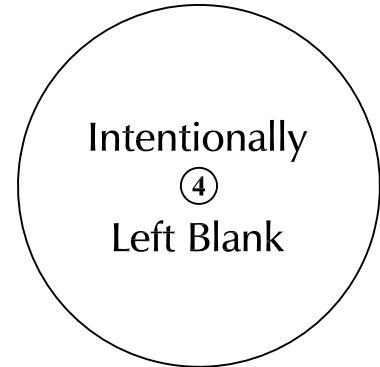
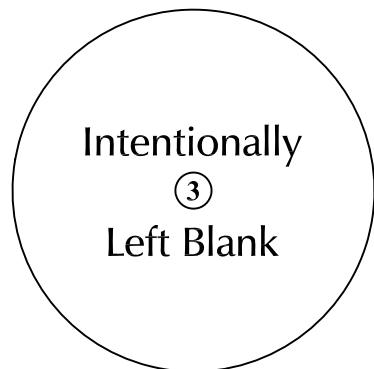
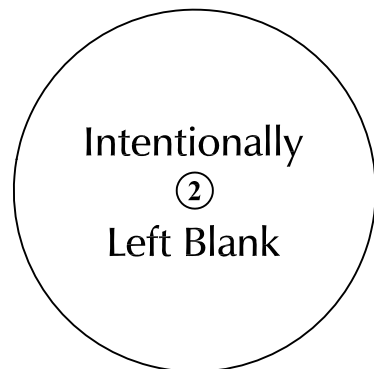
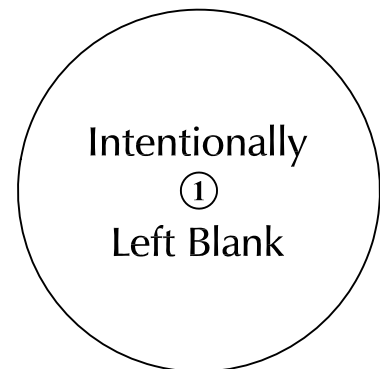
+ Please refer to count data sheets (attached) for specific intersection turning movement traffic count dates.

Figure 3a

## Existing (2017-2020)<sup>+</sup> Traffic

Grandview Reserve (LSC #184840)





LEGEND:

Traffic Control Used in the Analysis:

○ = Stop Sign

⬮ = Traffic Signal

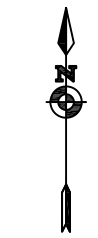
LOS Analysis Results:

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

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

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

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



Approximate Scale  
Scale: 1" = 4,000'

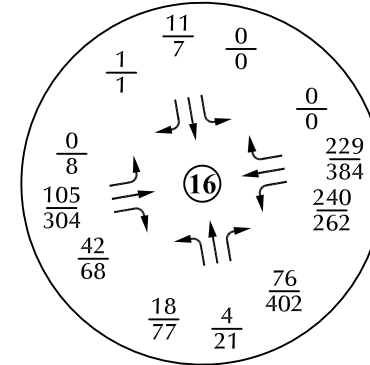
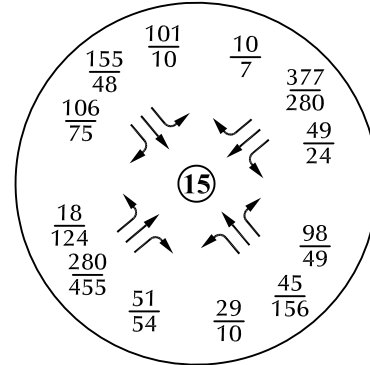
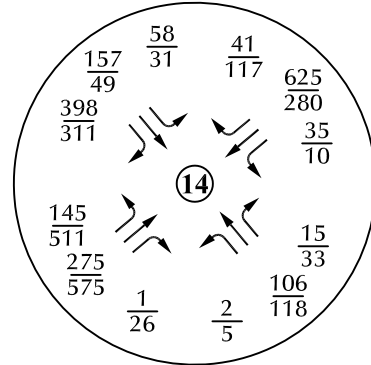
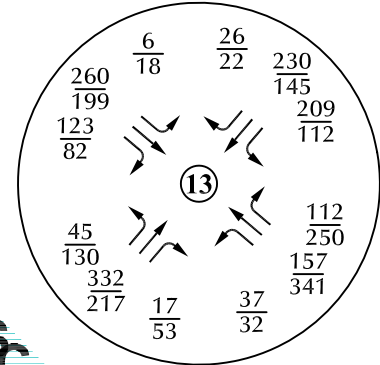
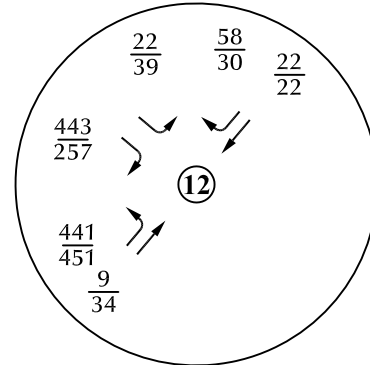
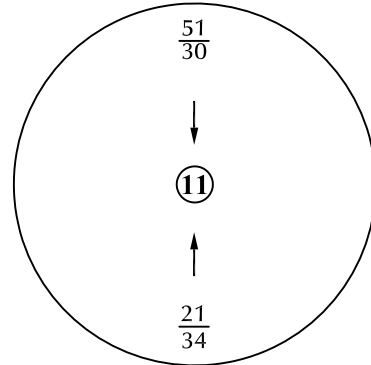
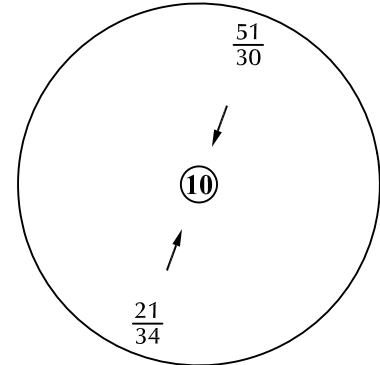
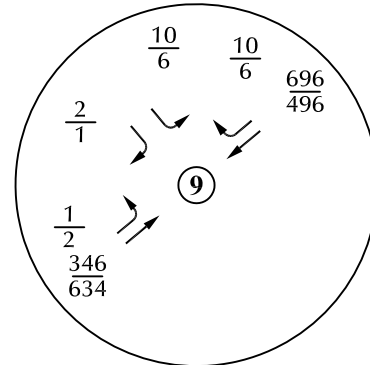
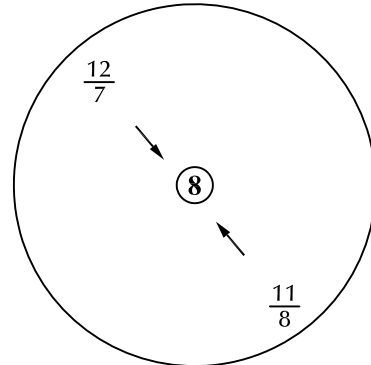
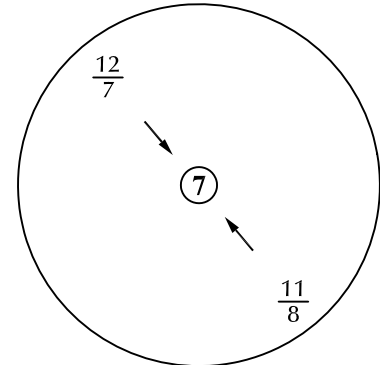
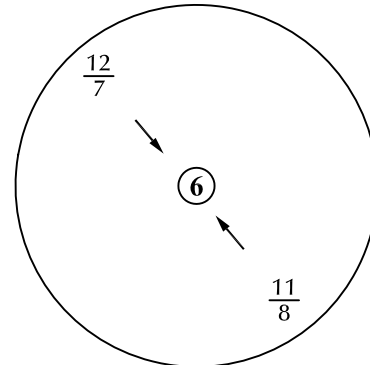
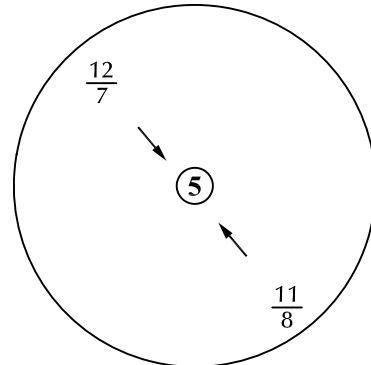
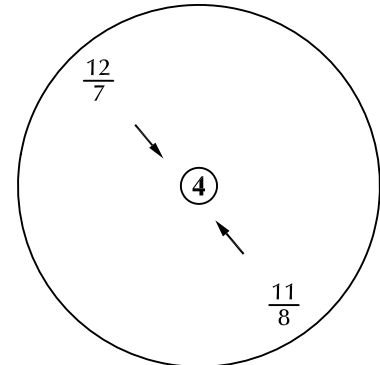
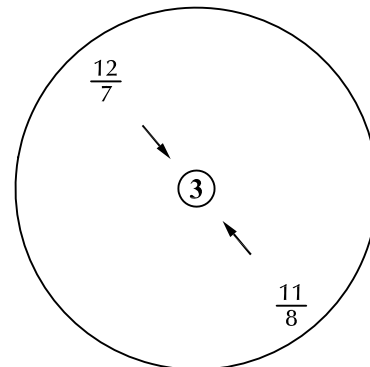
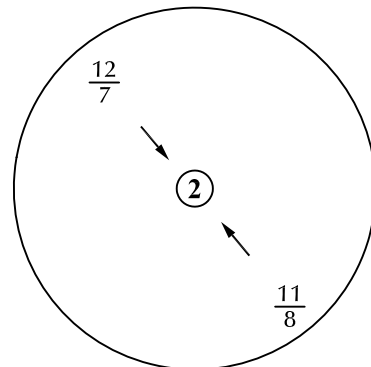
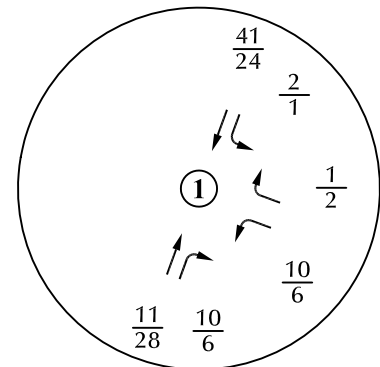


Figure 3b

# Existing Lane Geometry, Traffic Control and Level of Service

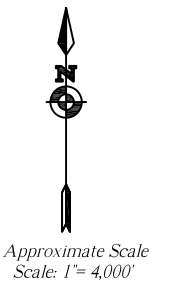
Grandview Reserve (LSC #184840)



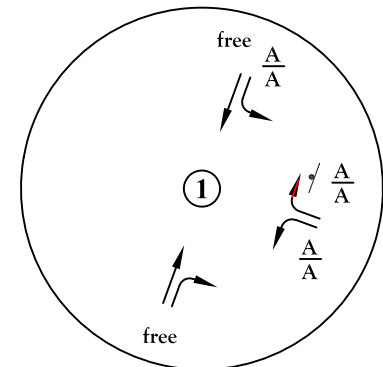


LEGEND:

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







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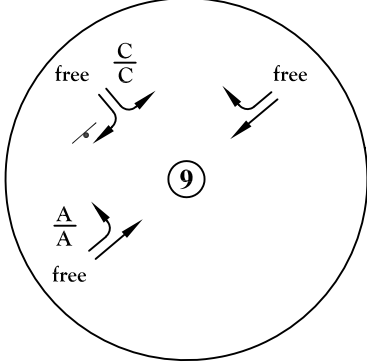
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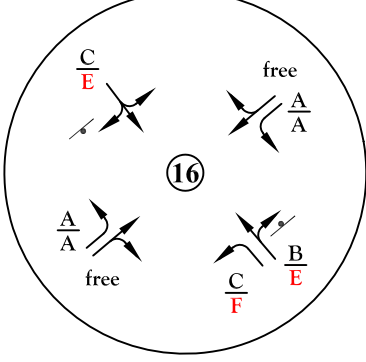
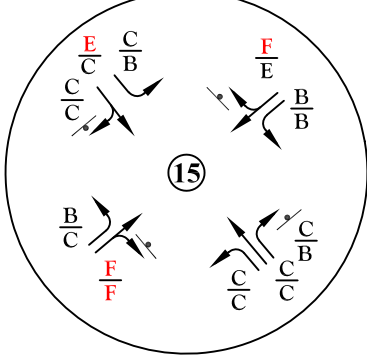
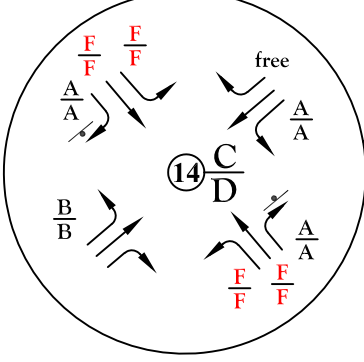
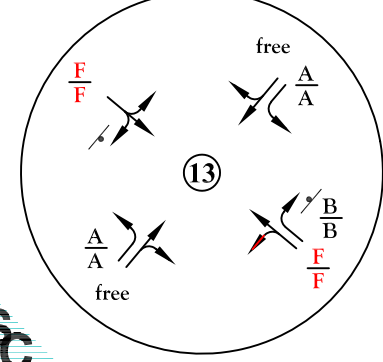
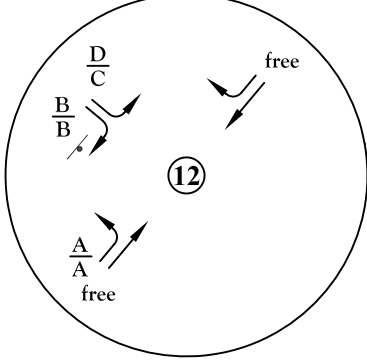
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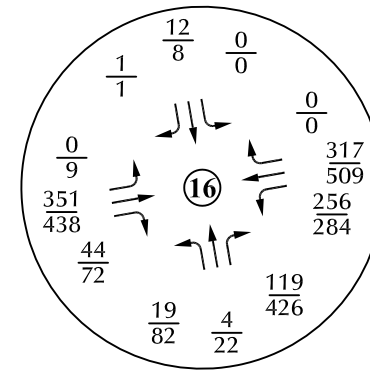
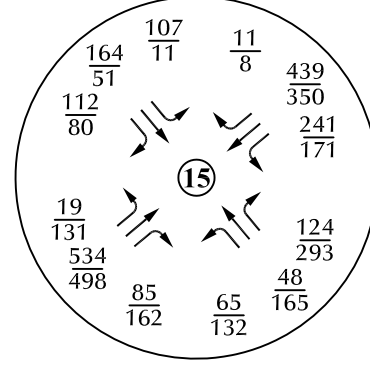
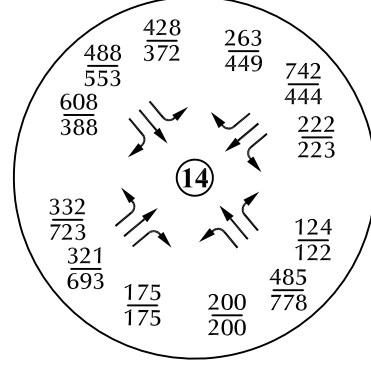
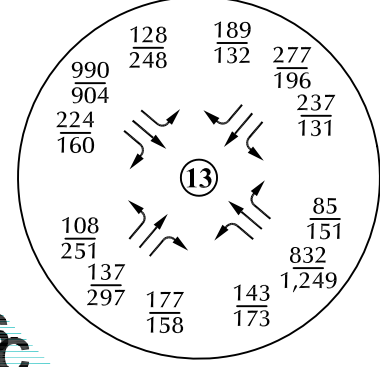
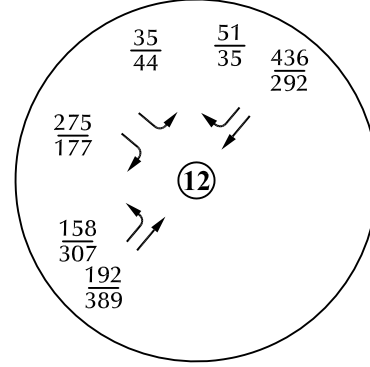
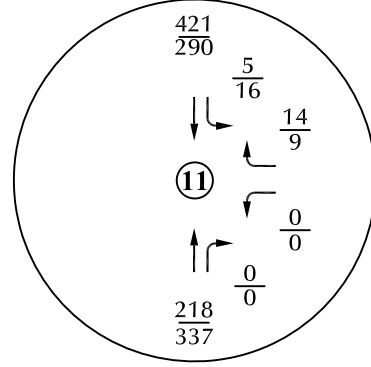
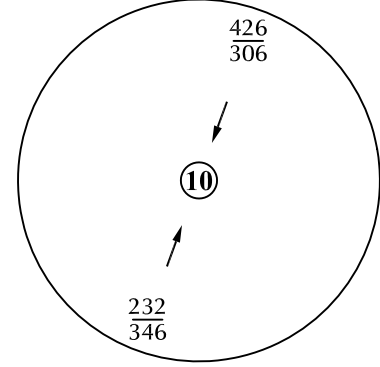
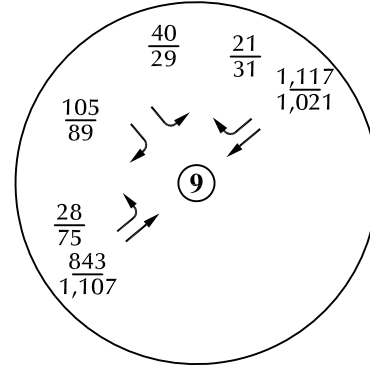
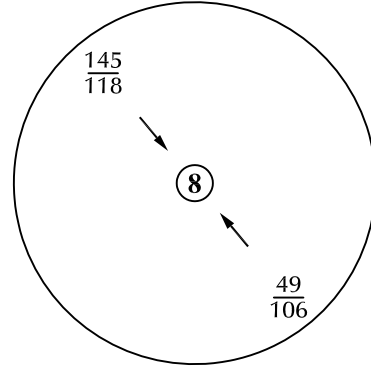
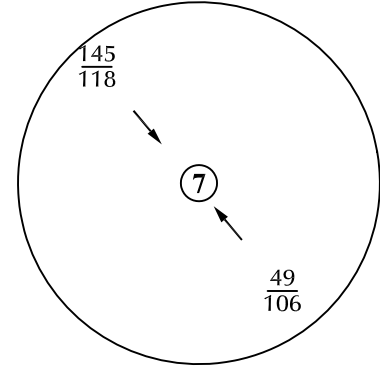
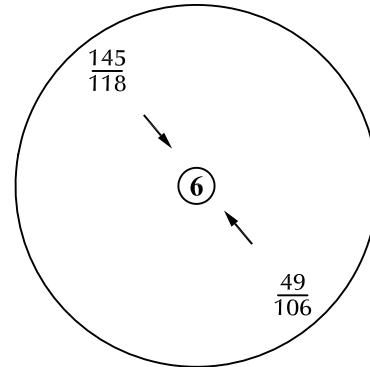
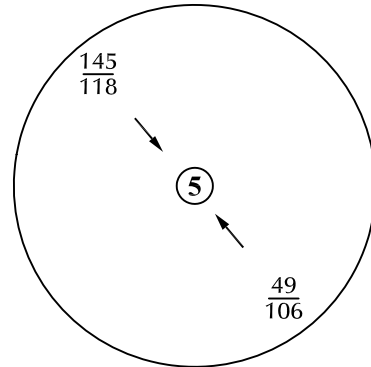
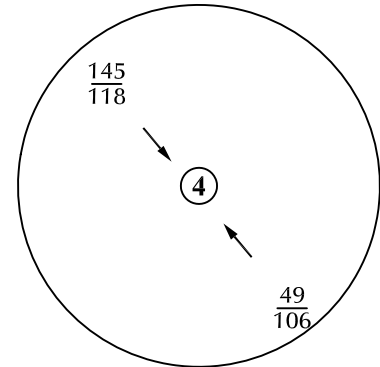
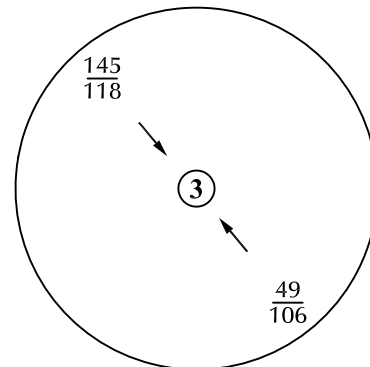
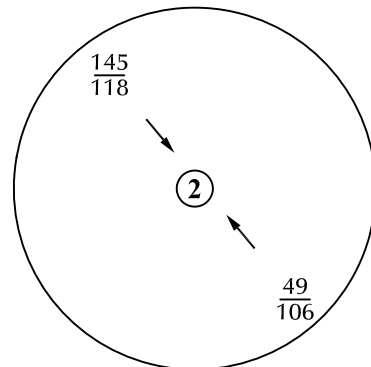
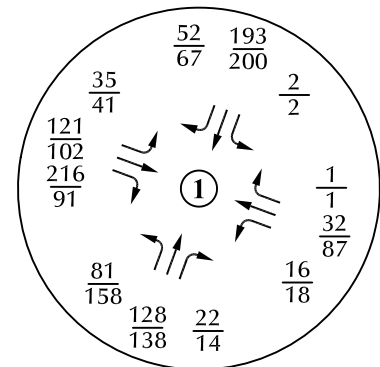
LEGEND:  
Traffic Control Used in the Analysis:  
= Stop Sign  
= Traffic Signal  
LOS Analysis Results:  
A = AM Individual Movement Peak-Hour Level of Service  
B = PM Individual Movement Peak-Hour Level of Service  
C = AM Entire Intersection Peak-Hour Level of Service  
C = PM Entire Intersection Peak-Hour Level of Service

Approximate Scale  
Scale: 1"= 4,000'



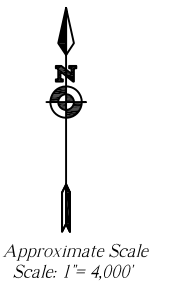
Figure 4b  
Year 2028 Background Lane Geometry,  
Traffic Control and Levels of Service  
Grandview Reserve (LSC #184840)



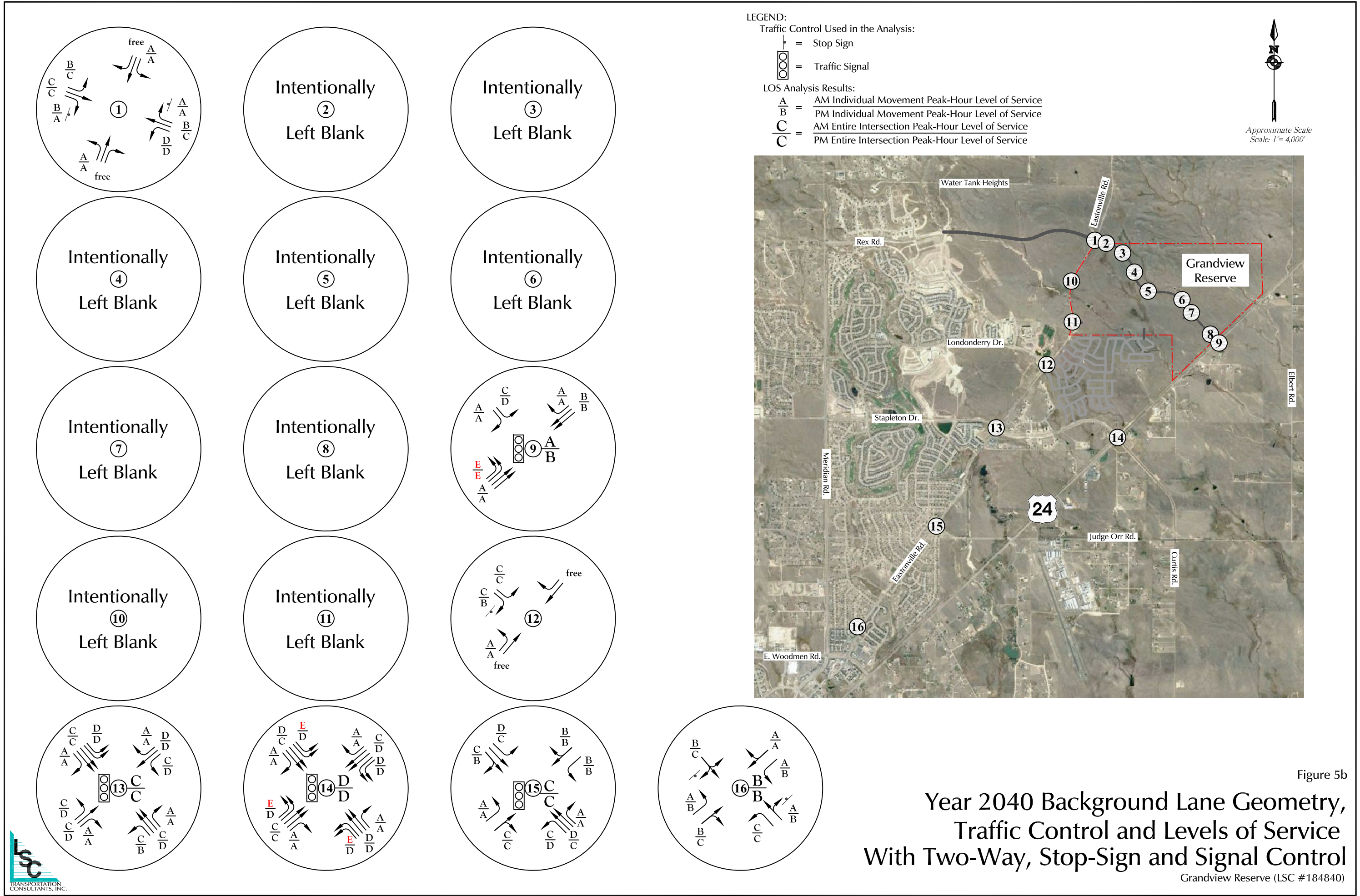


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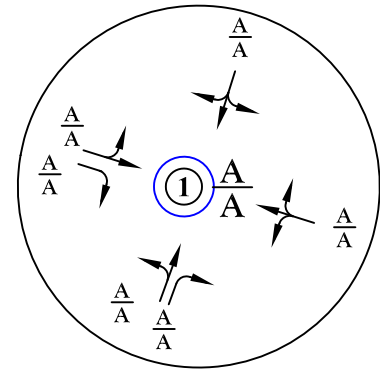
$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 PM Weekday Peak-Hour Traffic (vehicles per hour)  
 X,XXX = Annual Average Daily Traffic (vehicles per day)











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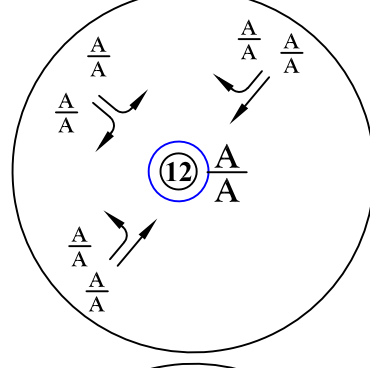
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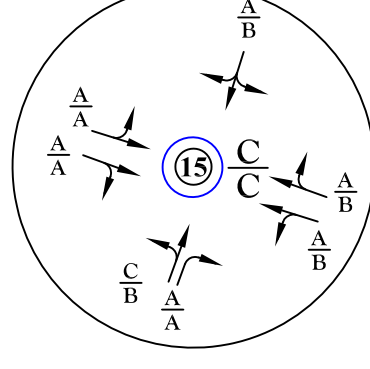
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LEGEND:  
Traffic Control Used in the Analysis:  
 = Stop Sign  
 = Traffic Signal  
 = Modern Roundabout  
 LOS Analysis Results:  
 $\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
 $\frac{C}{C}$  = AM Entire Intersection Peak-Hour Level of Service  
 $\frac{C}{C}$  = PM Entire Intersection Peak-Hour Level of Service

Approximate Scale  
Scale: 1" = 4,000'



Figure 5c  
Year 2040 Background Lane Geometry,  
Traffic Control and Levels of Service  
with Modern Roundabouts  
Grandview Reserve (LSC #184840)





Approximate Scale  
Scale: 1" = 4,000'



Figure 6

## Directional Distribution of Site-Generated Traffic

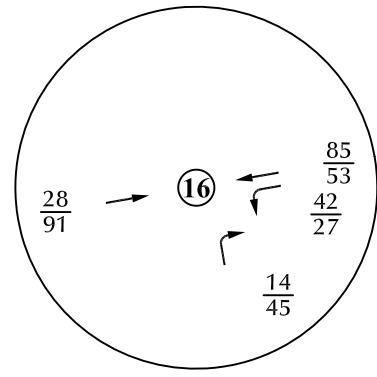
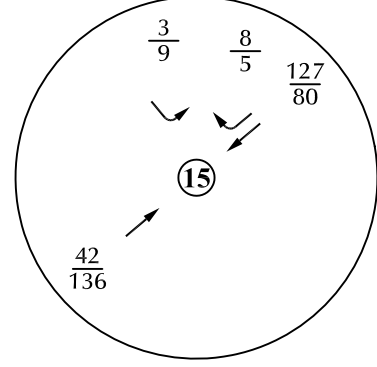
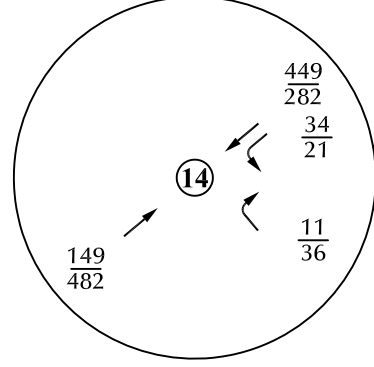
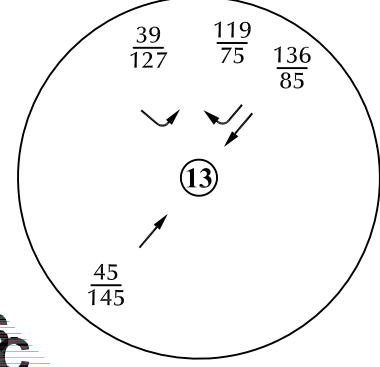
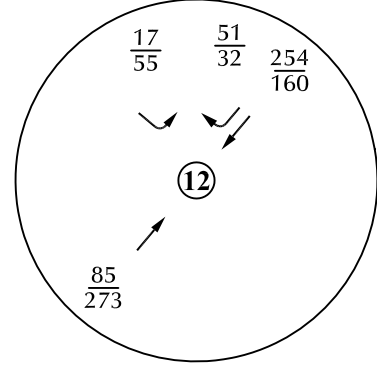
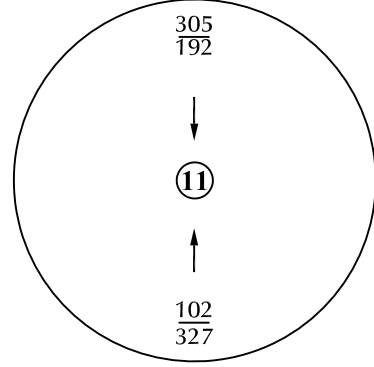
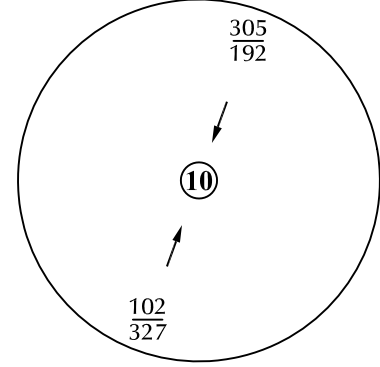
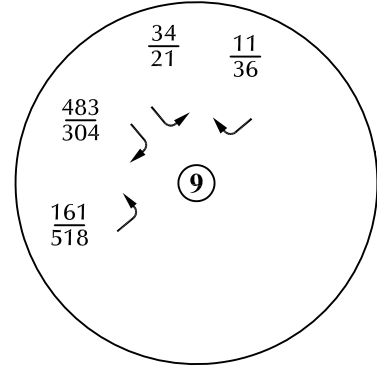
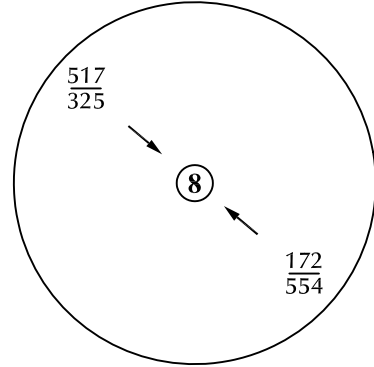
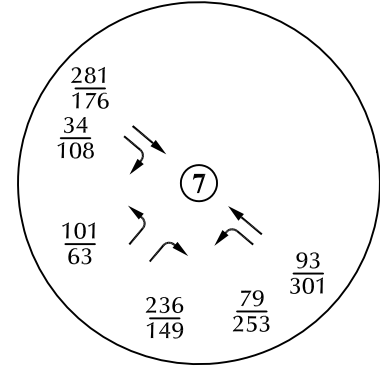
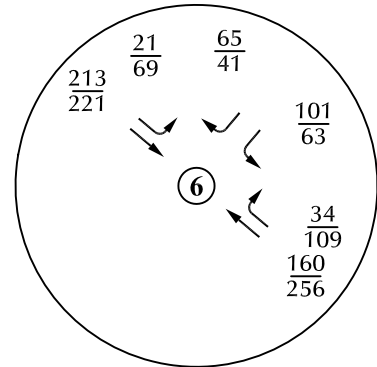
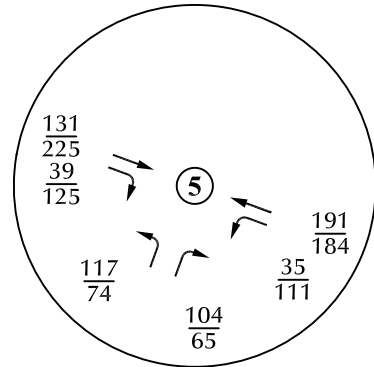
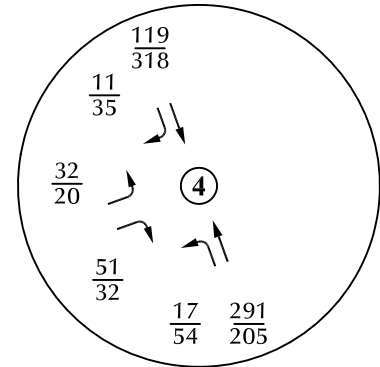
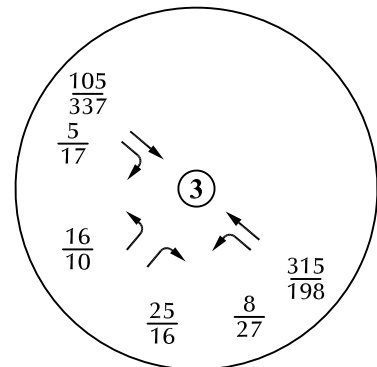
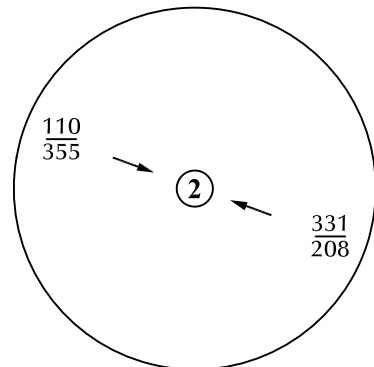
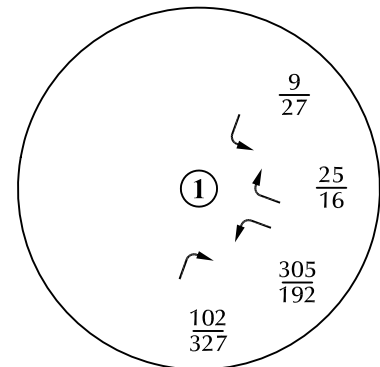
Grandview Reserve (LSC #184840)

LEGEND:

$\frac{XX\%}{XX\%}$  =  $\frac{\text{Residential Percent Directional Distribution}}{\text{Non-Residential Percent Directional Distribution}}$







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

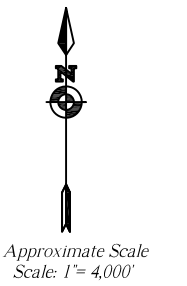
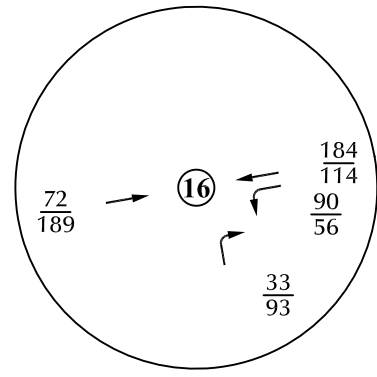
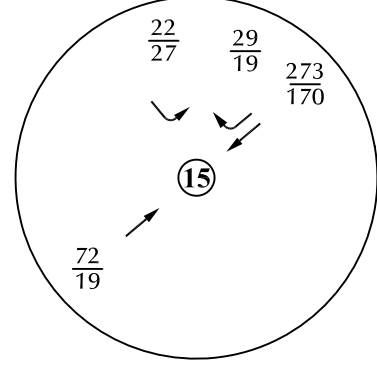
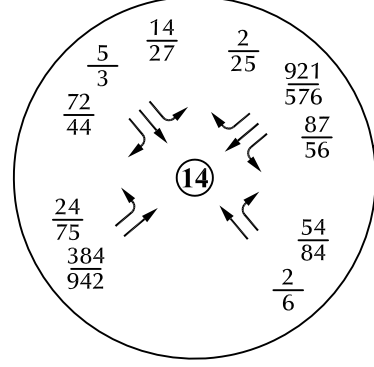
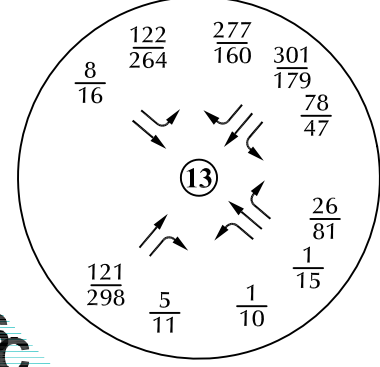
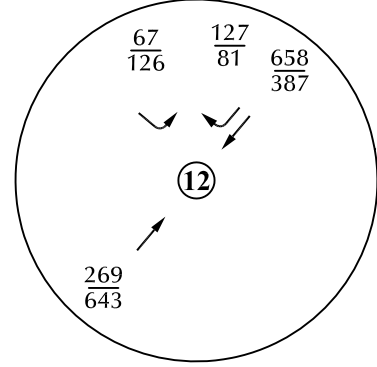
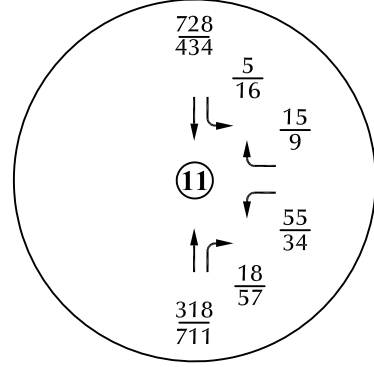
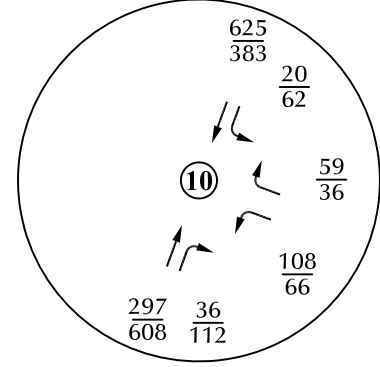
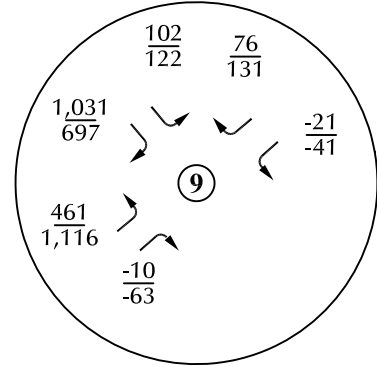
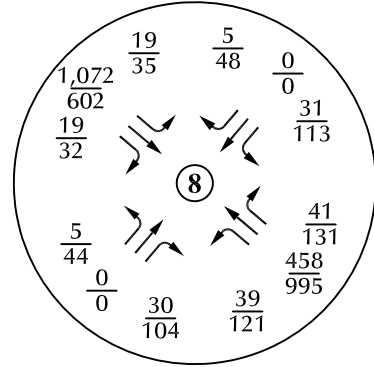
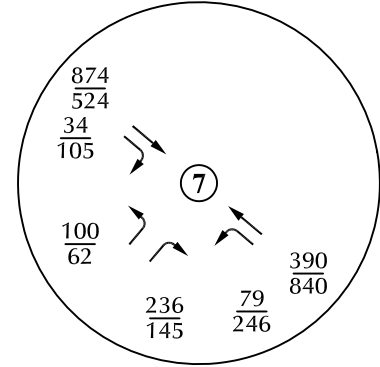
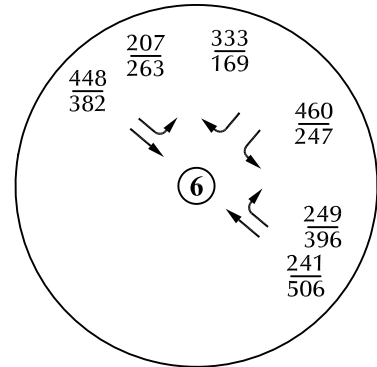
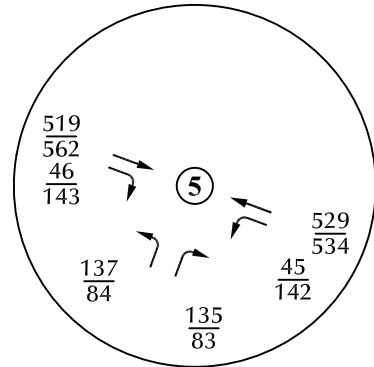
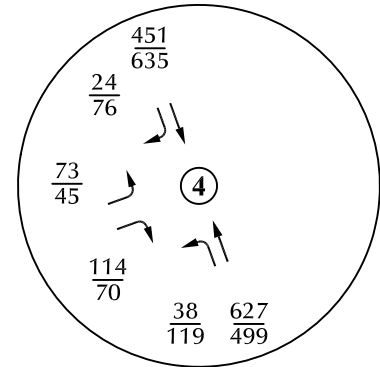
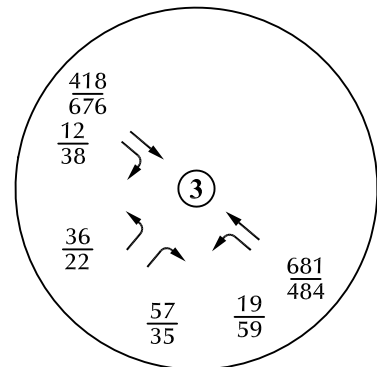
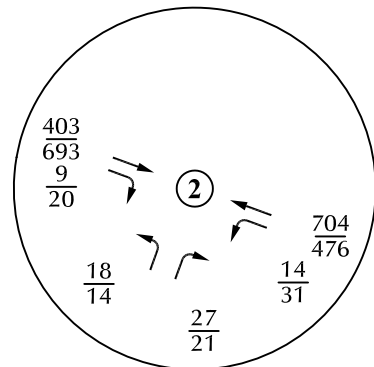
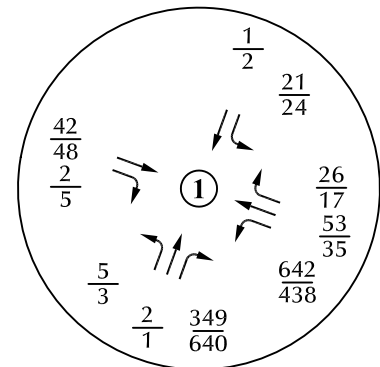
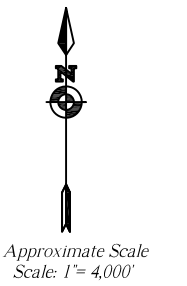


Figure 7  
**Assignment of  
 Phase 1 Site-Generated Traffic**  
 Grandview Reserve (LSC #184840)

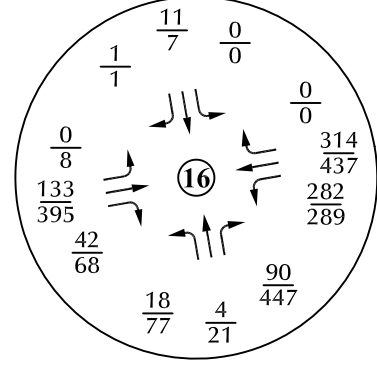
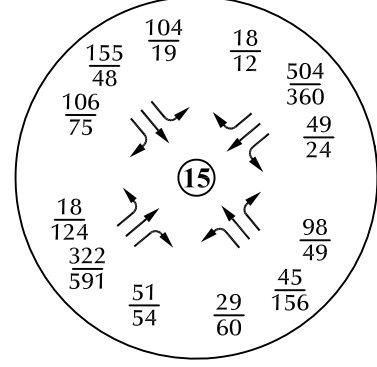
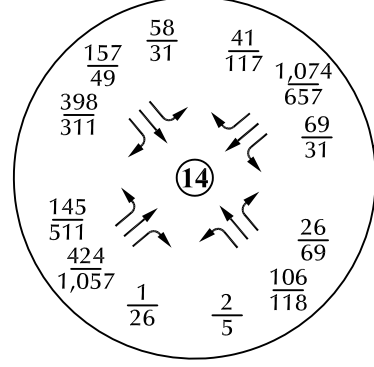
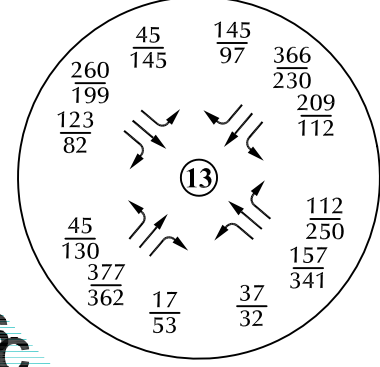
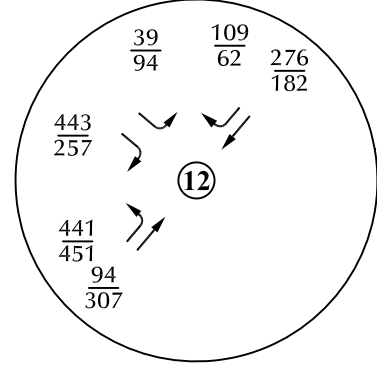
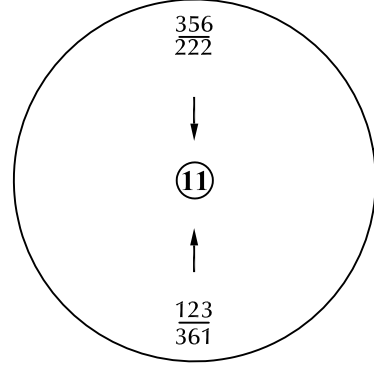
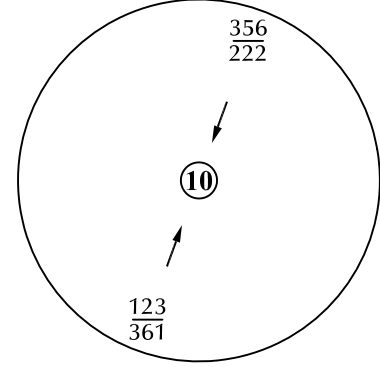
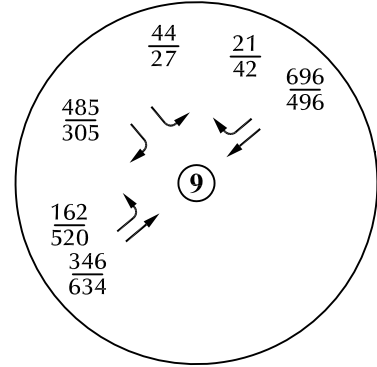
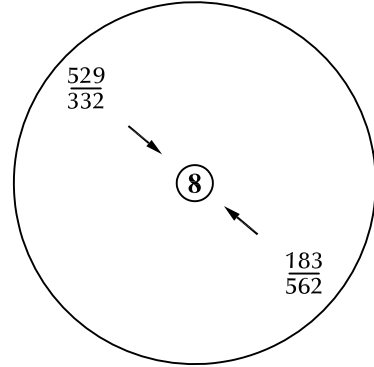
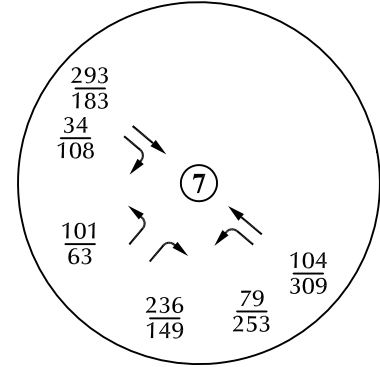
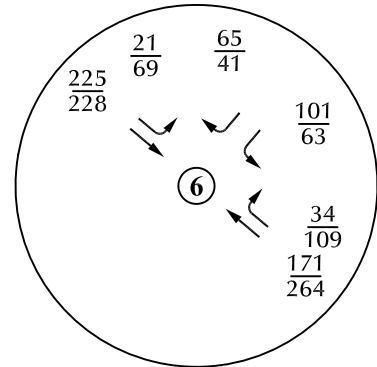
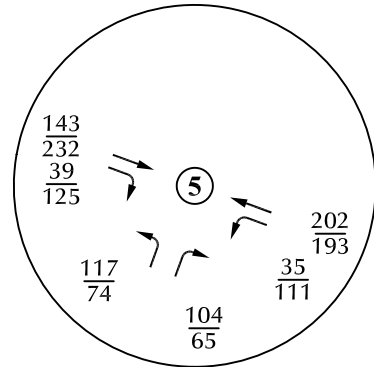
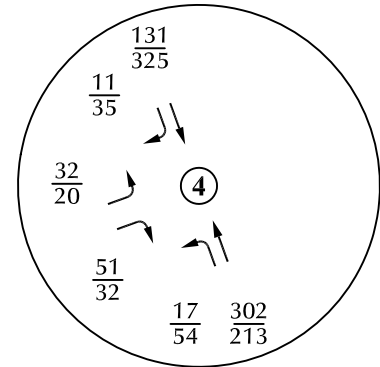
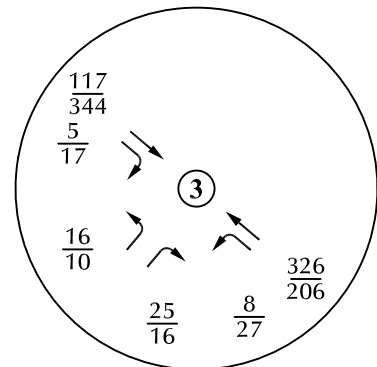
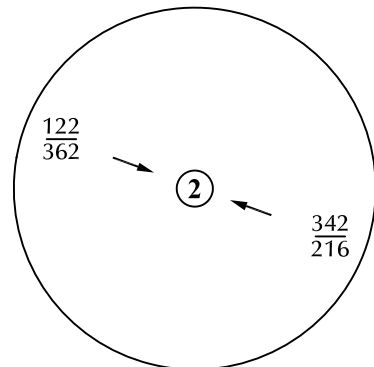
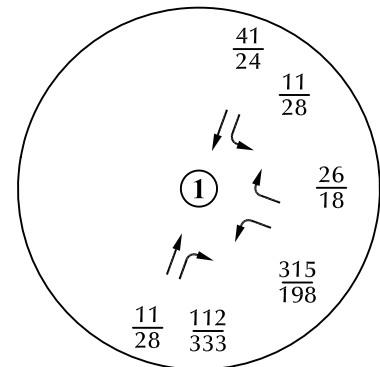




LEGEND:  
 $\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 $\frac{XX}{XX}$  = PM Weekday Peak-Hour Traffic (vehicles per hour)  
 X,XXX = Annual Average Daily Traffic (vehicles per day)

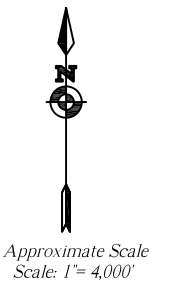




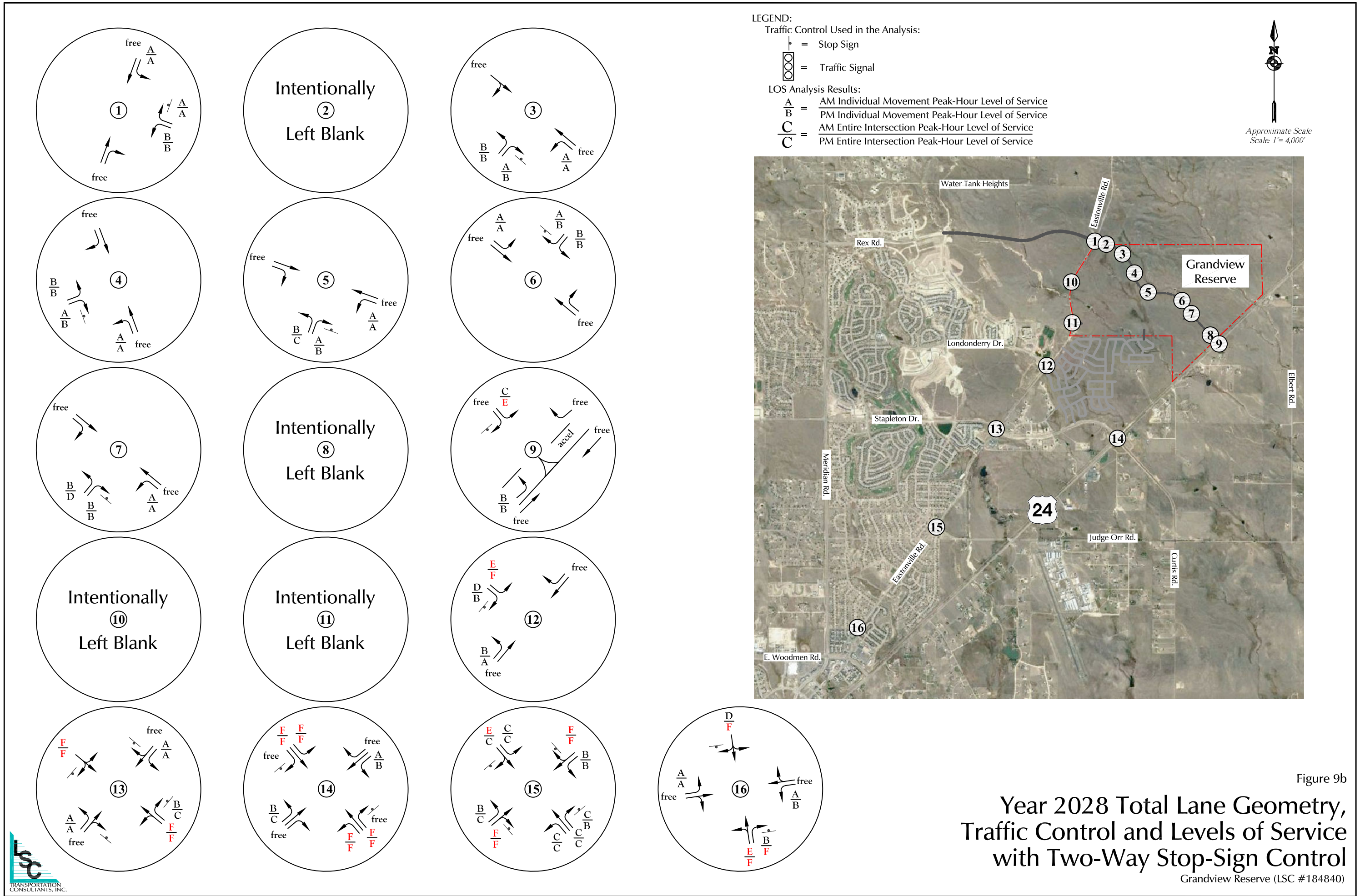


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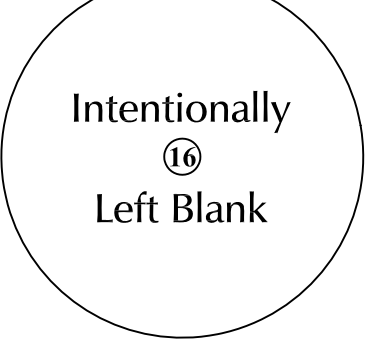
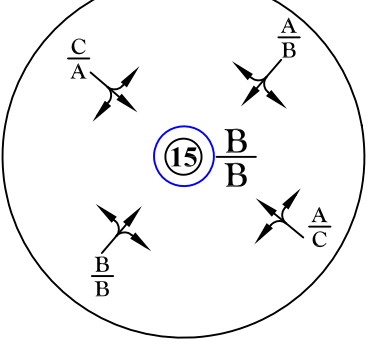
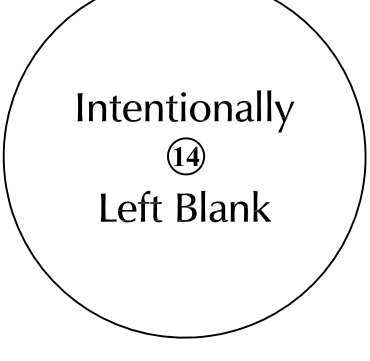
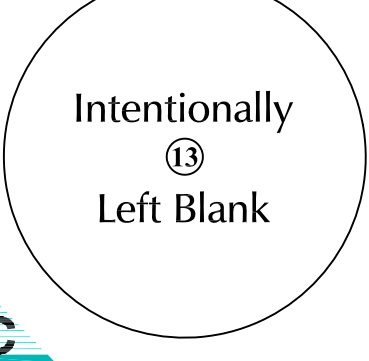
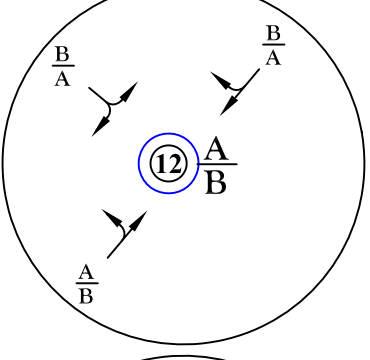
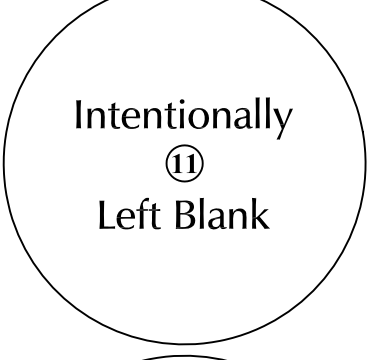
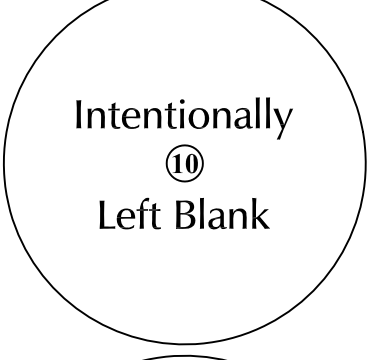
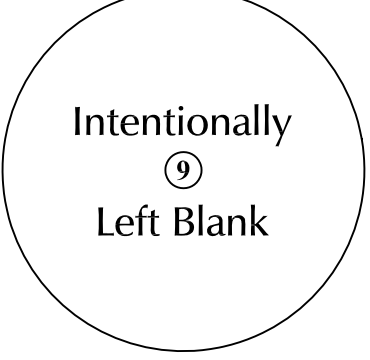
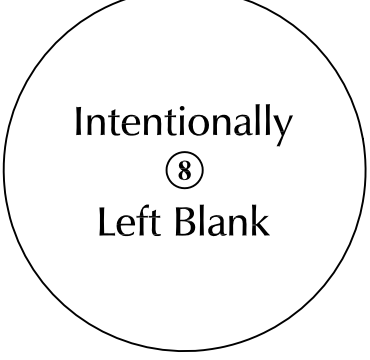
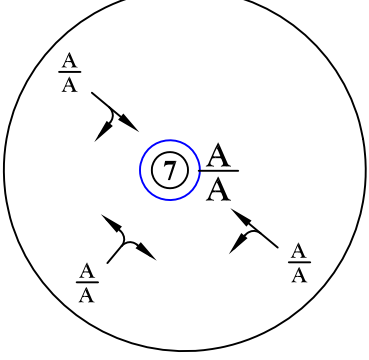
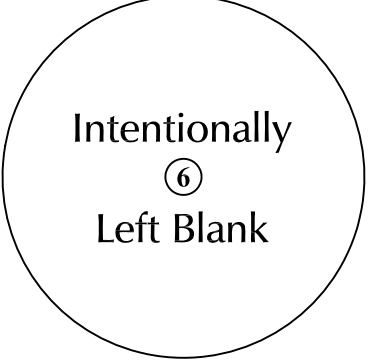
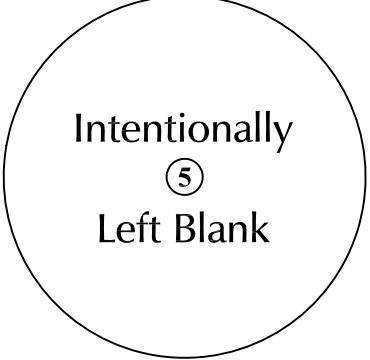
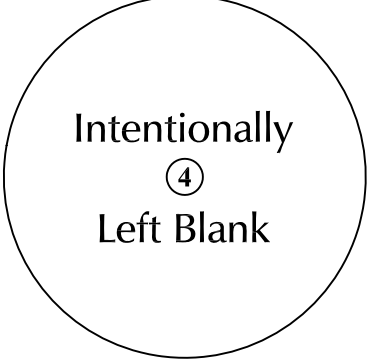
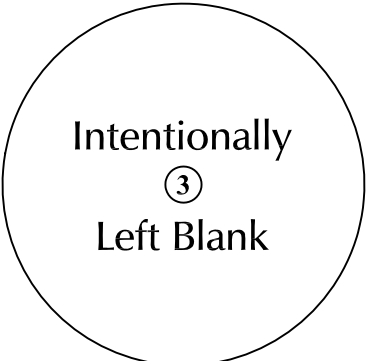
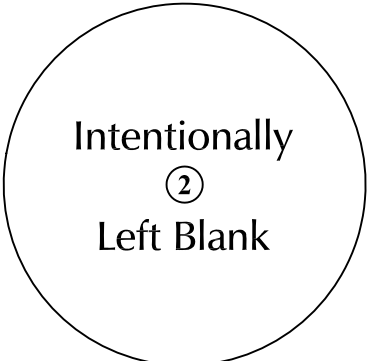
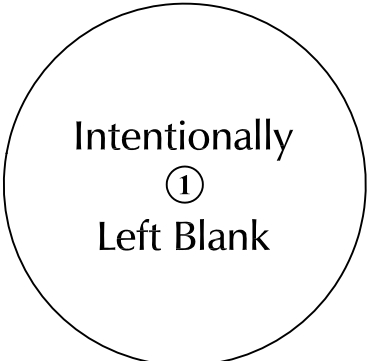
$\frac{XX}{XX}$  = AM Weekday Peak-Hour Traffic (vehicles per hour)  
 PM Weekday Peak-Hour Traffic (vehicles per hour)  
 X,XXX = Annual Average Daily Traffic (vehicles per day)











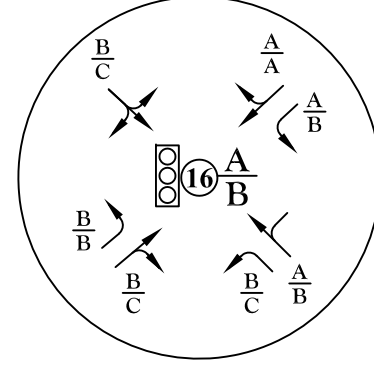
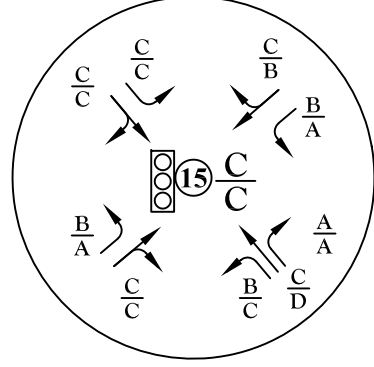
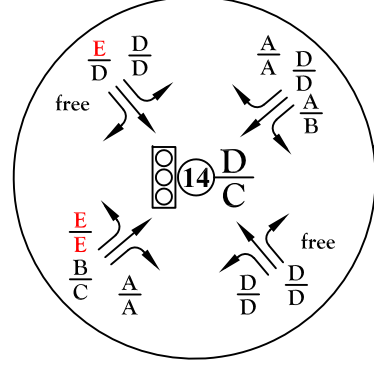
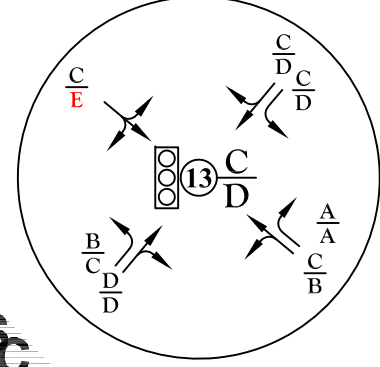
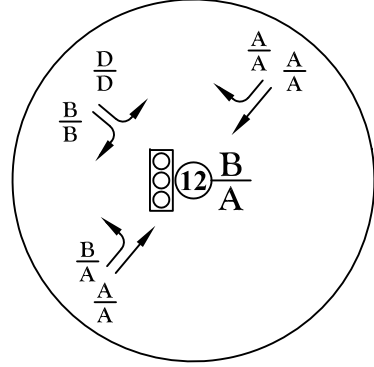
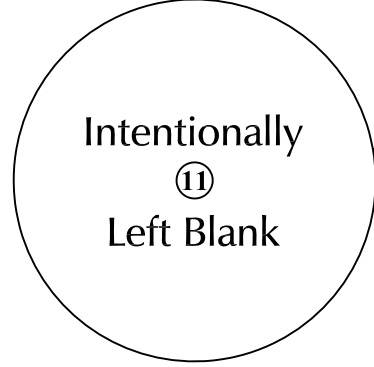
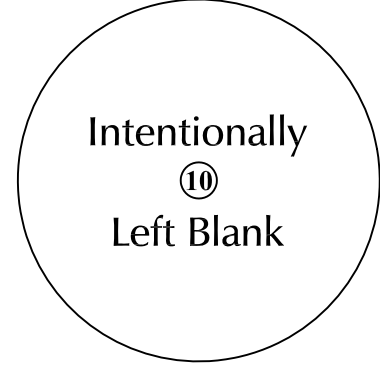
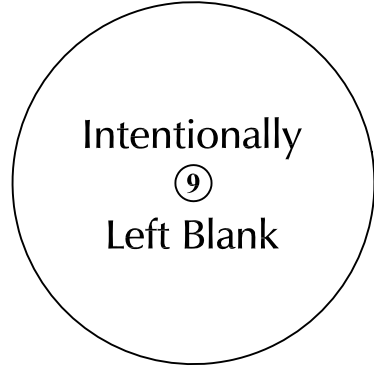
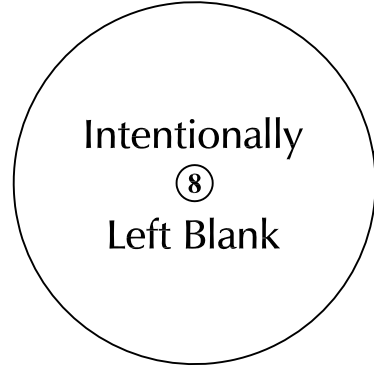
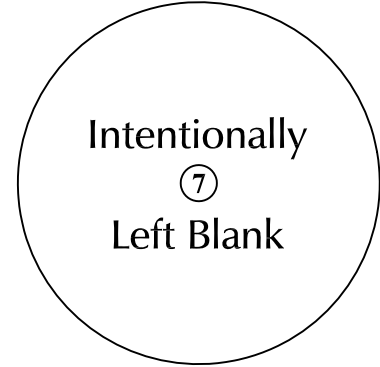
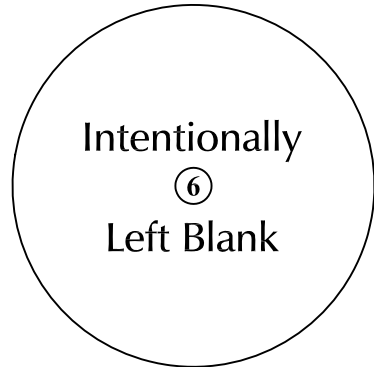
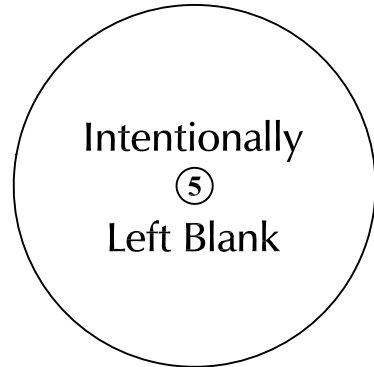
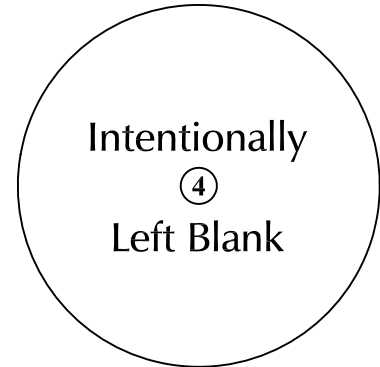
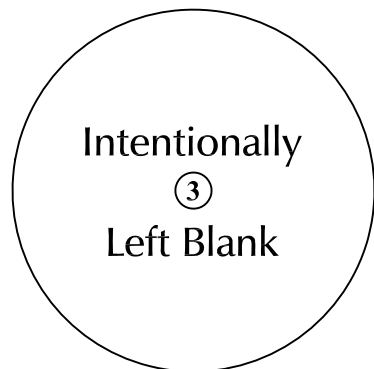
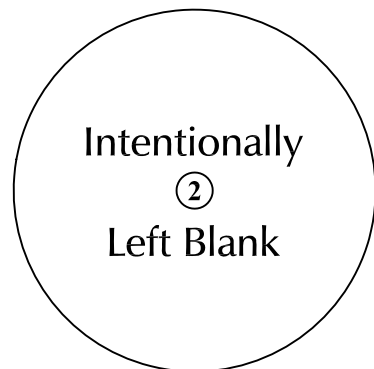
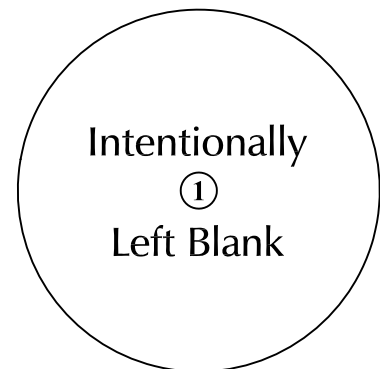
LEGEND:  
Traffic Control Used in the Analysis:  
 = Stop Sign  
 = Traffic Signal  
 = Modern Roundabout  
LOS Analysis Results:  
 $\frac{A}{B}$  = AM Individual Movement Peak-Hour Level of Service  
 $\frac{C}{C}$  = PM Individual Movement Peak-Hour Level of Service  
 $\frac{A}{C}$  = AM Entire Intersection Peak-Hour Level of Service  
 $\frac{B}{C}$  = PM Entire Intersection Peak-Hour Level of Service

Approximate Scale  
Scale: 1"= 4,000'



Figure 9c  
Year 2028 Total Lane Geometry,  
Traffic Control and Levels of Service  
with Modern Roundabouts  
Grandview Reserve (LSC #184840)





LEGEND:

Traffic Control Used in the Analysis:

⬇ = Stop Sign

⬆ = Traffic Signal

LOS Analysis Results:

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

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

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

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

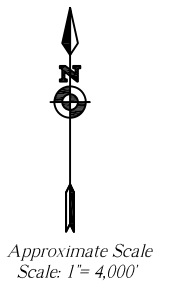
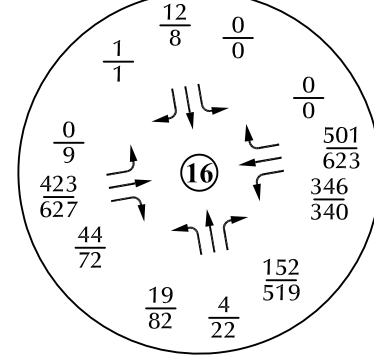
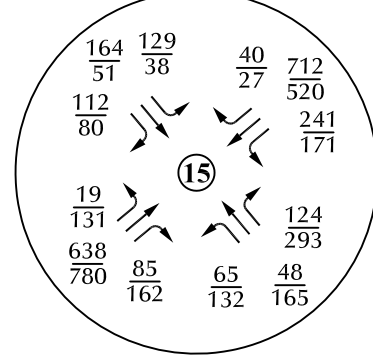
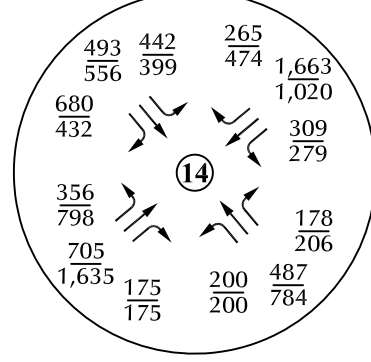
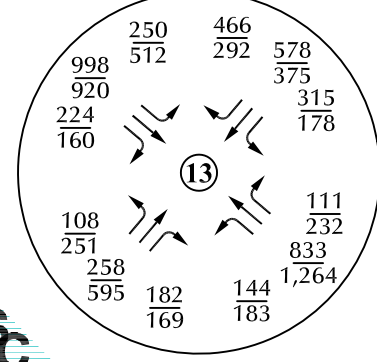
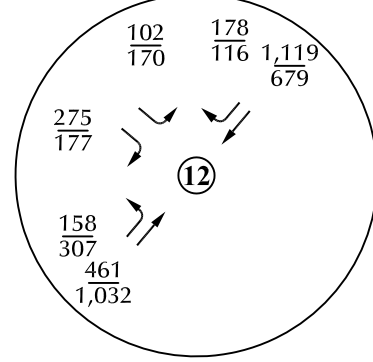
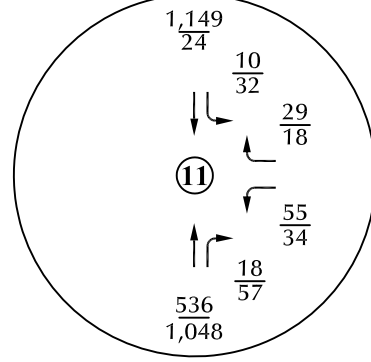
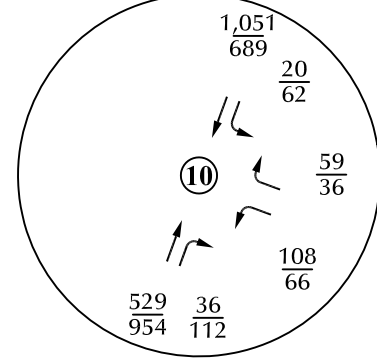
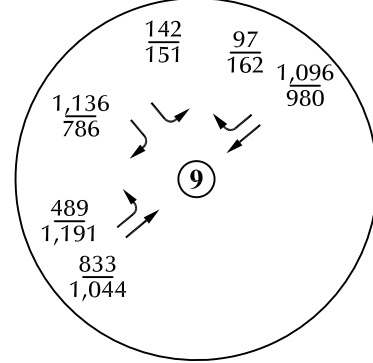
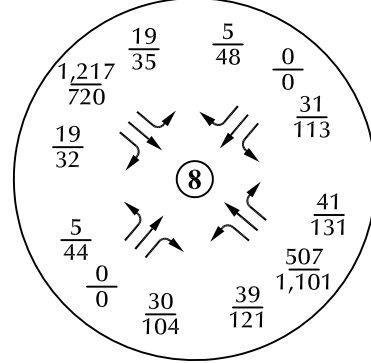
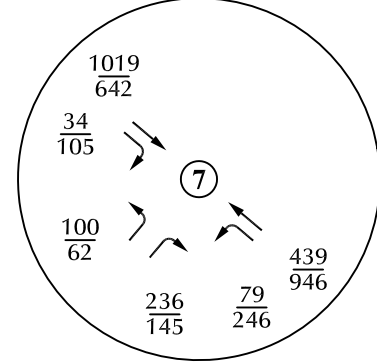
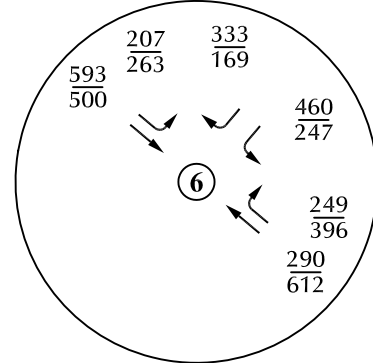
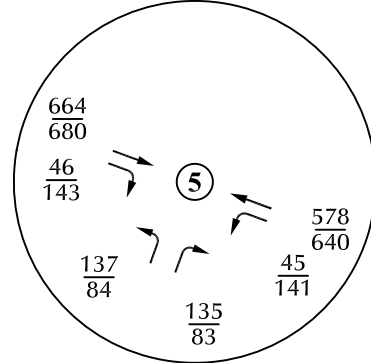
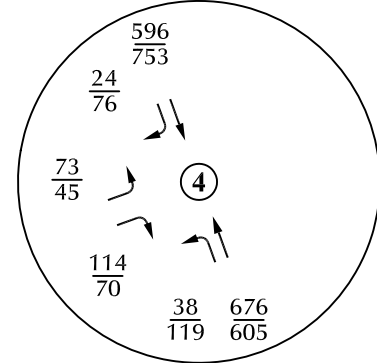
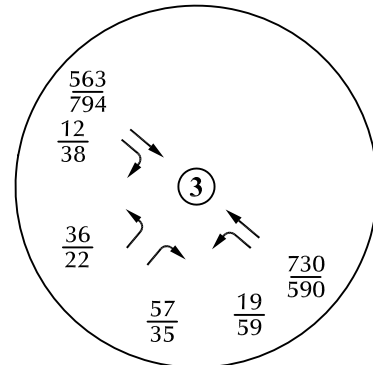
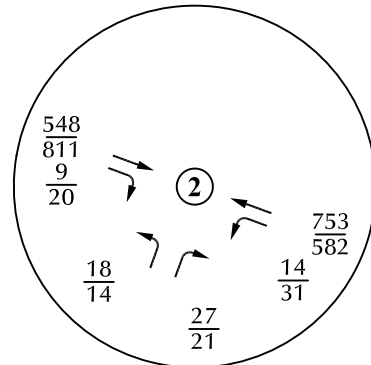
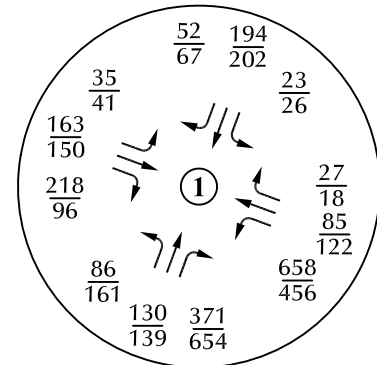


Figure 9d

# Year 2028 Total Lane Geometry, Traffic Control and Levels of Service with Traffic Signal Control

Grandview Reserve (LSC #184840)





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 = Annual Average Daily Traffic (vehicles per day)

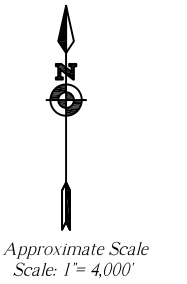
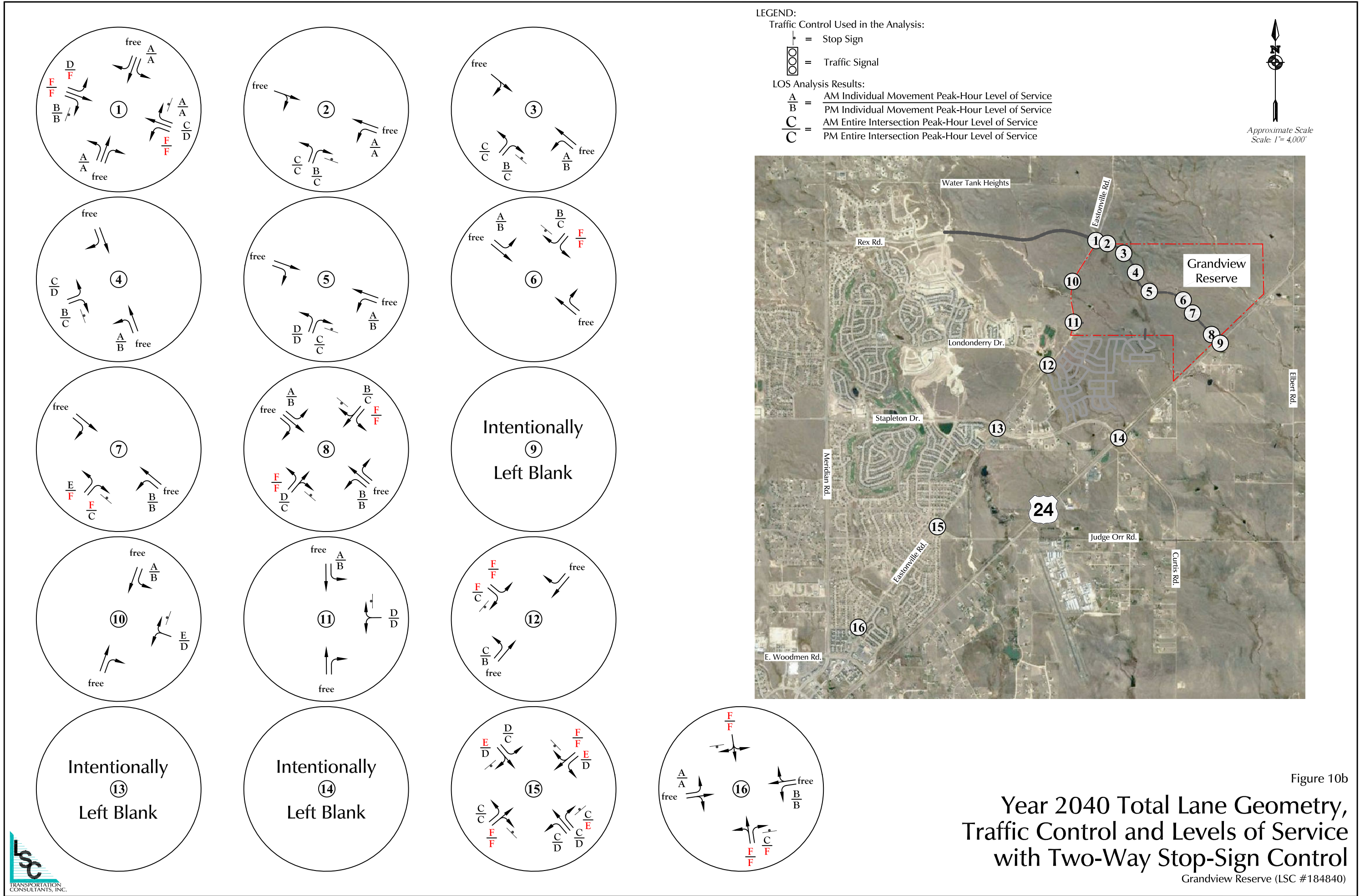
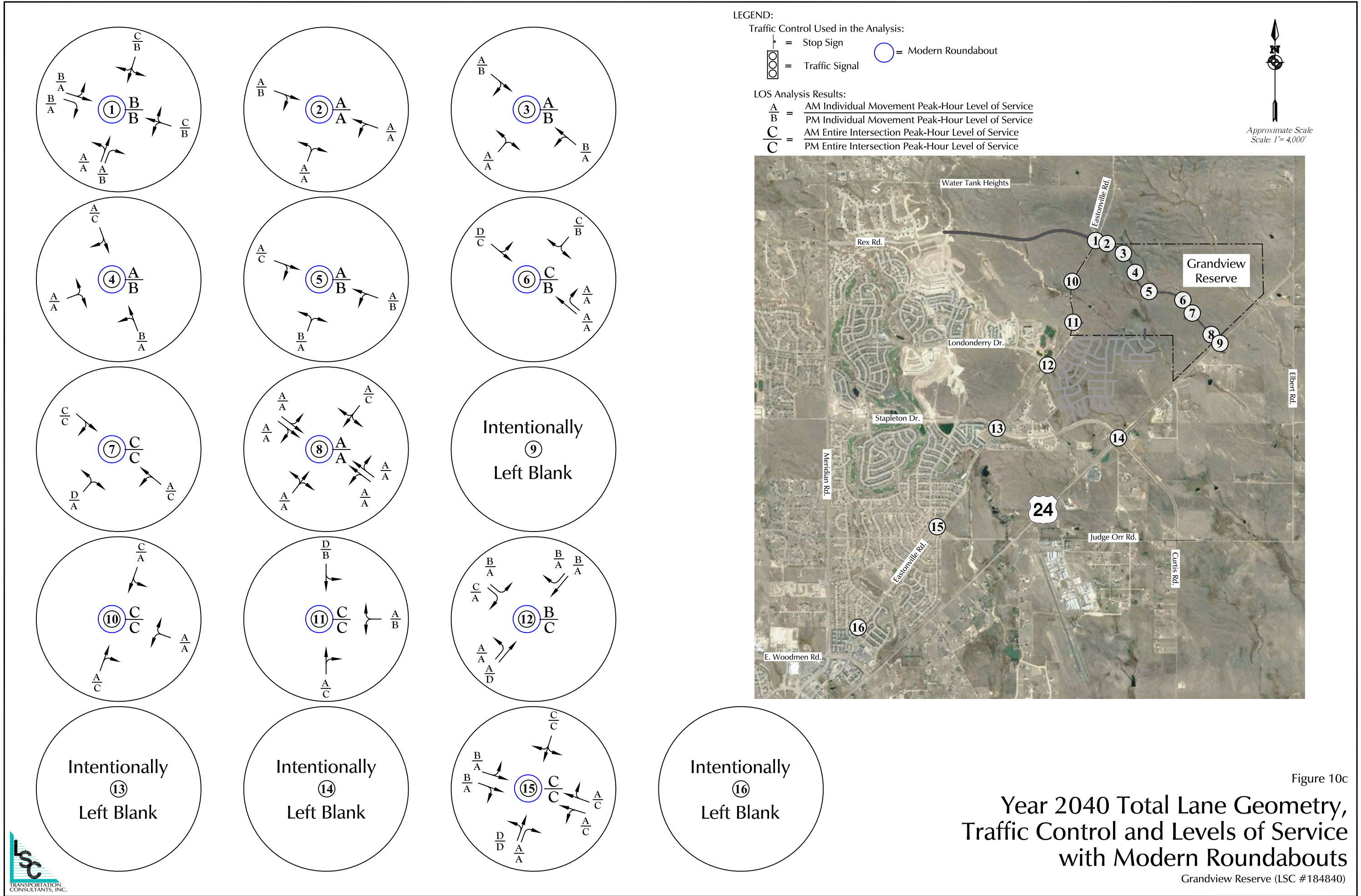


Figure 10a  
**Year 2040**  
**Total Traffic**  
 Grandview Reserve (LSC #184840)

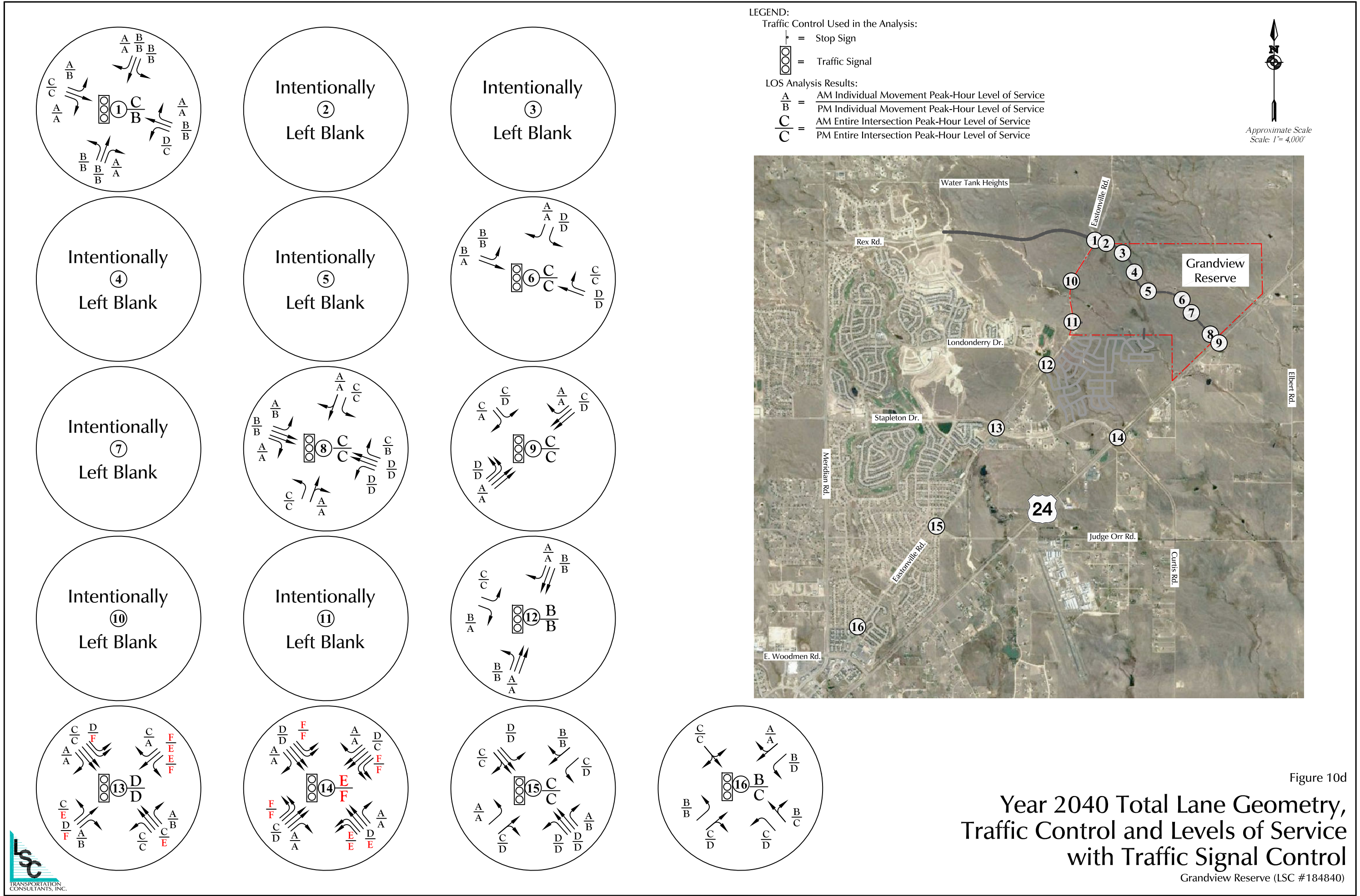














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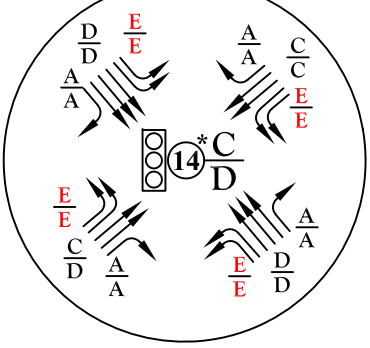
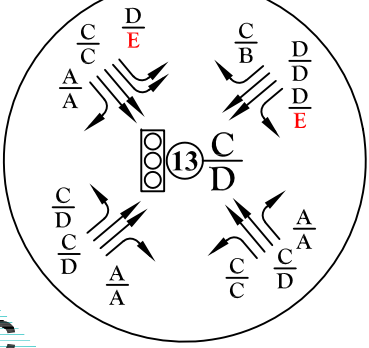
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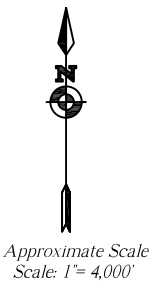
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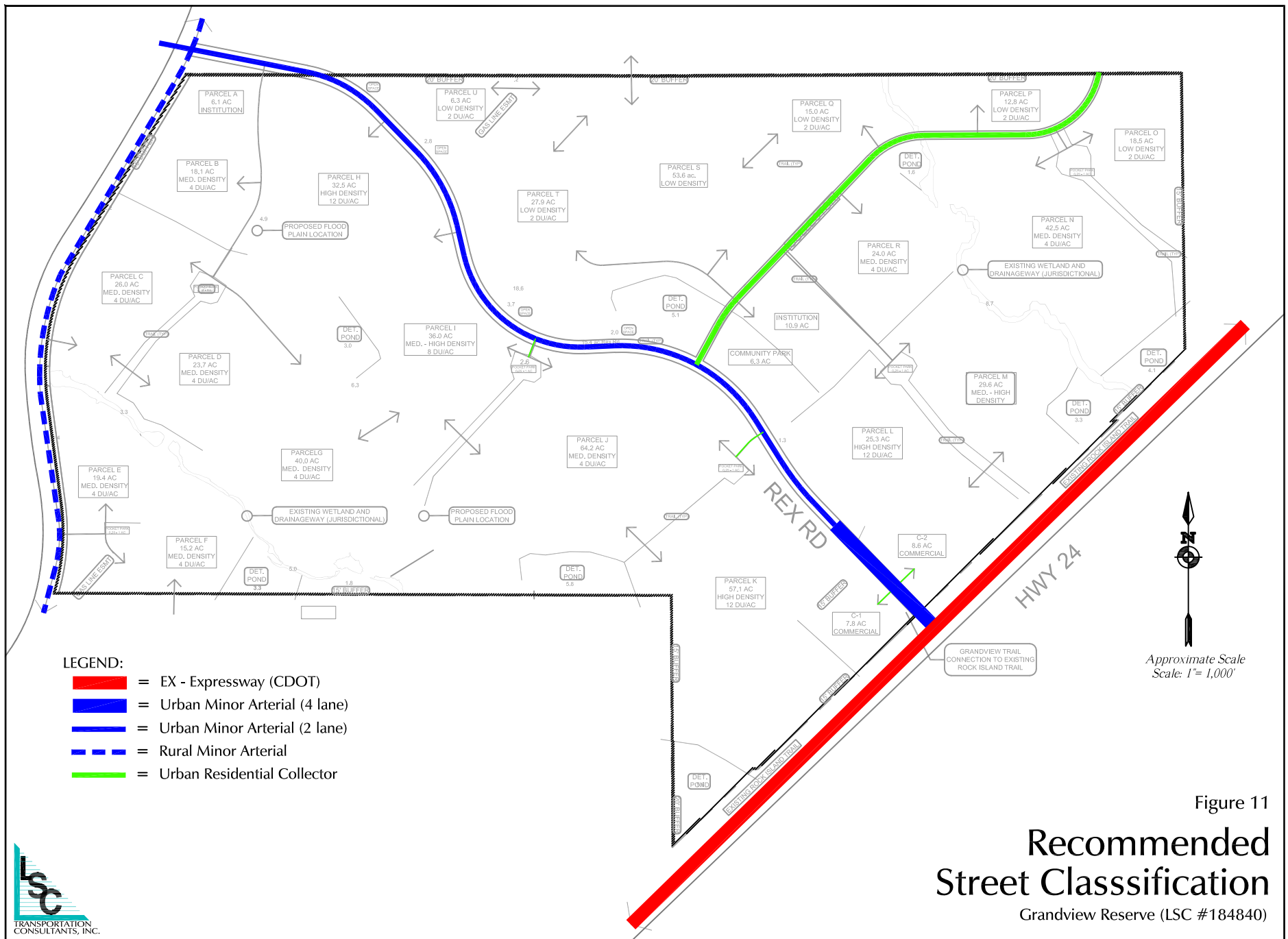
LEGEND:  
Traffic Control Used in the Analysis:  
= Stop Sign  
= Traffic Signal  
LOS Analysis Results:  
A/B = AM Individual Movement Peak-Hour Level of Service  
PM Individual Movement Peak-Hour Level of Service  
C/C = AM Entire Intersection Peak-Hour Level of Service  
PM Entire Intersection Peak-Hour Level of Service

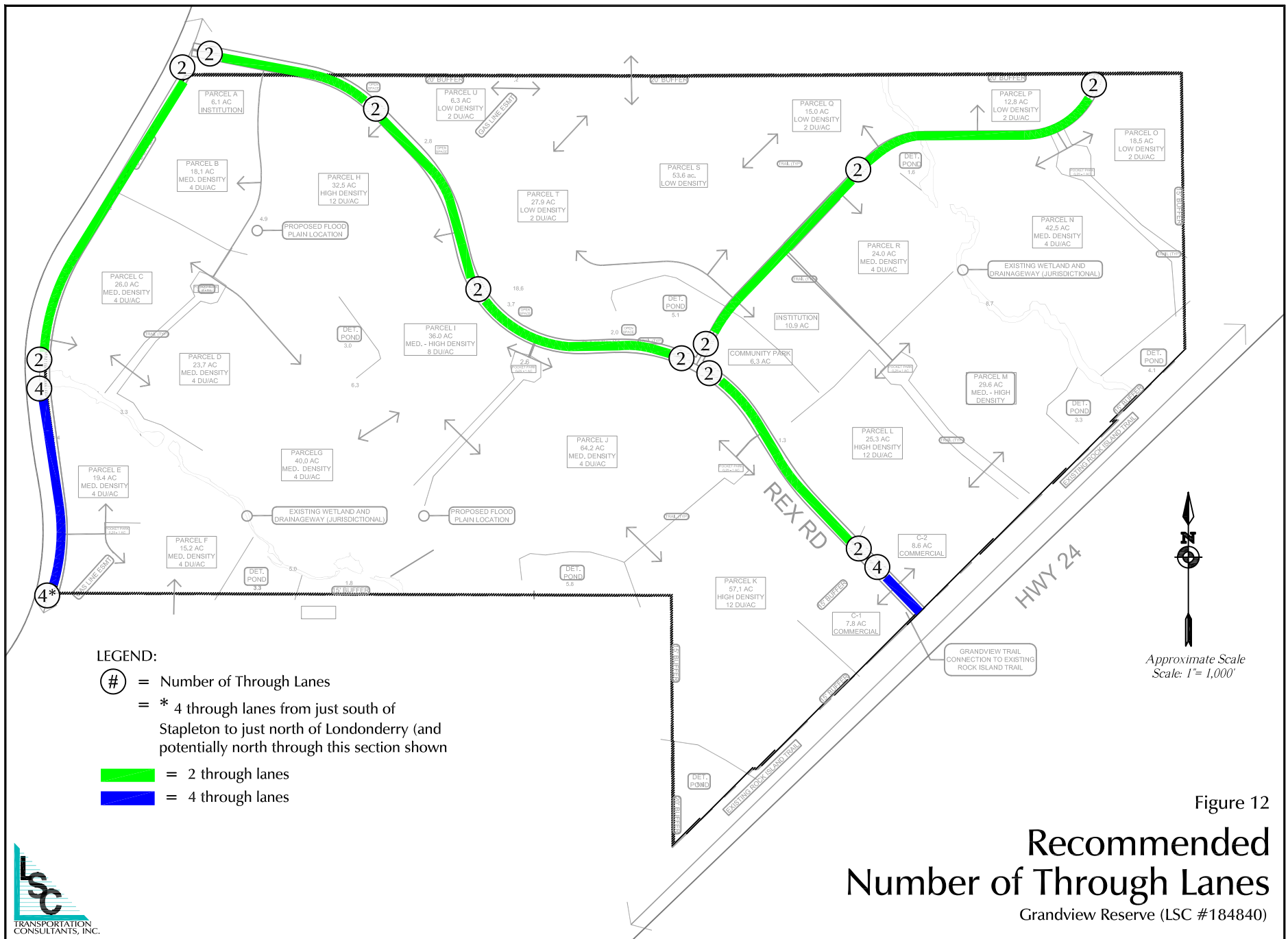


\*Note:  
The US 24 Planning and Environmental Linkage Study (October 2017) identifies additional options for potential capacity improvements at this intersection including a jughandle or jr interchange

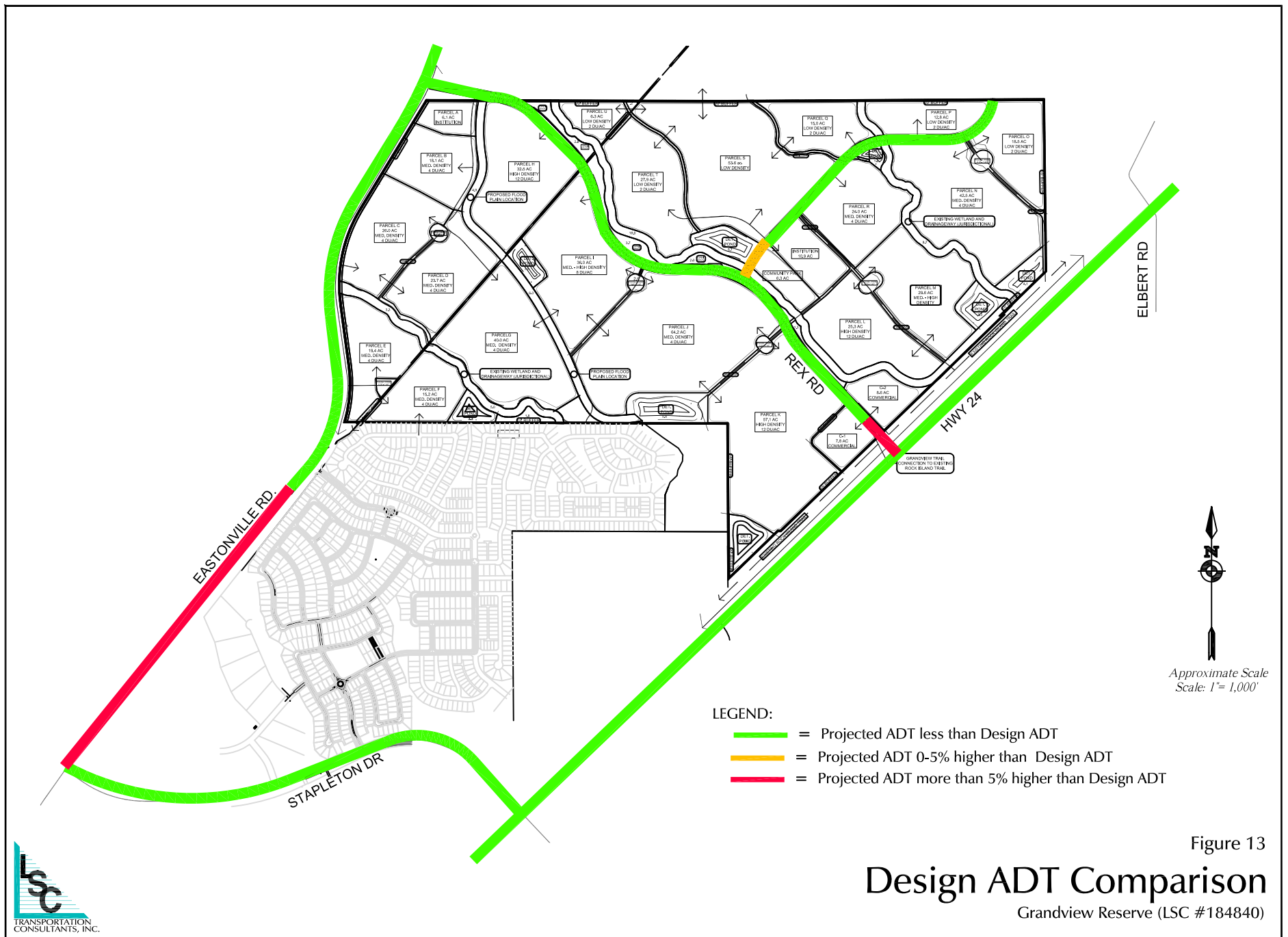
Figure 10e  
Year 2040 Total Lane Geometry, Traffic Control and Levels of Service with Hypothetical Intersection Capacity Improvements  
Grandview Reserve (LSC #184840)



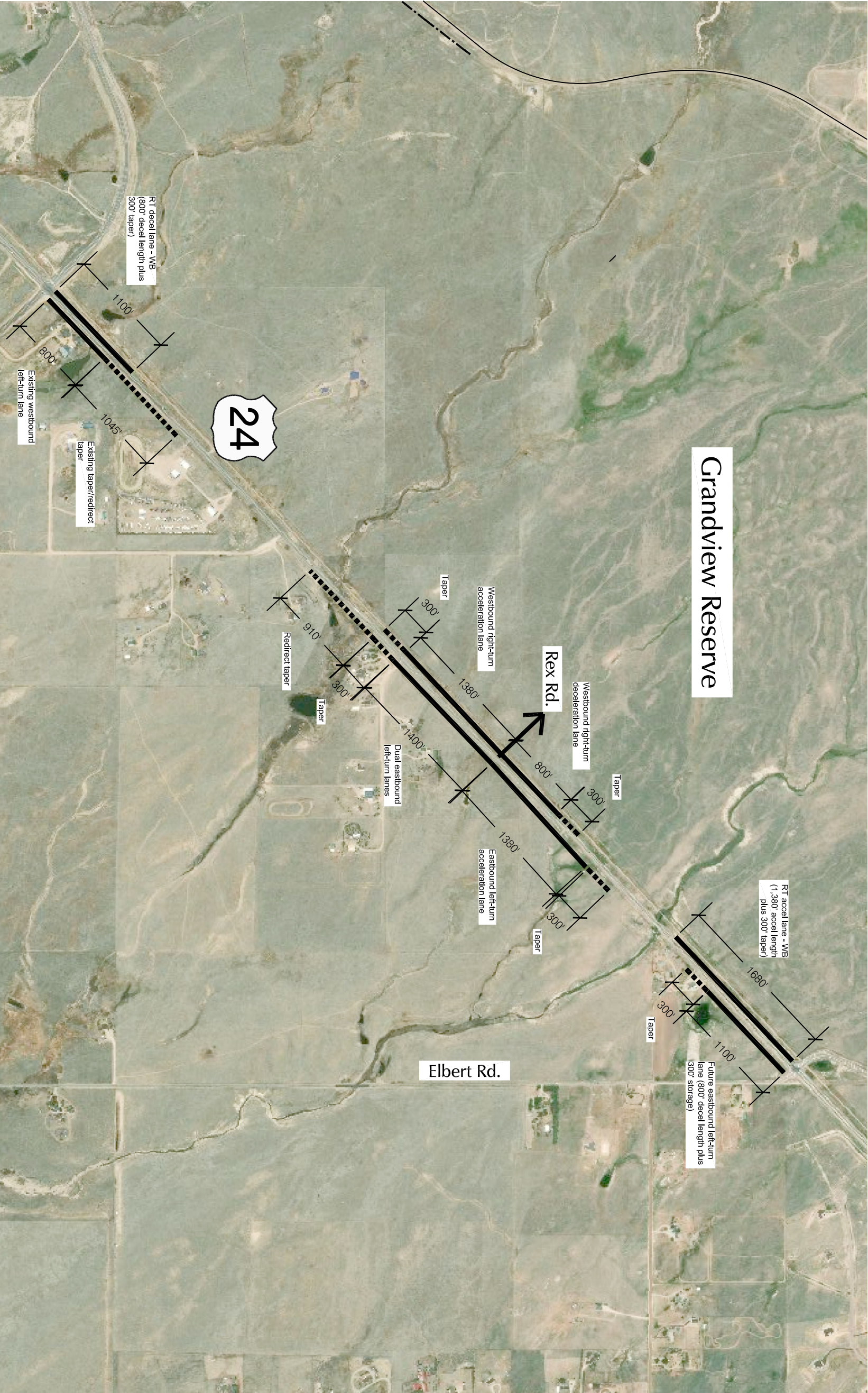












Approximate Scale  
1" = 1000'

Grandview Reserve

Rex Rd.

Elbert Rd.

24

RT decel lane - WB  
(800' decel length plus  
300' taper)

RT accel lane - WB  
(1,380' accel length  
plus 300' taper)

Future eastbound left-turn  
lane (800' decel length plus  
300' storage)

Westbound right-turn  
deceleration lane

Westbound right-turn  
acceleration lane

Eastbound left-turn  
acceleration lane

Dual eastbound  
left-turn lanes

Redirect taper

Existing taper/redirect  
taper

Existing westbound  
left-turn lane

US Highway 24 Intersection Spacing and Future Auxiliary Turn Lane Requirements





## Appendix Map - 2040 MTCP Roadway Plan

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El Paso County

Major Transportation  
Corridors Plan

Corridors to the Future 2010 - 2040



# El Paso County 2040 Major Transportation Corridors Plan

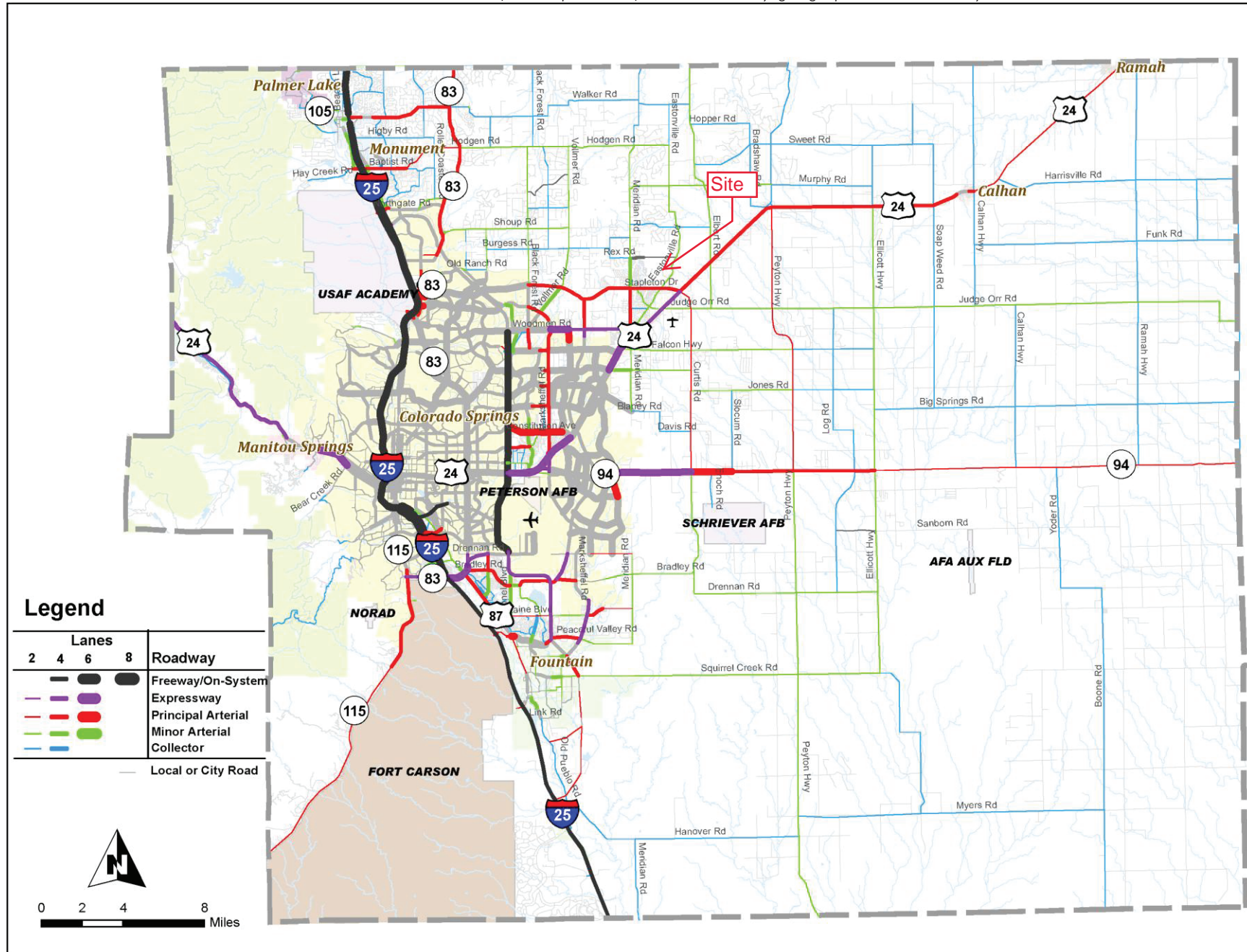
Adopted October 4, 2011  
By the Planning Commission

LSA  
LSA ASSOCIATES, INC.

**Catalyst, Inc.**

### FIGURE 4-8: 2040 MTCP ROADWAY PLAN

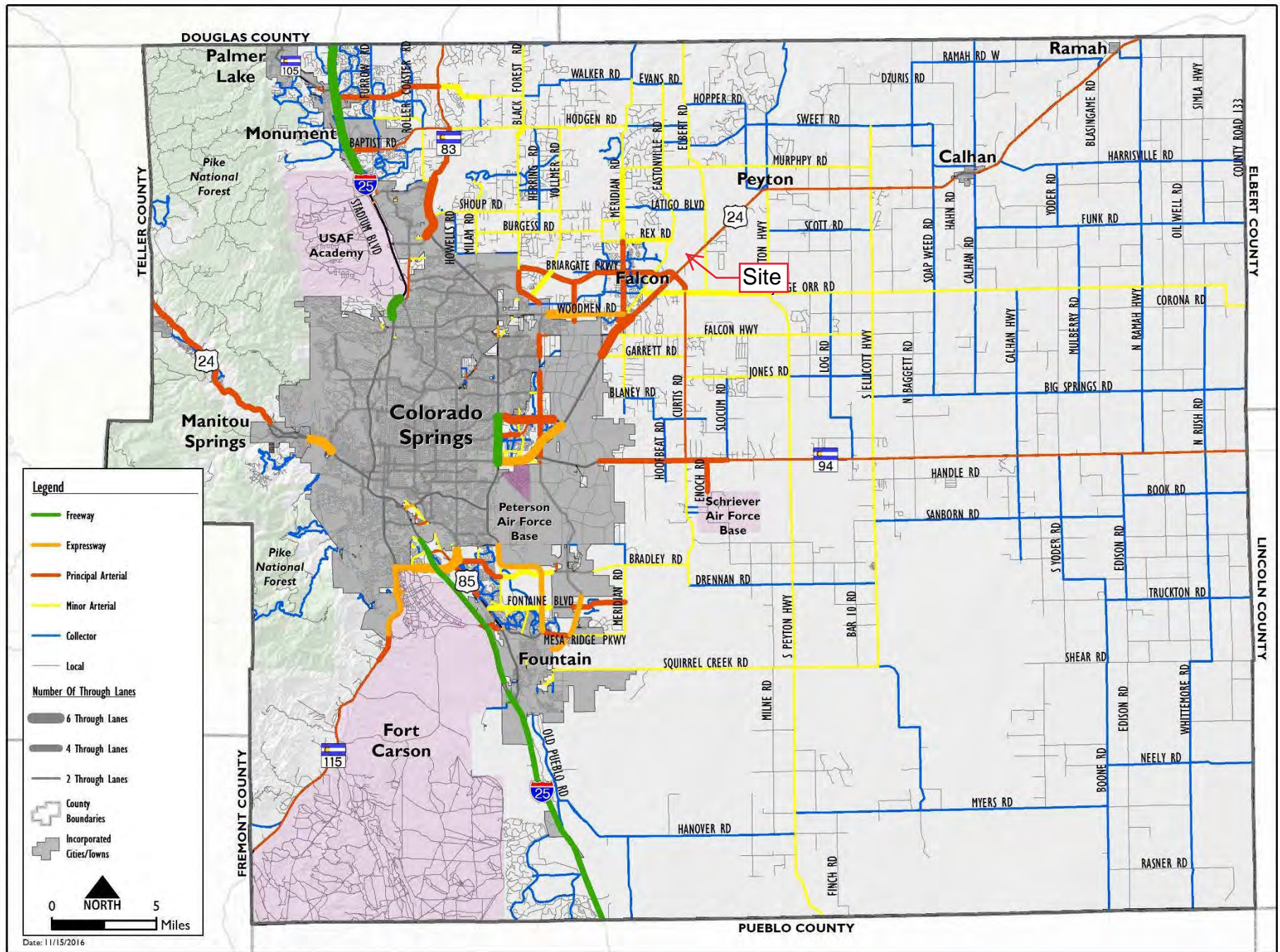
Source: PPACG travel model network (with adjustments); El Paso County geographic information system data



# MTCP Maps

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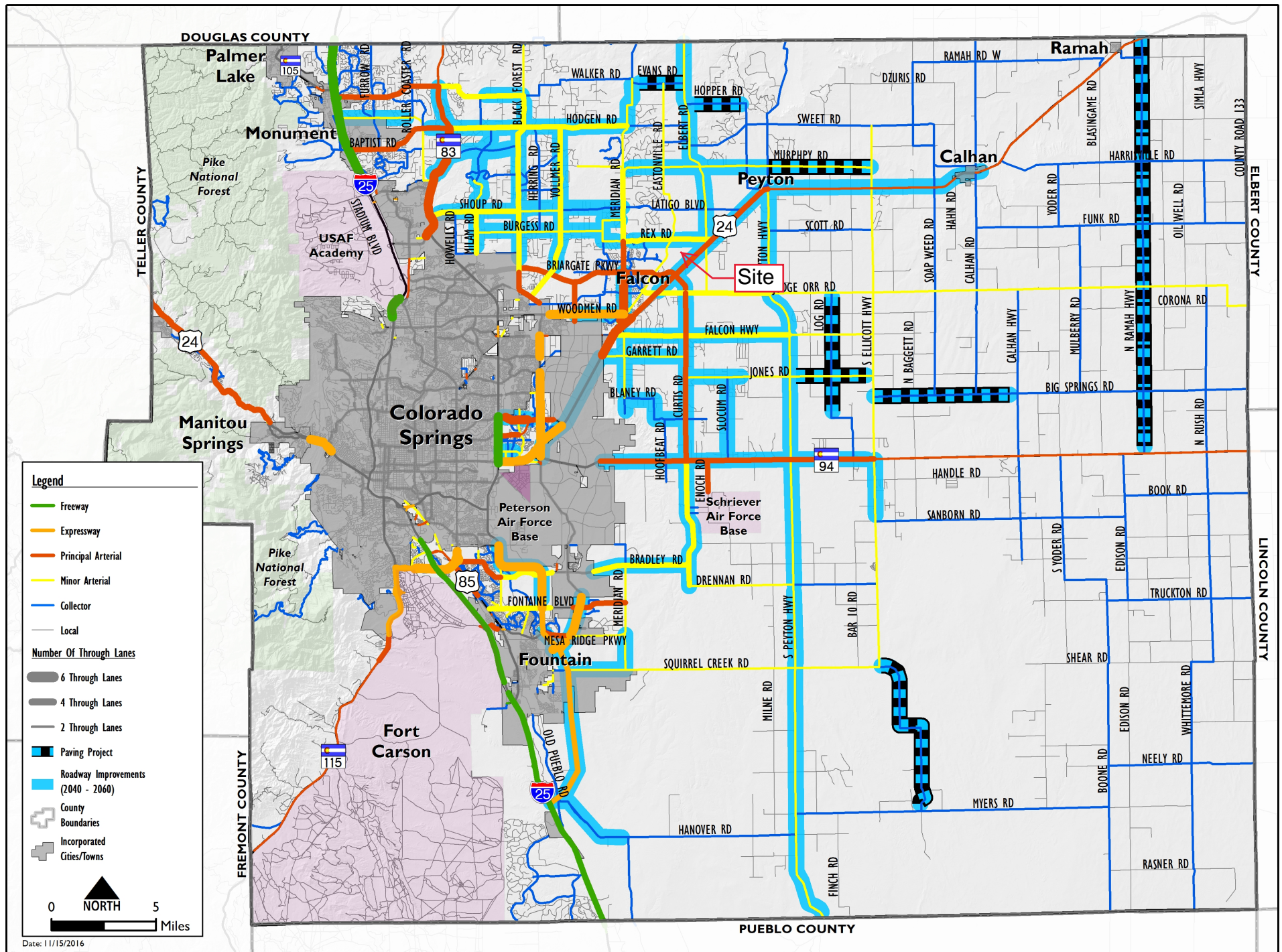




Map 14: 2040 Roadway Plan (Classification and Lanes)



# Map 17: 2060 Corridor Preservation



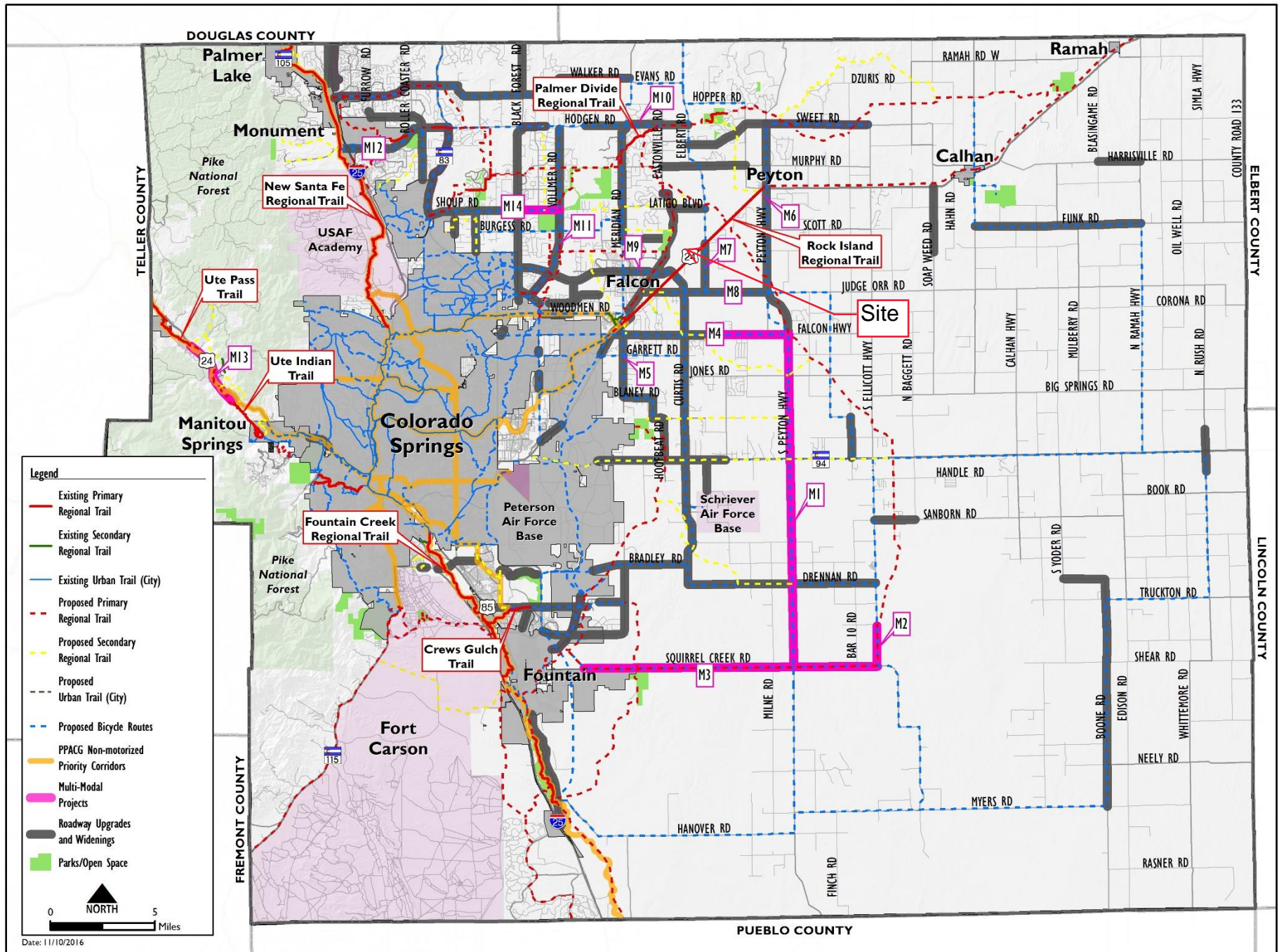
# MTCP Adopted Report 12-6-2016

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## Map 15 Bicycle and Pedestrian Network Improvements







**Map 15: Bicycle and Pedestrian Network and Improvements**

# NCHRP Report 684 Internal Trip Capture Estimation Tool

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NCHRP 684 Internal Trip Capture Estimation Tool					
<b>Project Name:</b>	Grandview Reserve	<b>Organization:</b>	LSC Transportation Consultants, Inc.		
<b>Project Location:</b>	Rex/US 24	<b>Performed By:</b>	KDF		
<b>Scenario Description:</b>	Buildout	<b>Date:</b>	3/9/2020		
<b>Analysis Year:</b>	2040	<b>Checked By:</b>			
<b>Analysis Period:</b>	AM Street Peak Hour	<b>Date:</b>			

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				218	135	83
Restaurant				0		
Cinema/Entertainment				0		
Residential				2,320	580	1,740
Hotel				0		
All Other Land Uses <sup>2</sup>				352	191	161
				2,890	906	1,984

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	12	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	17	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	2,890	906	1,984
Internal Capture Percentage	2%	3%	1%
External Vehicle-Trips <sup>5</sup>	2,832	877	1,955
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	13%	14%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	N/A	N/A

<sup>1</sup> Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i> ).
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.
<sup>6</sup> Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1



<b>Project Name:</b>	Grandview Reserve
<b>Analysis Period:</b>	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	135	135	1.00	83	83
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	580	580	1.00	1740	1740
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	24		11	0	12	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	35	17	348	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		43	0	0	0	0
Retail	0		0	0	12	0
Restaurant	0	11		0	29	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	23	0	0		0
Hotel	0	5	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	17	118	135	118	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	12	568	580	568	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	191	191	191	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	12	71	83	71	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	17	1723	1740	1723	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	161	161	161	0	0

<sup>1</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A
<sup>2</sup> Person-Trips
<sup>3</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
<b>Project Name:</b>	Grandview Reserve	<b>Organization:</b>	LSC Transportation Consultants, Inc.		
<b>Project Location:</b>	Rex/US 24	<b>Performed By:</b>	KDF		
<b>Scenario Description:</b>	Buildout	<b>Date:</b>	3/9/2020		
<b>Analysis Year:</b>	2040	<b>Checked By:</b>			
<b>Analysis Period:</b>	PM Street Peak Hour	<b>Date:</b>			

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips <sup>3</sup>		
	ITE LUCs <sup>1</sup>	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				671	322	349
Restaurant				0		
Cinema/Entertainment				0		
Residential				2,882	1,816	1,066
Hotel				0		
All Other Land Uses <sup>2</sup>				107	51	56
				3,660	2,189	1,471

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized	Veh. Occ. <sup>4</sup>	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses <sup>2</sup>						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail					2640	
Restaurant						
Cinema/Entertainment						
Residential		2640				
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	40	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	3,660	2,189	1,471
Internal Capture Percentage	2%	2%	3%
External Vehicle-Trips <sup>5</sup>	3,574	2,146	1,428
External Transit-Trips <sup>6</sup>	0	0	0
External Non-Motorized Trips <sup>6</sup>	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	1%	11%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	0%
Hotel	N/A	N/A

<sup>1</sup> Land Use Codes (LUCs) from <i>Trip Generation Manual</i> , published by the Institute of Transportation Engineers.
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE <i>Trip Generation Manual</i> ).
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.
<sup>6</sup> Person-Trips
*Indicates computation that has been rounded to the nearest whole number.
Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

<b>Project Name:</b>	Grandview Reserve
<b>Analysis Period:</b>	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends						
Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	322	322	1.00	349	349
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	1816	1816	1.00	1066	1066
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	7		101	14	40	17
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	43	45	224	0		32
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		26	0	0	73	0
Retail	0		0	0	835	0
Restaurant	0	161		0	291	0
Cinema/Entertainment	0	13	0		73	0
Residential	0	3	0	0		0
Hotel	0	6	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)						
Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	3	319	322	319	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	40	1776	1816	1776	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	51	51	51	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)						
Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles <sup>1</sup>	Transit <sup>2</sup>	Non-Motorized <sup>2</sup>
Office	0	0	0	0	0	0
Retail	40	309	349	309	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	1063	1066	1063	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses <sup>3</sup>	0	56	56	56	0	0

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

<sup>2</sup>Person-Trips

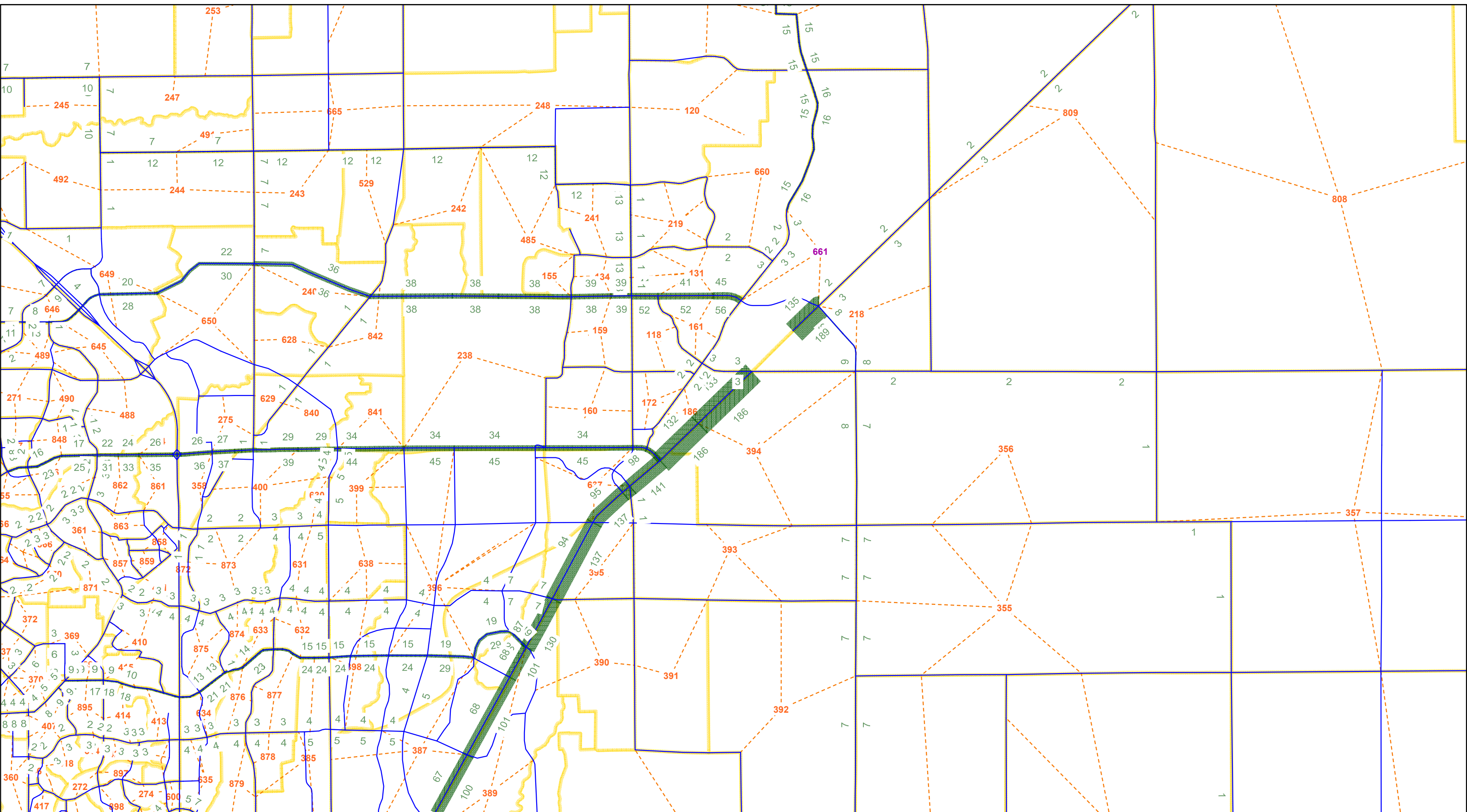
<sup>3</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

\*Indicates computation that has been rounded to the nearest whole number.

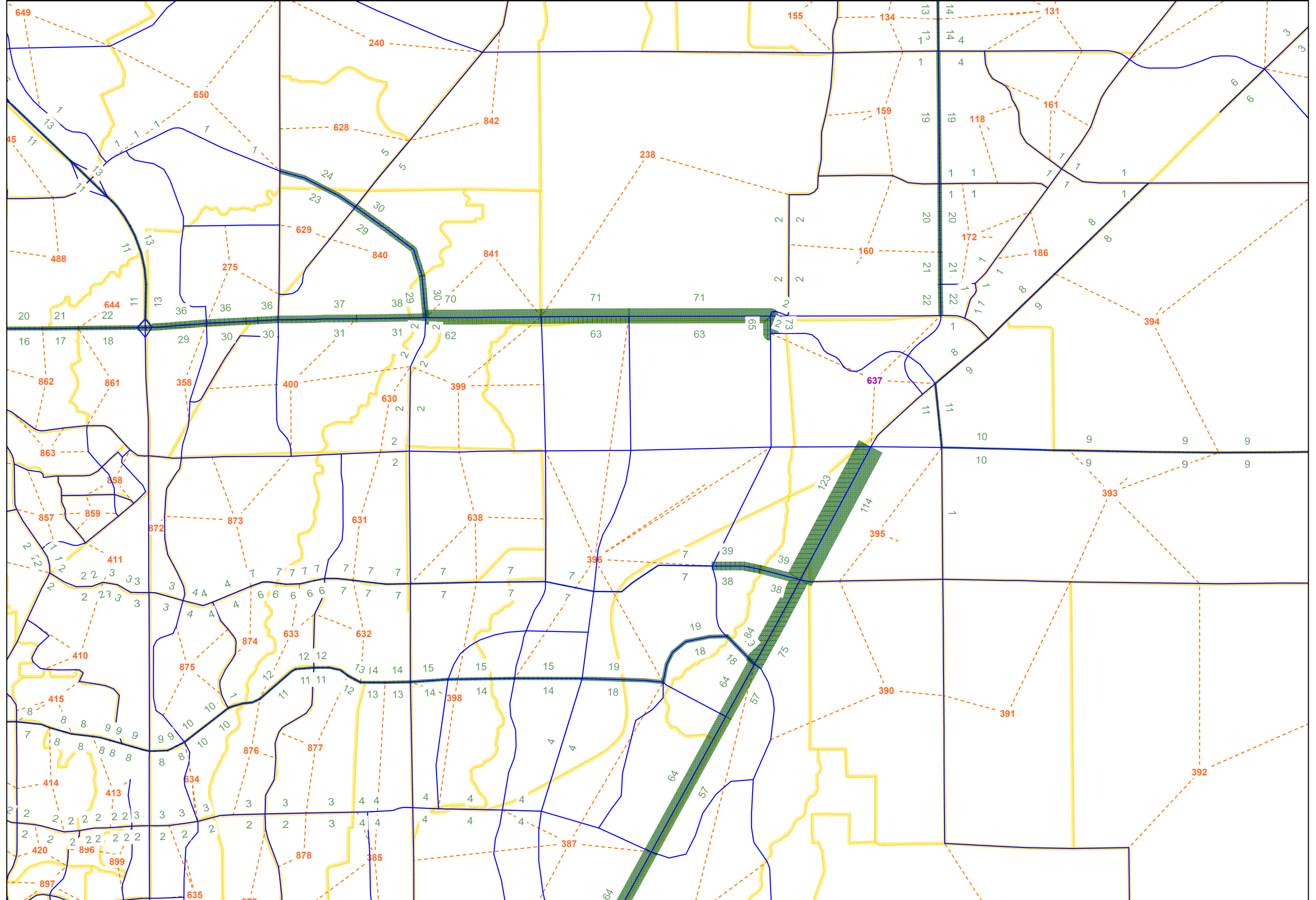


# PPACG Model Output

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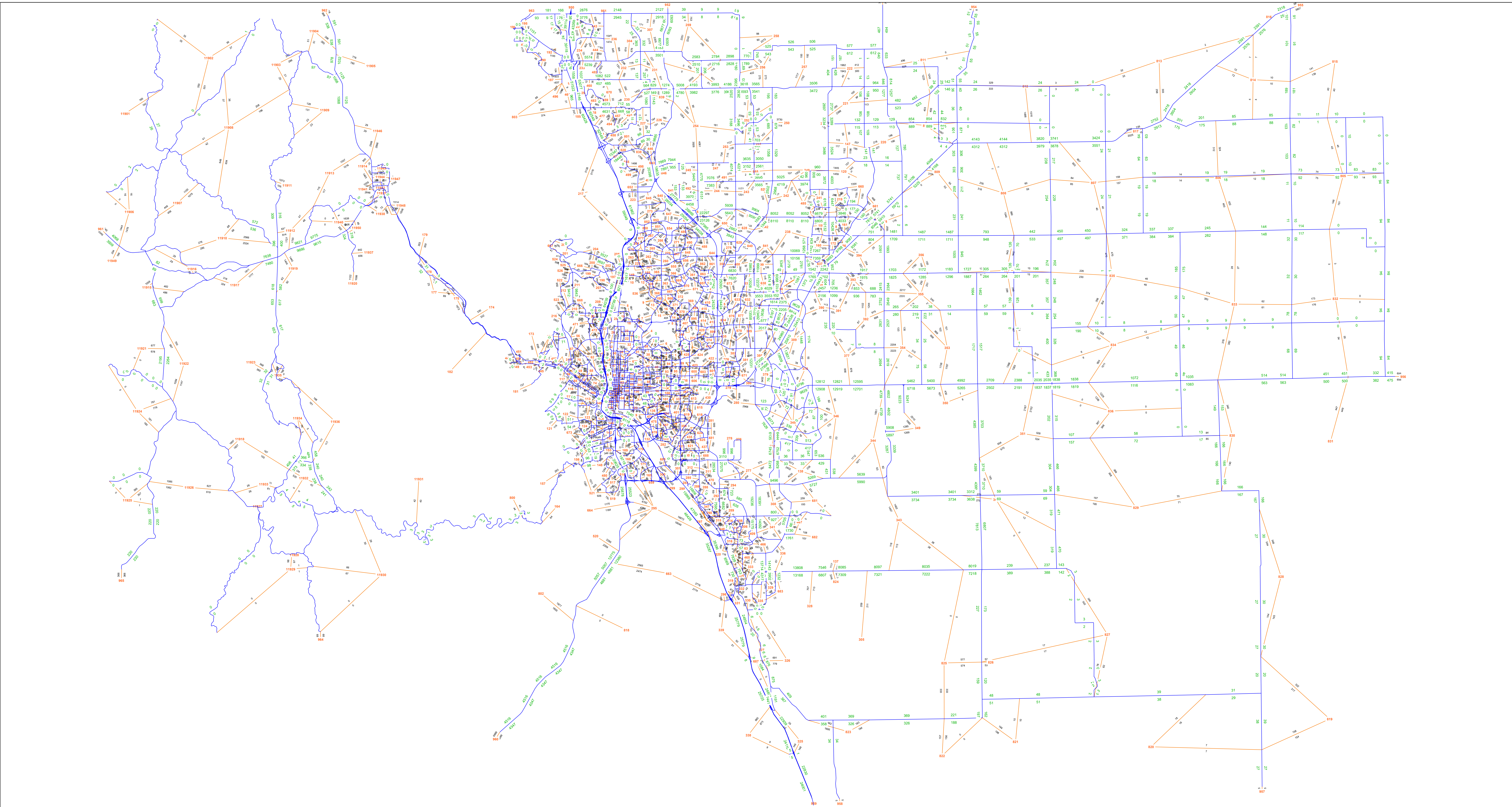


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# Traffic Counts

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# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Eastonville Rd - Londonderry Dr AM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 1

## Groups Printed- Unshifted

	Eastonville Rd Southbound				Westbound				Eastonville Rd Northbound				Londonderry Dr Eastbound				Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
06:30	0	3	1	0	0	0	0	0	19	2	0	0	1	0	39	0	65
06:45	0	0	5	0	0	0	0	0	55	0	0	0	0	0	67	0	127
Total	0	3	6	0	0	0	0	0	74	2	0	0	1	0	106	0	192
07:00	0	5	7	0	0	0	0	0	142	3	0	0	1	0	72	0	230
07:15	0	4	8	0	0	0	0	0	132	1	0	0	3	0	85	0	233
07:30	0	2	1	0	0	0	0	0	29	1	0	0	2	0	31	0	66
07:45	0	4	1	0	0	0	0	0	26	0	0	0	0	0	26	0	57
Total	0	15	17	0	0	0	0	0	329	5	0	0	6	0	214	0	586
08:00	0	2	3	0	0	0	0	0	19	2	0	0	2	0	36	0	64
08:15	0	2	2	0	0	0	0	0	17	1	0	0	1	0	22	0	45
Grand Total	0	22	28	0	0	0	0	0	439	10	0	0	10	0	378	0	887
Apprch %	0	44	56	0	0	0	0	0	97.8	2.2	0	0	2.6	0	97.4	0	
Total %	0	2.5	3.2	0	0	0	0	0	49.5	1.1	0	0	1.1	0	42.6	0	



# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

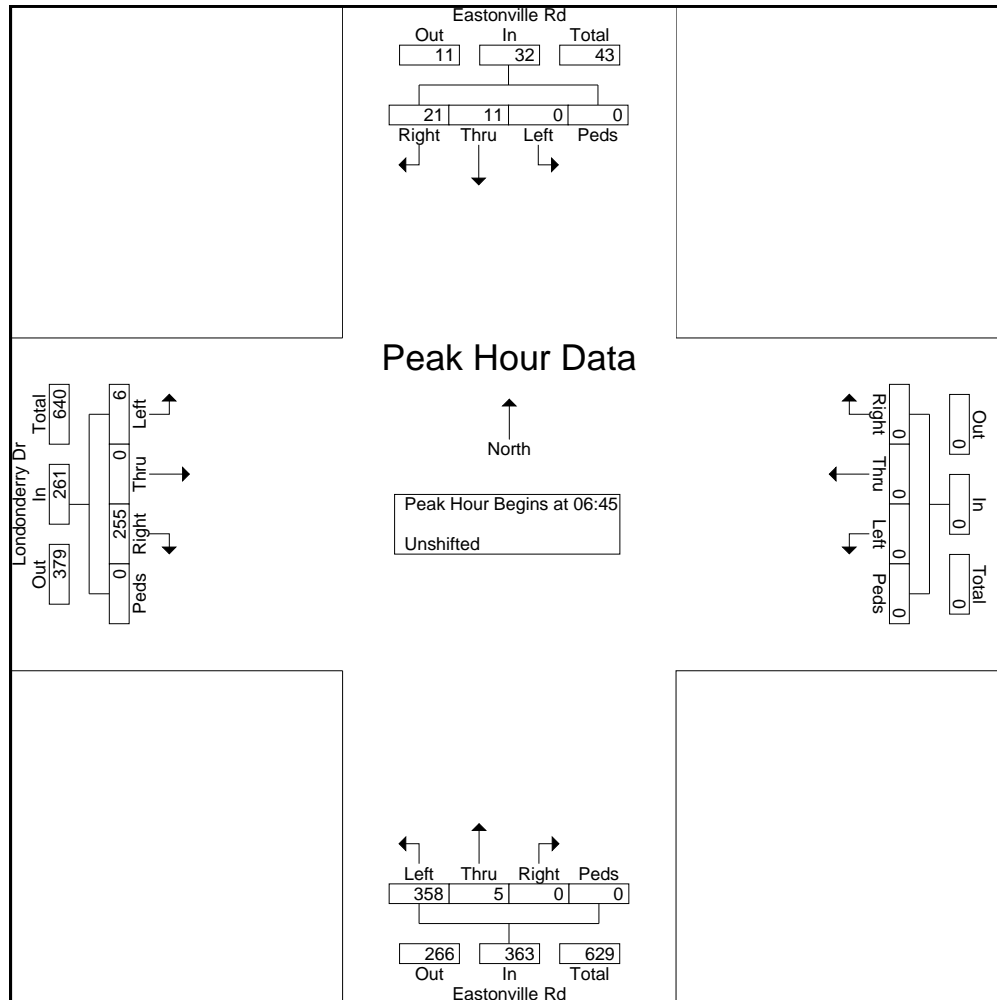
File Name : Eastonville Rd - Londonderry Dr AM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 2

	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr 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 06:45																					
06:45	0	0	5	0	5	0	0	0	0	0	55	0	0	0	55	0	0	67	0	67	127
07:00	0	5	7	0	12	0	0	0	0	0	142	3	0	0	145	1	0	72	0	73	230
07:15	0	4	8	0	12	0	0	0	0	0	132	1	0	0	133	3	0	85	0	88	233
07:30	0	2	1	0	3	0	0	0	0	0	29	1	0	0	30	2	0	31	0	33	66
Total Volume	0	11	21	0	32	0	0	0	0	0	358	5	0	0	363	6	0	255	0	261	656
% App. Total	0	34.4	65.6	0		0	0	0	0		98.6	1.4	0	0		2.3	0	97.7	0		
PHF	.000	.550	.656	.000	.667	.000	.000	.000	.000	.000	.630	.417	.000	.000	.626	.500	.000	.750	.000	.741	.704



# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Eastonville Rd - Londonderry Dr PM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 1

## Groups Printed- Unshifted

Start Time	Eastonville Rd Southbound				Westbound				Eastonville Rd Northbound				Londonderry Dr Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	0	4	1	0	0	0	0	0	52	6	0	0	0	0	53	0	116
16:15	0	3	1	0	0	0	0	0	52	7	0	0	0	0	17	0	80
16:30	0	5	0	0	0	0	0	0	49	8	0	0	1	0	29	0	92
16:45	0	3	0	0	0	0	0	0	44	1	0	0	2	0	29	0	79
Total	0	15	2	0	0	0	0	0	197	22	0	0	3	0	128	0	367
17:00	0	1	1	0	0	0	0	0	37	7	0	0	0	0	21	0	67
17:15	0	1	1	0	0	0	0	0	68	5	0	0	0	0	23	0	98
17:30	0	7	1	0	0	0	0	0	53	2	0	0	1	0	11	0	75
17:45	0	3	1	0	0	0	0	0	46	2	0	0	1	0	13	0	66
Total	0	12	4	0	0	0	0	0	204	16	0	0	2	0	68	0	306
Grand Total	0	27	6	0	0	0	0	0	401	38	0	0	5	0	196	0	673
Apprch %	0	81.8	18.2	0	0	0	0	0	91.3	8.7	0	0	2.5	0	97.5	0	
Total %	0	4	0.9	0	0	0	0	0	59.6	5.6	0	0	0.7	0	29.1	0	

# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

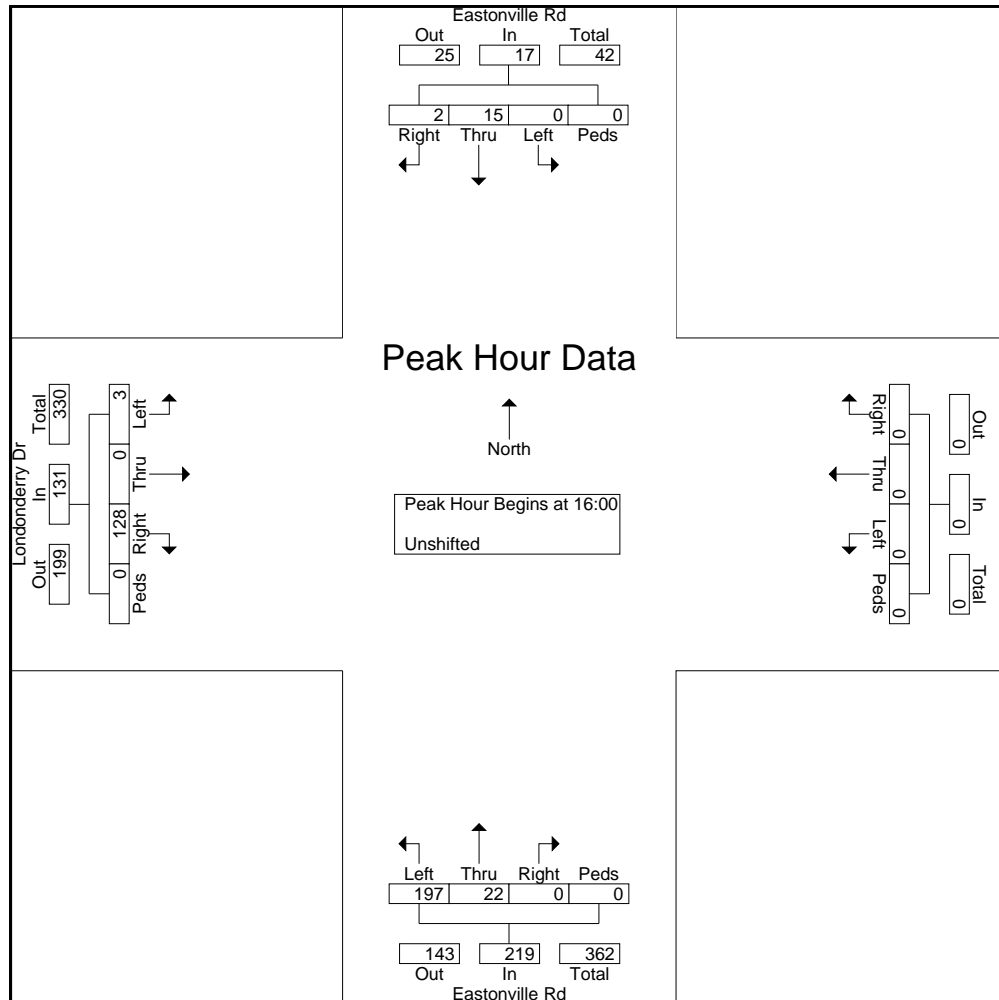
File Name : Eastonville Rd - Londonderry Dr PM 12-18

Site Code : 184750

Start Date : 12/11/2018

Page No : 2

	Eastonville Rd Southbound					Westbound					Eastonville Rd Northbound					Londonderry Dr 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 16:00																					
16:00	0	4	1	0	5	0	0	0	0	0	52	6	0	0	58	0	0	53	0	53	116
16:15	0	3	1	0	4	0	0	0	0	0	52	7	0	0	59	0	0	17	0	17	80
16:30	0	5	0	0	5	0	0	0	0	0	49	8	0	0	57	1	0	29	0	30	92
16:45	0	3	0	0	3	0	0	0	0	0	44	1	0	0	45	2	0	29	0	31	79
Total Volume	0	15	2	0	17	0	0	0	0	0	197	22	0	0	219	3	0	128	0	131	367
% App. Total	0	88.2	11.8	0		0	0	0	0		90	10	0	0		2.3	0	97.7	0		
PHF	.000	.750	.500	.000	.850	.000	.000	.000	.000	.000	.947	.688	.000	.000	.928	.375	.000	.604	.000	.618	.791





Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Eastonville Rd - Stapleton Dr 5-23-17 AM

Site Code : 00174350

Start Date : 05/23/2017

Page No : 1

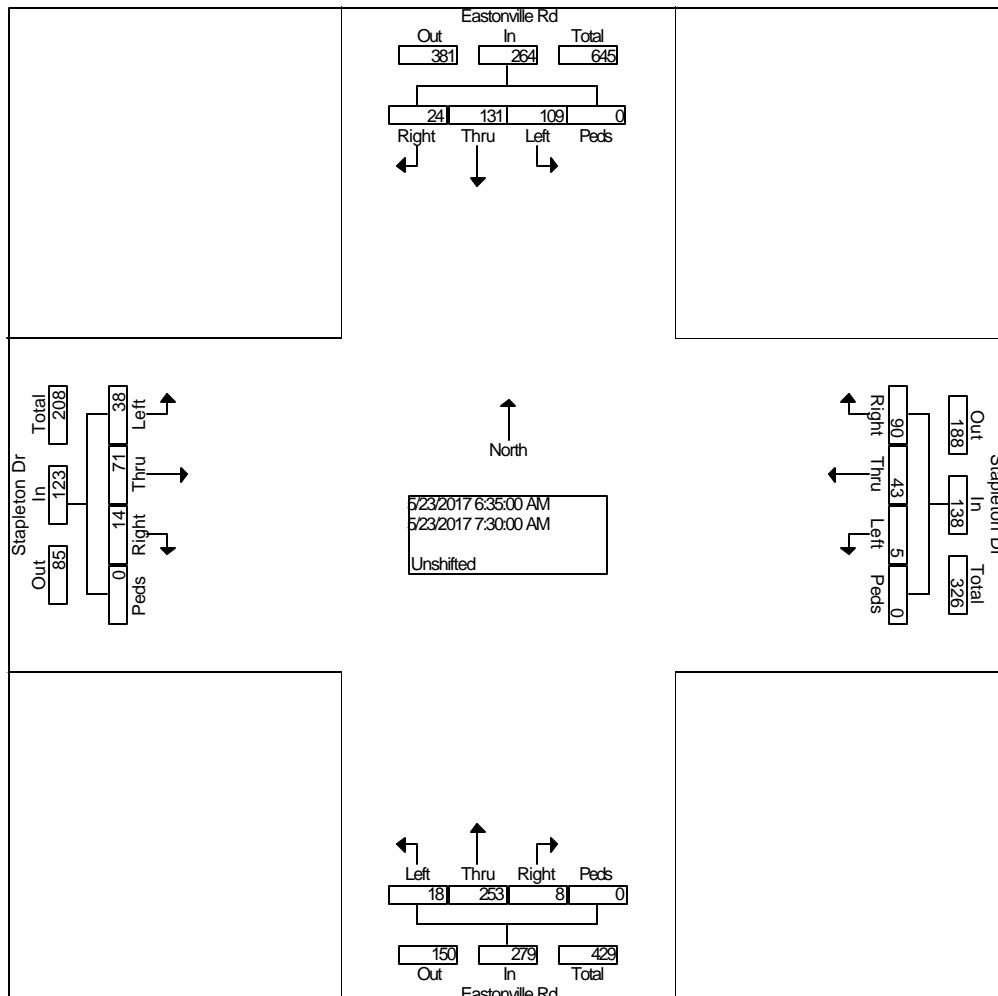
Groups Printed- Unshifted

	Eastonville Rd From North				Stapleton Dr From East				Eastonville Rd From South				Stapleton Dr From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	1	11	18	0	9	1	0	0	0	30	1	0	1	12	5	0	89
06:45 AM	2	16	25	0	19	5	2	0	0	42	3	0	4	17	8	0	143
07:00 AM	10	46	24	0	35	9	1	0	0	111	6	0	6	19	18	0	285
07:15 AM	10	54	37	0	25	20	1	0	7	75	7	0	2	16	6	0	260
07:30 AM	2	14	19	0	7	25	2	0	2	3	3	0	2	21	5	0	105
07:45 AM	4	7	11	0	11	15	2	0	0	8	2	0	4	29	2	0	95
08:00 AM	0	11	11	0	14	11	1	0	0	9	0	1	0	25	2	0	85
08:15 AM	3	11	22	0	7	10	1	0	1	10	2	0	0	11	2	0	80
Grand Total	32	170	167	0	127	96	10	0	10	288	24	1	19	150	48	0	1142
Apprch %	8.7	46.1	45.3	0.0	54.5	41.2	4.3	0.0	3.1	89.2	7.4	0.3	8.8	69.1	22.1	0.0	
Total %	2.8	14.9	14.6	0.0	11.1	8.4	0.9	0.0	0.9	25.2	2.1	0.1	1.7	13.1	4.2	0.0	

# Counts by LSC

File Name : Eastonville Rd - Stapleton Dr 5-23-17 AM  
 Site Code : 00174350  
 Start Date : 05/23/2017  
 Page No : 2

	Eastonville Rd From North					Stapleton Dr From East					Eastonville Rd From South					Stapleton Dr From West					
Start Time	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:25 AM - Peak 1 of 1																					
Intersection	06:35 AM																				
Volume	24	13	10	0	264	90	43	5	0	138	8	25	18	0	279	14	71	38	0	123	804
Percent	9.1	49.	41.	0.0		65.	31.	3.6	0.0		2.9	90.	6.5	0.0		11.	57.	30.	0.0		
		6	3			2	2					7				4	7	9			
07:10																					
Volume	3	18	8	0	29	15	4	0	0	19	0	38	1	0	39	2	6	7	0	15	102
Peak																					
Factor																					0.657
High Int.	07:25 AM					07:10 AM					07:05 AM					07:05 AM					
Volume	2	23	14	0	39	15	4	0	0	19	0	39	3	0	42	3	7	5	0	15	
Peak					0.56					0.60					0.55					0.68	
Factor					4					5					4					3	



Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Eastonville Rd - Stapleton Dr PM

Site Code : 00174350

Start Date : 05/11/2017

Page No : 1

Groups Printed- Unshifted

	Eastonville Rd From North				Stapleton Dr From East				Eastonville Rd From South				Stapleton Dr From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	2	19	12	0	16	19	1	0	1	23	1	0	1	13	2	0	110
04:15 PM	0	12	5	0	24	25	3	0	1	19	4	0	1	5	6	0	105
04:30 PM	3	16	12	0	16	35	5	0	2	19	3	0	2	9	9	0	131
04:45 PM	4	9	7	0	23	29	2	0	4	34	1	0	1	9	8	0	131
Total	9	56	36	0	79	108	11	0	8	95	9	0	5	36	25	0	477
05:00 PM	2	18	11	0	28	27	2	0	1	20	3	0	0	9	2	0	123
05:15 PM	1	13	8	0	25	23	0	0	1	21	0	0	0	19	2	0	113
05:30 PM	1	19	1	0	12	14	2	0	3	37	3	0	1	13	1	0	107
05:45 PM	1	16	1	0	11	13	1	0	2	31	1	0	1	9	1	0	88
Total	5	66	21	0	76	77	5	0	7	109	7	0	2	50	6	0	431
Grand Total	14	122	57	0	155	185	16	0	15	204	16	0	7	86	31	0	908
Apprch %	7.3	63.2	29.5	0.0	43.5	52.0	4.5	0.0	6.4	86.8	6.8	0.0	5.6	69.4	25.0	0.0	
Total %	1.5	13.4	6.3	0.0	17.1	20.4	1.8	0.0	1.7	22.5	1.8	0.0	0.8	9.5	3.4	0.0	



# Counts by LSC

File Name : Eastonville Rd - Stapleton Dr PM  
 Site Code : 00174350  
 Start Date : 05/11/2017  
 Page No : 2

	Eastonville Rd From North					Stapleton Dr From East					Eastonville Rd From South					Stapleton Dr From West					
Start Time	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Rig ht	Thr u	Lef t	Pe ds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	10	56	38	0	104	92	114	9	0	215	8	94	7	0	109	3	46	21	0	70	498
Percent	9.6	53.8	36.5	0.0		42.8	53.0	4.2	0.0		7.3	86.2	6.4	0.0		4.3	65.7	30.0	0.0		
04:45																					
Volume	4	9	7	0	20	23	29	2	0	54	4	34	1	0	39	1	9	8	0	18	131
Peak Factor																					0.950
High Int.	04:30 PM					05:00 PM					04:45 PM					05:15 PM					
Volume	3	16	12	0	31	28	27	2	0	57	4	34	1	0	39	0	19	2	0	21	
Peak Factor																					

# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

Page No : 1

## Groups Printed- Unshifted

	Hwy 24 Southbound				Stapleton Dr Westbound				Hwy 24 Northbound				Stapleton Dr Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	4	120	3	0	0	11	3	0	5	39	0	0	2	30	26	0	243
06:45	7	123	7	0	0	12	4	0	13	55	0	0	11	25	33	0	290
Total	11	243	10	0	0	23	7	0	18	94	0	0	13	55	59	0	533
07:00	9	125	8	0	1	22	4	0	24	70	0	0	12	37	33	0	345
07:15	7	139	11	0	0	29	4	0	18	51	0	0	10	39	27	0	335
07:30	6	115	10	0	1	24	0	0	15	48	1	0	3	28	28	0	279
07:45	6	106	9	0	0	11	4	0	6	43	1	0	5	19	19	0	229
Total	28	485	38	0	2	86	12	0	63	212	2	0	30	123	107	0	1188
08:00	2	74	6	0	4	11	2	0	13	66	0	0	1	10	17	0	206
08:15	3	86	5	0	3	9	0	0	8	60	2	0	2	9	13	0	200
Grand Total	44	888	59	0	9	129	21	0	102	432	4	0	46	197	196	0	2127
Apprch %	4.4	89.6	6	0	5.7	81.1	13.2	0	19	80.3	0.7	0	10.5	44.9	44.6	0	
Total %	2.1	41.7	2.8	0	0.4	6.1	1	0	4.8	20.3	0.2	0	2.2	9.3	9.2	0	

# LSC Transportation Consultants, Inc.

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

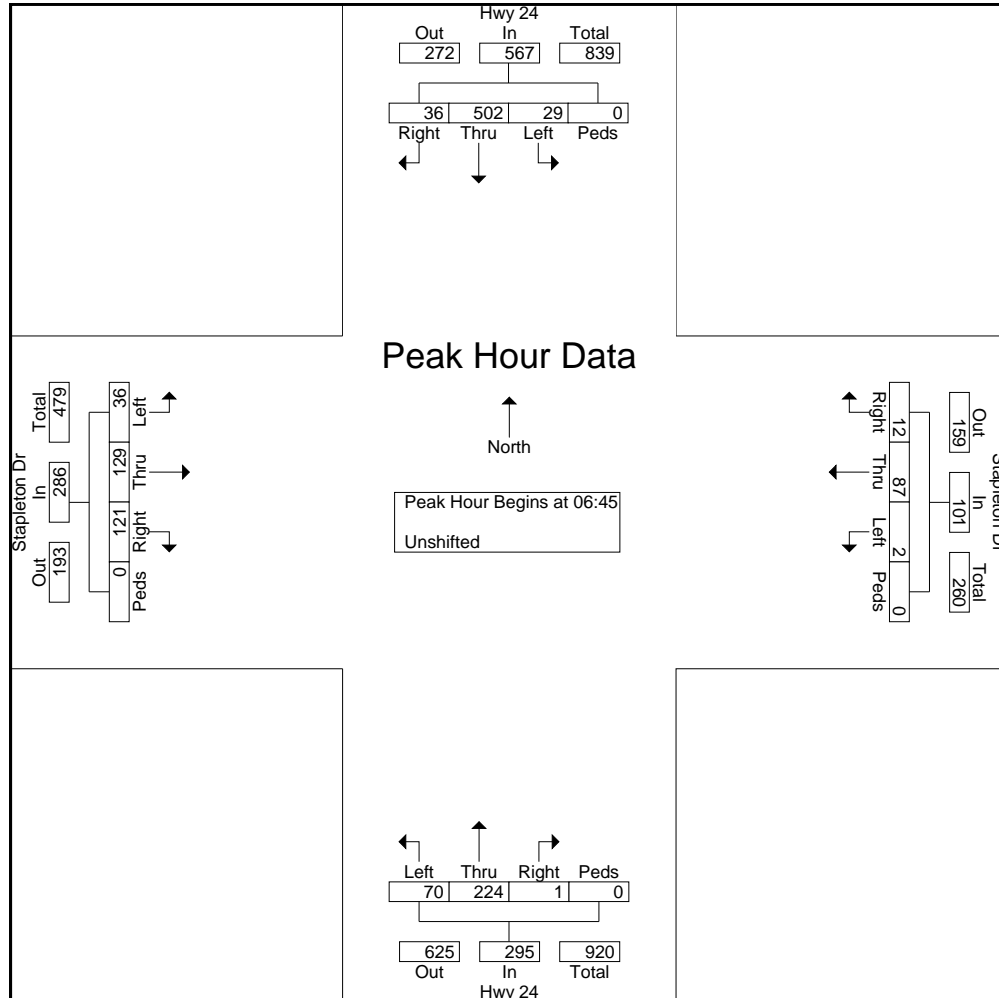
File Name : Hwy 24 - Stapleton Rd AM 11-18

Site Code : 184750

Start Date : 11/15/2018

Page No : 2

	Hwy 24 Southbound					Stapleton Dr Westbound					Hwy 24 Northbound					Stapleton Dr 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 06:45																					
06:45	7	123	7	0	137	0	12	4	0	16	13	55	0	0	68	11	25	33	0	69	290
07:00	9	125	8	0	142	1	22	4	0	27	24	70	0	0	94	12	37	33	0	82	345
07:15	7	139	11	0	157	0	29	4	0	33	18	51	0	0	69	10	39	27	0	76	335
07:30	6	115	10	0	131	1	24	0	0	25	15	48	1	0	64	3	28	28	0	59	279
Total Volume	29	502	36	0	567	2	87	12	0	101	70	224	1	0	295	36	129	121	0	286	1249
% App. Total	5.1	88.5	6.3	0		2	86.1	11.9	0		23.7	75.9	0.3	0		12.6	45.1	42.3	0		
PHF	.806	.903	.818	.000	.903	.500	.750	.750	.000	.765	.729	.800	.250	.000	.785	.750	.827	.917	.000	.872	.905





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Hwy 24 - Stapleton Rd PM 11-18

Site Code : 00184750

Start Date : 11/28/2018

Page No : 1

## Groups Printed- Unshifted

	Hwy 24 Southbound				Stapleton Rd Westbound				Hwy 24 Northbound				Stapleton Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	4	73	11	0	1	20	6	0	20	127	5	0	5	6	11	0	289
16:15	1	73	9	0	3	31	5	0	13	100	5	1	7	5	9	0	262
16:30	3	85	3	0	1	23	7	0	28	96	4	0	2	6	13	0	271
16:45	4	73	9	0	1	29	7	0	32	98	6	0	5	7	14	0	285
Total	12	304	32	0	6	103	25	0	93	421	20	1	19	24	47	0	1107
17:00	2	94	2	0	0	22	5	0	18	138	4	0	0	10	16	0	311
17:15	1	74	7	0	2	23	9	0	29	109	7	0	7	15	13	0	296
17:30	1	63	4	0	1	23	6	0	20	133	4	0	5	8	7	0	275
17:45	4	55	4	0	1	15	6	0	18	136	5	0	4	8	6	0	262
Total	8	286	17	0	4	83	26	0	85	516	20	0	16	41	42	0	1144
Grand Total	20	590	49	0	10	186	51	0	178	937	40	1	35	65	89	0	2251
Apprch %	3	89.5	7.4	0	4	75.3	20.6	0	15.4	81.1	3.5	0.1	18.5	34.4	47.1	0	
Total %	0.9	26.2	2.2	0	0.4	8.3	2.3	0	7.9	41.6	1.8	0	1.6	2.9	4	0	

# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

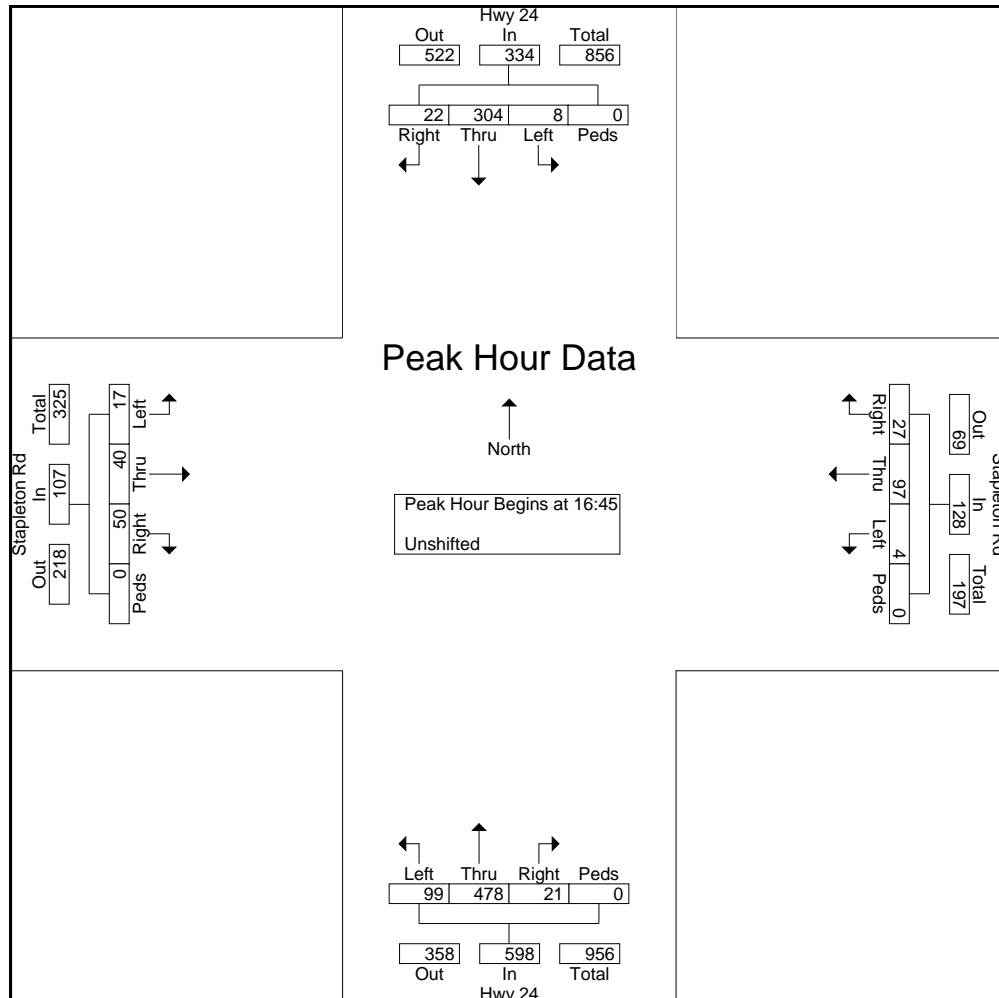
File Name : Hwy 24 - Stapleton Rd PM 11-18

Site Code : 00184750

Start Date : 11/28/2018

Page No : 2

	Hwy 24 Southbound					Stapleton Rd Westbound					Hwy 24 Northbound					Stapleton 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 16:45																					
16:45	4	73	9	0	86	1	29	7	0	37	32	98	6	0	136	5	7	14	0	26	285
17:00	2	94	2	0	98	0	22	5	0	27	18	138	4	0	160	0	10	16	0	26	311
17:15	1	74	7	0	82	2	23	9	0	34	29	109	7	0	145	7	15	13	0	35	296
17:30	1	63	4	0	68	1	23	6	0	30	20	133	4	0	157	5	8	7	0	20	275
Total Volume	8	304	22	0	334	4	97	27	0	128	99	478	21	0	598	17	40	50	0	107	1167
% App. Total	2.4	91	6.6	0		3.1	75.8	21.1	0		16.6	79.9	3.5	0		15.9	37.4	46.7	0		
PHF	.500	.809	.611	.000	.852	.500	.836	.750	.000	.865	.773	.866	.750	.000	.934	.607	.667	.781	.000	.764	.938





# LSC Transportation Consultants, Inc.

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

File Name : Eastonville Rd - Judge Orr Rd AM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 1

## Groups Printed- Unshifted

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
06:30 AM	13	26	0	0	39	3	11	0	0	14	2	35	12	0	49	8	41	22	0	71	173
06:45 AM	20	25	0	0	45	2	12	10	0	24	2	36	13	0	51	6	43	23	0	72	192
Total	33	51	0	0	84	5	23	10	0	38	4	71	25	0	100	14	84	45	0	143	365
07:00 AM	6	35	1	0	42	6	6	24	0	36	3	63	10	0	76	24	37	21	0	82	236
07:15 AM	7	48	6	0	61	10	9	25	0	44	5	54	14	0	73	47	36	26	0	109	287
07:30 AM	8	37	3	0	48	6	16	23	0	45	7	32	6	0	45	20	32	31	0	83	221
07:45 AM	9	30	0	0	39	7	9	11	0	27	5	40	6	0	51	10	28	29	0	67	184
Total	30	150	10	0	190	29	40	83	0	152	20	189	36	0	245	101	133	107	0	341	928
08:00 AM	12	30	1	0	43	6	6	6	0	18	9	13	9	0	31	0	18	25	0	43	135
08:15 AM	5	23	0	0	28	7	10	0	0	17	21	17	10	0	48	0	17	28	0	45	138
Grand Total	80	254	11	0	345	47	79	99	0	225	54	290	80	0	424	115	252	205	0	572	1566
Apprch %	23.2	73.6	3.2	0		20.9	35.1	44	0		12.7	68.4	18.9	0		20.1	44.1	35.8	0		
Total %	5.1	16.2	0.7	0	22	3	5	6.3	0	14.4	3.4	18.5	5.1	0	27.1	7.3	16.1	13.1	0	36.5	





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

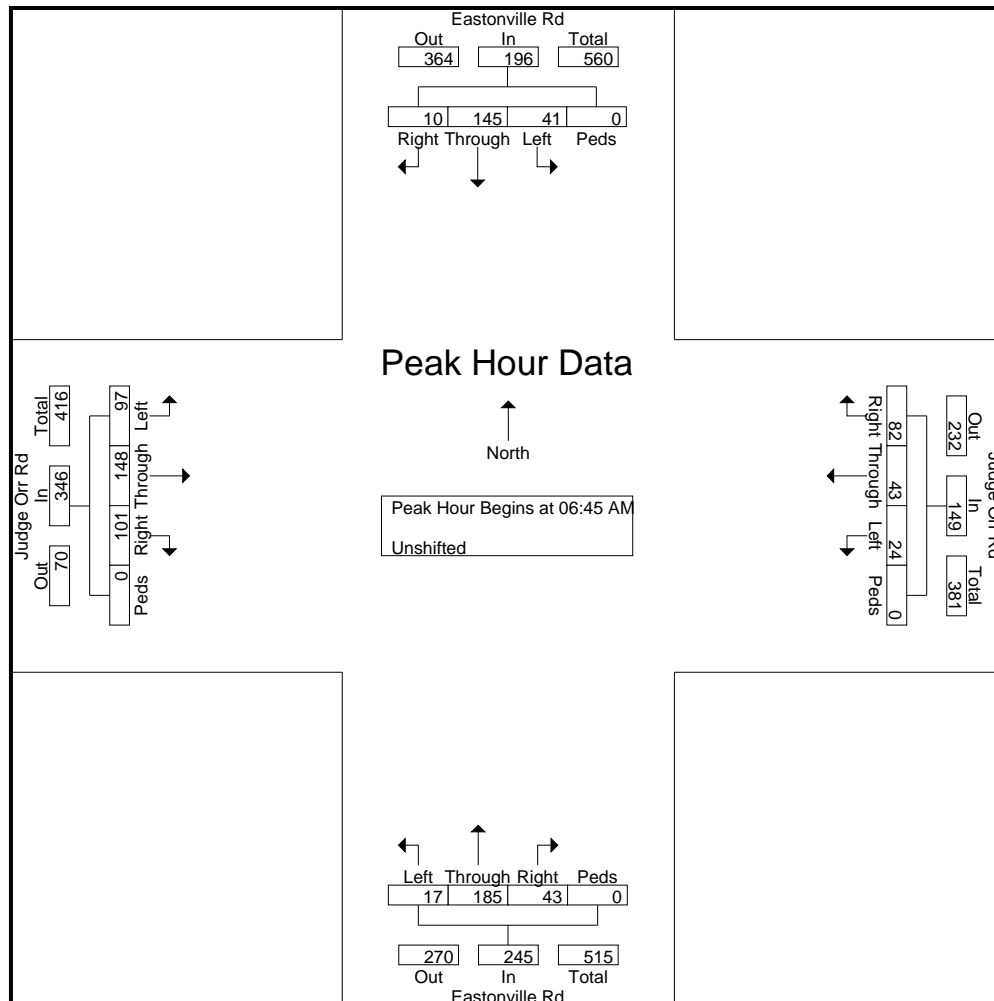
File Name : Eastonville Rd - Judge Orr Rd AM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 2

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	20	25	0	0	45	2	12	10	0	24	2	36	13	0	51	6	43	23	0	72	192
07:00 AM	6	35	1	0	42	6	6	24	0	36	3	63	10	0	76	24	37	21	0	82	236
07:15 AM	7	48	6	0	61	10	9	25	0	44	5	54	14	0	73	47	36	26	0	109	287
07:30 AM	8	37	3	0	48	6	16	23	0	45	7	32	6	0	45	20	32	31	0	83	221
Total Volume	41	145	10	0	196	24	43	82	0	149	17	185	43	0	245	97	148	101	0	346	936
% App. Total	20.9	74	5.1	0		16.1	28.9	55	0		6.9	75.5	17.6	0		28	42.8	29.2	0		
PHF	.513	.755	.417	.000	.803	.600	.672	.820	.000	.828	.607	.734	.768	.000	.806	.516	.860	.815	.000	.794	.815





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

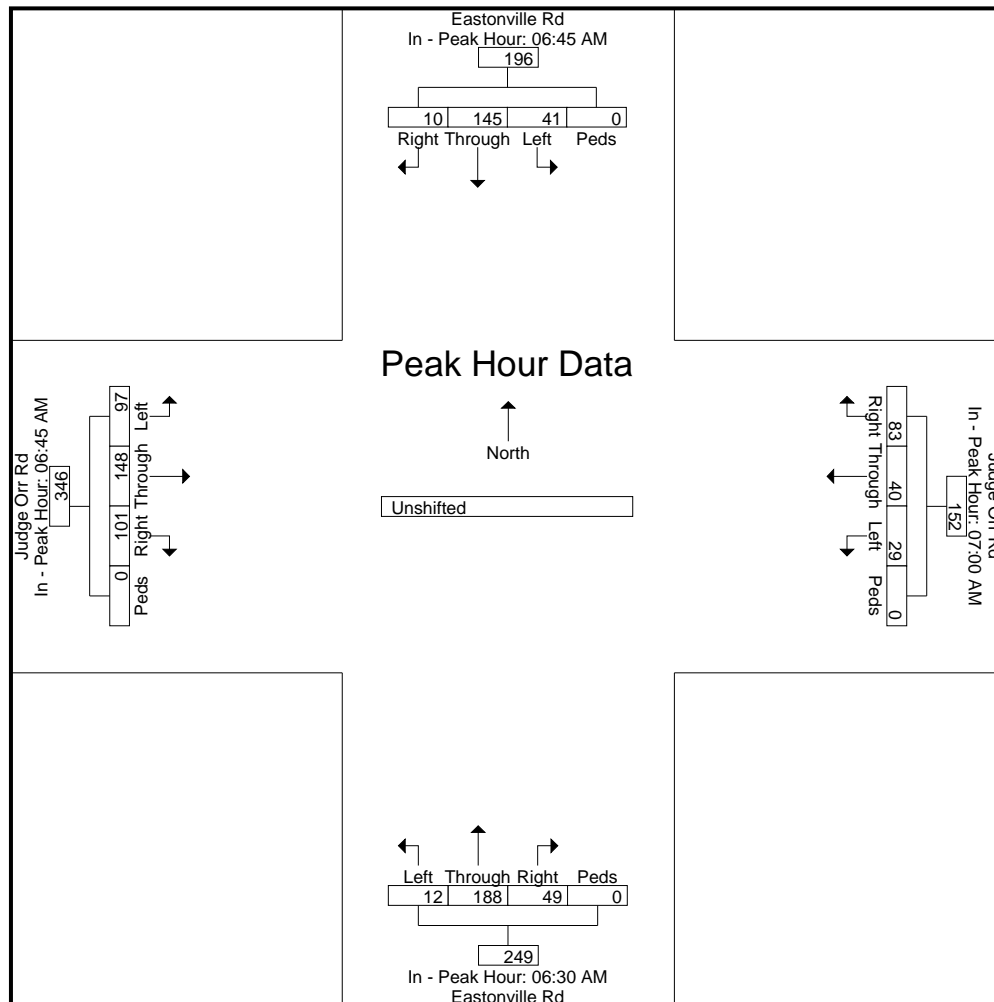
File Name : Eastonville Rd - Judge Orr Rd AM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 3

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1</b>																					
Peak Hour for Each Approach Begins at:																					
	06:45 AM					07:00 AM					06:30 AM					06:45 AM					
+0 mins.	20	25	0	0	45	6	6	24	0	36	2	35	12	0	49	6	43	23	0	72	
+15 mins.	6	35	1	0	42	10	9	25	0	44	2	36	13	0	51	24	37	21	0	82	
+30 mins.	7	48	6	0	61	6	16	23	0	45	3	63	10	0	76	47	36	26	0	109	
+45 mins.	8	37	3	0	48	7	9	11	0	27	5	54	14	0	73	20	32	31	0	83	
Total Volume	41	145	10	0	196	29	40	83	0	152	12	188	49	0	249	97	148	101	0	346	
% App. Total	20.9	74	5.1	0		19.1	26.3	54.6	0		4.8	75.5	19.7	0		28	42.8	29.2	0		
PHF	.513	.755	.417	.000	.803	.725	.625	.830	.000	.844	.600	.746	.875	.000	.819	.516	.860	.815	.000	.794	





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

File Name : Eastonville Rd - Judge Orr Rd PM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 1

## Groups Printed- Unshifted

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
04:00 PM	10	21	1	0	32	11	25	9	0	45	26	30	16	0	72	2	8	26	0	36	185
04:15 PM	5	18	2	0	25	14	26	6	0	46	24	28	11	0	63	3	10	17	0	30	164
04:30 PM	5	22	2	0	29	18	47	12	0	77	32	40	13	0	85	4	12	19	0	35	226
04:45 PM	7	30	2	0	39	14	36	9	0	59	29	28	13	0	70	1	12	26	0	39	207
Total	27	91	7	0	125	57	134	36	0	227	111	126	53	0	290	10	42	88	0	140	782
05:00 PM	4	20	0	0	24	12	33	11	0	56	26	44	8	0	78	1	11	16	0	28	186
05:15 PM	4	21	3	0	28	6	33	7	0	46	32	57	11	0	100	4	11	20	0	35	209
05:30 PM	5	33	2	0	40	5	28	12	0	45	22	44	7	0	73	2	9	14	0	25	183
05:45 PM	8	36	2	0	46	6	24	5	0	35	25	41	11	0	77	1	16	18	0	35	193
Total	21	110	7	0	138	29	118	35	0	182	105	186	37	0	328	8	47	68	0	123	771
Grand Total	48	201	14	0	263	86	252	71	0	409	216	312	90	0	618	18	89	156	0	263	1553
Apprch %	18.3	76.4	5.3	0		21	61.6	17.4	0		35	50.5	14.6	0		6.8	33.8	59.3	0		
Total %	3.1	12.9	0.9	0	16.9	5.5	16.2	4.6	0	26.3	13.9	20.1	5.8	0	39.8	1.2	5.7	10	0	16.9	





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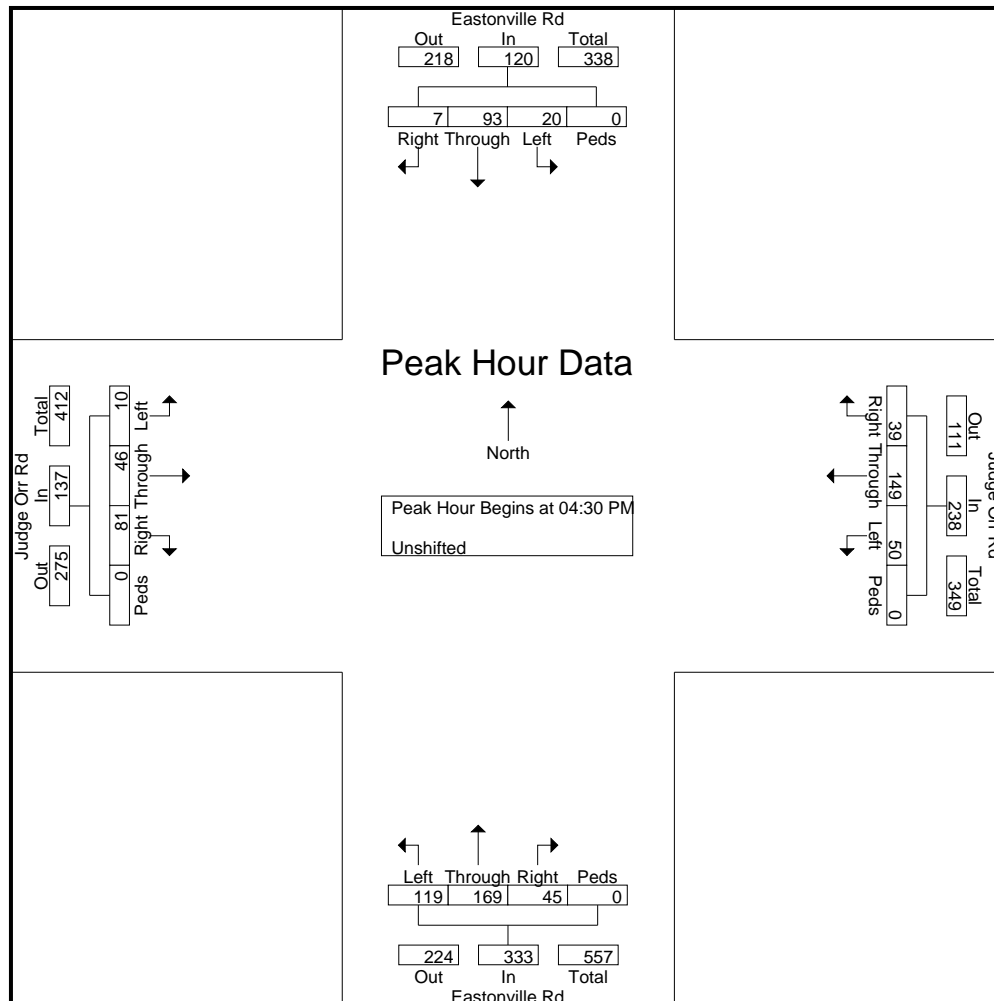
File Name : Eastonville Rd - Judge Orr Rd PM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 2

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	5	22	2	0	29	18	47	12	0	77	32	40	13	0	85	4	12	19	0	35	226
04:45 PM	7	30	2	0	39	14	36	9	0	59	29	28	13	0	70	1	12	26	0	39	207
05:00 PM	4	20	0	0	24	12	33	11	0	56	26	44	8	0	78	1	11	16	0	28	186
05:15 PM	4	21	3	0	28	6	33	7	0	46	32	57	11	0	100	4	11	20	0	35	209
Total Volume	20	93	7	0	120	50	149	39	0	238	119	169	45	0	333	10	46	81	0	137	828
% App. Total	16.7	77.5	5.8	0		21	62.6	16.4	0		35.7	50.8	13.5	0		7.3	33.6	59.1	0		
PHF	.714	.775	.583	.000	.769	.694	.793	.813	.000	.773	.930	.741	.865	.000	.833	.625	.958	.779	.000	.878	.916





# LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210

Colorado Springs, CO 80905

719-633-2868

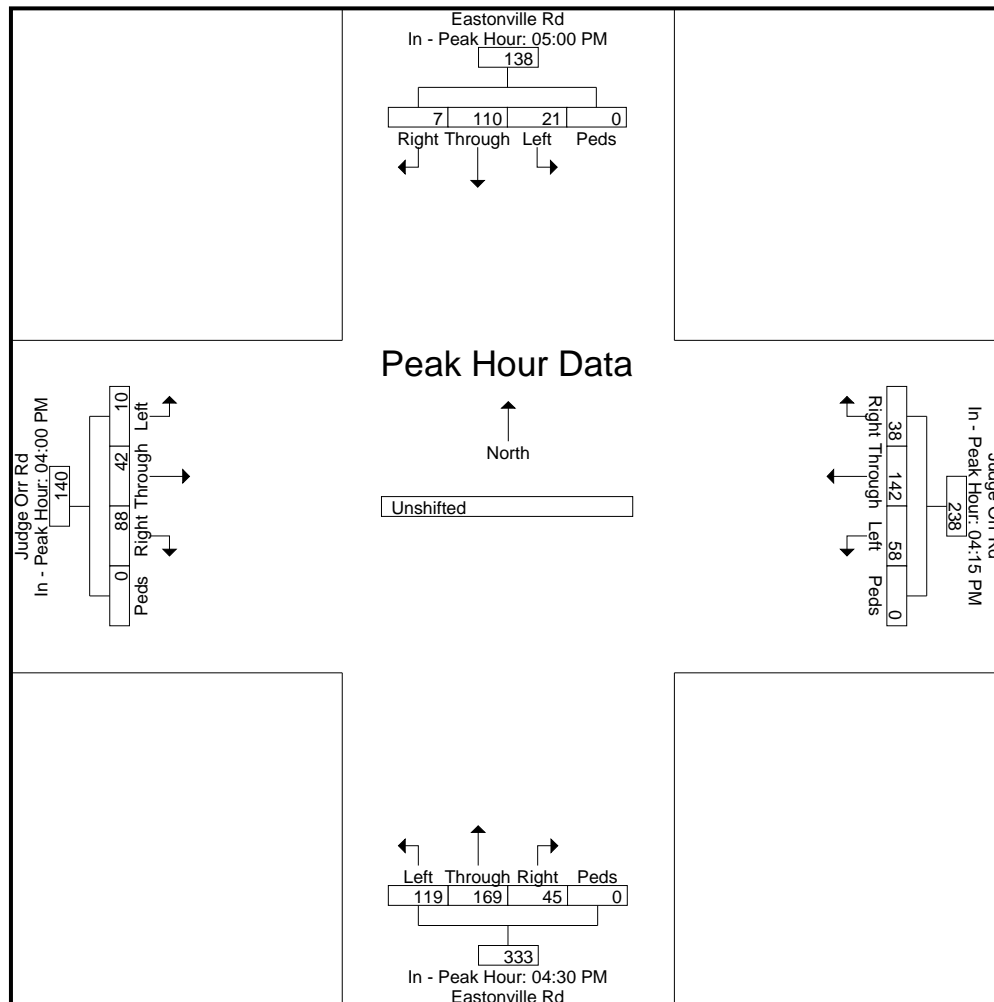
File Name : Eastonville Rd - Judge Orr Rd PM 10-19

Site Code : 194730

Start Date : 10/2/2019

Page No : 3

	Eastonville Rd Southbound					Judge Orr Rd Westbound					Eastonville Rd Northbound					Judge Orr Rd Eastbound					
Start Time	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Left	Through	Right	Peds	App. Total	Int. Total
<b>Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1</b>																					
Peak Hour for Each Approach Begins at:																					
	05:00 PM					04:15 PM					04:30 PM					04:00 PM					
+0 mins.	4	20	0	0	24	14	26	6	0	46	32	40	13	0	85	2	8	26	0	36	
+15 mins.	4	21	3	0	28	18	47	12	0	77	29	28	13	0	70	3	10	17	0	30	
+30 mins.	5	33	2	0	40	14	36	9	0	59	26	44	8	0	78	4	12	19	0	35	
+45 mins.	8	36	2	0	46	12	33	11	0	56	32	57	11	0	100	1	12	26	0	39	
Total Volume	21	110	7	0	138	58	142	38	0	238	119	169	45	0	333	10	42	88	0	140	
% App. Total	15.2	79.7	5.1	0		24.4	59.7	16	0		35.7	50.8	13.5	0		7.1	30	62.9	0		
PHF	.656	.764	.583	.000	.750	.806	.755	.792	.000	.773	.930	.741	.865	.000	.833	.625	.875	.846	.000	.897	



# LSC Transportation Consultants, Inc.

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

File Name : mclaughlin rd - eastonville rd am  
Site Code : 184840  
Start Date : 6/30/2020  
Page No : 1

## Groups Printed- Unshifted

Start Time	McLaughlin Rd Southbound					Eastonville Rd Westbound					McLaughlin Rd Northbound					Eastonville Rd Eastbound					Int. Total
	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	
06:30 AM	0	3	0	0	3	31	15	0	0	46	1	0	5	0	6	0	3	5	0	8	63
06:45 AM	0	3	0	0	3	25	6	0	0	31	1	0	10	0	11	0	8	5	0	13	58
Total	0	6	0	0	6	56	21	0	0	77	2	0	15	0	17	0	11	10	0	21	121
07:00 AM	0	1	0	0	1	41	6	0	0	47	4	0	5	0	9	0	5	4	0	9	66
07:15 AM	0	2	0	0	2	52	9	0	0	61	4	1	8	0	13	0	2	7	0	9	85
07:30 AM	0	1	0	0	1	56	5	0	0	61	4	1	16	0	21	0	5	13	0	18	101
07:45 AM	0	2	0	0	2	42	10	0	0	52	4	2	18	0	24	0	6	9	0	15	93
Total	0	6	0	0	6	191	30	0	0	221	16	4	47	0	67	0	18	33	0	51	345
08:00 AM	0	6	1	0	7	41	12	0	0	53	5	0	15	0	20	0	7	11	0	18	98
08:15 AM	0	1	0	0	1	39	10	0	0	49	3	1	11	0	15	0	10	6	0	16	81
Grand Total	0	19	1	0	20	327	73	0	0	400	26	5	88	0	119	0	46	60	0	106	645
Apprch %	0	95	5	0		81.8	18.2	0	0		21.8	4.2	73.9	0		0	43.4	56.6	0		
Total %	0	2.9	0.2	0	3.1	50.7	11.3	0	0	62	4	0.8	13.6	0	18.4	0	7.1	9.3	0	16.4	



# LSC Transportation Consultants, Inc.

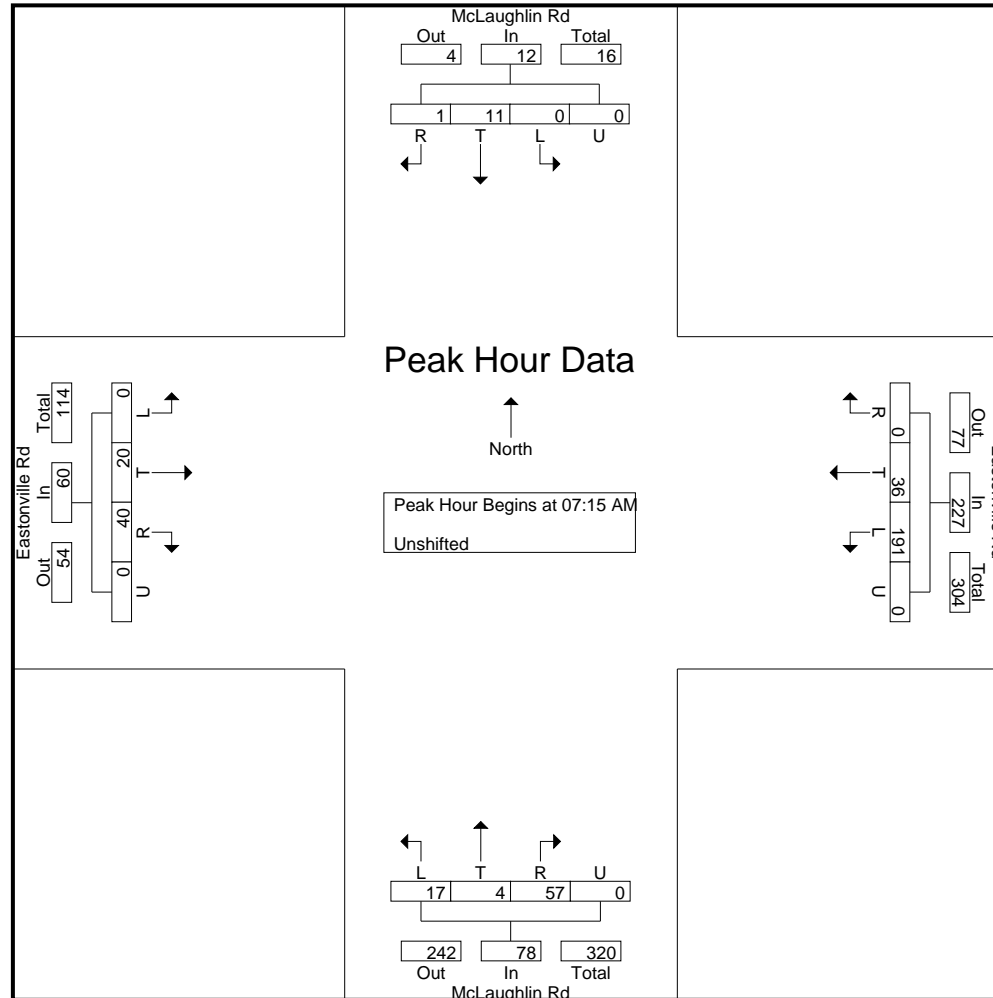
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : mclaughlin rd - eastonville rd am

Site Code : 184840

Start Date : 6/30/2020

Page No : 3



# LSC Transportation Consultants, Inc.

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

File Name : McLaughlin Rd - Eastonville Rd PM  
Site Code : 00184840  
Start Date : 6/30/2020  
Page No : 1

## Groups Printed- Unshifted

	McLaughlin Rd Southbound					Eastonville Rd Westbound					McLaughlin Rd Northbound					Eastonville Rd Eastbound					
Start Time	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	L	T	R	U	App. Total	Int. Total
04:00 PM	0	2	0	0	2	36	9	0	0	45	10	5	40	0	55	1	10	9	0	20	122
04:15 PM	0	1	0	0	1	50	9	0	0	59	11	5	71	0	87	0	24	16	0	40	187
04:30 PM	0	0	0	0	0	49	8	0	0	57	14	7	69	0	90	2	16	13	0	31	178
04:45 PM	0	1	0	0	1	59	12	1	0	72	13	5	67	0	85	1	26	16	0	43	201
Total	0	4	0	0	4	194	38	1	0	233	48	22	247	0	317	4	76	54	0	134	688
05:00 PM	0	5	0	0	5	47	11	0	0	58	20	2	82	0	104	2	30	17	0	49	216
05:15 PM	0	0	1	0	1	54	7	0	0	61	14	5	84	0	103	1	26	14	0	41	206
05:30 PM	0	2	0	0	2	75	9	0	0	84	22	4	87	0	113	4	37	21	0	62	261
05:45 PM	0	0	0	0	0	47	17	0	0	64	18	9	88	0	115	1	37	13	0	51	230
Total	0	7	1	0	8	223	44	0	0	267	74	20	341	0	435	8	130	65	0	203	913
Grand Total	0	11	1	0	12	417	82	1	0	500	122	42	588	0	752	12	206	119	0	337	1601
Apprch %	0	91.7	8.3	0		83.4	16.4	0.2	0		16.2	5.6	78.2	0		3.6	61.1	35.3	0		
Total %	0	0.7	0.1	0	0.7	26	5.1	0.1	0	31.2	7.6	2.6	36.7	0	47	0.7	12.9	7.4	0	21	

# LSC Transportation Consultants, Inc.

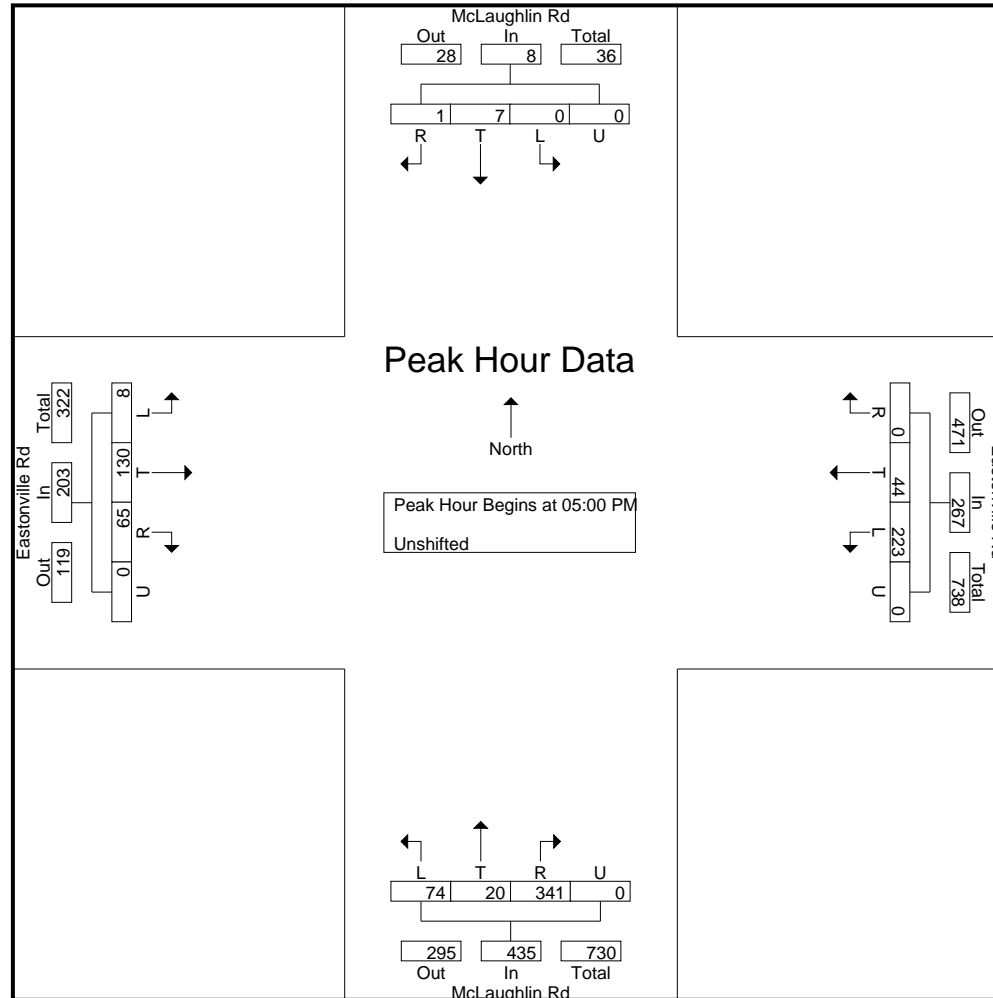
545 E Pikes Peak Ave, Suite 210  
Colorado Springs, CO 80905  
719-633-2868

File Name : McLaughlin Rd - Eastonville Rd PM

Site Code : 00184840

Start Date : 6/30/2020

Page No : 3



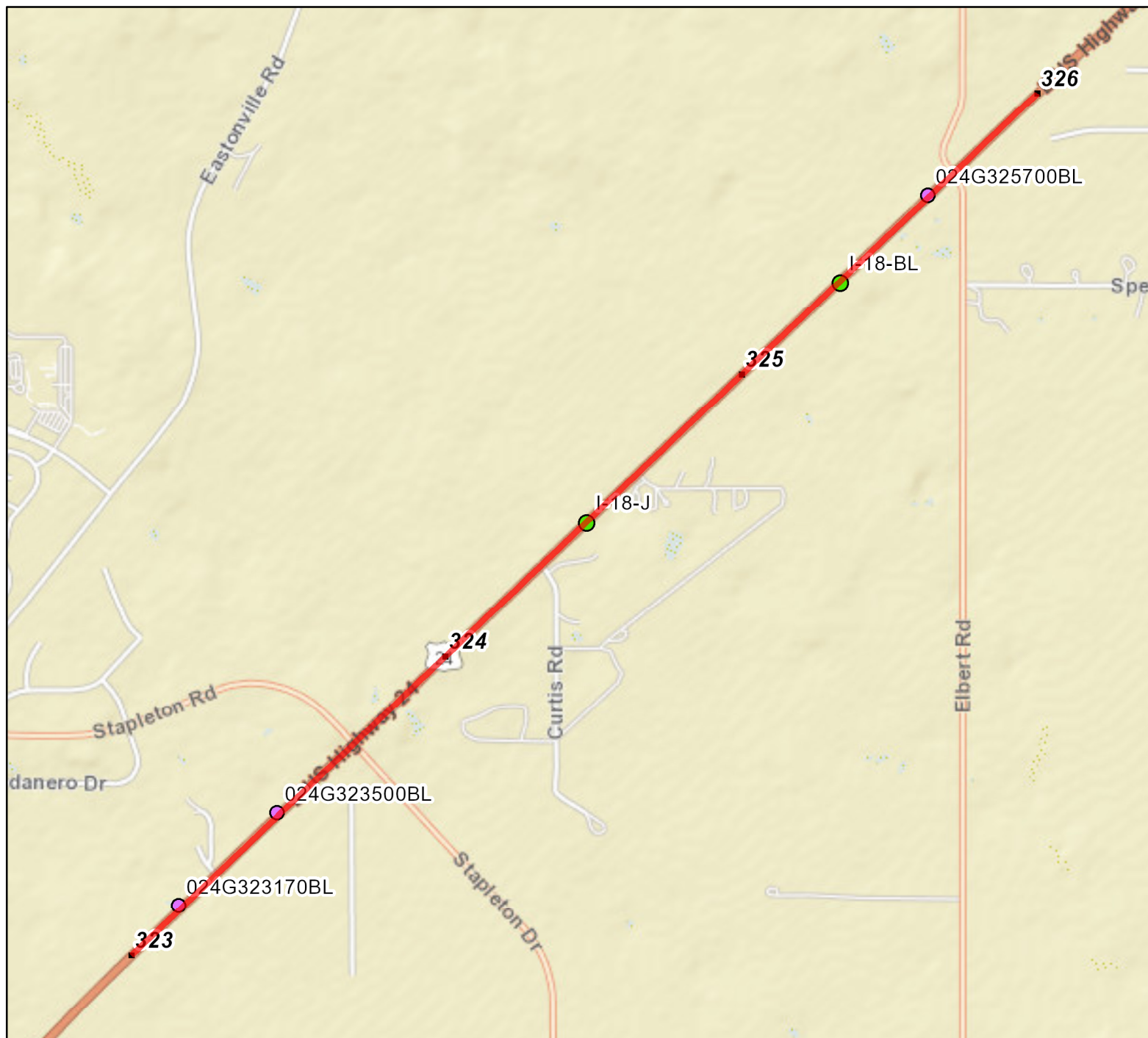
# Colorado Department of Transportation Straight Line Diagram

---





# Route 024G From 323 to 326



## Legend

Route

Milepoint

## Structures

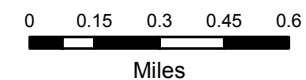
Major Structure

Minor Structure

Created:

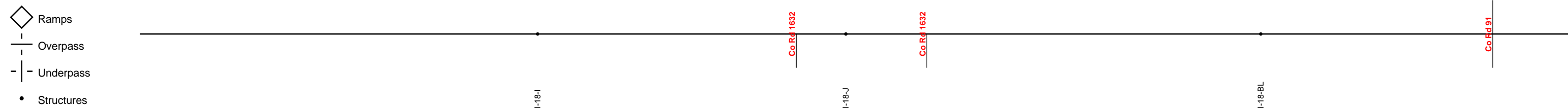
Date: 7/8/2020

Time: 10:19:02 AM



The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".

Route 024G  
From 323 To 326



## CLASSIFICATION

Access Control	E-X: Expressway, Major Bypass
----------------	-------------------------------

## SAFETY

Primary Speed Limit	65	35
---------------------	----	----

## TRAFFIC

AADT	11000	8000
DHV	11.0	
Off Peak Truck Percentage	4.70	7.40
Peak Truck Percentage	0.39	0.44
Year 20 Factor	1.45	1.33





It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

# Levels of Service

---

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

Existing Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	8.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	255	358	5	11	21
Future Vol, veh/h	6	255	358	5	11	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	68	68	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	345	526	7	16	31
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1091	32	47	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	1059	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	238	1042	1560	-	-	-
Stage 1	991	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	1042	1560	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	333	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.6	8.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1560	-	157	1042	-	-
HCM Lane V/C Ratio	0.337	-	0.052	0.331	-	-
HCM Control Delay (s)	8.5	0	29.2	10.2	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	1.5	-	0.2	1.5	-	-



HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr













Existing Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	24.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	38	71	14	5	43	90	18	253	8	110	131	24
Future Vol, veh/h	38	71	14	5	43	90	18	253	8	110	131	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	71	71	71	60	60	60	79	76	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	108	21	7	61	127	30	422	13	139	172	30

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1048	960	187	1019	969	429	202	0	0	435	0	0
Stage 1	465	465	-	489	489	-	-	-	-	-	-	-
Stage 2	583	495	-	530	480	-	-	-	-	-	-	-
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	206	257	855	215	254	626	1370	-	-	1125	-	-
Stage 1	578	563	-	561	549	-	-	-	-	-	-	-
Stage 2	498	546	-	533	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	113	215	855	112	212	626	1370	-	-	1125	-	-
Mov Cap-2 Maneuver	113	215	-	112	212	-	-	-	-	-	-	-
Stage 1	561	484	-	545	533	-	-	-	-	-	-	-
Stage 2	342	530	-	348	476	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	129.8		19.5		0.5		3.5	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1370	-	-	180 194 626	1125	-	-
HCM Lane V/C Ratio	0.022	-	-	1.035 0.348 0.202	0.124	-	-
HCM Control Delay (s)	7.7	0	-	129.8 33.2 12.2	8.7	0	-
HCM Lane LOS	A	A	-	F D B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.8 1.5 0.8	0.4	-	-

Intersection												
Int Delay, s/veh	13.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	129	121	2	87	12	70	224	1	29	502	36
Future Vol, veh/h	36	129	121	2	87	12	70	224	1	29	502	36
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	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	94	94	94	78	78	78	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	148	139	2	93	13	90	287	1	32	546	39

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1131	1078	546	1240	1116	287	585	0	0	288	0	0
Stage 1	610	610	-	467	467	-	-	-	-	-	-	-
Stage 2	521	468	-	773	649	-	-	-	-	-	-	-
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	181	219	538	152	208	752	990	-	-	1274	-	-
Stage 1	482	485	-	576	562	-	-	-	-	-	-	-
Stage 2	539	561	-	392	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	99	194	538	39	184	752	990	-	-	1274	-	-
Mov Cap-2 Maneuver	99	194	-	39	184	-	-	-	-	-	-	-
Stage 1	438	473	-	524	511	-	-	-	-	-	-	-
Stage 2	394	510	-	195	454	-	-	-	-	-	-	-










Approach	EB		WB		NB		SB	
HCM Control Delay, s	44.1		40.2		2.1		0.4	
HCM LOS	E		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	990	-	-	99	194	538	39	184	752	1274	-	-
HCM Lane V/C Ratio	0.091	-	-	0.418	0.764	0.259	0.055	0.503	0.017	0.025	-	-
HCM Control Delay (s)	9	-	-	65.3	66.4	14	102.6	42.9	9.9	7.9	-	-
HCM Lane LOS	A	-	-	F	F	B	F	E	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1.7	5.1	1	0.2	2.5	0.1	0.1	-	-

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Existing Traffic  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	148	101	24	43	82	17	185	43	41	145	10
Future Vol, veh/h	97	148	101	24	43	82	17	185	43	41	145	10
Peak Hour Factor	0.79	0.79	0.79	0.85	0.85	0.85	0.84	0.84	0.84	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	187	128	28	51	96	20	220	51	51	181	13
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	18	11.7	18.5	14.8
HCM LOS	C	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	81%	0%	59%	0%	100%	0%	0%	94%
Vol Right, %	0%	19%	0%	41%	0%	0%	100%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	17	228	97	249	24	43	82	41	155
LT Vol	17	0	97	0	24	0	0	41	0
Through Vol	0	185	0	148	0	43	0	0	145
RT Vol	0	43	0	101	0	0	82	0	10
Lane Flow Rate	20	271	123	315	28	51	96	51	194
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.045	0.555	0.264	0.607	0.066	0.112	0.194	0.116	0.409
Departure Headway (Hd)	8.008	7.365	7.738	6.936	8.461	7.948	7.229	8.155	7.6
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	447	489	464	520	423	450	495	439	473
Service Time	5.766	5.123	5.492	4.69	6.228	5.715	4.996	5.916	5.361
HCM Lane V/C Ratio	0.045	0.554	0.265	0.606	0.066	0.113	0.194	0.116	0.41
HCM Control Delay	11.1	19	13.3	19.9	11.8	11.7	11.7	12	15.6
HCM Lane LOS	B	C	B	C	B	B	B	B	C
HCM 95th-tile Q	0.1	3.3	1.1	4	0.2	0.4	0.7	0.4	2

HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

Existing Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	20	40	191	36	0	17	4	57	0	11	1
Future Vol, veh/h	0	20	40	191	36	0	17	4	57	0	11	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	93	93	93	93	93	93	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	48	205	39	0	18	4	61	0	14	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	39	0	0	72	0	0	505	497	48	530	521	39
Stage 1	-	-	-	-	-	-	48	48	-	449	449	-
Stage 2	-	-	-	-	-	-	457	449	-	81	72	-
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	1571	-	-	1528	-	-	478	475	1021	460	460	1033
Stage 1	-	-	-	-	-	-	965	855	-	589	572	-
Stage 2	-	-	-	-	-	-	583	572	-	927	835	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1571	-	-	1528	-	-	417	411	1021	385	398	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	417	411	-	385	398	-
Stage 1	-	-	-	-	-	-	965	855	-	589	495	-
Stage 2	-	-	-	-	-	-	490	495	-	867	835	-





Approach	EB	WB	NB	SB
HCM Control Delay, s	0	6.5	10.2	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	417	930	1571	-	-	1528	-	-	419
HCM Lane V/C Ratio	0.044	0.071	-	-	-	0.134	-	-	0.037
HCM Control Delay (s)	14	9.2	0	-	-	7.7	-	-	13.9
HCM Lane LOS	B	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.2	0	-	-	0.5	-	-	0.1








HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr













Existing Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	7.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	128	197	22	15	2
Future Vol, veh/h	3	128	197	22	15	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	62	62	94	94	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	206	210	23	18	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	462	19	20	0	-	0
Stage 1	19	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	558	1059	1596	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	484	1059	1596	-	-	-
Mov Cap-2 Maneuver	484	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.3	6.8		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1596	-	484	1059	-	-
HCM Lane V/C Ratio	0.131	-	0.01	0.195	-	-
HCM Control Delay (s)	7.6	0	12.5	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	0	0.7	-	-

HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr

Existing Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	46	3	9	114	92	7	94	8	38	56	10
Future Vol, veh/h	21	46	3	9	114	92	7	94	8	38	56	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	87	87	87	68	68	68	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	55	4	10	131	106	10	138	12	46	67	12
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	448	335	73	359	335	144	79	0	0	150	0	0
Stage 1	165	165	-	164	164	-	-	-	-	-	-	-
Stage 2	283	170	-	195	171	-	-	-	-	-	-	-
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	521	585	989	596	585	903	1519	-	-	1431	-	-
Stage 1	837	762	-	838	762	-	-	-	-	-	-	-
Stage 2	724	758	-	807	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	366	561	989	532	561	903	1519	-	-	1431	-	-
Mov Cap-2 Maneuver	366	561	-	532	561	-	-	-	-	-	-	-
Stage 1	831	736	-	832	757	-	-	-	-	-	-	-
Stage 2	525	753	-	718	731	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	13.8		11.8		0.5		2.8					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1519	-	-	492 559 903	1431	-	-					
HCM Lane V/C Ratio	0.007	-	-	0.171 0.253 0.117	0.032	-	-					
HCM Control Delay (s)	7.4	0	-	13.8 13.6 9.5	7.6	0	-					
HCM Lane LOS	A	A	-	B B A	A	A	-					
HCM 95th %tile Q(veh)	0	-	-	0.6 1 0.4	0.1	-	-					

Intersection												
Int Delay, s/veh	8.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	40	50	4	97	27	99	478	21	8	304	22
Future Vol, veh/h	17	40	50	4	97	27	99	478	21	8	304	22
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	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	48	60	5	117	33	106	514	23	9	358	26

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1189	1125	358	1169	1128	514	384	0	0	537	0	0
Stage 1	376	376	-	726	726	-	-	-	-	-	-	-
Stage 2	813	749	-	443	402	-	-	-	-	-	-	-
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	165	205	686	170	204	560	1174	-	-	1031	-	-
Stage 1	645	616	-	416	430	-	-	-	-	-	-	-
Stage 2	372	419	-	594	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	71	185	686	115	184	560	1174	-	-	1031	-	-
Mov Cap-2 Maneuver	71	185	-	115	184	-	-	-	-	-	-	-
Stage 1	587	610	-	379	391	-	-	-	-	-	-	-
Stage 2	223	381	-	495	595	-	-	-	-	-	-	-










Approach	EB		WB		NB		SB	
HCM Control Delay, s	28.6		44.2		1.4		0.2	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1174	-	-	71	185	686	115	184	560	1031	-	-
HCM Lane V/C Ratio	0.091	-	-	0.288	0.261	0.088	0.042	0.635	0.058	0.009	-	-
HCM Control Delay (s)	8.4	-	-	75.1	31.2	10.8	37.7	53.5	11.8	8.5	-	-
HCM Lane LOS	A	-	-	F	D	B	E	F	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	1	1	0.3	0.1	3.6	0.2	0	-	-

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Existing Traffic  
PM Peak Hour

Intersection												
Intersection Delay, s/veh	12.7											
Intersection LOS	B											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	46	81	50	149	39	119	169	45	20	93	7
Future Vol, veh/h	10	46	81	50	149	39	119	169	45	20	93	7
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.87	0.87	0.87	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	55	98	64	191	50	137	194	52	24	112	8
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0








Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	12.1	12.3	13.5	11.9
HCM LOS	B	B	B	B







Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	79%	0%	36%	0%	100%	0%	0%	93%
Vol Right, %	0%	21%	0%	64%	0%	0%	100%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	214	10	127	50	149	39	20	100
LT Vol	119	0	10	0	50	0	0	20	0
Through Vol	0	169	0	46	0	149	0	0	93
RT Vol	0	45	0	81	0	0	39	0	7
Lane Flow Rate	137	246	12	153	64	191	50	24	120
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.268	0.437	0.026	0.289	0.13	0.36	0.084	0.051	0.24
Departure Headway (Hd)	7.048	6.395	7.764	6.797	7.401	6.893	6.181	7.73	7.163
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	558	464	532	487	525	583	466	504
Service Time	4.842	4.189	5.464	4.497	5.101	4.593	3.881	5.43	4.873
HCM Lane V/C Ratio	0.271	0.441	0.026	0.288	0.131	0.364	0.086	0.052	0.238
HCM Control Delay	12.4	14.1	10.7	12.2	11.2	13.4	9.4	10.8	12.1
HCM Lane LOS	B	B	B	B	B	B	A	B	B
HCM 95th-tile Q	1.1	2.2	0.1	1.2	0.4	1.6	0.3	0.2	0.9









HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

Existing Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	10											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	130	65	223	44	0	74	20	341	0	7	1
Future Vol, veh/h	8	130	65	223	44	0	74	20	341	0	7	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	79	79	79	96	96	96	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	159	79	282	56	0	77	21	355	0	9	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	238	0	0	844	839	199	1027	878	56
Stage 1	-	-	-	-	-	-	219	219	-	620	620	-
Stage 2	-	-	-	-	-	-	625	620	-	407	258	-
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	1549	-	-	1329	-	-	283	302	842	213	287	1011
Stage 1	-	-	-	-	-	-	783	722	-	476	480	-
Stage 2	-	-	-	-	-	-	473	480	-	621	694	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1549	-	-	1329	-	-	228	236	842	96	225	1011
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	236	-	96	225	-
Stage 1	-	-	-	-	-	-	778	718	-	473	378	-
Stage 2	-	-	-	-	-	-	363	378	-	346	690	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			7			17.2			20.1		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	228		737	1549	-	-	1329	-	-	249		
HCM Lane V/C Ratio	0.338		0.51	0.006	-	-	0.212	-	-	0.041		
HCM Control Delay (s)	28.6		14.9	7.3	-	-	8.4	-	-	20.1		
HCM Lane LOS	D		B	A	-	-	A	-	-	C		
HCM 95th %tile Q(veh)	1.4		2.9	0	-	-	0.8	-	-	0.1		

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	1	11	10	2	41
Future Vol, veh/h	10	1	11	10	2	41
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	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	1	13	12	2	48
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	65	13	0	0	25	0
Stage 1	13	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	941	1067	-	-	1589	-
Stage 1	1010	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	940	1067	-	-	1589	-
Mov Cap-2 Maneuver	940	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.9	0	0.3			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 940 1067 1589	-	-		
HCM Lane V/C Ratio	-	- 0.013 0.001 0.001	-	-		
HCM Control Delay (s)	-	- 8.9 8.4 7.3	-	-		
HCM Lane LOS	-	- A A A	-	-		
HCM 95th %tile Q(veh)	-	- 0 0 0	-	-		

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	2	1	346	696	10
Future Vol, veh/h	10	2	1	346	696	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	100	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	78	92	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	2	1	444	757	12







Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1203	- 769	0 - 0
Stage 1	757	- -	- - -
Stage 2	446	- -	- - -
Critical Hdwy	6.42	- 4.12	- - -
Critical Hdwy Stg 1	5.42	- -	- - -
Critical Hdwy Stg 2	5.42	- -	- - -
Follow-up Hdwy	3.518	- 2.218	- - -
Pot Cap-1 Maneuver	204	0 845	- - -
Stage 1	463	0 -	- - -
Stage 2	645	0 -	- - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	204	- 845	- - -
Mov Cap-2 Maneuver	335	- -	- - -
Stage 1	463	- -	- - -
Stage 2	645	- -	- - -

Approach	EB	NB	SB
HCM Control Delay, s	16.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	845	-	335	-	-	-
HCM Lane V/C Ratio	0.001	-	0.035	-	-	-
HCM Control Delay (s)	9.3	-	16.1	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr









Short-Term Background Traffic  
AM Peak Hour













Intersection						
Int Delay, s/veh	10.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	443	441	9	22	58
Future Vol, veh/h	22	443	441	9	22	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	400	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	68	85	85	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	599	649	11	26	87
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1335	26	113	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	1309	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	169	1050	1476	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	95	1050	1476	-	-	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	558	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.6	9.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1476	-	194	1050	-	-
HCM Lane V/C Ratio	0.439	-	0.153	0.57	-	-
HCM Control Delay (s)	9.3	-	26.9	12.9	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	2.3	-	0.5	3.7	-	-



HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr

Short-Term Background Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	260	123	37	157	112	45	332	17	209	230	26
Future Vol, veh/h	6	260	123	37	157	112	45	332	17	209	230	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	0	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	306	145	44	185	132	53	391	20	246	271	31
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1445	1296	287	1511	1301	401	302	0	0	411	0	0
Stage 1	779	779	-	507	507	-	-	-	-	-	-	-
Stage 2	666	517	-	1004	794	-	-	-	-	-	-	-
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	110	~ 162	752	99	~ 161	649	1259	-	-	1148	-	-
Stage 1	389	406	-	548	539	-	-	-	-	-	-	-
Stage 2	449	534	-	291	400	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 122	752	-	~ 121	649	1259	-	-	1148	-	-
Mov Cap-2 Maneuver	-	~ 122	-	-	~ 121	-	-	-	-	-	-	-
Stage 1	373	319	-	525	516	-	-	-	-	-	-	-
Stage 2	220	512	-	~ 8	314	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s							0.9		4			
HCM LOS	-		-									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1259	-	-	-	-	649	1148	-	-			
HCM Lane V/C Ratio	0.042	-	-	-	-	0.203	0.214	-	-			
HCM Control Delay (s)	8	-	-	-	-	12	9	-	-			
HCM Lane LOS	A	-	-	-	-	B	A	-	-			
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.8	0.8	-	-			
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	58	157	398	2	106	15	145	275	1	35	625	41
Future Vol, veh/h	58	157	398	2	106	15	145	275	1	35	625	41
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	94	94	94	78	78	78	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	180	457	2	113	16	186	353	1	38	679	45

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1537	1481	-	1593	1525	-	724	0	0	354	0	0
Stage 1	755	755	-	725	725	-	-	-	-	-	-	-
Stage 2	782	726	-	868	800	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	95 ~ 125	0	86	118	0	879	-	-	1205	-	-	-
Stage 1	401	417	0	416	430	0	-	-	-	-	-	-
Stage 2	387	430	0	347	397	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	- ~ 95	-	- ~ 90	-	879	-	-	-	1205	-	-	-
Mov Cap-2 Maneuver	- ~ 95	-	- ~ 90	-	-	-	-	-	-	-	-	-
Stage 1	316	404	-	328	339	-	-	-	-	-	-	-
Stage 2	204	339	-	186	384	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			3.5	0.4
HCM LOS	-	-		










Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	879	-	-	-	95	-	-	90	-	1205	-	-
HCM Lane V/C Ratio	0.211	-	-	-	1.9	-	-	1.253	-	0.032	-	-
HCM Control Delay (s)	10.2	-	-	-	\$ 516.2	0	-	262.5	0	8.1	-	-
HCM Lane LOS	B	-	-	-	F	A	-	F	A	A	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-	15.1	-	-	8.1	-	0.1	-	-

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

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd








Short-Term Background Traffic  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	75.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	101	155	106	29	45	98	18	280	51	49	377	10
Future Vol, veh/h	101	155	106	29	45	98	18	280	51	49	377	10
Peak Hour Factor	0.79	0.79	0.79	0.85	0.85	0.85	0.84	0.84	0.84	0.80	0.80	0.80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	128	196	134	34	53	115	21	333	61	61	471	13
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	35.5	16.5	70	136.5
HCM LOS	E	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	85%	0%	59%	0%	100%	0%	0%	97%
Vol Right, %	0%	15%	0%	41%	0%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	331	101	261	29	45	98	49	387
LT Vol	18	0	101	0	29	0	0	49	0
Through Vol	0	280	0	155	0	45	0	0	377
RT Vol	0	51	0	106	0	0	98	0	10
Lane Flow Rate	21	394	128	330	34	53	115	61	484
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.057	0.981	0.341	0.809	0.101	0.149	0.302	0.165	1.231
Departure Headway (Hd)	10.199	9.567	10.338	9.513	11.443	10.915	10.175	9.7	9.164
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	353	382	350	383	315	330	355	372	402
Service Time	7.899	7.267	8.038	7.213	9.143	8.615	7.875	7.4	6.864
HCM Lane V/C Ratio	0.059	1.031	0.366	0.862	0.108	0.161	0.324	0.164	1.204
HCM Control Delay	13.5	73.1	18.3	42.1	15.4	15.5	17.2	14.3	152
HCM Lane LOS	B	F	C	E	C	C	C	B	F
HCM 95th-tile Q	0.2	11.3	1.5	7.1	0.3	0.5	1.2	0.6	20.3

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	105	42	240	229	0	18	4	76	0	11	1
Future Vol, veh/h	0	105	42	240	229	0	18	4	76	0	11	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	93	93	93	93	93	93	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	127	51	258	246	0	19	4	82	0	14	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	246	0	0	178	0	0	923	915	153	958	940	246
Stage 1	-	-	-	-	-	-	153	153	-	762	762	-
Stage 2	-	-	-	-	-	-	770	762	-	196	178	-
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	1320	-	-	1398	-	-	250	273	893	237	264	793
Stage 1	-	-	-	-	-	-	849	771	-	397	414	-
Stage 2	-	-	-	-	-	-	393	414	-	806	752	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1320	-	-	1398	-	-	204	222	893	182	215	793
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	222	-	182	215	-
Stage 1	-	-	-	-	-	-	849	771	-	397	337	-
Stage 2	-	-	-	-	-	-	307	337	-	728	752	-







  

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			4.2			12.8			21.9		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	204	776	1320	-	-	1398	-	-	229
HCM Lane V/C Ratio	0.095	0.111	-	-	-	0.185	-	-	0.067
HCM Control Delay (s)	24.5	10.2	0	-	-	8.2	-	-	21.9
HCM Lane LOS	C	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.4	0	-	-	0.7	-	-	0.2









Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	28	6	1	24
Future Vol, veh/h	6	2	28	6	1	24
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	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	33	7	1	28

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	63	33	0	0	40	0
Stage 1	33	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	943	1041	-	-	1570	-
Stage 1	989	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	942	1041	-	-	1570	-
Mov Cap-2 Maneuver	942	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	992	-	-	-	-	-







Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT
Capacity (veh/h)	-	- 942 1041 1570	-	-
HCM Lane V/C Ratio	-	- 0.007 0.002 0.001	-	-
HCM Control Delay (s)	-	- 8.9 8.5 7.3	-	-
HCM Lane LOS	-	- A A A	-	-
HCM 95th %tile Q(veh)	-	- 0 0 0	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	1	2	634	496	6
Future Vol, veh/h	6	1	2	634	496	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	100	0	800	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	93	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	1	2	682	584	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1270	-	591	0	-	0
Stage 1	584	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	186	0	985	-	-	-
Stage 1	557	0	-	-	-	-
Stage 2	500	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	186	-	985	-	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.3	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	985	-	325	-	-	-
HCM Lane V/C Ratio	0.002	-	0.022	-	-	-
HCM Control Delay (s)	8.7	-	16.3	0	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-	-

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

Short-Term Background Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	9.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	257	451	34	22	30
Future Vol, veh/h	39	257	451	34	22	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	400	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	62	62	94	94	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	415	480	36	26	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1022	26	61	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	996	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	261	1050	1542	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	180	1050	1542	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	687	-	-	-	-	-
Stage 2	357	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12	7.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1542	-	284	1050	-	-
HCM Lane V/C Ratio	0.311	-	0.221	0.395	-	-
HCM Control Delay (s)	8.4	-	21.2	10.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	1.3	-	0.8	1.9	-	-

HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr

Short-Term Background Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Vol, veh/h	18	199	82	32	341	250	130	217	53	112	145	22
Future Vol, veh/h	18	199	82	32	341	250	130	217	53	112	145	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	0	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	234	96	38	401	294	153	255	62	132	171	26

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1388	1071	184	1205	1053	286	197	0	0	317	0	0
Stage 1	448	448	-	592	592	-	-	-	-	-	-	-
Stage 2	940	623	-	613	461	-	-	-	-	-	-	-
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	120	~ 221	858	161	~ 226	753	1376	-	-	1243	-	-
Stage 1	590	573	-	493	494	-	-	-	-	-	-	-
Stage 2	316	478	-	480	565	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 176	858	-	~ 180	753	1376	-	-	1243	-	-
Mov Cap-2 Maneuver	-	~ 176	-	-	~ 180	-	-	-	-	-	-	-
Stage 1	525	512	-	438	439	-	-	-	-	-	-	-
Stage 2	~ 15	425	-	207	505	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2.6	3.3
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1376	-	-	-	753	1243	-
HCM Lane V/C Ratio	0.111	-	-	-	0.391	0.106	-
HCM Control Delay (s)	7.9	-	-	-	12.8	8.2	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.4	-	-	-	1.9	0.4	-

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



Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Vol, veh/h	31	49	311	5	118	33	511	575	26	10	375	117
Future Vol, veh/h	31	49	311	5	118	33	511	575	26	10	375	117
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	59	375	6	142	40	549	618	28	12	441	138

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2266	2209	-	2280	2319	-	579	0	0	646	0	0
Stage 1	465	465	-	1716	1716	-	-	-	-	-	-	-
Stage 2	1801	1744	-	564	603	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 29	~ 44	0	28	~ 38	0	995	-	-	939	-	-
Stage 1	578	563	0	114	145	0	-	-	-	-	-	-
Stage 2	102	140	0	510	488	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 19	-	-	~ 17	-	995	-	-	939	-	-
Mov Cap-2 Maneuver	-	~ 19	-	-	~ 17	-	-	-	-	-	-	-
Stage 1	259	556	-	51	~ 65	-	-	-	-	-	-	-
Stage 2	-	63	-	450	482	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			6	0.2
HCM LOS	-	-		










Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	995	-	-	-	19	-	-	17	-	939	-	-
HCM Lane V/C Ratio	0.552	-	-	-	3.107	-	-	8.363	-	0.013	-	-
HCM Control Delay (s)	13	-	-	\$ 1368.4	0	\$ 3755.3	0	8.9	-	-	-	-
HCM Lane LOS	B	-	-	F	A	-	F	A	A	-	-	-
HCM 95th %tile Q(veh)	3.5	-	-	-	7.8	-	-	18.5	-	0	-	-

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

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Background Traffic  
PM Peak Hour

Intersection	
Intersection Delay, s/veh	80.9
Intersection LOS	F








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	48	75	60	156	49	124	455	54	24	280	7
Future Vol, veh/h	10	48	75	60	156	49	124	455	54	24	280	7
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.87	0.87	0.87	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	58	90	77	200	63	143	523	62	29	337	8
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	17.8	18.2	145.5	39.2
HCM LOS	C	C	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	89%	0%	39%	0%	100%	0%	0%	98%
Vol Right, %	0%	11%	0%	61%	0%	0%	100%	0%	2%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	509	10	123	60	156	49	24	287
LT Vol	124	0	10	0	60	0	0	24	0
Through Vol	0	455	0	48	0	156	0	0	280
RT Vol	0	54	0	75	0	0	49	0	7
Lane Flow Rate	143	585	12	148	77	200	63	29	346
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.341	1.306	0.033	0.371	0.2	0.491	0.142	0.072	0.816
Departure Headway (Hd)	8.622	8.034	10.765	9.789	10.041	9.52	8.791	9.61	9.077
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	418	456	335	370	360	382	410	375	401
Service Time	6.372	5.783	8.465	7.489	7.741	7.22	6.491	7.31	6.777
HCM Lane V/C Ratio	0.342	1.283	0.036	0.4	0.214	0.524	0.154	0.077	0.863
HCM Control Delay	15.8	177.1	13.8	18.1	15.2	21.1	12.9	13.1	41.4
HCM Lane LOS	C	F	B	C	C	C	B	B	E
HCM 95th-tile Q	1.5	25.6	0.1	1.7	0.7	2.6	0.5	0.2	7.4







HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

Short-Term Background Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	24.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	304	68	262	384	0	77	21	402	0	7	1
Future Vol, veh/h	8	304	68	262	384	0	77	21	402	0	7	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	96	96	96	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	358	80	308	452	0	80	22	419	0	9	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	452	0	0	438	0	0	1489	1484	398	1705	1524	452
Stage 1	-	-	-	-	-	-	416	416	-	1068	1068	-
Stage 2	-	-	-	-	-	-	1073	1068	-	637	456	-
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	1109	-	-	1122	-	-	102	125	652	72	118	608
Stage 1	-	-	-	-	-	-	614	592	-	268	298	-
Stage 2	-	-	-	-	-	-	267	298	-	465	568	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1109	-	-	1122	-	-	~ 74	90	652	17	85	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 74	90	-	17	85	-
Stage 1	-	-	-	-	-	-	609	587	-	266	216	-
Stage 2	-	-	-	-	-	-	185	216	-	159	563	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			3.8			73.9			47.4		
HCM LOS							F			E		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	74		498	1109	-	-	1122	-	-	95		
HCM Lane V/C Ratio	1.084		0.885	0.008	-	-	0.275	-	-	0.108		
HCM Control Delay (s)	227.7		45.9	8.3	-	-	9.4	-	-	47.4		
HCM Lane LOS	F		E	A	-	-	A	-	-	E		
HCM 95th %tile Q(veh)	5.9		9.8	0	-	-	1.1	-	-	0.4		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	7.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	315	26	11	112	11	41
Future Vol, veh/h	315	26	11	112	11	41
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	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	371	31	13	132	13	48
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	87	13	0	0	145	0
Stage 1	13	-	-	-	-	-
Stage 2	74	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	914	1067	-	-	1437	-
Stage 1	1010	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	1067	-	-	1437	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.5	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 906 1067 1437		-		
HCM Lane V/C Ratio	-	- 0.409 0.029 0.009		-		
HCM Control Delay (s)	-	- 11.7 8.5 7.5		-		
HCM Lane LOS	-	- B A A		-		
HCM 95th %tile Q(veh)	-	- 2 0.1 0		-		








HCM 6th TWSC  
3: Parcel H & Rex Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	117	5	8	326	16	25
Future Vol, veh/h	117	5	8	326	16	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	6	9	384	19	29

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	144
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1438
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1438
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.1
HCM LOS			B







Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	564	907	-	-	1438	-
HCM Lane V/C Ratio	0.033	0.032	-	-	0.007	-
HCM Control Delay (s)	11.6	9.1	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

HCM 6th TWSC  
4: Parcel I & Rex Rd

Short-Term Total Traffic  
AM Peak Hour






Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	131	11	17	302	32	51
Future Vol, veh/h	131	11	17	302	32	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	13	20	355	38	60
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	167	0	549	154
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1411	-	497	892
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1411	-	490	892
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	671	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	560	892	-	-	1411	-
HCM Lane V/C Ratio	0.067	0.067	-	-	0.014	-
HCM Control Delay (s)	11.9	9.3	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	4.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	143	39	35	202	117	104
Future Vol, veh/h	143	39	35	202	117	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	168	46	41	238	138	122
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	214	0	488	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1356	-	539	876
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1356	-	523	876
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	714	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.1		11.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	589	876	-	-	1356	-
HCM Lane V/C Ratio	0.234	0.14	-	-	0.03	-
HCM Control Delay (s)	13	9.8	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.5	-	-	0.1	-

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	225	171	34	101	65
Future Vol, veh/h	21	225	171	34	101	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	405	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	265	201	40	119	76
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	241	0	-	0	516	201
Stage 1	-	-	-	-	201	-
Stage 2	-	-	-	-	315	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1326	-	-	-	519	840
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	740	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1326	-	-	-	509	840
Mov Cap-2 Maneuver	-	-	-	-	585	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	740	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		11.5		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1326	-	-	-	585	840
HCM Lane V/C Ratio	0.019	-	-	-	0.203	0.091
HCM Control Delay (s)	7.8	-	-	-	12.7	9.7
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	0.3









Intersection						
Int Delay, s/veh	6.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	293	34	79	104	101	236
Future Vol, veh/h	293	34	79	104	101	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	405	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	345	40	93	122	119	278
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	385	0	653	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1173	-	432	698
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1173	-	398	698
Mov Cap-2 Maneuver	-	-	-	-	501	-
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	686	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.6		13.8	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	501	698	-	-	1173	-
HCM Lane V/C Ratio	0.237	0.398	-	-	0.079	-
HCM Control Delay (s)	14.4	13.5	-	-	8.3	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	1.9	-	-	0.3	-

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	485	162	0	696	21
Future Vol, veh/h	44	485	162	0	696	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	100	0	-	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	78	92	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	571	191	0	757	25
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1139	-	782	0	-	0
Stage 1	757	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	223	0	836	-	-	-
Stage 1	463	0	-	-	-	-
Stage 2	690	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	172	-	836	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	357	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	20.7	10.6		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	836	-	281	-	-	-
HCM Lane V/C Ratio	0.228	-	0.184	-	-	-
HCM Control Delay (s)	10.6	0	20.7	0	-	-
HCM Lane LOS	B	A	C	A	-	-
HCM 95th %tile Q(veh)	0.9	-	0.7	-	-	-

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	15.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	443	441	94	276	109
Future Vol, veh/h	39	443	441	94	276	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	400	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	68	85	85	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	599	649	111	325	163

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1734	325	488	0	-	0
Stage 1	325	-	-	-	-	-
Stage 2	1409	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	96	716	1075	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 38	716	1075	-	-	-
Mov Cap-2 Maneuver	133	-	-	-	-	-
Stage 1	290	-	-	-	-	-
Stage 2	226	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.7	11.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1075	-	133	716	-	-
HCM Lane V/C Ratio	0.603	-	0.396	0.836	-	-
HCM Control Delay (s)	13.3	-	48.8	30.2	-	-
HCM Lane LOS	B	-	E	D	-	-
HCM 95th %tile Q(veh)	4.2	-	1.7	9.3	-	-

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

HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔		↔	↔	
Traffic Vol, veh/h	45	260	123	37	157	112	45	377	17	209	366	145
Future Vol, veh/h	45	260	123	37	157	112	45	377	17	209	366	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	0	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	306	145	44	185	132	53	444	20	246	431	171

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1728	1579	517	1794	1654	454	602	0	0	464	0	0
Stage 1	1009	1009	-	560	560	-	-	-	-	-	-	-
Stage 2	719	570	-	1234	1094	-	-	-	-	-	-	-
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	70	~ 109	558	62	~ 98	606	975	-	-	1097	-	-
Stage 1	290	318	-	513	511	-	-	-	-	-	-	-
Stage 2	420	505	-	216	290	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 80	558	-	~ 72	606	975	-	-	1097	-	-
Mov Cap-2 Maneuver	-	~ 80	-	-	~ 72	-	-	-	-	-	-	-
Stage 1	274	~ 247	-	485	483	-	-	-	-	-	-	-
Stage 2	192	478	-	-	225	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0.9	2.7
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	975	-	-	-	606	1097	-
HCM Lane V/C Ratio	0.054	-	-	-	0.217	0.224	-
HCM Control Delay (s)	8.9	-	-	-	12.6	9.2	-
HCM Lane LOS	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8	0.9	-

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












Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Vol, veh/h	58	157	398	2	106	26	145	424	1	69	1074	41
Future Vol, veh/h	58	157	398	2	106	26	145	424	1	69	1074	41
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	94	94	94	78	78	78	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	67	180	457	2	113	28	186	544	1	75	1167	45
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	2290	2234	-	2346	2278	-	1212	0	0	545	0	0
Stage 1	1317	1317	-	916	916	-	-	-	-	-	-	-
Stage 2	973	917	-	1430	1362	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 28	~ 43	0	25	~ 40	0	576	-	-	1024	-	-
Stage 1	194	227	0	326	351	0	-	-	-	-	-	-
Stage 2	303	351	0	167	216	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 27	-	-	~ 25	-	576	-	-	1024	-	-
Mov Cap-2 Maneuver	-	~ 27	-	-	~ 25	-	-	-	-	-	-	-
Stage 1	131	210	-	221	238	-	-	-	-	-	-	-
Stage 2	108	238	-	22	200	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s					3.6		0.5					
HCM LOS	-		-									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	576	-	-	-	27	-	-	25	-	1024	-	-
HCM Lane V/C Ratio	0.323	-	-	-	6.684	-	-	4.511	-	0.073	-	-
HCM Control Delay (s)	14.2	-	-	\$ 2844.2	0	\$ 1896.1	0	8.8	-	-	-	-
HCM Lane LOS	B	-	-	-	F	A	-	F	A	A	-	-
HCM 95th %tile Q(veh)	1.4	-	-	-	22.2	-	-	14	-	0.2	-	-
Notes												
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon												

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection	
Intersection Delay, s/veh	130
Intersection LOS	F








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	104	155	106	29	45	98	18	322	51	49	504	18
Future Vol, veh/h	104	155	106	29	45	98	18	322	51	49	504	18
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	122	182	125	34	53	115	21	379	60	58	593	21
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	33.2	17.3	100.5	246.1
HCM LOS	D	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	86%	0%	59%	0%	100%	0%	0%	97%
Vol Right, %	0%	14%	0%	41%	0%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	373	104	261	29	45	98	49	522
LT Vol	18	0	104	0	29	0	0	49	0
Through Vol	0	322	0	155	0	45	0	0	504
RT Vol	0	51	0	106	0	0	98	0	18
Lane Flow Rate	21	439	122	307	34	53	115	58	614
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.056	1.087	0.33	0.761	0.101	0.149	0.302	0.151	1.514
Departure Headway (Hd)	10.566	9.944	10.979	10.148	12.088	11.557	10.812	9.794	9.251
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	341	369	329	359	298	312	334	368	399
Service Time	8.266	7.644	8.679	7.848	9.788	9.257	8.512	7.494	6.951
HCM Lane V/C Ratio	0.062	1.19	0.371	0.855	0.114	0.17	0.344	0.158	1.539
HCM Control Delay	13.9	104.7	19	38.9	16.1	16.3	18.1	14.2	267.9
HCM Lane LOS	B	F	C	E	C	C	C	B	F
HCM 95th-tile Q	0.2	14.3	1.4	6.1	0.3	0.5	1.2	0.5	31.9

HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

Short-Term Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	133	42	282	314	0	18	4	90	0	11	1
Future Vol, veh/h	0	133	42	282	314	0	18	4	90	0	11	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	93	93	93	93	93	93	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	160	51	303	338	0	19	4	97	0	14	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	338	0	0	211	0	0	1138	1130	186	1180	1155	338
Stage 1	-	-	-	-	-	-	186	186	-	944	944	-
Stage 2	-	-	-	-	-	-	952	944	-	236	211	-
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	1221	-	-	1360	-	-	179	204	856	167	197	704
Stage 1	-	-	-	-	-	-	816	746	-	315	341	-
Stage 2	-	-	-	-	-	-	312	341	-	767	728	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1221	-	-	1360	-	-	138	159	856	120	153	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	159	-	120	153	-
Stage 1	-	-	-	-	-	-	816	746	-	315	265	-
Stage 2	-	-	-	-	-	-	229	265	-	676	728	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	4	14.7	29.2
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	138	721	1221	-	-	1360	-	-	164
HCM Lane V/C Ratio	0.14	0.14	-	-	-	0.223	-	-	0.094
HCM Control Delay (s)	35.3	10.8	0	-	-	8.4	-	-	29.2
HCM Lane LOS	E	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0.5	0	-	-	0.9	-	-	0.3

Intersection			
Intersection Delay, s/veh	6.7		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	385	215	397
Demand Flow Rate, veh/h	393	219	405
Vehicles Circulating, veh/h	95	121	352
Vehicles Exiting, veh/h	245	636	136
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.8	4.6	8.6
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	393	219	405
Cap Entry Lane, veh/h	1252	1220	964
Entry HV Adj Factor	0.980	0.980	0.980
Flow Entry, veh/h	385	215	397
Cap Entry, veh/h	1227	1195	945
V/C Ratio	0.314	0.180	0.420
Control Delay, s/veh	5.8	4.6	8.6
LOS	A	A	A
95th %tile Queue, veh	1	1	2



HCM 6th Roundabout  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
AM Peak Hour

Intersection			
Intersection Delay, s/veh	11.5		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	652	760	488
Demand Flow Rate, veh/h	665	775	498
Vehicles Circulating, veh/h	331	54	662
Vehicles Exiting, veh/h	828	942	167
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.0	9.1	14.6
Approach LOS	B	A	B
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.328	4.328	4.328
Entry Flow, veh/h	665	775	498
Cap Entry Lane, veh/h	1072	1356	809
Entry HV Adj Factor	0.980	0.980	0.981
Flow Entry, veh/h	652	760	488
Cap Entry, veh/h	1051	1330	793
V/C Ratio	0.620	0.571	0.616
Control Delay, s/veh	12.0	9.1	14.6
LOS	B	A	B
95th %tile Queue, veh	4	4	4







HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
AM Peak Hour

Intersection				
Intersection Delay, s/veh	11.5			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	429	202	460	672
Demand Flow Rate, veh/h	438	206	469	685
Vehicles Circulating, veh/h	699	532	369	110
Vehicles Exiting, veh/h	96	306	767	628
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	18.1	7.4	10.1	9.4
Approach LOS	C	A	B	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	438	206	469	685
Cap Entry Lane, veh/h	676	802	947	1233
Entry HV Adj Factor	0.980	0.980	0.982	0.981
Flow Entry, veh/h	429	202	460	672
Cap Entry, veh/h	663	786	930	1210
V/C Ratio	0.648	0.257	0.495	0.555
Control Delay, s/veh	18.1	7.4	10.1	9.4
LOS	C	A	B	A
95th %tile Queue, veh	5	1	3	4













Volume  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	39	443	441	94	276	109
Future Volume (vph)	39	443	441	94	276	109
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.74	0.74	0.68	0.85	0.85	0.67
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	53	599	649	111	325	163
Shared Lane Traffic (%)						
Lane Group Flow (vph)	53	599	649	111	325	163
Intersection Summary						

Timings  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	443	441	94	276	109
Future Volume (vph)	39	443	441	94	276	109
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	Max
Act Effect Green (s)	9.8	9.8	65.2	65.2	65.2	65.2
Actuated g/C Ratio	0.12	0.12	0.77	0.77	0.77	0.77
v/c Ratio	0.26	0.84	0.81	0.08	0.23	0.13
Control Delay	36.8	15.2	17.7	3.1	3.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	15.2	17.7	3.1	3.7	0.9
LOS	D	B	B	A	A	A
Approach Delay	17.0			15.5	2.7	
Approach LOS	B			B	A	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85

Natural Cycle: 80

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 12.7

Intersection LOS: B

Intersection Capacity Utilization 55.6%

ICU Level of Service B













Analysis Period (min) 15

Splits and Phases: 12: Eastonville Rd & Londonderry Dr



Volume  
13: Eastonville Rd & Stapleton Dr

















Short-Term Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	45	260	123	37	157	112	45	377	17	209	366	145
Future Volume (vph)	45	260	123	37	157	112	45	377	17	209	366	145
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
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)	53	306	145	44	185	132	53	444	20	246	431	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	504	0	0	229	132	53	464	0	246	602	0
Intersection Summary												



# Timings 13: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	45	260	37	157	112	45	377	209	366
Future Volume (vph)	45	260	37	157	112	45	377	209	366
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0	10.0	31.0	14.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	11.1%	34.4%	15.6%	38.9%
Yellow Time (s)	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
Lost Time Adjust (s)		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
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		26.5		26.5	26.5	27.9	22.7	36.6	31.8
Actuated g/C Ratio		0.36		0.36	0.36	0.38	0.31	0.49	0.43
v/c Ratio		0.81		0.42	0.20	0.20	0.81	0.68	0.77
Control Delay		31.3		20.3	3.9	14.2	38.3	25.0	30.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		31.3		20.3	3.9	14.2	38.3	25.0	30.0
LOS		C		C	A	B	D	C	C
Approach Delay		31.3		14.3			35.8		28.5
Approach LOS		C		B			D		C

## Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 74

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 28.6

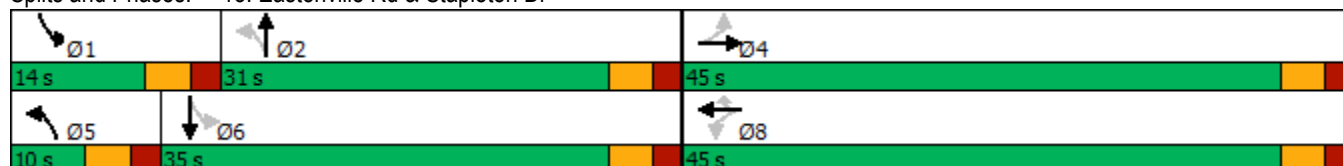
Intersection LOS: C

Intersection Capacity Utilization 83.1%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 13: Eastonville Rd & Stapleton Dr



























Volume  
14: US 24 & Stapleton Dr

Short-Term Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	58	157	398	2	106	26	145	424	1	69	1074	41
Future Volume (vph)	58	157	398	2	106	26	145	424	1	69	1074	41
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.87	0.87	0.87	0.94	0.94	0.94	0.78	0.78	0.78	0.92	0.92	0.92
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)	67	180	457	2	113	28	186	544	1	75	1167	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	180	457	2	113	28	186	544	1	75	1167	45
Intersection Summary												

Timings  
14: US 24 & Stapleton Dr

Short-Term Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	157	398	2	106	26	145	424	1	69	1074	41
Future Volume (vph)	58	157	398	2	106	26	145	424	1	69	1074	41
Turn Type	Perm	NA	Free	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	4	4		8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0	1.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	6.0	6.0		6.0	6.0	6.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	34.0	34.0		34.0	34.0	34.0	13.0	76.0	76.0	10.0	73.0	73.0
Total Split (%)	28.3%	28.3%		28.3%	28.3%	28.3%	10.8%	63.3%	63.3%	8.3%	60.8%	60.8%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
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
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
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	15.5	15.5	106.6	15.5	15.5	15.5	79.5	72.2	72.2	73.1	67.1	67.1
Actuated g/C Ratio	0.15	0.15	1.00	0.15	0.15	0.15	0.75	0.68	0.68	0.69	0.63	0.63
v/c Ratio	0.39	0.67	0.29	0.02	0.42	0.10	0.93	0.43	0.00	0.13	1.00	0.04
Control Delay	47.9	55.3	0.5	38.0	45.9	0.7	74.5	10.3	0.0	4.6	46.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	55.3	0.5	38.0	45.9	0.7	74.5	10.3	0.0	4.6	46.7	1.3
LOS	D	E	A	D	D	A	E	B	A	A	D	A
Approach Delay		19.0			36.9			26.6			42.6	
Approach LOS		B			D			C			D	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 106.6

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 32.4

Intersection LOS: C

Intersection Capacity Utilization 87.8%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr

 Ø1	 Ø2	 Ø4
10 s	76 s	34 s
 Ø5	 Ø6	 Ø8
13 s	73 s	34 s



















Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	104	155	106	29	45	98	18	322	51	49	504	18
Future Volume (vph)	104	155	106	29	45	98	18	322	51	49	504	18
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
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)	122	182	125	34	53	115	21	379	60	58	593	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	122	307	0	34	53	115	21	439	0	58	614	0
Intersection Summary												

Timings  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	104	155	29	45	98	18	322	49	504
Future Volume (vph)	104	155	29	45	98	18	322	49	504
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	15.0	45.0	15.0	45.0	45.0	12.0	48.0	12.0	48.0
Total Split (%)	12.5%	37.5%	12.5%	37.5%	37.5%	10.0%	40.0%	10.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	25.8	21.0	21.1	15.9	15.9	34.3	31.1	35.6	33.5
Actuated g/C Ratio	0.34	0.28	0.28	0.21	0.21	0.45	0.41	0.47	0.44
v/c Ratio	0.26	0.60	0.10	0.14	0.27	0.07	0.58	0.15	0.75
Control Delay	20.6	31.3	19.8	30.2	8.3	12.7	24.1	12.9	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	31.3	19.8	30.2	8.3	12.7	24.1	12.9	27.7
LOS	C	C	B	C	A	B	C	B	C
Approach Delay		28.2		16.0			23.6		26.4
Approach LOS		C		B			C		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 75.5

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 24.9









Intersection LOS: C

Intersection Capacity Utilization 67.2%

ICU Level of Service C

Analysis Period (min) 15













Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
Ø1	Ø2	Ø3	Ø4
12 s	48 s	15 s	45 s
			
Ø5	Ø6	Ø7	Ø8
12 s	48 s	15 s	45 s

















Volume  
16: McLaughlin Rd & Eastonville Dr

Short-Term Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	133	42	282	314	0	18	4	90	0	11	1
Future Volume (vph)	1	133	42	282	314	0	18	4	90	0	11	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93	0.78	0.78	0.78
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)	1	160	51	303	338	0	19	4	97	0	14	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	211	0	303	338	0	19	101	0	0	15	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

Short-Term Total Traffic  
AM Peak Hour

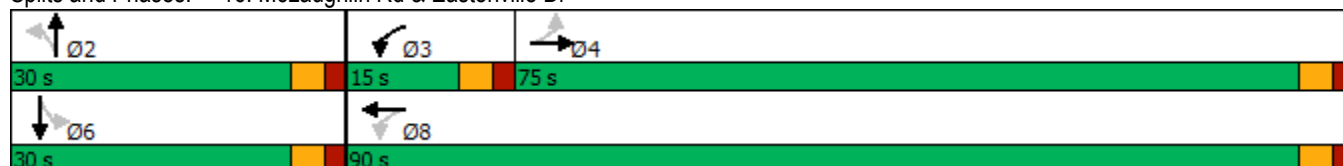
							
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	1	133	282	314	18	4	11
Future Volume (vph)	1	133	282	314	18	4	11
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	75.0	75.0	15.0	90.0	30.0	30.0	30.0
Total Split (%)	62.5%	62.5%	12.5%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	9.6	9.6	23.3	23.3	6.2	6.2	6.2
Actuated g/C Ratio	0.24	0.24	0.59	0.59	0.16	0.16	0.16
v/c Ratio	0.00	0.47	0.45	0.31	0.09	0.30	0.05
Control Delay	12.0	15.5	6.4	5.0	16.6	7.9	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	15.5	6.4	5.0	16.6	7.9	15.5
LOS	B	B	A	A	B	A	B
Approach Delay		15.5		5.7		9.3	15.5
Approach LOS		B		A		A	B

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 39.6  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 8.4  
 Intersection Capacity Utilization 45.3%  
 Analysis Period (min) 15







Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr



HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

Short-Term Total Traffic  
PM Peak Hour






Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	198	7	28	333	10	24
Future Vol, veh/h	198	7	28	333	10	24
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	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	233	8	33	392	12	28
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	85	33	0	0	425	0
Stage 1	33	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	916	1041	-	-	1134	-
Stage 1	989	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	906	1041	-	-	1134	-
Mov Cap-2 Maneuver	906	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.2	0	2.4			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 906 1041 1134				-
HCM Lane V/C Ratio	-	- 0.257 0.008 0.01				-
HCM Control Delay (s)	-	- 10.3 8.5 8.2				-
HCM Lane LOS	-	- B A A				-
HCM 95th %tile Q(veh)	-	- 1 0 0				-

HCM 6th TWSC  
3: Parcel H & Rex Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection

Int Delay, s/veh 0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	344	17	27	206	10	16
Future Vol, veh/h	344	17	27	206	10	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	405	20	32	242	12	19

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	425
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1134
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1134
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	491	637	-	-	1134	-
HCM Lane V/C Ratio	0.024	0.03	-	-	0.028	-
HCM Control Delay (s)	12.5	10.8	-	-	8.3	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection

Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	325	35	54	213	20	32
Future Vol, veh/h	325	35	54	213	20	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	382	41	64	251	24	38

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	423
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1136
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1136
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	467	665	-	-	1136	-
HCM Lane V/C Ratio	0.05	0.057	-	-	0.056	-
HCM Control Delay (s)	13.1	10.7	-	-	8.4	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-



Intersection







Int Delay, s/veh 3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	232	125	111	193	74	65
Future Vol, veh/h	232	125	111	193	74	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	147	131	227	87	76






Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	420
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1139
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1139
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	766	-	-	1139	-
HCM Lane V/C Ratio	0.201	0.1	-	-	0.115	-
HCM Control Delay (s)	15.4	10.2	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.4	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	228	264	109	63	41
Future Vol, veh/h	69	228	264	109	63	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	405	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	81	268	311	128	74	48
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	439	0	-	0	741	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	430	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1121	-	-	-	384	729
Stage 1	-	-	-	-	743	-
Stage 2	-	-	-	-	656	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1121	-	-	-	356	729
Mov Cap-2 Maneuver	-	-	-	-	469	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	656	-
Approach	EB	WB		SB		
HCM Control Delay, s	2	0		12.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1121	-	-	-	469	729
HCM Lane V/C Ratio	0.072	-	-	-	0.158	0.066
HCM Control Delay (s)	8.5	-	-	-	14.1	10.3
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6	0.2

Intersection								
Int Delay, s/veh	5.2							
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑	↗	↘	↑	↘	↗		
Traffic Vol, veh/h	183	108	253	309	63	149		
Future Vol, veh/h	183	108	253	309	63	149		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	None		
Storage Length	-	155	405	-	0	0		
Veh in Median Storage, #	0	-	-	0	0	-		
Grade, %	0	-	-	0	0	-		
Peak Hour Factor	85	85	85	85	85	85		
Heavy Vehicles, %	2	2	2	2	2	2		
Mvmt Flow	215	127	298	364	74	175		
Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	0	0	342	0	1175	215		
Stage 1	-	-	-	-	215	-		
Stage 2	-	-	-	-	960	-		
Critical Hdwy	-	-	4.12	-	6.42	6.22		
Critical Hdwy Stg 1	-	-	-	-	5.42	-		
Critical Hdwy Stg 2	-	-	-	-	5.42	-		
Follow-up Hdwy	-	-	2.218	-	3.518	3.318		
Pot Cap-1 Maneuver	-	-	1217	-	212	825		
Stage 1	-	-	-	-	821	-		
Stage 2	-	-	-	-	372	-		
Platoon blocked, %	-	-		-				
Mov Cap-1 Maneuver	-	-	1217	-	160	825		
Mov Cap-2 Maneuver	-	-	-	-	239	-		
Stage 1	-	-	-	-	821	-		
Stage 2	-	-	-	-	281	-		
Approach	EB		WB		NB			
HCM Control Delay, s	0		4		15.3			
HCM LOS					C			
Minor Lane/Major Mvmt	NBLn1		NBLn2		EBT	EBR	WBL	WBT
Capacity (veh/h)	239		825		-	-	1217	-
HCM Lane V/C Ratio	0.31		0.212		-	-	0.245	-
HCM Control Delay (s)	26.7		10.5		-	-	8.9	-
HCM Lane LOS	D		B		-	-	A	-
HCM 95th %tile Q(veh)	1.3		0.8		-	-	1	-

Intersection						
Int Delay, s/veh	8.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	305	520	0	496	42
Future Vol, veh/h	27	305	520	0	496	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	100	0	-	-	-	800
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	93	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	359	612	0	584	49

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1808	-	633	0	-	0
Stage 1	584	-	-	-	-	-
Stage 2	1224	-	-	-	-	-
Critical Hdwy	6.42	-	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	-	2.218	-	-	-
Pot Cap-1 Maneuver	87	0	950	-	-	-
Stage 1	557	0	-	-	-	-
Stage 2	278	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 31	-	950	-	-	-
Mov Cap-2 Maneuver	119	-	-	-	-	-
Stage 1	198	-	-	-	-	-
Stage 2	278	-	-	-	-	-







Approach	EB	NB	SB
HCM Control Delay, s	45.9	15.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	950	-	119	-	-	-
HCM Lane V/C Ratio	0.644	-	0.267	-	-	-
HCM Control Delay (s)	15.4	0	45.9	0	-	-
HCM Lane LOS	C	A	E	A	-	-
HCM 95th %tile Q(veh)	4.9	-	1	-	-	-

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

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	10					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	94	257	451	307	182	62
Future Vol, veh/h	94	257	451	307	182	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	400	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	302	531	361	214	73
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1637	214	287	0	-	0
Stage 1	214	-	-	-	-	-
Stage 2	1423	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	111	826	1275	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 65	826	1275	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	25.9	5.8		0		
HCM LOS	D					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1275	-	163	826	-	-
HCM Lane V/C Ratio	0.416	-	0.678	0.366	-	-
HCM Control Delay (s)	9.8	-	64.2	11.9	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	2.1	-	3.9	1.7	-	-
Notes						
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						



HCM 6th TWSC  
13: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕	↕	↕		↕	↕	
Traffic Vol, veh/h	145	199	82	32	341	250	130	362	53	112	230	97
Future Vol, veh/h	145	199	82	32	341	250	130	362	53	112	230	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	250	0	-	-	400	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	171	234	96	38	401	294	153	426	62	132	271	114

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1703	1386	328	1520	1412	457	385	0	0	488	0	0
Stage 1	592	592	-	763	763	-	-	-	-	-	-	-
Stage 2	1111	794	-	757	649	-	-	-	-	-	-	-
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	~ 72	~ 143	713	97	~ 138	604	1173	-	-	1075	-	-
Stage 1	493	494	-	397	413	-	-	-	-	-	-	-
Stage 2	254	400	-	400	466	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 109	713	-	~ 105	604	1173	-	-	1075	-	-
Mov Cap-2 Maneuver	-	~ 109	-	-	~ 105	-	-	-	-	-	-	-
Stage 1	429	433	-	345	~ 359	-	-	-	-	-	-	-
Stage 2	-	348	-	139	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2	2.2
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1173	-	-	-	604	1075	-
HCM Lane V/C Ratio	0.13	-	-	-	0.487	0.123	-
HCM Control Delay (s)	8.5	-	-	-	16.5	8.8	-
HCM Lane LOS	A	-	-	-	C	A	-
HCM 95th %tile Q(veh)	0.4	-	-	-	2.7	0.4	-

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

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Vol, veh/h	31	49	311	5	118	69	511	1057	26	31	657	117
Future Vol, veh/h	31	49	311	5	118	69	511	1057	26	31	657	117
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	-	-	Free	-	-	Free	-	-	None	-	-	None
Storage Length	185	-	325	225	-	225	1000	-	0	785	-	785
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	93	93	93	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	59	375	6	142	83	549	1137	28	36	773	138

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	3165	3108	-	3179	3218	-	911	0	0	1165	0	0
Stage 1	845	845	-	2235	2235	-	-	-	-	-	-	-
Stage 2	2320	2263	-	944	983	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	-	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	-	3.518	4.018	-	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	~ 6	~ 12	0	~ 6	~ 10	0	748	-	-	600	-	-
Stage 1	357	379	0	56	~ 79	0	-	-	-	-	-	-
Stage 2	50	77	0	315	327	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	~ 3	-	-	~ 3	-	748	-	-	600	-	-
Mov Cap-2 Maneuver	-	~ 3	-	-	~ 3	-	-	-	-	-	-	-
Stage 1	95	356	-	15	~ 21	-	-	-	-	-	-	-
Stage 2	-	~ 20	-	247	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			7	0.4
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	748	-	-	-	3	-	-	3	-	600	-	-
HCM Lane V/C Ratio	0.735	-	-	-	19.679	-	-	47.39	-	0.061	-	-
HCM Control Delay (s)	21.9	-	-	\$	10726.5	0	\$	23241.6	0	11.4	-	-
HCM Lane LOS	C	-	-	-	F	A	-	F	A	B	-	-
HCM 95th %tile Q(veh)	6.6	-	-	-	9.4	-	-	20.1	-	0.2	-	-










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

HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection

Intersection Delay, s/veh 174  
Intersection LOS F








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	48	75	60	156	49	124	591	54	24	360	12
Future Vol, veh/h	19	48	75	60	156	49	124	591	54	24	360	12
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.87	0.87	0.87	0.83	0.83	0.83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	58	90	77	200	63	143	679	62	29	434	14
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	19.9	20.6	304.9	96
HCM LOS	C	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	92%	0%	39%	0%	100%	0%	0%	97%
Vol Right, %	0%	8%	0%	61%	0%	0%	100%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	645	19	123	60	156	49	24	372
LT Vol	124	0	19	0	60	0	0	24	0
Through Vol	0	591	0	48	0	156	0	0	360
RT Vol	0	54	0	75	0	0	49	0	12
Lane Flow Rate	143	741	23	148	77	200	63	29	448
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.355	1.732	0.066	0.39	0.207	0.511	0.148	0.074	1.078
Departure Headway (Hd)	9.253	8.677	11.988	10.999	11.207	10.68	9.942	10.365	9.822
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	391	423	301	329	322	340	363	348	372
Service Time	6.953	6.377	9.688	8.699	8.907	8.38	7.642	8.065	7.522
HCM Lane V/C Ratio	0.366	1.752	0.076	0.45	0.239	0.588	0.174	0.083	1.204
HCM Control Delay	17	360.2	15.5	20.6	16.8	24	14.4	13.9	101.3
HCM Lane LOS	C	F	C	C	C	C	B	B	F
HCM 95th-tile Q	1.6	44.1	0.2	1.8	0.8	2.8	0.5	0.2	14.1

HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

Short-Term Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	57.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	395	68	289	437	0	77	21	447	0	7	1
Future Vol, veh/h	8	395	68	289	437	0	77	21	447	0	7	1
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	100	-	-	100	-	-	75	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	96	96	96	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	465	80	340	514	0	80	22	466	0	9	1
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	514	0	0	545	0	0	1722	1717	505	1961	1757	514
Stage 1	-	-	-	-	-	-	523	523	-	1194	1194	-
Stage 2	-	-	-	-	-	-	1199	1194	-	767	563	-
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	1052	-	-	1024	-	-	~ 70	90	567	48	85	560
Stage 1	-	-	-	-	-	-	537	530	-	228	260	-
Stage 2	-	-	-	-	-	-	226	260	-	395	509	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1052	-	-	1024	-	-	~ 46	60	567	5	56	560
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 46	60	-	5	56	-
Stage 1	-	-	-	-	-	-	532	525	-	226	174	-
Stage 2	-	-	-	-	-	-	143	174	-	67	504	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			4.1			194.3			72.9		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1		NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1		
Capacity (veh/h)	46		411	1052	-	-	1024	-	-	63		
HCM Lane V/C Ratio	1.744		1.186	0.009	-	-	0.332	-	-	0.163		
HCM Control Delay (s)	\$ 549.6		135.8	8.5	-	-	10.3	-	-	72.9		
HCM Lane LOS	F		F	A	-	-	B	-	-	F		
HCM 95th %tile Q(veh)	8		19.1	0	-	-	1.5	-	-	0.5		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

HCM 6th Roundabout  
7: J & K & Rex Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection			
Intersection Delay, s/veh	7.6		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	342	662	249
Demand Flow Rate, veh/h	349	675	253
Vehicles Circulating, veh/h	304	75	219
Vehicles Exiting, veh/h	446	397	434
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.3	8.7	5.4
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	349	675	253
Cap Entry Lane, veh/h	1012	1278	1104
Entry HV Adj Factor	0.979	0.980	0.984
Flow Entry, veh/h	342	662	249
Cap Entry, veh/h	991	1253	1086
V/C Ratio	0.345	0.528	0.229
Control Delay, s/veh	7.3	8.7	5.4
LOS	A	A	A
95th %tile Queue, veh	2	3	1



HCM 6th Roundabout  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
PM Peak Hour

Intersection			
Intersection Delay, s/veh	10.3		
Intersection LOS	B		
Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	413	892	287
Demand Flow Rate, veh/h	421	910	292
Vehicles Circulating, veh/h	218	113	542
Vehicles Exiting, veh/h	616	526	481
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.6	12.9	7.7
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.328	4.328	4.328
Entry Flow, veh/h	421	910	292
Cap Entry Lane, veh/h	1180	1290	896
Entry HV Adj Factor	0.981	0.980	0.982
Flow Entry, veh/h	413	892	287
Cap Entry, veh/h	1157	1264	880
V/C Ratio	0.357	0.705	0.326
Control Delay, s/veh	6.6	12.9	7.7
LOS	A	B	A
95th %tile Queue, veh	2	6	1







HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
PM Peak Hour

Intersection				
Intersection Delay, s/veh	13.8			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	171	340	884	477
Demand Flow Rate, veh/h	174	347	902	487
Vehicles Circulating, veh/h	552	862	112	429
Vehicles Exiting, veh/h	364	152	614	780
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	18.8	14.3	11.7
Approach LOS	A	C	B	B
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	174	347	902	487
Cap Entry Lane, veh/h	786	573	1231	891
Entry HV Adj Factor	0.982	0.980	0.981	0.980
Flow Entry, veh/h	171	340	884	477
Cap Entry, veh/h	772	561	1207	873
V/C Ratio	0.221	0.606	0.733	0.547
Control Delay, s/veh	7.1	18.8	14.3	11.7
LOS	A	C	B	B
95th %tile Queue, veh	1	4	7	3













Volume  
12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	94	257	451	307	182	62
Future Volume (vph)	94	257	451	307	182	62
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	111	302	531	361	214	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	302	531	361	214	73
Intersection Summary						

# Timings 12: Eastonville Rd & Londonderry Dr

Short-Term Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	94	257	451	307	182	62
Future Volume (vph)	94	257	451	307	182	62
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	70.0	70.0	70.0	70.0
Total Split (%)	22.2%	22.2%	77.8%	77.8%	77.8%	77.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	Max	Max	Max	Max
Act Effect Green (s)	10.6	10.6	65.1	65.1	65.1	65.1
Actuated g/C Ratio	0.12	0.12	0.76	0.76	0.76	0.76
v/c Ratio	0.51	0.66	0.60	0.26	0.15	0.06
Control Delay	43.2	11.8	8.7	3.9	3.4	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	11.8	8.7	3.9	3.4	1.0
LOS	D	B	A	A	A	A
Approach Delay	20.2			6.8	2.8	
Approach LOS	C			A	A	

## Intersection Summary

Cycle Length: 90  
Actuated Cycle Length: 85.7  
Natural Cycle: 60  
Control Type: Semi Act-Uncoord  
Maximum v/c Ratio: 0.66  
Intersection Signal Delay: 9.5  
Intersection Capacity Utilization 52.3%  
Analysis Period (min) 15













Intersection LOS: A  
ICU Level of Service A

Splits and Phases: 12: Eastonville Rd & Londonderry Dr



Volume  
13: Eastonville Rd & Stapleton Dr

















Short-Term Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	145	199	82	32	341	250	130	362	53	112	230	97
Future Volume (vph)	145	199	82	32	341	250	130	362	53	112	230	97
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
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)	171	234	96	38	401	294	153	426	62	132	271	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	501	0	0	439	294	153	488	0	132	385	0
Intersection Summary												



Timings  
13: Eastonville Rd & Stapleton Dr

Short-Term Total Traffic  
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	145	199	32	341	250	130	362	112	230
Future Volume (vph)	145	199	32	341	250	130	362	112	230
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	48.0	48.0	48.0	48.0	48.0	10.0	32.0	10.0	32.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	53.3%	11.1%	35.6%	11.1%	35.6%
Yellow Time (s)	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
Lost Time Adjust (s)		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
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None
Act Effect Green (s)		43.0		43.0	43.0	30.7	25.7	30.7	25.7
Actuated g/C Ratio		0.48		0.48	0.48	0.35	0.29	0.35	0.29
v/c Ratio		1.00		0.52	0.32	0.61	0.91	0.72	0.72
Control Delay		66.4		18.9	2.7	30.2	53.8	42.5	35.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		66.4		18.9	2.7	30.2	53.8	42.5	35.2
LOS		E		B	A	C	D	D	D
Approach Delay		66.4		12.4			48.2		37.1
Approach LOS		E		B			D		D

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 88.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 38.6







Intersection LOS: D

Intersection Capacity Utilization 88.3%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 13: Eastonville Rd & Stapleton Dr

 Ø1	 Ø2	 Ø4
10 s	32 s	48 s
 Ø5	 Ø6	 Ø8
10 s	32 s	48 s

























Volume  
14: US 24 & Stapleton Dr

Short-Term Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	31	49	311	5	118	69	511	1057	26	31	657	117
Future Volume (vph)	31	49	311	5	118	69	511	1057	26	31	657	117
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.93	0.93	0.93	0.85	0.85	0.85
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)	37	59	375	6	142	83	549	1137	28	36	773	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	59	375	6	142	83	549	1137	28	36	773	138
Intersection Summary												

# Timings 14: US 24 & Stapleton Dr

Short-Term Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	49	311	5	118	69	511	1057	26	31	657	117
Future Volume (vph)	31	49	311	5	118	69	511	1057	26	31	657	117
Turn Type	Perm	NA	Free	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		Free	8		8	2		2	6		6
Detector Phase	4	4		8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	33.0	33.0		33.0	33.0	33.0	34.0	77.0	77.0	10.0	53.0	53.0
Total Split (%)	27.5%	27.5%		27.5%	27.5%	27.5%	28.3%	64.2%	64.2%	8.3%	44.2%	44.2%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
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
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
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Act Effect Green (s)	13.3	13.3	105.4	13.3	13.3	13.3	82.1	75.2	75.2	53.1	47.1	47.1
Actuated g/C Ratio	0.13	0.13	1.00	0.13	0.13	0.13	0.78	0.71	0.71	0.50	0.45	0.45
v/c Ratio	0.31	0.25	0.24	0.04	0.61	0.27	0.98	0.86	0.02	0.18	0.93	0.18
Control Delay	48.4	43.8	0.4	39.8	54.7	5.3	64.7	21.8	0.2	10.2	47.4	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	43.8	0.4	39.8	54.7	5.3	64.7	21.8	0.2	10.2	47.4	3.8
LOS	D	D	A	D	D	A	E	C	A	B	D	A
Approach Delay		9.6			36.6			35.2			39.6	
Approach LOS		A			D			D			D	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 105.4

Natural Cycle: 90

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 32.9

Intersection LOS: C

Intersection Capacity Utilization 84.6%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr





















Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	19	48	75	60	156	49	124	591	54	24	360	12
Future Volume (vph)	19	48	75	60	156	49	124	591	54	24	360	12
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.83	0.83	0.83	0.78	0.78	0.78	0.87	0.87	0.87	0.83	0.83	0.83
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)	23	58	90	77	200	63	143	679	62	29	434	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	148	0	77	200	63	143	741	0	29	448	0
Intersection Summary												

Timings  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

Short-Term Total Traffic  
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	19	48	60	156	49	124	591	24	360
Future Volume (vph)	19	48	60	156	49	124	591	24	360
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	10.0	25.0	10.0	25.0	25.0	10.0	75.0	10.0	75.0
Total Split (%)	8.3%	20.8%	8.3%	20.8%	20.8%	8.3%	62.5%	8.3%	62.5%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	16.4	12.6	18.8	17.3	17.3	42.5	40.0	39.1	33.3
Actuated g/C Ratio	0.21	0.16	0.25	0.23	0.23	0.55	0.52	0.51	0.43
v/c Ratio	0.08	0.46	0.25	0.48	0.14	0.33	0.77	0.11	0.56
Control Delay	28.1	28.8	29.5	36.8	2.2	10.0	22.6	8.0	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	28.8	29.5	36.8	2.2	10.0	22.6	8.0	17.8
LOS	C	C	C	D	A	A	C	A	B
Approach Delay		28.7		28.7			20.6		17.2
Approach LOS		C		C			C		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 76.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 67.6%

ICU Level of Service C

Analysis Period (min) 15













Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
10 s	75 s	10 s	25 s
			
10 s	75 s	10 s	25 s

















Volume  
16: McLaughlin Rd & Eastonville Dr

Short-Term Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	8	395	68	289	437	0	77	21	447	0	7	1
Future Volume (vph)	8	395	68	289	437	0	77	21	447	0	7	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.96	0.96	0.96	0.78	0.78	0.78
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)	9	465	80	340	514	0	80	22	466	0	9	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	545	0	340	514	0	80	488	0	0	10	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

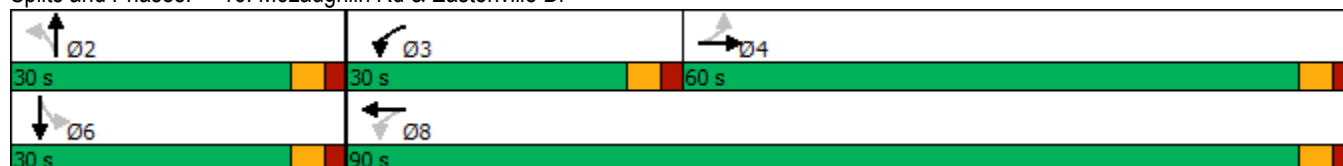
Short-Term Total Traffic  
PM Peak Hour

							
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	8	395	289	437	77	21	7
Future Volume (vph)	8	395	289	437	77	21	7
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	60.0	60.0	30.0	90.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	25.0%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	25.3	25.3	42.3	42.3	11.9	11.9	11.9
Actuated g/C Ratio	0.39	0.39	0.65	0.65	0.18	0.18	0.18
v/c Ratio	0.03	0.76	0.68	0.43	0.31	0.73	0.03
Control Delay	14.4	25.6	15.0	7.1	30.1	11.0	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	25.6	15.0	7.1	30.1	11.0	25.8
LOS	B	C	B	A	C	B	C
Approach Delay		25.4		10.2		13.7	25.8
Approach LOS		C		B		B	C

Intersection Summary













Cycle Length: 120  
 Actuated Cycle Length: 65.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 15.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 82.2%  
 ICU Level of Service E  
 Analysis Period (min) 15

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr















Volume  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	35	121	216	16	32	1	81	128	22	2	193	52
Future Volume (vph)	35	121	216	16	32	1	81	128	22	2	193	52
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	37	127	227	17	34	1	85	135	23	2	203	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	127	227	17	34	1	85	135	23	2	203	55
Intersection Summary												

HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	121	216	16	32	1	81	128	22	2	193	52
Future Vol, veh/h	35	121	216	16	32	1	81	128	22	2	193	52
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	205	-	155	300	-	155	315	-	155	205	-	155
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	37	127	227	17	34	1	85	135	23	2	203	55







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	541	535	203	717	567	135	258	0	0	158	0	0
Stage 1	207	207	-	305	305	-	-	-	-	-	-	-
Stage 2	334	328	-	412	262	-	-	-	-	-	-	-
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	452	452	838	345	433	914	1307	-	-	1422	-	-
Stage 1	795	731	-	705	662	-	-	-	-	-	-	-
Stage 2	680	647	-	617	691	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	401	422	838	184	404	914	1307	-	-	1422	-	-
Mov Cap-2 Maneuver	401	422	-	184	404	-	-	-	-	-	-	-
Stage 1	743	730	-	659	619	-	-	-	-	-	-	-
Stage 2	600	605	-	371	690	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.3		18.4		2.8		0.1	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1307	-	-	401	422	838	184	404	914	1422	-	-
HCM Lane V/C Ratio	0.065	-	-	0.092	0.302	0.271	0.092	0.083	0.001	0.001	-	-
HCM Control Delay (s)	7.9	-	-	14.9	17.2	10.9	26.5	14.7	8.9	7.5	-	-
HCM Lane LOS	A	-	-	B	C	B	D	B	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	1.3	1.1	0.3	0.3	0	0	-	-

Volume  
9: US 24 & Rex Rd













2040 Background Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	40	105	28	843	1117	21
Future Volume (vph)	40	105	28	843	1117	21
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.98	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	42	111	29	860	1176	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	111	29	860	1176	22
Intersection Summary						



Timings  
9: US 24 & Rex Rd

2040 Background Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	105	28	843	1117	21
Future Volume (vph)	40	105	28	843	1117	21
Turn Type	Prot	Free	Prot	NA	NA	Perm
Protected Phases	6		7	4	8	
Permitted Phases		Free				8
Detector Phase	6		7	4	8	8
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		10.0	20.0	20.0	20.0
Total Split (s)	25.0		48.0	95.0	47.0	47.0
Total Split (%)	20.8%		40.0%	79.2%	39.2%	39.2%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max		None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.0	120.0	6.5	90.0	82.8	82.8
Actuated g/C Ratio	0.17	1.00	0.05	0.75	0.69	0.69
v/c Ratio	0.14	0.07	0.16	0.32	0.48	0.02
Control Delay	23.8	0.1	58.4	6.1	10.2	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	0.1	58.4	6.1	10.2	3.7
LOS	C	A	E	A	B	A
Approach Delay	6.6			7.8	10.0	
Approach LOS	A			A	B	

Intersection Summary







Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 15 (13%), Referenced to phase 4:NBT and 8:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 8.9  
 Intersection Capacity Utilization 43.4%  
 Analysis Period (min) 15







Splits and Phases: 9: US 24 & Rex Rd



Volume  
12: Eastonville Rd & Londonderry Dr













2040 Background Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	35	275	158	192	463	51
Future Volume (vph)	35	275	158	192	463	51
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	37	289	166	202	487	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	289	166	202	487	54
Intersection Summary						

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	275	158	192	463	51
Future Vol, veh/h	35	275	158	192	463	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	0	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	289	166	202	487	54
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1021	487	541	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	262	581	1028	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	220	581	1028	-	-	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.1	4.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1028	-	351	581	-	-
HCM Lane V/C Ratio	0.162	-	0.105	0.498	-	-
HCM Control Delay (s)	9.2	-	16.5	17.2	-	-
HCM Lane LOS	A	-	C	C	-	-
HCM 95th %tile Q(veh)	0.6	-	0.3	2.8	-	-

























Volume  
13: Eastonville Rd & Stapleton Dr

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	128	990	224	143	832	85	108	137	177	237	277	189
Future Volume (vph)	128	990	224	143	832	85	108	137	177	237	277	189
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	135	1042	236	151	876	89	114	144	186	249	292	199
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	1042	236	151	876	89	114	144	186	249	292	199
Intersection Summary												

Timings  
13: Eastonville Rd & Stapleton Dr

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)	128	990	224	143	832	85	108	137	177	237	277	189
Future Volume (vph)	128	990	224	143	832	85	108	137	177	237	277	189
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	24.0	62.0	62.0	12.0	50.0	50.0	18.0	32.0	32.0	14.0	28.0	28.0
Total Split (%)	20.0%	51.7%	51.7%	10.0%	41.7%	41.7%	15.0%	26.7%	26.7%	11.7%	23.3%	23.3%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	9.3	36.4	36.4	44.0	35.1	35.1	30.7	19.5	19.5	30.6	19.4	19.4
Actuated g/C Ratio	0.10	0.39	0.39	0.48	0.38	0.38	0.33	0.21	0.21	0.33	0.21	0.21
v/c Ratio	0.39	0.75	0.31	0.61	0.65	0.13	0.35	0.37	0.39	0.55	0.75	0.41
Control Delay	46.0	28.1	3.7	25.0	27.0	1.8	24.5	35.6	7.7	29.5	49.5	8.2
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	46.0	28.1	3.7	25.0	27.0	1.8	24.5	35.6	7.7	29.5	49.5	8.2
LOS	D	C	A	C	C	A	C	D	A	C	D	A
Approach Delay		25.8			24.7			21.1			31.6	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 92.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.1

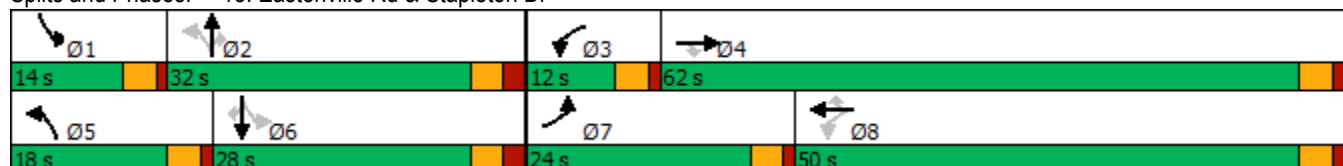
Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15













Splits and Phases: 13: Eastonville Rd & Stapleton Dr





























Volume  
14: US 24 & Stapleton Dr

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	428	488	608	200	485	124	332	321	175	222	742	263
Future Volume (vph)	428	488	608	200	485	124	332	321	175	222	742	263
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.98	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)	451	514	640	211	511	131	349	338	184	234	757	277
Shared Lane Traffic (%)												
Lane Group Flow (vph)	451	514	640	211	511	131	349	338	184	234	757	277
Intersection Summary												

Timings  
14: US 24 & Stapleton Dr

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)	428	488	608	200	485	124	332	321	175	222	742	263
Future Volume (vph)	428	488	608	200	485	124	332	321	175	222	742	263
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	11.0	11.0	10.0	11.0	
Total Split (s)	22.0	31.0		22.0	31.0		22.0	45.0	45.0	22.0	45.0	
Total Split (%)	18.3%	25.8%		18.3%	25.8%		18.3%	37.5%	37.5%	18.3%	37.5%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)	17.0	26.8	120.0	12.7	22.4	120.0	16.1	47.2	47.2	13.4	44.5	120.0
Actuated g/C Ratio	0.14	0.22	1.00	0.11	0.19	1.00	0.13	0.39	0.39	0.11	0.37	1.00
v/c Ratio	0.93	0.65	0.40	0.58	0.77	0.08	0.76	0.24	0.25	0.61	0.58	0.17
Control Delay	77.5	46.7	0.8	57.5	54.6	0.1	61.4	26.3	4.9	50.8	27.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	46.7	0.8	57.5	54.6	0.1	61.4	26.3	4.9	50.8	27.3	0.2
LOS	E	D	A	E	D	A	E	C	A	D	C	A
Approach Delay		37.0			46.9			35.8			25.7	
Approach LOS		D			D			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 35.5

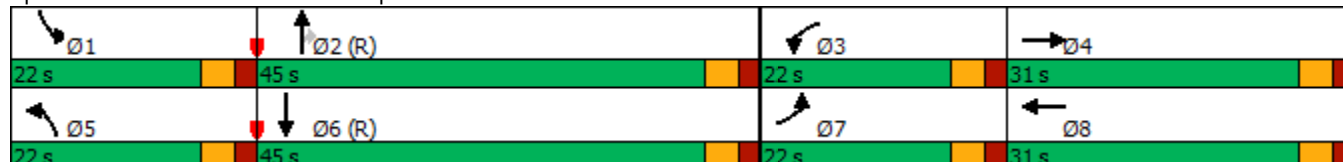
Intersection LOS: D

Intersection Capacity Utilization 72.3%

ICU Level of Service C













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr





















Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	107	164	112	65	48	124	19	534	85	241	439	11
Future Volume (vph)	107	164	112	65	48	124	19	534	85	241	439	11
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	113	173	118	68	51	131	20	562	89	254	462	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	291	0	68	51	131	20	651	0	254	474	0
Intersection Summary												

Timings  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	107	164	65	48	124	19	534	241	439
Future Volume (vph)	107	164	65	48	124	19	534	241	439
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	10.0	30.0	10.0	30.0	30.0	10.0	60.0	20.0	70.0
Total Split (%)	8.3%	25.0%	8.3%	25.0%	25.0%	8.3%	50.0%	16.7%	58.3%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	14.2	10.5	14.2	10.5	10.5	41.0	35.6	52.1	48.8
Actuated g/C Ratio	0.18	0.13	0.18	0.13	0.13	0.51	0.44	0.64	0.60
v/c Ratio	0.43	0.55	0.32	0.11	0.39	0.04	0.81	0.62	0.42
Control Delay	35.9	26.2	33.6	37.1	8.2	6.8	28.8	15.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	26.2	33.6	37.1	8.2	6.8	28.8	15.0	11.5
LOS	D	C	C	D	A	A	C	B	B
Approach Delay		28.9		21.0			28.1		12.7
Approach LOS		C		C			C		B

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 21.9

Intersection LOS: C

Intersection Capacity Utilization 75.6%

ICU Level of Service D













Analysis Period (min) 15

Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
Ø1	Ø2	Ø3	Ø4
20 s	60 s	10 s	30 s
			
Ø5	Ø6	Ø7	Ø8
10 s	70 s	10 s	30 s















Volume  
16: McLaughlin Rd & Eastonville Dr

2040 Background Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	351	44	256	317	0	19	4	119	0	12	1
Future Volume (vph)	1	351	44	256	317	0	19	4	119	0	12	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	1	369	46	269	334	0	20	4	125	0	13	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	415	0	269	334	0	20	129	0	0	14	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

2040 Background Traffic  
AM Peak Hour

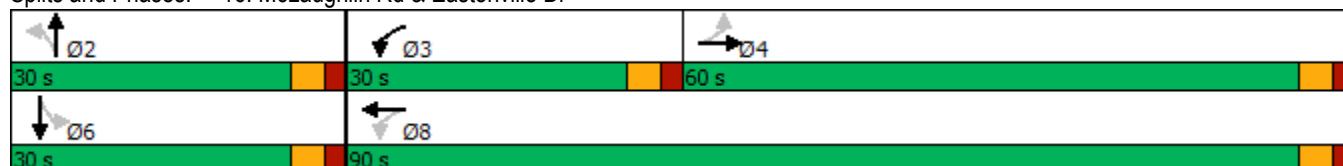
							
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	1	351	256	317	19	4	12
Future Volume (vph)	1	351	256	317	19	4	12
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	60.0	60.0	30.0	90.0	30.0	30.0	30.0
Total Split (%)	50.0%	50.0%	25.0%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	15.6	15.6	29.3	29.3	6.7	6.7	6.7
Actuated g/C Ratio	0.34	0.34	0.63	0.63	0.15	0.15	0.15
v/c Ratio	0.00	0.67	0.47	0.28	0.10	0.38	0.05
Control Delay	10.0	18.9	6.5	4.5	20.9	9.3	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.9	6.5	4.5	20.9	9.3	19.5
LOS	A	B	A	A	C	A	B
Approach Delay		18.9		5.4		10.9	19.5
Approach LOS		B		A		B	B

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 46.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 11.0  
 Intersection Capacity Utilization 55.5%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr





HCM 6th Roundabout  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
AM Peak Hour

Intersection						
Intersection Delay, s/veh	4.7					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	391		52		243	
Demand Flow Rate, veh/h	400		53		248	
Vehicles Circulating, veh/h	226		263		170	
Vehicles Exiting, veh/h	178		155		456	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	4.8		3.9		4.5	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.420	0.580	1.000	0.907	0.093	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	168	232	53	225	23	265
Cap Entry Lane, veh/h	1156	1156	1055	1217	1217	1197
Entry HV Adj Factor	0.979	0.978	0.987	0.979	1.000	0.981
Flow Entry, veh/h	164	227	52	220	23	260
Cap Entry, veh/h	1132	1131	1042	1191	1217	1175
V/C Ratio	0.145	0.201	0.050	0.185	0.019	0.221
Control Delay, s/veh	4.4	5.0	3.9	4.6	3.1	5.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	1	1	0	1	0	1

Intersection						
Intersection Delay, s/veh	5.3					
Intersection LOS	A					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	326		368		541	
Demand Flow Rate, veh/h	333		375		552	
Vehicles Circulating, veh/h	497		38		169	
Vehicles Exiting, veh/h	224		792		244	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	7.1		3.9		5.2	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	L	TR	LT	TR
Assumed Moves	L	TR	L	TR	LT	TR
RT Channelized						
Lane Util	0.114	0.886	0.451	0.549	0.469	0.531
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	38	295	169	206	259	293
Cap Entry Lane, veh/h	855	931	1303	1375	1155	1230
Entry HV Adj Factor	0.974	0.980	0.982	0.980	0.982	0.979
Flow Entry, veh/h	37	289	166	202	254	287
Cap Entry, veh/h	832	912	1280	1348	1135	1204
V/C Ratio	0.044	0.317	0.130	0.150	0.224	0.238
Control Delay, s/veh	4.8	7.4	3.9	3.9	5.2	5.1
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	0	1	1	1













HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
AM Peak Hour

Intersection							
Intersection Delay, s/veh	11.8						
Intersection LOS	B						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		2		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	404		250		671		728
Demand Flow Rate, veh/h	411		255		684		742
Vehicles Circulating, veh/h	799		708		550		141
Vehicles Exiting, veh/h	84		526		660		822
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	9.2		6.8		17.4		9.9
Approach LOS	A		A		C		A
Lane	Left	Right	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LT	R	LTR
Assumed Moves	LT	TR	LT	R	LT	R	LTR
RT Channelized							
Lane Util	0.470	0.530	0.475	0.525	0.867	0.133	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328
Entry Flow, veh/h	193	218	121	134	593	91	742
Cap Entry Lane, veh/h	647	720	704	778	814	890	1260
Entry HV Adj Factor	0.983	0.981	0.983	0.978	0.981	0.978	0.981
Flow Entry, veh/h	190	214	119	131	582	89	728
Cap Entry, veh/h	636	706	692	760	798	870	1236
V/C Ratio	0.298	0.303	0.172	0.172	0.729	0.102	0.589
Control Delay, s/veh	9.5	8.8	7.1	6.6	19.2	5.1	9.9
LOS	A	A	A	A	C	A	A
95th %tile Queue, veh	1	1	1	1	6	0	4













Volume  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	41	102	91	18	87	1	158	138	14	2	200	67
Future Volume (vph)	41	102	91	18	87	1	158	138	14	2	200	67
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	43	107	96	19	92	1	166	145	15	2	211	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	107	96	19	92	1	166	145	15	2	211	71
Intersection Summary												

HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	8.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	102	91	18	87	1	158	138	14	2	200	67
Future Vol, veh/h	41	102	91	18	87	1	158	138	14	2	200	67
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	205	-	155	300	-	155	315	-	155	205	-	155
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	43	107	96	19	92	1	166	145	15	2	211	71







Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	746	707	211	829	763	145	282	0	0	160	0	0
Stage 1	215	215	-	477	477	-	-	-	-	-	-	-
Stage 2	531	492	-	352	286	-	-	-	-	-	-	-
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	330	360	829	290	334	902	1280	-	-	1419	-	-
Stage 1	787	725	-	569	556	-	-	-	-	-	-	-
Stage 2	532	548	-	665	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	225	313	829	171	290	902	1280	-	-	1419	-	-
Mov Cap-2 Maneuver	225	313	-	171	290	-	-	-	-	-	-	-
Stage 1	685	724	-	495	484	-	-	-	-	-	-	-
Stage 2	375	477	-	500	674	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	23.8	4.2	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1280	-	-	225	313	829	171	290	902	1419	-	-
HCM Lane V/C Ratio	0.13	-	-	0.192	0.343	0.116	0.111	0.316	0.001	0.001	-	-
HCM Control Delay (s)	8.2	-	-	24.8	22.4	9.9	28.7	23	9	7.5	-	-
HCM Lane LOS	A	-	-	C	C	A	D	C	A	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.7	1.5	0.4	0.4	1.3	0	0	-	-

Volume  
9: US 24 & Rex Rd













2040 Background Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	29	89	75	1107	1021	31
Future Volume (vph)	29	89	75	1107	1021	31
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.98	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	31	94	79	1130	1075	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	94	79	1130	1075	33
Intersection Summary						



Timings  
9: US 24 & Rex Rd

2040 Background Traffic  
PM Peak Hour

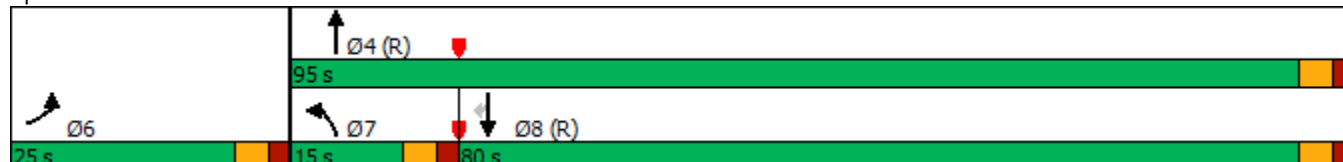
						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	89	75	1107	1021	31
Future Volume (vph)	29	89	75	1107	1021	31
Turn Type	Prot	Free	Prot	NA	NA	Perm
Protected Phases	6		7	4	8	
Permitted Phases		Free				8
Detector Phase	6		7	4	8	8
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		10.0	20.0	20.0	20.0
Total Split (s)	25.0		15.0	95.0	80.0	80.0
Total Split (%)	20.8%		12.5%	79.2%	66.7%	66.7%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max		None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.0	120.0	8.1	90.0	79.1	79.1
Actuated g/C Ratio	0.17	1.00	0.07	0.75	0.66	0.66
v/c Ratio	0.11	0.06	0.34	0.43	0.46	0.03
Control Delay	43.6	0.1	57.1	6.1	11.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	0.1	57.1	6.1	11.4	2.9
LOS	D	A	E	A	B	A
Approach Delay	10.9			9.4	11.1	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 15 (13%), Referenced to phase 4:NBT and 8:SBT, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.46  
 Intersection Signal Delay: 10.3  
 Intersection Capacity Utilization 44.6%  
 Analysis Period (min) 15







Intersection LOS: B  
 ICU Level of Service A







Splits and Phases: 9: US 24 & Rex Rd



Volume  
12: Eastonville Rd & Londonderry Dr













2040 Background Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	44	177	307	389	292	35
Future Volume (vph)	44	177	307	389	292	35
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	46	186	323	409	307	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	186	323	409	344	0
Intersection Summary						

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	44	177	307	389	292	35
Future Vol, veh/h	44	177	307	389	292	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	186	323	409	307	37
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1381	326	344	0	-	0
Stage 1	326	-	-	-	-	-
Stage 2	1055	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	159	715	1215	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	715	1215	-	-	-
Mov Cap-2 Maneuver	238	-	-	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	335	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.2	4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1215	-	238	715	-	-
HCM Lane V/C Ratio	0.266	-	0.195	0.261	-	-
HCM Control Delay (s)	9	-	23.7	11.8	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	1.1	-	0.7	1	-	-

























Volume  
13: Eastonville Rd & Stapleton Dr

2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	248	904	160	173	1249	151	251	297	158	131	196	132
Future Volume (vph)	248	904	160	173	1249	151	251	297	158	131	196	132
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.98	0.95	0.95	0.98	0.95	0.95	0.95	0.95	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)	261	922	168	182	1274	159	264	313	166	138	206	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	261	922	168	182	1274	159	264	313	166	138	206	139
Intersection Summary												

Timings  
13: Eastonville Rd & Stapleton Dr

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)	248	904	160	173	1249	151	251	297	158	131	196	132
Future Volume (vph)	248	904	160	173	1249	151	251	297	158	131	196	132
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	21.0	47.0	47.0	19.0	45.0	45.0	16.0	44.0	44.0	10.0	38.0	38.0
Total Split (%)	17.5%	39.2%	39.2%	15.8%	37.5%	37.5%	13.3%	36.7%	36.7%	8.3%	31.7%	31.7%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	12.8	42.6	42.6	51.8	40.3	40.3	34.3	23.2	23.2	24.3	17.3	17.3
Actuated g/C Ratio	0.13	0.42	0.42	0.52	0.40	0.40	0.34	0.23	0.23	0.24	0.17	0.17
v/c Ratio	0.60	0.62	0.22	0.54	0.90	0.22	0.75	0.73	0.34	0.57	0.64	0.36
Control Delay	48.2	26.2	4.9	17.5	39.4	7.5	41.0	46.3	6.8	36.1	48.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	26.2	4.9	17.5	39.4	7.5	41.0	46.3	6.8	36.1	48.5	8.8
LOS	D	C	A	B	D	A	D	D	A	D	D	A
Approach Delay		27.8			33.8			35.6			33.5	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 100.5

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 32.1

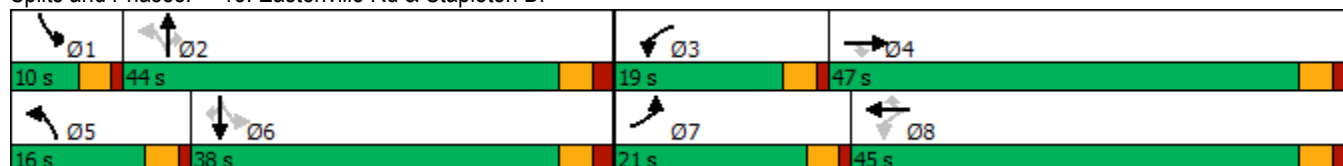
Intersection LOS: C

Intersection Capacity Utilization 80.8%

ICU Level of Service D













Analysis Period (min) 15

Splits and Phases: 13: Eastonville Rd & Stapleton Dr



Volume  
14: US 24 & Stapleton Dr

























2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	372	553	388	200	778	122	723	693	175	223	444	449
Future Volume (vph)	372	553	388	200	778	122	723	693	175	223	444	449
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.98	0.98	0.95	0.95	0.98	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)	392	582	408	211	819	128	738	707	184	235	453	473
Shared Lane Traffic (%)												
Lane Group Flow (vph)	392	582	408	211	819	128	738	707	184	235	453	473
Intersection Summary												



Timings  
14: US 24 & Stapleton Dr

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)	372	553	388	200	778	122	723	693	175	223	444	449
Future Volume (vph)	372	553	388	200	778	122	723	693	175	223	444	449
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			8			2			Free
Detector Phase	7	4		3	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0		10.0	10.0	10.0	10.0	11.0	11.0	10.0	11.0	
Total Split (s)	20.0	34.0		16.0	30.0	30.0	29.0	34.0	34.0	16.0	21.0	
Total Split (%)	20.0%	34.0%		16.0%	30.0%	30.0%	29.0%	34.0%	34.0%	16.0%	21.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effect Green (s)	14.4	28.8	98.6	10.2	24.7	24.7	23.3	29.1	29.1	10.4	16.2	98.6
Actuated g/C Ratio	0.15	0.29	1.00	0.10	0.25	0.25	0.24	0.30	0.30	0.11	0.16	1.00
v/c Ratio	0.78	0.56	0.26	0.59	0.93	0.24	0.91	0.68	0.31	0.65	0.78	0.30
Control Delay	52.9	32.3	0.4	49.8	53.9	2.4	53.4	34.8	5.7	51.4	50.4	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	32.3	0.4	49.8	53.9	2.4	53.4	34.8	5.7	51.4	50.4	0.5
LOS	D	C	A	D	D	A	D	C	A	D	D	A
Approach Delay		28.7			47.4			40.0			30.3	
Approach LOS		C			D			D			C	

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 98.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 36.6

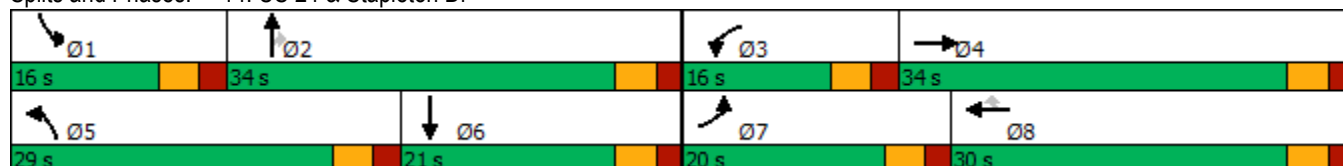
Intersection LOS: D

Intersection Capacity Utilization 81.7%

ICU Level of Service D













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr





















Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	11	51	80	132	165	293	131	498	162	171	350	8
Future Volume (vph)	11	51	80	132	165	293	131	498	162	171	350	8
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	12	54	84	139	174	308	138	524	171	180	368	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	138	0	139	174	308	138	695	0	180	376	0
Intersection Summary												

Timings  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	11	51	132	165	293	131	498	171	350
Future Volume (vph)	11	51	132	165	293	131	498	171	350
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	10.0	30.0	10.0	30.0	30.0	15.0	65.0	15.0	65.0
Total Split (%)	8.3%	25.0%	8.3%	25.0%	25.0%	12.5%	54.2%	12.5%	54.2%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	13.7	8.4	18.2	17.5	17.5	45.7	36.9	45.7	36.9
Actuated g/C Ratio	0.17	0.10	0.23	0.22	0.22	0.57	0.46	0.57	0.46
v/c Ratio	0.05	0.33	0.53	0.23	0.53	0.25	0.83	0.59	0.44
Control Delay	30.0	19.4	38.8	31.3	8.3	7.1	28.1	17.4	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	19.4	38.8	31.3	8.3	7.1	28.1	17.4	16.2
LOS	C	B	D	C	A	A	C	B	B
Approach Delay		20.3		21.6			24.6		16.6
Approach LOS		C		C			C		B

Intersection Summary













Cycle Length: 120  
 Actuated Cycle Length: 80.4  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 21.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 73.7%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
Ø1	Ø2	Ø3	Ø4
15 s	65 s	10 s	30 s
			
Ø5	Ø6	Ø7	Ø8
15 s	65 s	10 s	30 s















Volume  
16: McLaughlin Rd & Eastonville Dr

2040 Background Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	9	438	72	284	509	0	82	22	426	0	8	1
Future Volume (vph)	9	438	72	284	509	0	82	22	426	0	8	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	9	461	76	299	536	0	86	23	448	0	8	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	537	0	299	536	0	86	471	0	0	9	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

2040 Background Traffic  
PM Peak Hour

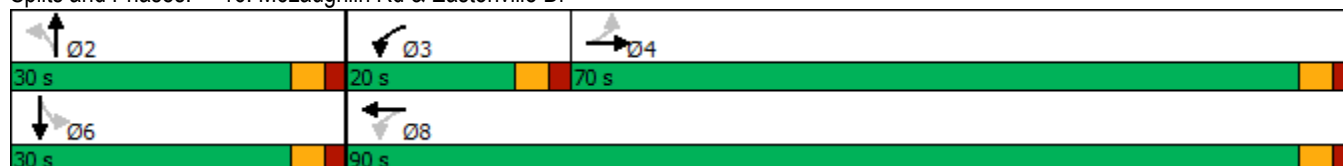
							
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	9	438	284	509	82	22	8
Future Volume (vph)	9	438	284	509	82	22	8
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	70.0	70.0	20.0	90.0	30.0	30.0	30.0
Total Split (%)	58.3%	58.3%	16.7%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	24.3	24.3	40.0	40.0	11.2	11.2	11.2
Actuated g/C Ratio	0.39	0.39	0.64	0.64	0.18	0.18	0.18
v/c Ratio	0.03	0.75	0.61	0.45	0.34	0.72	0.03
Control Delay	13.3	23.7	11.3	7.2	29.2	10.9	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	23.7	11.3	7.2	29.2	10.9	24.1
LOS	B	C	B	A	C	B	C
Approach Delay		23.5		8.7		13.8	24.1
Approach LOS		C		A		B	C

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 62.1  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 14.4  
 Intersection Capacity Utilization 83.2%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service E

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr



HCM 6th Roundabout  
1: Eastonville Rd & Rex Rd

2040 Background Traffic  
PM Peak Hour

Intersection						
Intersection Delay, s/veh	5.2					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	246		112		326	
Demand Flow Rate, veh/h	251		114		332	
Vehicles Circulating, veh/h	236		361		155	
Vehicles Exiting, veh/h	335		126		332	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	4.2		4.9		5.2	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.610	0.390	1.000	0.955	0.045	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	153	98	114	317	15	289
Cap Entry Lane, veh/h	1146	1146	955	1233	1233	1035
Entry HV Adj Factor	0.979	0.980	0.984	0.981	1.000	0.982
Flow Entry, veh/h	150	96	112	311	15	284
Cap Entry, veh/h	1122	1122	939	1210	1233	1016
V/C Ratio	0.134	0.086	0.119	0.257	0.012	0.279
Control Delay, s/veh	4.4	3.9	4.9	5.3	3.0	6.3
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	0	0	1	0	1



Intersection						
Intersection Delay, s/veh	5.1					
Intersection LOS	A					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	232		732		344	
Demand Flow Rate, veh/h	237		746		351	
Vehicles Circulating, veh/h	313		47		329	
Vehicles Exiting, veh/h	367		503		464	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	4.8		5.3		5.1	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	L	TR	LT	TR
Assumed Moves	L	TR	L	TR	LT	TR
RT Channelized						
Lane Util	0.198	0.802	0.441	0.559	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	47	190	329	417	165	186
Cap Entry Lane, veh/h	1012	1088	1293	1364	997	1074
Entry HV Adj Factor	0.979	0.979	0.982	0.980	0.979	0.980
Flow Entry, veh/h	46	186	323	409	162	182
Cap Entry, veh/h	991	1065	1269	1338	977	1052
V/C Ratio	0.046	0.175	0.255	0.306	0.165	0.173
Control Delay, s/veh	4.0	5.0	5.1	5.4	5.2	5.0
LOS	A	A	A	A	A	A
95th %tile Queue, veh	0	1	1	1	1	1

HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Background Traffic  
PM Peak Hour

Intersection							
Intersection Delay, s/veh	10.6						
Intersection LOS	B						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		2		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	150		621		833		556
Demand Flow Rate, veh/h	153		633		849		567
Vehicles Circulating, veh/h	701		687		251		460
Vehicles Exiting, veh/h	326		413		603		860
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	6.0		10.4		10.6		12.1
Approach LOS	A		B		B		B
Lane	Left	Right	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LT	R	LTR
Assumed Moves	LT	R	LT	TR	LT	R	LTR
RT Channelized							
Lane Util	0.438	0.562	0.471	0.529	0.795	0.205	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328
Entry Flow, veh/h	67	86	298	335	675	174	567
Cap Entry Lane, veh/h	708	783	718	792	1072	1147	960
Entry HV Adj Factor	0.984	0.977	0.979	0.982	0.980	0.983	0.980
Flow Entry, veh/h	66	84	292	329	662	171	556
Cap Entry, veh/h	697	764	702	777	1050	1127	941
V/C Ratio	0.095	0.110	0.415	0.423	0.630	0.152	0.590
Control Delay, s/veh	6.2	5.8	10.8	10.1	12.2	4.5	12.1
LOS	A	A	B	B	B	A	B
95th %tile Queue, veh	0	0	2	2	5	1	4

HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	1103.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↰	↰	↱	↰	↰	↱	↰	↰	↱	↰
Traffic Vol, veh/h	35	163	218	658	85	27	86	130	371	23	194	52
Future Vol, veh/h	35	163	218	658	85	27	86	130	371	23	194	52
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	205	-	155	300	-	155	315	-	155	205	-	155
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	37	172	229	693	89	28	91	137	391	24	204	55

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	825	962	204	799	626	137	259	0	0	528	0	0
Stage 1	252	252	-	319	319	-	-	-	-	-	-	-
Stage 2	573	710	-	480	307	-	-	-	-	-	-	-
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	292	256	837	~ 304	401	911	1306	-	-	1039	-	-
Stage 1	752	698	-	693	653	-	-	-	-	-	-	-
Stage 2	505	437	-	~ 567	661	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	214	233	837	~ 83	365	911	1306	-	-	1039	-	-
Mov Cap-2 Maneuver	214	233	-	~ 83	365	-	-	-	-	-	-	-
Stage 1	699	682	-	~ 644	607	-	-	-	-	-	-	-
Stage 2	388	406	-	~ 301	646	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29	\$ 2909.6	1.2	0.7
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1306	-	-	214	233	837	83	365	911	1039	-	-
HCM Lane V/C Ratio	0.069	-	-	0.172	0.736	0.274	8.345	0.245	0.031	0.023	-	-
HCM Control Delay (s)	8	-	-	25.3	54.1	10.3	3402.2	18	9.1	8.5	-	-
HCM Lane LOS	A	-	-	D	F	B	F	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.6	5.1	1.1	79.5	0.9	0.1	0.1	-	-






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

HCM 6th TWSC  
2: Parcel A & B & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection






Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	548	9	14	753	18	27
Future Vol, veh/h	548	9	14	753	18	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	577	9	15	793	19	28

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	586
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	989
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	989
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	288	513	-	-	989	-
HCM Lane V/C Ratio	0.066	0.055	-	-	0.015	-
HCM Control Delay (s)	18.4	12.4	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	563	12	19	730	36	57
Future Vol, veh/h	563	12	19	730	36	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	612	13	21	793	39	62
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	625	0	1454	619
Stage 1	-	-	-	-	619	-
Stage 2	-	-	-	-	835	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	956	-	143	489
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	956	-	140	489
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	417	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.2		16		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	277	489	-	-	956	-
HCM Lane V/C Ratio	0.141	0.127	-	-	0.022	-
HCM Control Delay (s)	20.1	13.4	-	-	8.8	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.4	-	-	0.1	-

Intersection

Int Delay, s/veh 2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	596	24	38	676	73	114
Future Vol, veh/h	596	24	38	676	73	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	627	25	40	712	77	120

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	652
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	935
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	935
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	281	484	-	-	935	-
HCM Lane V/C Ratio	0.273	0.248	-	-	0.043	-
HCM Control Delay (s)	22.6	14.9	-	-	9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	1	-	-	0.1	-



Intersection

Int Delay, s/veh 4.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	664	46	45	578	137	135
Future Vol, veh/h	664	46	45	578	137	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	699	48	47	608	144	142

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	747
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	861
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	861
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	23.5
HCM LOS			C







Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	285	440	-	-	861	-
HCM Lane V/C Ratio	0.506	0.323	-	-	0.055	-
HCM Control Delay (s)	29.9	17	-	-	9.4	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	2.7	1.4	-	-	0.2	-

HCM 6th TWSC  
6: Rex Rd & Residential Collector

2040 Total Traffic  
AM Peak Hour

Intersection

Int Delay, s/veh 107.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	207	593	290	249	460	333
Future Vol, veh/h	207	593	290	249	460	333
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	405	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	624	305	262	484	351

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	567	0	0 1365 305
Stage 1	-	-	- 305 -
Stage 2	-	-	- 1060 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1005	-	- ~ 162 735
Stage 1	-	-	- 748 -
Stage 2	-	-	- ~ 333 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1005	-	- ~ 127 735
Mov Cap-2 Maneuver	-	-	- ~ 246 -
Stage 1	-	-	- 586 -
Stage 2	-	-	- ~ 333 -













Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	286.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1005	-	-	-	246	735
HCM Lane V/C Ratio	0.217	-	-	-	1.968	0.477
HCM Control Delay (s)	9.6	-	-	-	\$ 483.3	14.3
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.8	-	-	-	35	2.6

Notes

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

Intersection						
Int Delay, s/veh	12.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	1019	34	79	439	100	236
Future Vol, veh/h	1019	34	79	439	100	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	405	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1073	36	83	462	105	248
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1109	0	1701	1073
Stage 1	-	-	-	-	1073	-
Stage 2	-	-	-	-	628	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	630	-	~ 101	268
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	532	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	630	-	~ 88	268
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	462	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.8		66.2		
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	268	-	-	630	-
HCM Lane V/C Ratio	0.492	0.927	-	-	0.132	-
HCM Control Delay (s)	37.1	78.6	-	-	11.6	-
HCM Lane LOS	E	F	-	-	B	-
HCM 95th %tile Q(veh)	2.5	8.5	-	-	0.5	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	1217	19	39	507	41	5	0	30	31	0	5
Future Vol, veh/h	19	1217	19	39	507	41	5	0	30	31	0	5
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	205	-	155	200	-	0	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	1281	20	41	534	43	5	0	32	33	0	5






Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	577	0	0	1301	0	0	1961	1980	1281	1963	1957	534
Stage 1	-	-	-	-	-	-	1321	1321	-	616	616	-
Stage 2	-	-	-	-	-	-	640	659	-	1347	1341	-
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	996	-	-	532	-	-	48	62	202	47	64	546
Stage 1	-	-	-	-	-	-	193	226	-	478	482	-
Stage 2	-	-	-	-	-	-	464	461	-	186	221	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	996	-	-	532	-	-	44	56	202	37	58	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	56	-	37	58	-
Stage 1	-	-	-	-	-	-	189	221	-	468	445	-
Stage 2	-	-	-	-	-	-	424	426	-	154	217	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.8			36.3			237.6		
HCM LOS							E			F		






  

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	44	202	996	-	-	532	-	-	37	546
HCM Lane V/C Ratio	0.12	0.156	0.02	-	-	0.077	-	-	0.882	0.01
HCM Control Delay (s)	97.6	26.1	8.7	-	-	12.3	-	-	274	11.7
HCM Lane LOS	F	D	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0.5	0.1	-	-	0.2	-	-	3.2	0

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	108	59	529	36	20	1051
Future Vol, veh/h	108	59	529	36	20	1051
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	62	557	38	21	1106
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1705	557	0	0	595	0
Stage 1	557	-	-	-	-	-
Stage 2	1148	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	~ 101	530	-	-	981	-
Stage 1	574	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 99	530	-	-	981	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	39	0		0.2		
HCM LOS	E					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	274	981	-	
HCM Lane V/C Ratio	-	-	0.642	0.021	-	
HCM Control Delay (s)	-	-	39	8.8	-	
HCM Lane LOS	-	-	E	A	-	
HCM 95th %tile Q(veh)	-	-	4	0.1	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

HCM 6th TWSC  
11: Eastonville Rd & Parcels E & F







2040 Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	29	536	18	10	1149
Future Vol, veh/h	55	29	536	18	10	1149
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	34	631	21	12	1352
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2007	631	0	0	652	0
Stage 1	631	-	-	-	-	-
Stage 2	1376	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	65	481	-	-	935	-
Stage 1	530	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 64	481	-	-	935	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	34.1	0		0.1		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	220	935	-	
HCM Lane V/C Ratio	-	-	0.449	0.013	-	
HCM Control Delay (s)	-	-	34.1	8.9	-	
HCM Lane LOS	-	-	D	A	-	
HCM 95th %tile Q(veh)	-	-	2.1	0	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon



HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
AM Peak Hour

Intersection						
Int Delay, s/veh	27.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	102	275	158	461	1119	178
Future Vol, veh/h	102	275	158	461	1119	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	0	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	289	166	485	1178	187

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1995	1178	1365	0	-	0
Stage 1	1178	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 66	~ 232	503	-	-	-
Stage 1	292	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 44	~ 232	503	-	-	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	196	-	-	-	-	-
Stage 2	434	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	158.2	4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	503	-	140	232	-	-
HCM Lane V/C Ratio	0.331	-	0.767	1.248	-	-
HCM Control Delay (s)	15.7	-	86.1	185	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	1.4	-	4.6	14.6	-	-

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










HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
AM Peak Hour

Intersection

Intersection Delay, s/veh 26.7

Intersection LOS F








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	129	164	112	65	48	124	19	638	85	241	712	40
Future Vol, veh/h	129	164	112	65	48	124	19	638	85	241	712	40
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	136	173	118	68	51	131	20	672	89	254	749	42
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	41.1	22.3	495.6	389.6
HCM LOS	E	C	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	88%	0%	59%	0%	100%	0%	0%	95%
Vol Right, %	0%	12%	0%	41%	0%	0%	100%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	19	723	129	276	65	48	124	241	752
LT Vol	19	0	129	0	65	0	0	241	0
Through Vol	0	638	0	164	0	48	0	0	712
RT Vol	0	85	0	112	0	0	124	0	40
Lane Flow Rate	20	761	136	291	68	51	131	254	792
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.057	2.053	0.389	0.77	0.21	0.148	0.358	0.691	2.038
Departure Headway (Hd)	11.65	11.042	13.827	12.979	14.984	14.442	13.685	11.92	11.35
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	309	335	262	282	242	250	265	307	332
Service Time	9.35	8.742	11.527	10.679	12.684	12.142	11.385	9.62	9.05
HCM Lane V/C Ratio	0.065	2.272	0.519	1.032	0.281	0.204	0.494	0.827	2.386
HCM Control Delay	15.1	508.2	25.1	48.6	21.6	19.6	23.8	37.5	502.5
HCM Lane LOS	C	F	D	E	C	C	C	E	F
HCM 95th-tile Q	0.2	48.1	1.8	5.8	0.8	0.5	1.6	4.8	46.4

HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

2040 Total Traffic  
AM Peak Hour

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	423	44	346	501	0	19	4	152	0	12	1
Future Vol, veh/h	1	423	44	346	501	0	19	4	152	0	12	1
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	100	-	-	100	-	-	75	-	-	-	-	-
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	1	445	46	364	527	0	20	4	160	0	13	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	527	0	0	491	0	0	1732	1725	468	1807	1748	527
Stage 1	-	-	-	-	-	-	470	470	-	1255	1255	-
Stage 2	-	-	-	-	-	-	1262	1255	-	552	493	-
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	1040	-	-	1072	-	-	69	89	595	61	86	551
Stage 1	-	-	-	-	-	-	574	560	-	210	243	-
Stage 2	-	-	-	-	-	-	208	243	-	518	547	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1040	-	-	1072	-	-	43	59	595	31	57	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	59	-	31	57	-
Stage 1	-	-	-	-	-	-	573	559	-	210	160	-
Stage 2	-	-	-	-	-	-	126	160	-	375	546	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			4.1			30.4			80.3		
HCM LOS							D			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	43	483	1040	-	-	1072	-	-	61
HCM Lane V/C Ratio	0.465	0.34	0.001	-	-	0.34	-	-	0.224
HCM Control Delay (s)	147.3	16.2	8.5	-	-	10.1	-	-	80.3
HCM Lane LOS	F	C	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	1.7	1.5	0	-	-	1.5	-	-	0.8

HCM 6th Roundabout  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection						
Intersection Delay, s/veh	13.4					
Intersection LOS	B					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	438		810		619	
Demand Flow Rate, veh/h	447		827		632	
Vehicles Circulating, veh/h	939		271		237	
Vehicles Exiting, veh/h	240		598		1149	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	11.5		19.2		6.1	
Approach LOS	B		C		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.477	0.523	1.000	0.369	0.631	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	213	234	827	233	399	288
Cap Entry Lane, veh/h	604	604	1047	1145	1145	556
Entry HV Adj Factor	0.979	0.979	0.980	0.980	0.980	0.982
Flow Entry, veh/h	209	229	810	228	391	283
Cap Entry, veh/h	592	591	1025	1121	1122	546
V/C Ratio	0.353	0.387	0.790	0.204	0.349	0.518
Control Delay, s/veh	11.1	11.8	19.2	5.0	6.7	16.0
LOS	B	B	C	A	A	C
95th %tile Queue, veh	2	2	9	1	2	3

HCM 6th Roundabout  
2: Parcels A & B & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection			
Intersection Delay, s/veh	8.6		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	586	808	47
Demand Flow Rate, veh/h	598	824	48
Vehicles Circulating, veh/h	15	19	589
Vehicles Exiting, veh/h	828	618	24
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.0	9.9	5.5
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	598	824	48
Cap Entry Lane, veh/h	1359	1353	757
Entry HV Adj Factor	0.981	0.981	0.979
Flow Entry, veh/h	586	808	47
Cap Entry, veh/h	1333	1327	741
V/C Ratio	0.440	0.609	0.063
Control Delay, s/veh	7.0	9.9	5.5
LOS	A	A	A
95th %tile Queue, veh	2	4	0

HCM 6th Roundabout  
3: Parcel H & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection			
Intersection Delay, s/veh	9.0		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	625	814	101
Demand Flow Rate, veh/h	637	830	103
Vehicles Circulating, veh/h	21	40	624
Vehicles Exiting, veh/h	849	687	34
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	10.4	6.6
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	637	830	103
Cap Entry Lane, veh/h	1351	1325	730
Entry HV Adj Factor	0.981	0.981	0.981
Flow Entry, veh/h	625	814	101
Cap Entry, veh/h	1325	1299	716
V/C Ratio	0.472	0.627	0.141
Control Delay, s/veh	7.5	10.4	6.6
LOS	A	B	A
95th %tile Queue, veh	3	5	0



HCM 6th Roundabout  
4: Parcel I & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection			
Intersection Delay, s/veh	9.1		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	652	752	197
Demand Flow Rate, veh/h	666	767	201
Vehicles Circulating, veh/h	41	79	640
Vehicles Exiting, veh/h	805	762	66
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.1	10.2	8.5
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	666	767	201
Cap Entry Lane, veh/h	1323	1273	718
Entry HV Adj Factor	0.980	0.980	0.980
Flow Entry, veh/h	652	752	197
Cap Entry, veh/h	1296	1248	704
V/C Ratio	0.503	0.603	0.280
Control Delay, s/veh	8.1	10.2	8.5
LOS	A	B	A
95th %tile Queue, veh	3	4	1

HCM 6th Roundabout  
5: I & J & Rex Rd

2040 Total Traffic  
AM Peak Hour

Intersection			
Intersection Delay, s/veh	10.0		
Intersection LOS	B		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	747	655	286
Demand Flow Rate, veh/h	762	668	292
Vehicles Circulating, veh/h	48	147	713
Vehicles Exiting, veh/h	767	858	97
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.5	9.8	11.9
Approach LOS	A	A	B
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	762	668	292
Cap Entry Lane, veh/h	1314	1188	667
Entry HV Adj Factor	0.980	0.980	0.979
Flow Entry, veh/h	747	655	286
Cap Entry, veh/h	1288	1164	653
V/C Ratio	0.580	0.562	0.438
Control Delay, s/veh	9.5	9.8	11.9
LOS	A	A	B
95th %tile Queue, veh	4	4	2

HCM 6th Roundabout  
6: Rex Rd & Residential Collector

2040 Total Traffic  
AM Peak Hour

Intersection				
Intersection Delay, s/veh	21.2			
Intersection LOS	C			
Approach	EB	WB	SB	
Entry Lanes	1	2	1	
Conflicting Circle Lanes	2	2	2	
Adj Approach Flow, veh/h	842	567	835	
Demand Flow Rate, veh/h	858	578	852	
Vehicles Circulating, veh/h	494	222	311	
Vehicles Exiting, veh/h	669	1130	489	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	34.6	5.6	18.1	
Approach LOS	D	A	C	
Lane	Left	Left	Right	Left
Designated Moves	LT	LT	R	LR
Assumed Moves	LT	LT	R	LR
RT Channelized				
Lane Util	1.000	0.538	0.462	1.000
Follow-Up Headway, s	2.535	2.667	2.535	2.535
Critical Headway, s	4.328	4.645	4.328	4.328
Entry Flow, veh/h	858	311	267	852
Cap Entry Lane, veh/h	933	1101	1176	1090
Entry HV Adj Factor	0.981	0.980	0.981	0.980
Flow Entry, veh/h	842	305	262	835
Cap Entry, veh/h	915	1079	1154	1068
V/C Ratio	0.920	0.283	0.227	0.782
Control Delay, s/veh	34.6	6.1	5.2	18.1
LOS	D	A	A	C
95th %tile Queue, veh	14	1	1	8

Intersection			
Intersection Delay, s/veh	20.3		
Intersection LOS	C		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	1076	545	353
Demand Flow Rate, veh/h	1098	556	360
Vehicles Circulating, veh/h	85	107	1061
Vehicles Exiting, veh/h	578	1314	122
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	22.4	7.6	33.4
Approach LOS	C	A	D
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	1098	556	360
Cap Entry Lane, veh/h	1265	1237	468
Entry HV Adj Factor	0.980	0.980	0.981
Flow Entry, veh/h	1076	545	353
Cap Entry, veh/h	1240	1212	459
V/C Ratio	0.868	0.449	0.770
Control Delay, s/veh	22.4	7.6	33.4
LOS	C	A	D
95th %tile Queue, veh	12	2	7

Intersection						
Intersection Delay, s/veh	7.5					
Intersection LOS	A					
Approach	EB		WB		NB	
Entry Lanes	2		2		1	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	1365		638		38	
Demand Flow Rate, veh/h	1391		651		39	
Vehicles Circulating, veh/h	78		26		1405	
Vehicles Exiting, veh/h	572		1418		64	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	8.8		4.8		9.9	
Approach LOS	A		A		A	
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	654	737	306	345	39	40
Cap Entry Lane, veh/h	1256	1329	1318	1389	430	845
Entry HV Adj Factor	0.981	0.981	0.980	0.980	0.974	0.975
Flow Entry, veh/h	641	723	300	338	38	39
Cap Entry, veh/h	1232	1304	1291	1361	419	824
V/C Ratio	0.521	0.555	0.232	0.248	0.091	0.047
Control Delay, s/veh	8.7	8.9	4.8	4.8	9.9	4.8
LOS	A	A	A	A	A	A
95th %tile Queue, veh	3	4	1	1	0	0

Intersection			
Intersection Delay, s/veh	17.4		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	176	595	1127
Demand Flow Rate, veh/h	179	607	1149
Vehicles Circulating, veh/h	568	21	116
Vehicles Exiting, veh/h	60	1244	631
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.3	6.8	24.8
Approach LOS	A	A	C
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.328	4.328	4.328
Entry Flow, veh/h	179	607	1149
Cap Entry Lane, veh/h	876	1395	1287
Entry HV Adj Factor	0.983	0.980	0.981
Flow Entry, veh/h	176	595	1127
Cap Entry, veh/h	862	1367	1262
V/C Ratio	0.204	0.435	0.893
Control Delay, s/veh	6.3	6.8	24.8
LOS	A	A	C
95th %tile Queue, veh	1	2	14



Intersection			
Intersection Delay, s/veh	24.5		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	89	583	1220
Demand Flow Rate, veh/h	91	594	1244
Vehicles Circulating, veh/h	575	11	59
Vehicles Exiting, veh/h	30	1292	607
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.0	6.9	34.2
Approach LOS	A	A	D
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	91	594	1244
Cap Entry Lane, veh/h	768	1364	1299
Entry HV Adj Factor	0.978	0.981	0.981
Flow Entry, veh/h	89	583	1220
Cap Entry, veh/h	751	1339	1274
V/C Ratio	0.119	0.435	0.957
Control Delay, s/veh	6.0	6.9	34.2
LOS	A	A	D
95th %tile Queue, veh	0	2	18

HCM 6th Roundabout  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
AM Peak Hour

Intersection						
Intersection Delay, s/veh	10.2					
Intersection LOS	B					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	396		651		1365	
Demand Flow Rate, veh/h	404		664		1393	
Vehicles Circulating, veh/h	1202		109		169	
Vehicles Exiting, veh/h	360		1497		604	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	17.4		5.9		10.2	
Approach LOS	C		A		B	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	L	TR	LT	TR
Assumed Moves	L	TR	L	TR	LT	TR
RT Channelized						
Lane Util	0.270	0.730	0.255	0.745	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	109	295	169	495	655	738
Cap Entry Lane, veh/h	447	511	1221	1294	1155	1230
Entry HV Adj Factor	0.982	0.980	0.982	0.980	0.980	0.981
Flow Entry, veh/h	107	289	166	485	642	724
Cap Entry, veh/h	439	501	1199	1269	1132	1206
V/C Ratio	0.244	0.577	0.138	0.382	0.567	0.600
Control Delay, s/veh	12.1	19.4	4.2	6.5	10.1	10.4
LOS	B	C	A	A	B	B
95th %tile Queue, veh	1	4	0	2	4	4













HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
AM Peak Hour

Intersection								
Intersection Delay, s/veh	21.1							
Intersection LOS	C							
Approach	EB		WB		NB		SB	
Entry Lanes	2		2		2		1	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	427		250		781		1045	
Demand Flow Rate, veh/h	435		255		796		1066	
Vehicles Circulating, veh/h	1092		844		574		141	
Vehicles Exiting, veh/h	115		526		953		958	
Ped Vol Crossing Leg, #/h	0		0		0		0	
Ped Cap Adj	1.000		1.000		1.000		1.000	
Approach Delay, s/veh	13.8		7.9		30.1		20.6	
Approach LOS	B		A		D		C	
Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	R	LTR	
Assumed Moves	LT	TR	LT	R	LT	R	LTR	
RT Channelized								
Lane Util	0.469	0.531	0.475	0.525	0.886	0.114	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328	
Entry Flow, veh/h	204	231	121	134	705	91	1066	
Cap Entry Lane, veh/h	494	561	621	693	796	872	1260	
Entry HV Adj Factor	0.983	0.979	0.983	0.978	0.981	0.978	0.980	
Flow Entry, veh/h	200	226	119	131	692	89	1045	
Cap Entry, veh/h	486	549	611	677	781	853	1235	
V/C Ratio	0.413	0.412	0.195	0.193	0.886	0.104	0.846	
Control Delay, s/veh	14.6	13.1	8.3	7.6	33.3	5.2	20.6	
LOS	B	B	A	A	D	A	C	
95th %tile Queue, veh	2	2	1	1	11	0	11	

Volume  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
AM Peak Hour

























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	35	163	218	658	85	27	86	130	371	23	194	52
Future Volume (vph)	35	163	218	658	85	27	86	130	371	23	194	52
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	37	172	229	693	89	28	91	137	391	24	204	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	172	229	693	89	28	91	137	391	24	204	55
Intersection Summary												

# Timings

## 1: Eastonville Rd & Rex Rd

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)	35	163	218	658	85	27	86	130	371	23	194	52
Future Volume (vph)	35	163	218	658	85	27	86	130	371	23	194	52
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	16.0	30.0	30.0	16.0	30.0	30.0	74.0	74.0	74.0	74.0	74.0	74.0
Total Split (%)	13.3%	25.0%	25.0%	13.3%	25.0%	25.0%	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	16.0	9.9	9.9	25.8	21.9	21.9	11.3	11.3	11.3	11.3	11.3	11.3
Actuated g/C Ratio	0.34	0.21	0.21	0.54	0.46	0.46	0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.07	0.44	0.45	1.01	0.10	0.04	0.33	0.31	0.58	0.08	0.46	0.13
Control Delay	7.0	21.1	6.3	52.6	11.4	1.6	18.9	17.3	6.1	15.1	19.5	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	21.1	6.3	52.6	11.4	1.6	18.9	17.3	6.1	15.1	19.5	5.1
LOS	A	C	A	D	B	A	B	B	A	B	B	A
Approach Delay		12.2			46.3			10.4			16.3	
Approach LOS		B			D			B			B	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 47.5

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 25.1

Intersection LOS: C

Intersection Capacity Utilization 76.7%

ICU Level of Service D







Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Rex Rd

 Ø2	 Ø3	 Ø4
74 s	16 s	30 s
 Ø6	 Ø7	 Ø8
74 s	16 s	30 s

Volume  
6: Rex Rd & Residential Collector













2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	207	593	290	249	460	333
Future Volume (vph)	207	593	290	249	460	333
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	218	624	305	262	484	351
Shared Lane Traffic (%)						
Lane Group Flow (vph)	218	624	305	262	484	351
Intersection Summary						



Timings  
6: Rex Rd & Residential Collector

2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	207	593	290	249	460	333
Future Volume (vph)	207	593	290	249	460	333
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	75.0	60.0	60.0	45.0	45.0
Total Split (%)	12.5%	62.5%	50.0%	50.0%	37.5%	37.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	None	None	Max	Max
Act Effect Green (s)	70.0	70.0	55.2	55.2	40.0	40.0
Actuated g/C Ratio	0.58	0.58	0.46	0.46	0.33	0.33
v/c Ratio	0.39	0.57	0.36	0.30	0.82	0.46
Control Delay	14.1	18.3	48.2	27.0	49.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	18.3	48.2	27.0	49.7	5.1
LOS	B	B	D	C	D	A
Approach Delay		17.2	38.4		30.9	
Approach LOS		B	D		C	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 27.7  
 Intersection Capacity Utilization 65.0%  
 Analysis Period (min) 15













Intersection LOS: C  
 ICU Level of Service C

Splits and Phases: 6: Rex Rd & Residential Collector























Volume  
8: C-1/C-2 & Rex Rd

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	19	1217	19	39	507	41	5	0	30	31	0	5
Future Volume (vph)	19	1217	19	39	507	41	5	0	30	31	0	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	20	1281	20	41	534	43	5	0	32	33	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	1281	20	41	534	43	5	32	0	33	5	0
Intersection Summary												

Timings  
8: C-1/C-2 & Rex Rd

2040 Total Traffic  
AM Peak Hour

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	19	1217	19	39	507	41	5	0	31	0
Future Volume (vph)	19	1217	19	39	507	41	5	0	31	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		2			6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	2	2	2	6	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	25.0	25.0	25.0	25.0
Total Split (%)	79.2%	79.2%	79.2%	79.2%	79.2%	79.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effect Green (s)	64.5	64.5	64.5	64.5	64.5	64.5	45.5	45.5	45.5	45.5
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.38	0.38	0.38	0.38
v/c Ratio	0.05	0.67	0.02	0.34	0.28	0.05	0.01	0.05	0.06	0.01
Control Delay	7.3	16.4	1.5	49.9	38.6	22.4	30.2	0.1	29.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	16.4	1.5	49.9	38.6	22.4	30.2	0.1	29.5	0.0
LOS	A	B	A	D	D	C	C	A	C	A
Approach Delay		16.0			38.3			4.2		25.6
Approach LOS		B			D			A		C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 22.8

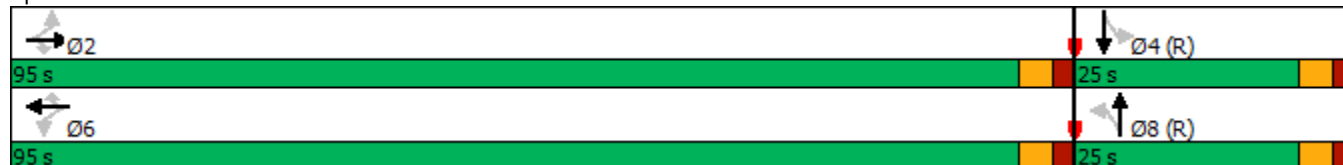
Intersection LOS: C

Intersection Capacity Utilization 50.4%

ICU Level of Service A







Analysis Period (min) 15

Splits and Phases: 8: C-1/C-2 & Rex Rd










Volume  
9: US 24 & Rex Rd

2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	142	1136	489	833	1096	97
Future Volume (vph)	142	1136	489	833	1096	97
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.98	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	149	1196	515	850	1154	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	1196	515	850	1154	102
Intersection Summary						

Timings  
9: US 24 & Rex Rd

2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	142	1136	489	833	1096	97
Future Volume (vph)	142	1136	489	833	1096	97
Turn Type	Prot	Free	Prot	NA	NA	Perm
Protected Phases	6		7	4	8	
Permitted Phases		Free				8
Detector Phase	6		7	4	8	8
Switch Phase						
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	20.0		10.0	20.0	20.0	20.0
Total Split (s)	25.0		48.0	95.0	47.0	47.0
Total Split (%)	20.8%		40.0%	79.2%	39.2%	39.2%
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	Max		None	C-Max	C-Max	C-Max
Act Effect Green (s)	20.0	120.0	23.6	90.0	61.4	61.4
Actuated g/C Ratio	0.17	1.00	0.20	0.75	0.51	0.51
v/c Ratio	0.51	0.76	0.76	0.32	0.64	0.12
Control Delay	34.5	21.8	48.9	4.2	24.0	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	21.8	48.9	4.2	24.0	5.4
LOS	C	C	D	A	C	A
Approach Delay	23.2			21.1	22.5	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 15 (13%), Referenced to phase 4:NBT and 8:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 22.2  
 Intersection Capacity Utilization 64.6%  
 Analysis Period (min) 15







Intersection LOS: C  
 ICU Level of Service C

Splits and Phases: 9: US 24 & Rex Rd



Volume  
12: Eastonville Rd & Londonderry Dr













2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	102	275	158	461	1119	178
Future Volume (vph)	102	275	158	461	1119	178
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	107	289	166	485	1178	187
Shared Lane Traffic (%)						
Lane Group Flow (vph)	107	289	166	485	1178	187
Intersection Summary						



Timings  
12: Eastonville Rd & Londonderry Dr

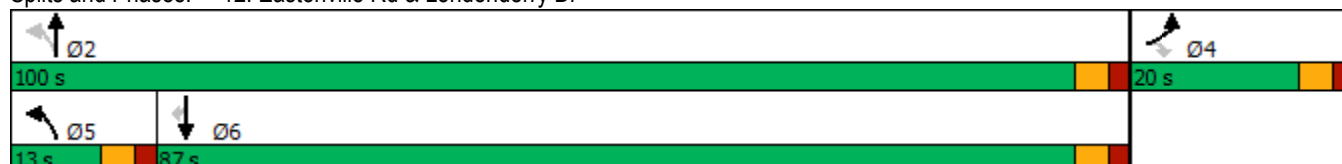
2040 Total Traffic  
AM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	102	275	158	461	1119	178
Future Volume (vph)	102	275	158	461	1119	178
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	13.0	100.0	87.0	87.0
Total Split (%)	16.7%	16.7%	10.8%	83.3%	72.5%	72.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	10.3	10.3	44.9	44.9	31.7	31.7
Actuated g/C Ratio	0.16	0.16	0.68	0.68	0.48	0.48
v/c Ratio	0.38	0.69	0.47	0.20	0.69	0.22
Control Delay	31.4	19.7	10.1	4.1	15.5	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	19.7	10.1	4.1	15.5	2.3
LOS	C	B	B	A	B	A
Approach Delay	22.8			5.7	13.7	
Approach LOS	C			A	B	

Intersection Summary













Cycle Length: 120  
 Actuated Cycle Length: 65.6  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 13.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 57.8%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 12: Eastonville Rd & Londonderry Dr



























Volume  
13: Eastonville Rd & Stapleton Dr

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	250	998	224	144	833	111	108	258	182	315	578	466
Future Volume (vph)	250	998	224	144	833	111	108	258	182	315	578	466
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	263	1051	236	152	877	117	114	272	192	332	608	491
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	1051	236	152	877	117	114	272	192	332	608	491
Intersection Summary												

Timings  
13: Eastonville Rd & Stapleton Dr

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)	250	998	224	144	833	111	108	258	182	315	578	466
Future Volume (vph)	250	998	224	144	833	111	108	258	182	315	578	466
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	24.0	62.0	62.0	12.0	50.0	50.0	18.0	32.0	32.0	14.0	28.0	28.0
Total Split (%)	20.0%	51.7%	51.7%	10.0%	41.7%	41.7%	15.0%	26.7%	26.7%	11.7%	23.3%	23.3%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	12.9	37.8	37.8	41.7	32.8	32.8	34.2	23.2	23.2	34.5	23.4	23.4
Actuated g/C Ratio	0.13	0.39	0.39	0.43	0.34	0.34	0.35	0.24	0.24	0.35	0.24	0.24
v/c Ratio	0.58	0.76	0.31	0.66	0.74	0.19	0.44	0.61	0.38	0.92	1.36	0.81
Control Delay	46.3	29.8	3.6	30.3	33.0	4.4	27.1	41.7	9.3	59.9	208.5	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	29.8	3.6	30.3	33.0	4.4	27.1	41.7	9.3	59.9	208.5	26.5
LOS	D	C	A	C	C	A	C	D	A	E	F	C
Approach Delay		28.6			29.7			28.1			111.6	
Approach LOS		C			C			C			F	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 97.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.36

Intersection Signal Delay: 54.0

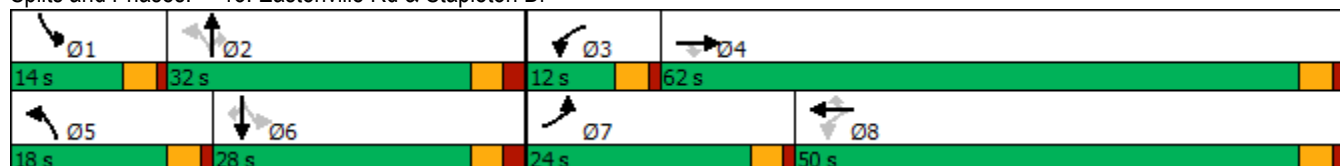
Intersection LOS: D

Intersection Capacity Utilization 87.0%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 13: Eastonville Rd & Stapleton Dr



























Volume  
14: US 24 & Stapleton Dr

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	442	493	680	200	487	178	356	705	175	309	1663	265
Future Volume (vph)	442	493	680	200	487	178	356	705	175	309	1663	265
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.98	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)	465	519	716	211	513	187	375	742	184	325	1697	279
Shared Lane Traffic (%)												
Lane Group Flow (vph)	465	519	716	211	513	187	375	742	184	325	1697	279
Intersection Summary												

Timings  
14: US 24 & Stapleton Dr

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)	442	493	680	200	487	178	356	705	175	309	1663	265
Future Volume (vph)	442	493	680	200	487	178	356	705	175	309	1663	265
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	11.0	11.0	10.0	11.0	
Total Split (s)	17.0	30.0		18.0	31.0		10.0	62.0	62.0	10.0	62.0	
Total Split (%)	14.2%	25.0%		15.0%	25.8%		8.3%	51.7%	51.7%	8.3%	51.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)	12.0	23.0	120.0	11.8	22.8	120.0	8.2	57.0	57.0	8.2	57.0	120.0
Actuated g/C Ratio	0.10	0.19	1.00	0.10	0.19	1.00	0.07	0.48	0.48	0.07	0.48	1.00
v/c Ratio	1.36	0.77	0.45	0.63	0.76	0.12	1.60	0.44	0.22	1.38	1.01	0.18
Control Delay	219.0	54.1	0.9	60.4	53.9	0.2	321.9	22.0	3.1	228.3	53.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	219.0	54.1	0.9	60.4	53.9	0.2	321.9	22.0	3.1	228.3	53.0	0.2
LOS	F	D	A	E	D	A	F	C	A	F	D	A
Approach Delay		76.8			44.4			105.8			71.4	
Approach LOS		E			D			F			E	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.60

Intersection Signal Delay: 76.1

Intersection LOS: E

Intersection Capacity Utilization 98.9%

ICU Level of Service F













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr



Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	129	164	112	65	48	124	19	638	85	241	712	40
Future Volume (vph)	129	164	112	65	48	124	19	638	85	241	712	40
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	136	173	118	68	51	131	20	672	89	254	749	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	291	0	68	51	131	20	761	0	254	791	0
Intersection Summary												





















# Timings

## 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic

AM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	129	164	65	48	124	19	638	241	712
Future Volume (vph)	129	164	65	48	124	19	638	241	712
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	10.0	30.0	10.0	30.0	30.0	10.0	60.0	20.0	70.0
Total Split (%)	8.3%	25.0%	8.3%	25.0%	25.0%	8.3%	50.0%	16.7%	58.3%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	17.0	13.2	15.6	10.5	10.5	50.7	45.5	64.4	60.9
Actuated g/C Ratio	0.18	0.14	0.16	0.11	0.11	0.53	0.48	0.68	0.64
v/c Ratio	0.55	0.52	0.35	0.13	0.42	0.06	0.87	0.69	0.67
Control Delay	45.6	28.4	39.4	42.0	8.9	6.8	34.3	25.1	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	28.4	39.4	42.0	8.9	6.8	34.3	25.1	15.7
LOS	D	C	D	D	A	A	C	C	B
Approach Delay		33.9		24.0			33.6		18.0
Approach LOS		C		C			C		B

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 95.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 81.0%

ICU Level of Service D













Analysis Period (min) 15

Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
Ø1	Ø2	Ø3	Ø4
20 s	60 s	10 s	30 s
			
Ø5	Ø6	Ø7	Ø8
10 s	70 s	10 s	30 s















Volume  
16: McLaughlin Rd & Eastonville Dr

2040 Total Traffic  
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	1	423	44	346	501	0	19	4	152	0	12	1
Future Volume (vph)	1	423	44	346	501	0	19	4	152	0	12	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	1	445	46	364	527	0	20	4	160	0	13	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	491	0	364	527	0	20	164	0	0	14	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

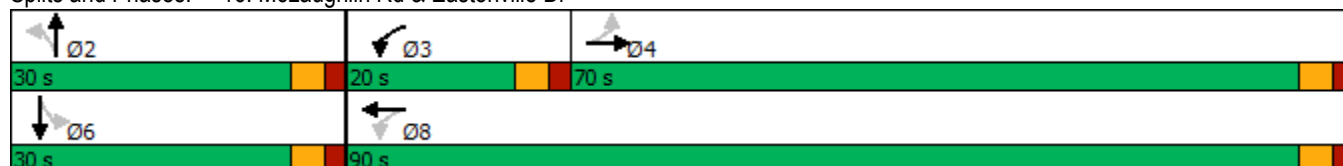
2040 Total Traffic  
AM Peak Hour

							
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	1	423	346	501	19	4	12
Future Volume (vph)	1	423	346	501	19	4	12
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	70.0	70.0	20.0	90.0	30.0	30.0	30.0
Total Split (%)	58.3%	58.3%	16.7%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	19.0	19.0	34.2	34.2	6.9	6.9	6.9
Actuated g/C Ratio	0.37	0.37	0.66	0.66	0.13	0.13	0.13
v/c Ratio	0.00	0.72	0.65	0.43	0.11	0.47	0.06
Control Delay	11.0	20.7	10.7	5.2	24.4	10.4	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	20.7	10.7	5.2	24.4	10.4	22.8
LOS	B	C	B	A	C	B	C
Approach Delay		20.7		7.4		11.9	22.8
Approach LOS		C		A		B	C

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 51.5  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 12.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 66.2%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr



























# Timings

# 2040 Total Traffic With Hypothetical Capacity Improvements

## 13: Eastonville Rd & Stapleton Dr

AM Peak Hour 2 NB/SB TH

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	998	224	144	833	111	108	258	182	315	578	466
Future Volume (vph)	250	998	224	144	833	111	108	258	182	315	578	466
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	24.0	62.0	62.0	12.0	50.0	50.0	18.0	32.0	32.0	14.0	28.0	28.0
Total Split (%)	20.0%	51.7%	51.7%	10.0%	41.7%	41.7%	15.0%	26.7%	26.7%	11.7%	23.3%	23.3%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	12.9	37.8	37.8	41.6	32.7	32.7	33.6	22.2	22.2	33.4	22.1	22.1
Actuated g/C Ratio	0.13	0.39	0.39	0.43	0.34	0.34	0.35	0.23	0.23	0.35	0.23	0.23
v/c Ratio	0.57	0.76	0.31	0.64	0.73	0.19	0.40	0.33	0.38	0.77	0.75	0.79
Control Delay	46.1	29.4	3.6	29.1	32.6	4.4	26.0	33.5	8.6	40.4	43.2	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	29.4	3.6	29.1	32.6	4.4	26.0	33.5	8.6	40.4	43.2	22.4
LOS	D	C	A	C	C	A	C	C	A	D	D	C
Approach Delay		28.3			29.3			23.8			35.4	
Approach LOS		C			C			C			D	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 96.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 30.1

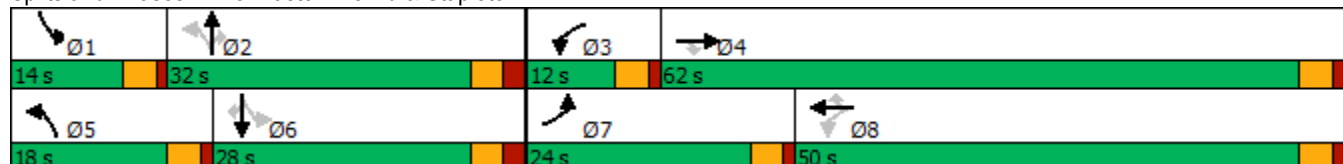
Intersection LOS: C

Intersection Capacity Utilization 75.1%

ICU Level of Service D

Analysis Period (min) 15

### Splits and Phases: 13: Eastonville Rd & Stapleton Dr

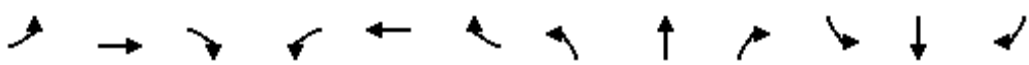


# Timings

## 14: US 24 & Stapleton Dr

# 2040 Total Traffic With Hypothetical Capacity Improvements

AM Peak Hour 2 NB/SB TH

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	493	680	200	487	178	356	705	175	309	1663	265
Future Volume (vph)	442	493	680	200	487	178	356	705	175	309	1663	265
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	11.0	11.0	10.0	11.0	
Total Split (s)	25.0	35.0		21.0	31.0		20.0	49.0	49.0	15.0	44.0	
Total Split (%)	20.8%	29.2%		17.5%	25.8%		16.7%	40.8%	40.8%	12.5%	36.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)	19.2	24.5	120.0	12.6	17.9	120.0	18.2	44.9	44.9	18.0	44.7	120.0
Actuated g/C Ratio	0.16	0.20	1.00	0.10	0.15	1.00	0.15	0.37	0.37	0.15	0.37	1.00
v/c Ratio	0.85	0.50	0.45	0.58	0.68	0.12	0.72	0.39	0.26	0.63	0.90	0.18
Control Delay	63.8	44.0	0.9	57.5	52.8	0.2	56.9	28.5	4.6	64.0	31.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	44.0	0.9	57.5	52.8	0.2	56.9	28.5	4.6	64.0	31.7	0.2
LOS	E	D	A	E	D	A	E	C	A	E	C	A
Approach Delay		31.3			43.1			33.3			32.4	
Approach LOS		C			D			C			C	

## Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.9

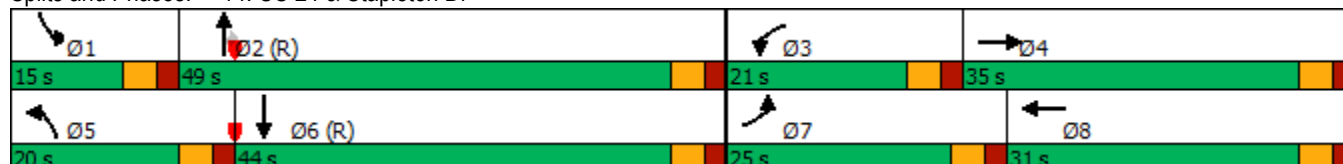
Intersection LOS: C

Intersection Capacity Utilization 81.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr



HCM 6th TWSC  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	24.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Vol, veh/h	41	150	96	456	122	18	161	139	654	26	202	67
Future Vol, veh/h	41	150	96	456	122	18	161	139	654	26	202	67
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	205	-	155	300	-	155	315	-	155	205	-	155
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	43	158	101	480	128	19	169	146	688	27	213	71

Major/Minor	Minor2		Minor1		Major1		Major2		Major2		Major2	
Conflicting Flow All	1169	1439	213	916	822	146	284	0	0	834	0	0
Stage 1	267	267	-	484	484	-	-	-	-	-	-	-
Stage 2	902	1172	-	432	338	-	-	-	-	-	-	-
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	170	~ 133	827	~ 253	309	901	1278	-	-	799	-	-
Stage 1	738	688	-	564	552	-	-	-	-	-	-	-
Stage 2	332	266	-	602	641	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	90	~ 111	827	-	259	901	1278	-	-	799	-	-
Mov Cap-2 Maneuver	90	~ 111	-	-	259	-	-	-	-	-	-	-
Stage 1	641	665	-	490	479	-	-	-	-	-	-	-
Stage 2	206	231	-	~ 389	619	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	173.9		1.4	0.9
HCM LOS	F	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1278	-	-	90	111	827	-	259	901	799	-	-
HCM Lane V/C Ratio	0.133	-	-	0.48	1.422	0.122	-	0.496	0.021	0.034	-	-
HCM Control Delay (s)	8.2	-	-	77.4	305.1	10	-	31.8	9.1	9.7	-	-
HCM Lane LOS	A	-	-	F	F	B	-	D	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	2	11.2	0.4	-	2.6	0.1	0.1	-	-

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








HCM 6th TWSC  
2: Parcel A & B & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	811	20	31	582	14	21
Future Vol, veh/h	811	20	31	582	14	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	854	21	33	613	15	22






Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	875
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	771
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	771
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	258	353	-	-	771	-
HCM Lane V/C Ratio	0.057	0.063	-	-	0.042	-
HCM Control Delay (s)	19.8	15.9	-	-	9.9	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.1	-

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	794	38	59	590	22	35
Future Vol, veh/h	794	38	59	590	22	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	205	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	836	40	62	621	23	37

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	876
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	771
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	771
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	242	357	-	-	771	-
HCM Lane V/C Ratio	0.096	0.103	-	-	0.081	-
HCM Control Delay (s)	21.4	16.2	-	-	10.1	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.3	-

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	753	76	119	605	45	70
Future Vol, veh/h	753	76	119	605	45	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	793	80	125	637	47	74

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	873
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	773
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	773
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	389	-	-	773	-
HCM Lane V/C Ratio	0.221	0.189	-	-	0.162	-
HCM Control Delay (s)	26.5	16.4	-	-	10.6	-
HCM Lane LOS	D	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	0.7	-	-	0.6	-

Intersection

Int Delay, s/veh 3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	680	143	141	640	84	83
Future Vol, veh/h	680	143	141	640	84	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	305	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	716	151	148	674	88	87

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	867
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	777
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	777
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	25.6
HCM LOS			D







Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	430	-	-	777	-
HCM Lane V/C Ratio	0.433	0.203	-	-	0.191	-
HCM Control Delay (s)	35.5	15.5	-	-	10.7	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	2	0.8	-	-	0.7	-

Notes

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

HCM 6th TWSC  
6: Rex Rd & Residential Collector

2040 Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	39.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	263	500	612	396	247	169
Future Vol, veh/h	263	500	612	396	247	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	405	-	-	155	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	277	526	644	417	260	178
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1061	0	-	0	1724	644
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	1080	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	657	-	-	-	~ 98	473
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	326	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	657	-	-	-	~ 57	473
Mov Cap-2 Maneuver	-	-	-	-	~ 169	-
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	326	-
Approach	EB	WB		SB		
HCM Control Delay, s	5	0		196.4		
HCM LOS	F					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	657	-	-	-	169	473
HCM Lane V/C Ratio	0.421	-	-	-	1.538	0.376
HCM Control Delay (s)	14.4	-	-	-	\$ 319	17.1
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	2.1	-	-	-	17.1	1.7
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection

Int Delay, s/veh 4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	642	105	246	946	62	145
Future Vol, veh/h	642	105	246	946	62	145
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	155	405	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	676	111	259	996	65	153













Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	787
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	832
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	832
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	35.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	109	453	-	-	832	-
HCM Lane V/C Ratio	0.599	0.337	-	-	0.311	-
HCM Control Delay (s)	78.3	16.9	-	-	11.3	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	2.9	1.5	-	-	1.3	-

Notes

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

Intersection												
Int Delay, s/veh	181.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	720	32	121	1101	131	44	0	104	113	0	48
Future Vol, veh/h	35	720	32	121	1101	131	44	0	104	113	0	48
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	205	-	155	200	-	0	0	-	-	0	-	-
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	37	758	34	127	1159	138	46	0	109	119	0	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1297	0	0	792	0	0	2340	2383	758	2317	2279	1159
Stage 1	-	-	-	-	-	-	832	832	-	1413	1413	-
Stage 2	-	-	-	-	-	-	1508	1551	-	904	866	-
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	534	-	-	829	-	-	~ 25	34	407	~ 26	40	238
Stage 1	-	-	-	-	-	-	363	384	-	171	204	-
Stage 2	-	-	-	-	-	-	151	175	-	331	370	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	534	-	-	829	-	-	~ 16	27	407	~ 16	32	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 16	27	-	~ 16	32	-
Stage 1	-	-	-	-	-	-	338	358	-	159	173	-
Stage 2	-	-	-	-	-	-	101	148	-	225	344	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.9			\$ 412			\$ 2369.3		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	16	407	534	-	-	829	-	-	16	238		
HCM Lane V/C Ratio	2.895	0.269	0.069	-	-	0.154	-	-	7.434	0.212		
HCM Control Delay (s)	\$ 1345.4	17.1	12.2	-	-	10.1	-	-	\$ 3365.5	24.2		
HCM Lane LOS	F	C	B	-	-	B	-	-	F	C		
HCM 95th %tile Q(veh)	6.5	1.1	0.2	-	-	0.5	-	-	15.7	0.8		
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			








HCM 6th TWSC  
10: Eastonville Rd & Parcels C

2040 Total Traffic  
PM Peak Hour

Intersection

Int Delay, s/veh 2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	36	954	112	62	689
Future Vol, veh/h	66	36	954	112	62	689
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	69	38	1004	118	65	725

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1859	1004	0
Stage 1	1004	-	-
Stage 2	855	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	81	294	-
Stage 1	354	-	-
Stage 2	417	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	73	294	-
Mov Cap-2 Maneuver	199	-	-
Stage 1	354	-	-
Stage 2	374	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.8	0	0.9
HCM LOS	D		






Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	225	623
HCM Lane V/C Ratio	-	-	0.477	0.105
HCM Control Delay (s)	-	-	34.8	11.5
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	2.4	0.3

HCM 6th TWSC  
11: Eastonville Rd & Parcels E & F

2040 Total Traffic  
PM Peak Hour

Intersection

Int Delay, s/veh 1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	18	1048	57	32	724
Future Vol, veh/h	34	18	1048	57	32	724
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	155	205	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	19	1103	60	34	762







Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1933	1103	0
Stage 1	1103	-	-
Stage 2	830	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	73	257	-
Stage 1	318	-	-
Stage 2	428	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	69	257	-
Mov Cap-2 Maneuver	193	-	-
Stage 1	318	-	-
Stage 2	404	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.9	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	211	601
HCM Lane V/C Ratio	-	-	0.259	0.056
HCM Control Delay (s)	-	-	27.9	11.3
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	1	0.2

HCM 6th TWSC  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
PM Peak Hour

Intersection						
Int Delay, s/veh	34.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	170	177	307	1032	679	116
Future Vol, veh/h	170	177	307	1032	679	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	0	-	-	155
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	186	323	1086	715	122
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2447	715	837	0	-	0
Stage 1	715	-	-	-	-	-
Stage 2	1732	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 34	431	797	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	~ 156	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 20	431	797	-	-	-
Mov Cap-2 Maneuver	~ 101	-	-	-	-	-
Stage 1	289	-	-	-	-	-
Stage 2	~ 156	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	233.5	2.9		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	797	-	101	431	-	-
HCM Lane V/C Ratio	0.405	-	1.772	0.432	-	-
HCM Control Delay (s)	12.6	-	\$ 456.3	19.6	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	2	-	14.4	2.1	-	-
Notes						
~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon						










HCM 6th AWSC  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
PM Peak Hour

Intersection

Intersection Delay, s/veh 73.4

Intersection LOS F








Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	51	80	132	165	293	131	780	162	171	520	27
Future Vol, veh/h	38	51	80	132	165	293	131	780	162	171	520	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	54	84	139	174	308	138	821	171	180	547	28
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	26	37.2	704	237.2
HCM LOS	D	E	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	83%	0%	39%	0%	100%	0%	0%	95%
Vol Right, %	0%	17%	0%	61%	0%	0%	100%	0%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	131	942	38	131	132	165	293	171	547
LT Vol	131	0	38	0	132	0	0	171	0
Through Vol	0	780	0	51	0	165	0	0	520
RT Vol	0	162	0	80	0	0	293	0	27
Lane Flow Rate	138	992	40	138	139	174	308	180	576
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.4	2.708	0.131	0.415	0.398	0.474	0.781	0.517	1.569
Departure Headway (Hd)	11.477	10.83	15.757	14.738	13.72	13.183	12.432	13.153	12.585
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	316	347	229	247	264	276	293	277	294
Service Time	9.177	8.53	13.457	12.438	11.42	10.883	10.132	10.853	10.285
HCM Lane V/C Ratio	0.437	2.859	0.175	0.559	0.527	0.63	1.051	0.65	1.959
HCM Control Delay	21.6	798.9	20.8	27.5	25.2	27.2	48.3	29.1	302.3
HCM Lane LOS	C	F	C	D	D	D	E	D	F
HCM 95th-tile Q	1.9	75.4	0.4	1.9	1.8	2.4	6.1	2.8	26.7

HCM 6th TWSC  
16: McLaughlin Rd & Eastonville Dr

2040 Total Traffic  
PM Peak Hour

Intersection												
Int Delay, s/veh	183.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	627	72	340	623	0	82	22	519	0	8	1
Future Vol, veh/h	9	627	72	340	623	0	82	22	519	0	8	1
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	100	-	-	100	-	-	75	-	-	-	-	-
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	9	660	76	358	656	0	86	23	546	0	8	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	656	0	0	736	0	0	2093	2088	698	2373	2126	656
Stage 1	-	-	-	-	-	-	716	716	-	1372	1372	-
Stage 2	-	-	-	-	-	-	1377	1372	-	1001	754	-
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	931	-	-	870	-	-	~ 38	53	~ 440	24	50	465
Stage 1	-	-	-	-	-	-	421	434	-	180	214	-
Stage 2	-	-	-	-	-	-	179	214	-	293	417	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	931	-	-	870	-	-	~ 20	31	~ 440	-	29	465
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 20	31	-	-	29	-
Stage 1	-	-	-	-	-	-	417	430	-	178	126	-
Stage 2	-	-	-	-	-	-	98	126	-	-	413	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	4.2	\$ 671.3	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	20	286	931	-	-	870	-	-	-
HCM Lane V/C Ratio	4.316	1.991	0.01	-	-	0.411	-	-	-
HCM Control Delay (s)	\$ 1883	\$ 487.6	8.9	-	-	12	-	-	-
HCM Lane LOS	F	F	A	-	-	B	-	-	-
HCM 95th %tile Q(veh)	11.2	40.7	0	-	-	2	-	-	-

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

HCM 6th Roundabout  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection						
Intersection Delay, s/veh	11.5					
Intersection LOS	B					
Approach	EB		WB		NB	
Entry Lanes	2		1		2	
Conflicting Circle Lanes	1		1		1	
Adj Approach Flow, veh/h	302		627		1003	
Demand Flow Rate, veh/h	308		640		1023	
Vehicles Circulating, veh/h	735		365		233	
Vehicles Exiting, veh/h	375		891		810	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	7.8		14.8		9.5	
Approach LOS	A		B		A	
Lane	Left	Right	Left	Left	Right	Left
Designated Moves	LT	R	LTR	LT	R	LTR
Assumed Moves	LT	R	LTR	LT	R	LTR
RT Channelized						
Lane Util	0.666	0.334	1.000	0.314	0.686	1.000
Follow-Up Headway, s	2.535	2.535	2.609	2.535	2.535	2.609
Critical Headway, s	4.544	4.544	4.976	4.544	4.544	4.976
Entry Flow, veh/h	205	103	640	321	702	317
Cap Entry Lane, veh/h	727	727	951	1149	1149	615
Entry HV Adj Factor	0.980	0.981	0.980	0.982	0.980	0.980
Flow Entry, veh/h	201	101	627	315	688	311
Cap Entry, veh/h	713	713	932	1128	1126	602
V/C Ratio	0.282	0.142	0.673	0.279	0.611	0.516
Control Delay, s/veh	8.4	6.6	14.8	5.8	11.1	14.7
LOS	A	A	B	A	B	B
95th %tile Queue, veh	1	0	5	1	4	3

HCM 6th Roundabout  
2: Parcels A & B & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection			
Intersection Delay, s/veh	9.8		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	875	646	37
Demand Flow Rate, veh/h	892	659	37
Vehicles Circulating, veh/h	34	15	871
Vehicles Exiting, veh/h	640	893	55
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	11.5	7.6	7.1
Approach LOS	B	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	892	659	37
Cap Entry Lane, veh/h	1333	1359	568
Entry HV Adj Factor	0.981	0.980	1.000
Flow Entry, veh/h	875	646	37
Cap Entry, veh/h	1307	1332	568
V/C Ratio	0.669	0.485	0.065
Control Delay, s/veh	11.5	7.6	7.1
LOS	B	A	A
95th %tile Queue, veh	6	3	0



HCM 6th Roundabout  
3: Parcel H & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection			
Intersection Delay, s/veh	10.4		
Intersection LOS	B		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	876	683	60
Demand Flow Rate, veh/h	894	696	61
Vehicles Circulating, veh/h	63	23	853
Vehicles Exiting, veh/h	656	891	104
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	12.4	8.2	7.6
Approach LOS	B	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	894	696	61
Cap Entry Lane, veh/h	1294	1348	578
Entry HV Adj Factor	0.980	0.981	0.984
Flow Entry, veh/h	876	683	60
Cap Entry, veh/h	1268	1322	569
V/C Ratio	0.691	0.516	0.106
Control Delay, s/veh	12.4	8.2	7.6
LOS	B	A	A
95th %tile Queue, veh	6	3	0

HCM 6th Roundabout  
4: Parcel I & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection			
Intersection Delay, s/veh	12.1		
Intersection LOS	B		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	873	762	121
Demand Flow Rate, veh/h	891	778	123
Vehicles Circulating, veh/h	127	48	809
Vehicles Exiting, veh/h	698	884	209
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.6	9.7	8.6
Approach LOS	B	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	891	778	123
Cap Entry Lane, veh/h	1212	1314	605
Entry HV Adj Factor	0.980	0.980	0.984
Flow Entry, veh/h	873	762	121
Cap Entry, veh/h	1188	1287	595
V/C Ratio	0.735	0.592	0.203
Control Delay, s/veh	14.6	9.7	8.6
LOS	B	A	A
95th %tile Queue, veh	7	4	1

Intersection			
Intersection Delay, s/veh	13.2		
Intersection LOS	B		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	867	822	175
Demand Flow Rate, veh/h	884	838	179
Vehicles Circulating, veh/h	151	90	730
Vehicles Exiting, veh/h	777	819	305
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	15.4	11.8	9.1
Approach LOS	C	B	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	884	838	179
Cap Entry Lane, veh/h	1183	1259	655
Entry HV Adj Factor	0.980	0.980	0.978
Flow Entry, veh/h	867	822	175
Cap Entry, veh/h	1160	1234	641
V/C Ratio	0.747	0.666	0.273
Control Delay, s/veh	15.4	11.8	9.1
LOS	C	B	A
95th %tile Queue, veh	7	5	1

HCM 6th Roundabout  
6: Rex Rd & Residential Collector

2040 Total Traffic  
PM Peak Hour

Intersection				
Intersection Delay, s/veh	12.4			
Intersection LOS	B			
Approach	EB	WB	SB	
Entry Lanes	1	2	1	
Conflicting Circle Lanes	2	2	2	
Adj Approach Flow, veh/h	803	1061	438	
Demand Flow Rate, veh/h	820	1082	447	
Vehicles Circulating, veh/h	265	283	657	
Vehicles Exiting, veh/h	839	802	708	
Ped Vol Crossing Leg, #/h	0	0	0	
Ped Cap Adj	1.000	1.000	1.000	
Approach Delay, s/veh	14.8	10.4	12.7	
Approach LOS	B	B	B	
Lane	Left	Left	Right	Left
Designated Moves	LT	LT	R	LR
Assumed Moves	LT	LT	R	LR
RT Channelized				
Lane Util	1.000	0.607	0.393	1.000
Follow-Up Headway, s	2.535	2.667	2.535	2.535
Critical Headway, s	4.328	4.645	4.328	4.328
Entry Flow, veh/h	820	657	425	447
Cap Entry Lane, veh/h	1134	1040	1116	812
Entry HV Adj Factor	0.980	0.980	0.981	0.980
Flow Entry, veh/h	803	644	417	438
Cap Entry, veh/h	1111	1020	1095	796
V/C Ratio	0.723	0.631	0.381	0.550
Control Delay, s/veh	14.8	12.5	7.2	12.7
LOS	B	B	A	B
95th %tile Queue, veh	7	5	2	3

Intersection			
Intersection Delay, s/veh	23.9		
Intersection LOS	C		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	787	1255	218
Demand Flow Rate, veh/h	803	1280	222
Vehicles Circulating, veh/h	264	66	690
Vehicles Exiting, veh/h	1082	846	377
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.2	32.8	7.9
Approach LOS	B	D	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.328	4.328	4.328
Entry Flow, veh/h	803	1280	222
Cap Entry Lane, veh/h	1135	1343	790
Entry HV Adj Factor	0.981	0.981	0.982
Flow Entry, veh/h	787	1255	218
Cap Entry, veh/h	1113	1316	776
V/C Ratio	0.708	0.953	0.281
Control Delay, s/veh	14.2	32.8	7.9
LOS	B	D	A
95th %tile Queue, veh	6	18	1

HCM 6th Roundabout  
8: Commercial & Rex Rd

2040 Total Traffic  
PM Peak Hour

Intersection						
Intersection Delay, s/veh	9.0					
Intersection LOS	A					
Approach	EB		WB		NB	SB
Entry Lanes	2		2		1	1
Conflicting Circle Lanes	2		2		2	2
Adj Approach Flow, veh/h	829		1424		155	170
Demand Flow Rate, veh/h	846		1453		158	173
Vehicles Circulating, veh/h	251		85		932	1359
Vehicles Exiting, veh/h	1281		1005		165	179
Ped Vol Crossing Leg, #/h	0		0		0	0
Ped Cap Adj	1.000		1.000		1.000	1.000
Approach Delay, s/veh	7.2		9.3		8.8	15.2
Approach LOS	A		A		A	C
Lane	Left	Right	Left	Right	Left	Left
Designated Moves	LT	TR	LT	TR	LTR	LTR
Assumed Moves	LT	TR	LT	TR	LTR	LTR
RT Channelized						
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328
Entry Flow, veh/h	398	448	683	770	158	173
Cap Entry Lane, veh/h	1072	1147	1248	1321	643	447
Entry HV Adj Factor	0.979	0.981	0.980	0.980	0.981	0.983
Flow Entry, veh/h	390	439	669	755	155	170
Cap Entry, veh/h	1049	1125	1223	1295	631	440
V/C Ratio	0.371	0.391	0.547	0.583	0.246	0.387
Control Delay, s/veh	7.3	7.2	9.2	9.5	8.8	15.2
LOS	A	A	A	A	A	C
95th %tile Queue, veh	2	2	3	4	1	2

Intersection			
Intersection Delay, s/veh	15.5		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	107	1122	790
Demand Flow Rate, veh/h	109	1144	806
Vehicles Circulating, veh/h	1024	66	70
Vehicles Exiting, veh/h	186	809	1063
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.5	20.1	9.8
Approach LOS	A	C	A
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.535	2.535	2.535
Critical Headway, s	4.328	4.328	4.328
Entry Flow, veh/h	109	1144	806
Cap Entry Lane, veh/h	595	1343	1338
Entry HV Adj Factor	0.982	0.981	0.981
Flow Entry, veh/h	107	1122	790
Cap Entry, veh/h	584	1317	1312
V/C Ratio	0.183	0.852	0.602
Control Delay, s/veh	8.5	20.1	9.8
LOS	A	C	A
95th %tile Queue, veh	1	12	4



Intersection			
Intersection Delay, s/veh	18.1		
Intersection LOS	C		
Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	55	1163	796
Demand Flow Rate, veh/h	56	1186	812
Vehicles Circulating, veh/h	1125	35	37
Vehicles Exiting, veh/h	96	814	1144
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.2	24.0	10.1
Approach LOS	B	C	B
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	56	1186	812
Cap Entry Lane, veh/h	438	1331	1329
Entry HV Adj Factor	0.982	0.981	0.980
Flow Entry, veh/h	55	1163	796
Cap Entry, veh/h	430	1306	1302
V/C Ratio	0.128	0.891	0.611
Control Delay, s/veh	10.2	24.0	10.1
LOS	B	C	B
95th %tile Queue, veh	0	14	4

HCM 6th Roundabout  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
PM Peak Hour

Intersection						
Intersection Delay, s/veh	16.1					
Intersection LOS	C					
Approach	EB		NB		SB	
Entry Lanes	2		2		2	
Conflicting Circle Lanes	2		2		2	
Adj Approach Flow, veh/h	365		1409		837	
Demand Flow Rate, veh/h	373		1437		853	
Vehicles Circulating, veh/h	729		183		329	
Vehicles Exiting, veh/h	453		919		1291	
Ped Vol Crossing Leg, #/h	0		0		0	
Ped Cap Adj	1.000		1.000		1.000	
Approach Delay, s/veh	8.1		23.0		8.1	
Approach LOS	A		C		A	
Lane	Left	Right	Left	Right	Left	Right
Designated Moves	L	TR	L	TR	LT	TR
Assumed Moves	L	TR	L	TR	LT	TR
RT Channelized						
Lane Util	0.491	0.509	0.229	0.771	0.470	0.530
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	183	190	329	1108	401	452
Cap Entry Lane, veh/h	690	764	1141	1216	997	1074
Entry HV Adj Factor	0.978	0.979	0.982	0.980	0.981	0.981
Flow Entry, veh/h	179	186	323	1086	393	443
Cap Entry, veh/h	675	748	1120	1192	978	1053
V/C Ratio	0.265	0.249	0.288	0.912	0.402	0.421
Control Delay, s/veh	8.6	7.6	6.0	28.1	8.1	8.0
LOS	A	A	A	D	A	A
95th %tile Queue, veh	1	1	1	15	2	2













HCM 6th Roundabout  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
PM Peak Hour

Intersection								
Intersection Delay, s/veh	22.8							
Intersection LOS	C							
Approach	EB		WB		NB		SB	
Entry Lanes	2		2		2		1	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	178		621		1122		755	
Demand Flow Rate, veh/h	182		633		1144		771	
Vehicles Circulating, veh/h	884		1011		280		460	
Vehicles Exiting, veh/h	347		413		786		1184	
Ped Vol Crossing Leg, #/h	0		0		0		0	
Ped Cap Adj	1.000		1.000		1.000		1.000	
Approach Delay, s/veh	7.5		17.1		29.4		21.4	
Approach LOS	A		C		D		C	
Lane	Left	Right	Left	Right	Left	Right	Left	Right
Designated Moves	LT	TR	LT	TR	LT	R	LTR	
Assumed Moves	LT	TR	LT	TR	LT	R	LTR	
RT Channelized								
Lane Util	0.473	0.527	0.471	0.529	0.848	0.152	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.667	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.645	4.328	4.328	
Entry Flow, veh/h	86	96	298	335	970	174	771	
Cap Entry Lane, veh/h	599	670	533	601	1043	1119	960	
Entry HV Adj Factor	0.972	0.982	0.979	0.982	0.980	0.983	0.979	
Flow Entry, veh/h	84	94	292	329	951	171	755	
Cap Entry, veh/h	582	658	521	590	1023	1100	941	
V/C Ratio	0.144	0.143	0.560	0.557	0.930	0.155	0.803	
Control Delay, s/veh	7.9	7.1	18.1	16.3	33.9	4.7	21.4	
LOS	A	A	C	C	D	A	C	
95th %tile Queue, veh	0	0	3	3	15	1	9	

Volume  
1: Eastonville Rd & Rex Rd

2040 Total Traffic  
PM Peak Hour

























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	41	150	96	456	122	18	161	139	654	26	202	67
Future Volume (vph)	41	150	96	456	122	18	161	139	654	26	202	67
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	43	158	101	480	128	19	169	146	688	27	213	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	43	158	101	480	128	19	169	146	688	27	213	71
Intersection Summary												

# Timings

## 1: Eastonville Rd & Rex Rd

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)	41	150	96	456	122	18	161	139	654	26	202	67
Future Volume (vph)	41	150	96	456	122	18	161	139	654	26	202	67
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	30.0	30.0	15.0	30.0	30.0	75.0	75.0	75.0	75.0	75.0	75.0
Total Split (%)	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%	62.5%	62.5%	62.5%	62.5%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	16.5	10.0	10.0	24.7	21.3	21.3	17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.31	0.19	0.19	0.47	0.40	0.40	0.32	0.32	0.32	0.32	0.32	0.32
v/c Ratio	0.09	0.45	0.27	0.81	0.17	0.03	0.46	0.24	0.75	0.07	0.36	0.13
Control Delay	10.7	25.4	7.7	28.3	16.5	0.1	18.3	13.8	8.4	12.3	15.1	4.2
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	10.7	25.4	7.7	28.3	16.5	0.1	18.3	13.8	8.4	12.3	15.1	4.2
LOS	B	C	A	C	B	A	B	B	A	B	B	A
Approach Delay		17.4			25.1			10.8			12.4	
Approach LOS		B			C			B			B	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 52.8

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 15.9

Intersection LOS: B

Intersection Capacity Utilization 69.4%

ICU Level of Service C

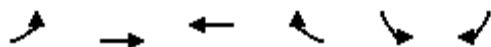
Analysis Period (min) 15

Splits and Phases: 1: Eastonville Rd & Rex Rd

 Ø2	 Ø3	 Ø4
75 s	15 s	30 s
 Ø6	 Ø7	 Ø8
75 s	15 s	30 s

Volume  
6: Rex Rd & Residential Collector













2040 Total Traffic  
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	263	500	612	396	247	169
Future Volume (vph)	263	500	612	396	247	169
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Adj. Flow (vph)	277	526	644	417	260	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	277	526	644	417	260	178
Intersection Summary						

Timings  
6: Rex Rd & Residential Collector

2040 Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	263	500	612	396	247	169
Future Volume (vph)	263	500	612	396	247	169
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	15.0	89.0	74.0	74.0	31.0	31.0
Total Split (%)	12.5%	74.2%	61.7%	61.7%	25.8%	25.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	None	None	Max	Max
Act Effect Green (s)	84.0	84.0	69.2	69.2	26.0	26.0
Actuated g/C Ratio	0.70	0.70	0.58	0.58	0.22	0.22
v/c Ratio	0.63	0.40	0.60	0.40	0.68	0.37
Control Delay	13.0	8.6	41.0	21.2	53.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	8.6	41.0	21.2	53.2	8.0
LOS	B	A	D	C	D	A
Approach Delay		10.2	33.3		34.8	
Approach LOS		B	C		C	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay: 25.5  
 Intersection Capacity Utilization 73.0%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service C













Splits and Phases: 6: Rex Rd & Residential Collector


























Volume  
8: C-1/C-2 & Rex Rd

2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	35	720	32	121	1101	131	44	0	104	113	0	48
Future Volume (vph)	35	720	32	121	1101	131	44	0	104	113	0	48
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	37	758	34	127	1159	138	46	0	109	119	0	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	758	34	127	1159	138	46	109	0	119	51	0
Intersection Summary												

Timings  
8: C-1/C-2 & Rex Rd

2040 Total Traffic  
PM Peak Hour

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	35	720	32	121	1101	131	44	0	113	0	
Future Volume (vph)	35	720	32	121	1101	131	44	0	113	0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	
Protected Phases	2				6		8		4		
Permitted Phases	2		2	6		6	8		4		
Detector Phase	2	2	2	6	6	6	8	8	4	4	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	95.0	95.0	95.0	95.0	95.0	95.0	25.0	25.0	25.0	25.0	
Total Split (%)	79.2%	79.2%	79.2%	79.2%	79.2%	79.2%	20.8%	20.8%	20.8%	20.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	59.2	59.2	59.2	59.2	59.2	59.2	50.8	50.8	50.8	50.8	
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.49	0.49	0.42	0.42	0.42	0.42	
v/c Ratio	0.30	0.43	0.04	0.48	0.66	0.16	0.08	0.13	0.22	0.07	
Control Delay	16.9	14.7	1.3	42.3	44.6	16.8	26.0	0.3	26.9	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.9	14.7	1.3	42.3	44.9	16.8	26.0	0.3	26.9	0.2	
LOS	B	B	A	D	D	B	C	A	C	A	
Approach Delay	14.2				41.9		7.9		18.9		
Approach LOS	B				D		A		B		

Intersection Summary







Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 4:SBTL and 8:NBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 29.5
Intersection Capacity Utilization 60.0%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service B

Splits and Phases: 8: C-1/C-2 & Rex Rd















Volume  
9: US 24 & Rex Rd

2040 Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	151	786	1191	1044	980	162
Future Volume (vph)	151	786	1191	1044	980	162
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.98	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	159	827	1254	1065	1032	171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	159	827	1254	1065	1032	171
Intersection Summary						

Timings  
9: US 24 & Rex Rd

2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR						
Lane Configurations												
Traffic Volume (vph)	151	786	1191	1044	980	162						
Future Volume (vph)	151	786	1191	1044	980	162						
Turn Type	Prot	Free	Prot	NA	NA	Perm						
Protected Phases	6		7	4	8							
Permitted Phases		Free				8						
Detector Phase	6		7	4	8	8						
Switch Phase												
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0						
Minimum Split (s)	20.0		10.0	20.0	20.0	20.0						
Total Split (s)	25.0		50.0	95.0	45.0	45.0						
Total Split (%)	20.8%		41.7%	79.2%	37.5%	37.5%						
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0						
All-Red Time (s)	2.0		2.0	2.0	2.0	2.0						
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0						
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0						
Lead/Lag			Lead		Lag	Lag						
Lead-Lag Optimize?			Yes		Yes	Yes						
Recall Mode	Max		None	C-Max	C-Max	C-Max						
Act Effect Green (s)	20.0	120.0	45.0	90.0	40.0	40.0						
Actuated g/C Ratio	0.17	1.00	0.38	0.75	0.33	0.33						
v/c Ratio	0.54	0.52	0.98	0.40	0.87	0.27						
Control Delay	39.5	6.1	31.7	7.3	47.2	6.8						
Queue Delay	0.0	0.0	14.0	0.0	0.0	1.5						
Total Delay	39.5	6.1	45.7	7.3	47.2	8.4						
LOS	D	A	D	A	D	A						
Approach Delay	11.5			28.1	41.7							
Approach LOS	B			C	D							

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 15 (13%), Referenced to phase 4:NBT and 8:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 28.1  
 Intersection Capacity Utilization 81.9%  
 Analysis Period (min) 15

Intersection LOS: C







ICU Level of Service D

Splits and Phases: 9: US 24 & Rex Rd















Volume  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Volume (vph)	170	177	307	1032	679	116
Future Volume (vph)	170	177	307	1032	679	116
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	179	186	323	1086	715	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	186	323	1086	715	122
Intersection Summary						

Timings  
12: Eastonville Rd & Londonderry Dr

2040 Total Traffic  
PM Peak Hour

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	177	307	1032	679	116
Future Volume (vph)	170	177	307	1032	679	116
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0
Total Split (s)	30.0	30.0	15.0	90.0	75.0	75.0
Total Split (%)	25.0%	25.0%	12.5%	75.0%	62.5%	62.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None
Act Effect Green (s)	11.1	11.1	34.4	34.4	19.1	19.1
Actuated g/C Ratio	0.20	0.20	0.62	0.62	0.34	0.34
v/c Ratio	0.51	0.40	0.63	0.50	0.59	0.20
Control Delay	26.4	6.9	12.8	7.0	17.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	6.9	12.8	7.0	17.3	4.0
LOS	C	A	B	A	B	A
Approach Delay	16.5			8.3	15.3	
Approach LOS	B			A	B	

Intersection Summary

Cycle Length: 120  
 Actuated Cycle Length: 55.6  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 11.7  
 Intersection Capacity Utilization 57.7%  
 Analysis Period (min) 15













Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 12: Eastonville Rd & Londonderry Dr



Volume  
13: Eastonville Rd & Stapleton Dr

























2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	512	920	160	183	1264	232	251	595	169	178	375	292
Future Volume (vph)	512	920	160	183	1264	232	251	595	169	178	375	292
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.98	0.95	0.95	0.98	0.95	0.95	0.95	0.95	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)	539	939	168	193	1290	244	264	626	178	187	395	307
Shared Lane Traffic (%)												
Lane Group Flow (vph)	539	939	168	193	1290	244	264	626	178	187	395	307
Intersection Summary												



Timings  
13: Eastonville Rd & Stapleton Dr

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)	512	920	160	183	1264	232	251	595	169	178	375	292
Future Volume (vph)	512	920	160	183	1264	232	251	595	169	178	375	292
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	20.0	48.0	48.0	20.0	48.0	48.0	15.0	42.0	42.0	10.0	37.0	37.0
Total Split (%)	16.7%	40.0%	40.0%	16.7%	40.0%	40.0%	12.5%	35.0%	35.0%	8.3%	30.8%	30.8%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	16.0	46.5	46.5	56.5	43.0	43.0	48.0	37.0	37.0	39.0	32.0	32.0
Actuated g/C Ratio	0.13	0.39	0.39	0.47	0.36	0.36	0.40	0.31	0.31	0.32	0.27	0.27
v/c Ratio	1.18	0.68	0.24	0.65	1.02	0.36	1.00	1.09	0.31	1.23	0.80	0.49
Control Delay	146.5	34.3	5.5	26.1	68.1	11.2	84.4	104.2	12.4	176.3	54.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	146.5	34.3	5.5	26.1	68.1	11.2	84.4	104.2	12.4	176.3	54.2	8.5
LOS	F	C	A	C	E	B	F	F	B	F	D	A
Approach Delay		68.1			55.4			84.0			64.1	
Approach LOS		E			E			F			E	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 130

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 1.23

Intersection Signal Delay: 66.5



















Intersection LOS: E

Intersection Capacity Utilization 105.7%

ICU Level of Service G













Analysis Period (min) 15

Splits and Phases: 13: Eastonville Rd & Stapleton Dr

								
10 s	42 s		20 s		48 s			
								
15 s	37 s		20 s		48 s			

























Volume  
14: US 24 & Stapleton Dr

2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	399	556	432	200	784	206	798	1635	175	279	1020	474
Future Volume (vph)	399	556	432	200	784	206	798	1635	175	279	1020	474
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.98	0.98	0.95	0.95	0.98	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)	420	585	455	211	825	217	814	1668	184	294	1041	499
Shared Lane Traffic (%)												
Lane Group Flow (vph)	420	585	455	211	825	217	814	1668	184	294	1041	499
Intersection Summary												

Timings  
14: US 24 & Stapleton Dr

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)	399	556	432	200	784	206	798	1635	175	279	1020	474
Future Volume (vph)	399	556	432	200	784	206	798	1635	175	279	1020	474
Turn Type	Prot	NA	Free	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			Free			Free			2			Free
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0		10.0	10.0		10.0	11.0	11.0	10.0	11.0	
Total Split (s)	15.0	33.0		15.0	33.0		22.0	62.0	62.0	10.0	50.0	
Total Split (%)	12.5%	27.5%		12.5%	27.5%		18.3%	51.7%	51.7%	8.3%	41.7%	
Yellow Time (s)	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	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)	10.0	28.1	120.0	9.9	28.0	120.0	17.0	57.0	57.0	5.0	45.0	120.0
Actuated g/C Ratio	0.08	0.23	1.00	0.08	0.23	1.00	0.14	0.48	0.48	0.04	0.38	1.00
v/c Ratio	1.47	0.71	0.29	0.75	1.00	0.14	1.67	0.99	0.22	2.06	0.78	0.32
Control Delay	267.5	47.6	0.5	70.6	77.5	0.2	345.4	51.8	6.5	524.8	20.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	267.5	47.6	0.5	70.6	77.5	0.2	345.4	51.8	6.5	524.8	20.4	0.4
LOS	F	D	A	E	E	A	F	D	A	F	C	A
Approach Delay		96.2			63.0			138.3			95.8	
Approach LOS		F			E			F			F	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.06

Intersection Signal Delay: 105.9

Intersection LOS: F

Intersection Capacity Utilization 102.9%

ICU Level of Service G













Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr



Volume  
15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic  
PM Peak Hour



















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	38	51	80	132	165	293	131	780	162	171	520	27
Future Volume (vph)	38	51	80	132	165	293	131	780	162	171	520	27
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	40	54	84	139	174	308	138	821	171	180	547	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	138	0	139	174	308	138	992	0	180	575	0
Intersection Summary												

# Timings

## 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

2040 Total Traffic

PM Peak Hour

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	38	51	132	165	293	131	780	171	520
Future Volume (vph)	38	51	132	165	293	131	780	171	520
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		5	2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	7	4	3	8	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	10.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	10.0	30.0	10.0	30.0	30.0	15.0	65.0	15.0	65.0
Total Split (%)	8.3%	25.0%	8.3%	25.0%	25.0%	12.5%	54.2%	12.5%	54.2%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	None	Min
Act Effect Green (s)	15.7	10.7	17.8	14.9	14.9	68.3	60.2	71.5	61.8
Actuated g/C Ratio	0.15	0.10	0.17	0.14	0.14	0.65	0.57	0.68	0.59
v/c Ratio	0.20	0.34	0.66	0.35	0.64	0.28	0.96	0.77	0.53
Control Delay	36.6	21.0	54.1	44.1	12.3	7.3	42.3	46.0	16.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	21.0	54.1	44.1	12.3	7.3	42.3	46.0	16.5
LOS	D	C	D	D	B	A	D	D	B
Approach Delay		24.5		30.6			38.0		23.5
Approach LOS		C		C			D		C

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 105.6

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 31.3









Intersection LOS: C

Intersection Capacity Utilization 88.5%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 15: Eastonville Dr & Meridian Ranch Rd/Judge Orr Rd

			
Ø1	Ø2	Ø3	Ø4
15 s	65 s	10 s	30 s
			
Ø5	Ø6	Ø7	Ø8
15 s	65 s	10 s	30 s

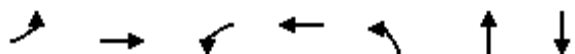
Volume  
16: McLaughlin Rd & Eastonville Dr

2040 Total Traffic  
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	9	627	72	340	623	0	82	22	519	0	8	1
Future Volume (vph)	9	627	72	340	623	0	82	22	519	0	8	1
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	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)	9	660	76	358	656	0	86	23	546	0	8	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	736	0	358	656	0	86	569	0	0	9	0
Intersection Summary												

Timings  
16: McLaughlin Rd & Eastonville Dr

2040 Total Traffic  
PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Configurations							
Traffic Volume (vph)	9	627	340	623	82	22	8
Future Volume (vph)	9	627	340	623	82	22	8
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	NA
Protected Phases		4	3	8		2	6
Permitted Phases	4		8		2		
Detector Phase	4	4	3	8	2	2	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	10.0	20.0	20.0	20.0	20.0
Total Split (s)	65.0	65.0	25.0	90.0	30.0	30.0	30.0
Total Split (%)	54.2%	54.2%	20.8%	75.0%	25.0%	25.0%	25.0%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	None	None	None	None	Min	Min	Min
Act Effect Green (s)	42.8	42.8	64.6	64.6	18.0	18.0	18.0
Actuated g/C Ratio	0.46	0.46	0.69	0.69	0.19	0.19	0.19
v/c Ratio	0.03	0.87	0.86	0.51	0.32	0.88	0.03
Control Delay	15.7	36.1	43.5	8.9	40.7	28.3	35.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	36.1	43.5	8.9	40.7	28.3	35.0
LOS	B	D	D	A	D	C	C
Approach Delay		35.8		21.1		29.9	35.0
Approach LOS		D		C		C	C

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 93.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 28.1

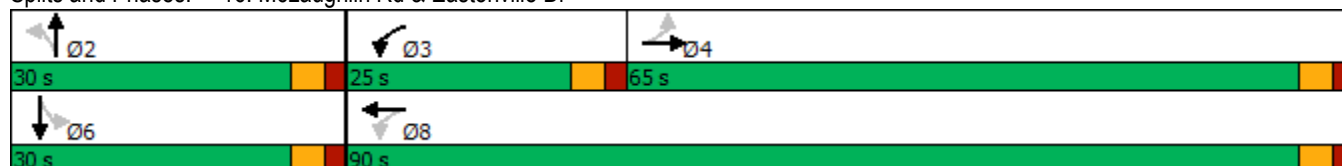
Intersection LOS: C

Intersection Capacity Utilization 102.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 16: McLaughlin Rd & Eastonville Dr





























# Timings

# 2040 Total Traffic With Hypothetical Capacity Improvements

## 13: Eastonville Rd & Stapleton Dr

PM Peak Hour 2 NB/SB TH

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	512	920	160	183	1264	232	251	595	169	178	375	292
Future Volume (vph)	512	920	160	183	1264	232	251	595	169	178	375	292
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Total Split (s)	24.0	62.0	62.0	12.0	50.0	50.0	18.0	32.0	32.0	14.0	28.0	28.0
Total Split (%)	20.0%	51.7%	51.7%	10.0%	41.7%	41.7%	15.0%	26.7%	26.7%	11.7%	23.3%	23.3%
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)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
Act Effect Green (s)	20.0	56.9	56.9	53.9	45.0	45.0	40.2	25.3	25.3	32.4	21.4	21.4
Actuated g/C Ratio	0.17	0.48	0.48	0.46	0.38	0.38	0.34	0.21	0.21	0.27	0.18	0.18
v/c Ratio	0.93	0.55	0.20	0.62	0.96	0.34	0.81	0.83	0.37	0.87	0.62	0.60
Control Delay	72.6	23.4	3.2	23.8	52.8	9.8	51.4	54.7	7.9	67.0	49.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.6	23.4	3.2	23.8	52.8	9.8	51.4	54.7	7.9	67.0	49.2	12.6
LOS	E	C	A	C	D	A	D	D	A	E	D	B
Approach Delay		37.5			43.5			46.1			40.3	
Approach LOS		D			D			D			D	

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 118.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 41.6

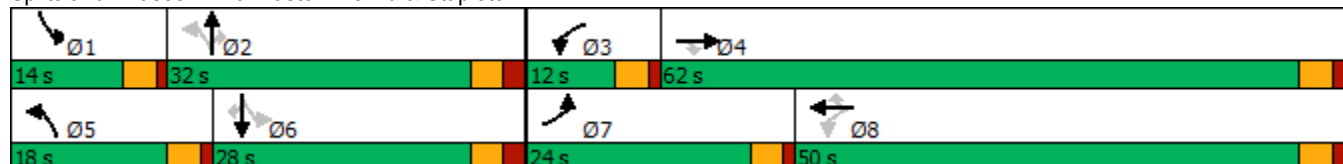
Intersection LOS: D

Intersection Capacity Utilization 90.9%

ICU Level of Service E

Analysis Period (min) 15

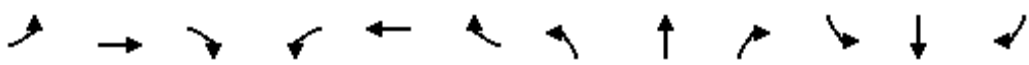
### Splits and Phases: 13: Eastonville Rd & Stapleton Dr



Timings  
14: US 24 & Stapleton Dr

2040 Total Traffic With Hypothetical Capacity Improvements

PM Peak Hour 2 NB/SB TH

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	399	556	432	200	784	206	798	1635	175	279	1020	474
Future Volume (vph)	399	556	432	200	784	206	798	1635	175	279	1020	474
Turn Type	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			Free			2			Free
Detector Phase	7	4	4	3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0		10.0	11.0	11.0	10.0	11.0	
Total Split (s)	21.0	33.0	33.0	21.0	33.0		34.0	44.0	44.0	22.0	32.0	
Total Split (%)	17.5%	27.5%	27.5%	17.5%	27.5%		28.3%	36.7%	36.7%	18.3%	26.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	None	C-Max	
Act Effect Green (s)	16.0	28.8	28.8	12.6	25.5	120.0	30.5	43.6	43.6	14.9	28.0	120.0
Actuated g/C Ratio	0.13	0.24	0.24	0.10	0.21	1.00	0.25	0.36	0.36	0.12	0.23	1.00
v/c Ratio	0.92	0.48	0.65	0.58	0.77	0.14	0.93	0.90	0.28	0.69	0.88	0.32
Control Delay	77.7	40.7	9.9	57.5	49.5	0.2	62.1	44.9	8.8	73.3	33.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.7	40.7	9.9	57.5	49.5	0.2	62.1	44.9	8.8	73.3	33.4	0.4
LOS	E	D	A	E	D	A	E	D	A	E	C	A
Approach Delay		41.7			42.3			47.6			30.8	
Approach LOS		D			D			D			C	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 110 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 41.2

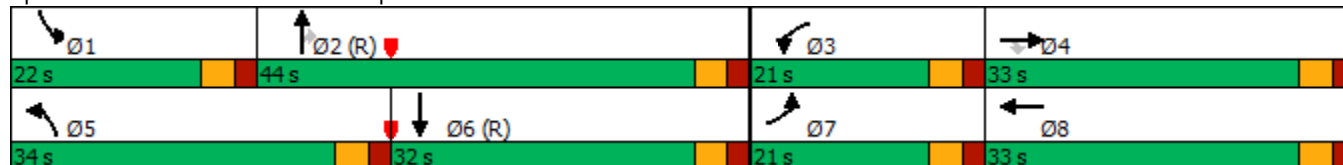
Intersection LOS: D

Intersection Capacity Utilization 85.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 14: US 24 & Stapleton Dr



## Queuing and Blocking Report

## Intersection: 9: US 24 &amp; Rex Rd

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	T	T	T	T	R
Maximum Queue (ft)	177	428	492	413	71	79	451	419	143
Average Queue (ft)	92	261	247	213	18	31	285	230	46
95th Queue (ft)	161	476	437	376	55	65	420	366	98
Link Distance (ft)	426	426			5314	5314	955	955	955
Upstream Blk Time (%)		2							
Queuing Penalty (veh)		8							
Storage Bay Dist (ft)			800	800					
Storage Blk Time (%)									
Queuing Penalty (veh)									

# Queuing Reports

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## Queuing and Blocking Report

## Intersection: 1: Eastonville Rd &amp; Rex Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	73	192	190	462	99	59	125	154	148	74	210	54
Average Queue (ft)	20	86	83	251	34	8	56	57	66	25	101	19
95th Queue (ft)	51	154	151	413	82	32	112	118	122	61	175	42
Link Distance (ft)		719			610			1444			1166	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205		155	450		155	315		155	205		155
Storage Blk Time (%)		1	1	0				0	0		3	
Queuing Penalty (veh)		3	2	0				1	1		2	

## Intersection: 6: Rex Rd &amp; Residential Collector

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	175	367	327	158	399	196
Average Queue (ft)	85	207	179	73	257	89
95th Queue (ft)	149	325	293	128	379	155
Link Distance (ft)		1438	819	819	596	596
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	405					
Storage Blk Time (%)		0				
Queuing Penalty (veh)		0				

## Intersection: 8: C-1/C-2 &amp; Rex Rd/#1 Rex Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	44	587	629	208	78	223	211	38	28	62	56	22
Average Queue (ft)	9	165	301	15	30	37	38	5	4	19	22	3
95th Queue (ft)	32	483	565	99	68	139	136	24	19	48	49	14
Link Distance (ft)		1738	1738			427	427	427	348	348	341	341
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	350			155	400							
Storage Blk Time (%)		0	22									
Queuing Penalty (veh)		0	4									

## Queuing and Blocking Report

### Intersection: 9: #1 US 24/US 24 & #1 Rex Rd

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	L	T	T	T	T	R
Maximum Queue (ft)	141	85	237	238	169	186	472	452	81
Average Queue (ft)	68	3	160	165	92	104	308	270	27
95th Queue (ft)	127	62	234	232	149	159	439	413	55
Link Distance (ft)	427	427			5312	5312	955	955	
Upstream Blk Time (%)		0							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)			1000	1000					800
Storage Blk Time (%)									
Queuing Penalty (veh)									

### Zone Summary

Zone wide Queuing Penalty: 14

## Queuing and Blocking Report

## Intersection: 1: Eastonville Rd &amp; Rex Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	69	178	94	415	234	32	184	229	248	86	159	52
Average Queue (ft)	24	91	32	211	60	10	83	60	125	30	72	17
95th Queue (ft)	55	154	66	366	151	31	152	162	218	72	134	39
Link Distance (ft)		719			610			1444			1166	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	205		155	450		155	315		155	205		155
Storage Blk Time (%)		1		0	0		0		4		0	
Queuing Penalty (veh)		2		1	1		0		11		0	

## Intersection: 6: Rex Rd &amp; Residential Collector

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	289	270	587	255	301	142
Average Queue (ft)	127	113	280	172	165	63
95th Queue (ft)	233	211	523	325	265	114
Link Distance (ft)		1438	819		596	596
Upstream Blk Time (%)			0			
Queuing Penalty (veh)			2			
Storage Bay Dist (ft)	405			155		
Storage Blk Time (%)			20	0		
Queuing Penalty (veh)			81	1		

## Intersection: 8: C-1/C-2 &amp; Rex Rd/#1 Rex Rd

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	82	272	393	76	265	451	431	218	66	95	116	62
Average Queue (ft)	28	45	139	11	74	251	201	32	21	37	52	18
95th Queue (ft)	70	155	277	62	178	399	372	120	52	70	95	44
Link Distance (ft)		831	831			427	427	427	348	348	341	341
Upstream Blk Time (%)					0	1	0	0				
Queuing Penalty (veh)					0	3	1	0				
Storage Bay Dist (ft)	350			155	400							
Storage Blk Time (%)		0	6			1						
Queuing Penalty (veh)		0	2			2						



## Queuing and Blocking Report

### Intersection: 9: #1 US 24/US 24 & #1 Rex Rd

Movement	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	L	T	T	T	T	R
Maximum Queue (ft)	214	549	507	1636	625	542	505	136
Average Queue (ft)	115	378	341	114	78	339	305	48
95th Queue (ft)	198	517	474	836	443	493	457	94
Link Distance (ft)	427			2647	2647	955	955	
Upstream Blk Time (%)				0	0			
Queuing Penalty (veh)				0	0			
Storage Bay Dist (ft)		1000	1000					800
Storage Blk Time (%)								
Queuing Penalty (veh)								

### Zone Summary

Zone wide Queuing Penalty: 106

# MSTA School Traffic Calculations

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# MSTA School Traffic Calculations

AM and PM Peak Traffic Estimates  
(These numbers do not reflect peak hour traffic volumes)

AM Cars / Student	PM Cars / Student	Avg. Car Length	PM At one Time
55.94%	39.15%	22.19	48.67%
43.35%	26.30%	22.00	37.87%
52.91%	47.50%	22.19	46.12%
50.08%	47.58%	22.83	55.71%

Pre-K & K loading is usually park and walk  
"PM Peak Vehicles" indicates minimum  
number of parking spaces needed.

Private & Non-Urban Charter data is based  
on few to no buses and uses the same  
percentages for all school types except  
11th and 12th grades which makes  
adjustments for student drivers.

**NOTES**

- Average Queue Length does not include an alternative traffic pattern required for high traffic demand days which is usually 30% additional length.
- Average Queue Length does not include the Student Loading Zone.
- Peak traffic volumes at schools normally occur within a 30-minute time period. (justifying a PHF of 0.5)

School Name: Grandview Reserve

Type: **Private / Non-urban Charter**

Version: 102816

MSTA School Queue Input					Calculations					
Grade Level	Student Population	Number of Buses	Staff Members	Student Drivers	PM Total Vehicles	PM Peak Vehicles	Average Queue Length	Total AM Trips	Total PM Trips	High Demand Length
Pre-K & K	75	1	10		30	15	333	94	70	30%
1-10	425	6	56		112	43	946	425	280	1230
11th										
12th										
Sum >>	500		66		142	58	1279	518	350	1663
Yes - If Pre-K & K students are provided parking spaces at or above their PM Peak Vehicles >>>>>										384

Pre-K & K				
AM Trips Generated				
Direction	Parents	Buses	Staff	Trips
IN	42		10	52
OUT	42			42
AM Pre-K-K Trips				94

PM Trips Generated				
Parents	Buses	Staff	Trips	
30			30	
30		10	40	
PM PK-K Trips				70

1-10				
AM Trips Generated				
Direction	Parents	Buses	Staff	Trips
IN	184		56	240
OUT	184			184
AM K-10 Trips				425

PM Trips Generated				
Parents	Buses	Staff	Trips	
112			112	
112		56	168	
PM K-10 Trips				280

AM Trips Generated				
Direction	Parents	Buses	Staff	Trips
IN				
OUT				
AM 11 Trips				

PM Trips Generated				
Parents	Buses	Staff	Trips	
PM 11 Trips				

AM Trips Generated				
Direction	Parents	Buses	Staff	Trips
IN				
OUT				
AM 12 Trips				

PM Trips Generated				
Parents	Buses	Staff	Trips	
PM 12 Trips				

All AM TRIPS		
In	292	
Out	226	
Total	518	

All PM TRIPS		
In	142	
Out	208	
Total	350	

ADT
164
705
868

## Additional Attachment

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Memorandum RE: Request for Amendment to the US Highway 24 Access  
Control Plan Modification to the Rex Road Intersection Location with  
Grandview Estates





LSC TRANSPORTATION CONSULTANTS, INC.  
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E-mail: [lsc@lsctrans.com](mailto:lsc@lsctrans.com)  
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## MEMORANDUM

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DATE: August 28, 2020

TO: Arthur Gonzales, Access Manager, CDOT R2

FROM: Jeffrey C. Hodsdon, P.E.

SUBJECT: Request for Amendment to the *US Highway 24 Access Control Plan*  
Modification to the Rex Road Intersection Location with Grandview Estates  
LSC #184840

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### Introduction & Background

This memorandum contains the following:

- Description of change requested of the Access Control Plan (ACP) with exhibits;
- Ultimate buildout exhibits for the new Rex Road and the improvements to the roadway;
- Justification for the Amendment;
- Traffic Impact Study – the latest version is attached (dated August 17, 2020); and
- Drainage study with all documents and exhibits needed for review.

Other Points:

- This request is for a “**sectional amendment**” to the ACP **for the location of Rex Road** in the 2005 SH 24 ACP relative to the Stapleton and Elbert Road intersections, rather than a complete amendment to the entire ACP.
- This memorandum contains detailed exhibits and verbiage to incorporate into the NEW SH24 ACP for the shift in the location of Rex Rd. further east along SH24.

Background

- The governing document with respect to access is the *US Highway 24 Access Control Plan* (ACP), dated January 2005. It is our understanding that criteria in the Colorado State Highway Access Code for EX Highways applies, if not specifically addressed, for this particular roadway corridor by the ACP.
- The Colorado Department of Transportation *US Hwy 24 Planning and Environmental Linkages Study Final Corridor Conditions Report* (PEL), dated December 2016, labels a future roadway intersecting US Hwy 24 at mile post 324.72 (about one mile southwest of Elbert Road) as “Rex Road.” This is consistent with the *US Highway 24 Access Control Plan* (ACP) dated January 2005.
- The *Final Planning & Environmental Linkages (PEL) Report US 24 Planning and Environmental Linkages Study*, dated March 2018, contained a page (37) listing specific recommended changes to the ACP. No proposed changes were listed for this subject section of US Highway 24. A copy of this is attached for reference.

**Requested Amendment to the ACP**

- This request is for a “sectional amendment” to the ACP for the location of Rex Road in the 2005 SH 24 ACP relative to the Stapleton and Elbert Road intersections, rather than a complete amendment to the entire ACP. Exhibit 1 shows the subject section of US Highway 24 and the location of the Grandview Reserve project.
- The request is to shift the planned Rex Road (full-movement, future signalized) intersection shown aligning with intersection 69 (shown in Exhibit 2) to a new location between Intersection 69 and 70 on the north side of US Hwy 24 at MP 325. Exhibit 3 shows the proposed shifted location requested with this amendment.

### Reason for this Request

- Rex Road is currently proposed to be extended southeast through the Grandview Reserve sketch plan area to intersect US Hwy 24 about one-quarter mile northeast of the location shown on the PEL and ACP. The reason for the request to move the location of the intersection of US Hwy 24/Rex is partly due to an existing bridge (Structure I-18-J) located at mile marker 324.476 that would limit the ability to provide auxiliary turn lanes on US Hwy 24 that would meet the criteria contained in the *Colorado State Highway Access Code*, if the intersection were built at the location shown in the PEL and ACP. A copy of the *Grandview Reserve Master Traffic Impact Analysis* by LSC Transportation Consultants, Inc. (dated August 17, 2020) that contains analysis of the proposed US Hwy 24/Rex intersection has been attached.
- El Paso County staff wants the proposed Rex Road connected through the Grandview site to an intersection with Highway 24 between Elbert and Stapleton.
- El Paso County and CDOT staff indicated support for the proposed Rex Road location and this requested change to the ACP at meetings with the applicant. Based on those meetings and support, the applicant has updated the Grandview Reserve Sketch Plan and the TIS report has been updated.

### Objectives, Principles and Strategies described in the US Highway 24 Access Control Plan and the State Highway Access Code which apply to this request:

#### State Highway Access Code Section 2.12 Access Control Plan

- (1) *Either the Department or the appropriate local authority may, at its discretion, develop an access control plan for a designated portion of state highway. An access control plan provides the appropriate local authority and the Department with a comprehensive roadway access design plan for a designated portion of state highway for the purpose of bringing that portion of highway into conformance with its access category and its functional needs to the extent feasible given existing conditions. **The plan should achieve the optimum balance between state and local transportation planning objectives, and preserve and support the current and future functional integrity of the highway.***
- (2) *The access control plan shall indicate existing and future access locations and all access related roadway access design elements, including traffic signals, that are to be modified and reconstructed, relocated, removed, added, or remain. The plan shall not preclude the current or future accommodation of other transportation modes of*



*bicycles, pedestrian, and transit. All traffic control devices or modifications shall meet the requirements of the M.U.T.C.D. as required by state and federal statutes. **To the extent practical, the plan shall meet the functional characteristics and design standards of the assigned category and conform to all standards and specifications in the Code.** To determine the sufficiency and ensure that the plan will be successful, a study will be completed incorporating the appropriate elements of Code section 2.3 and included as supporting information for Department review. At least one advertised public meeting shall be held during the development phase of the plan. All property owners of record abutting the state highway within the plan limits shall be notified by the Department or the appropriate local authority of the proposed plan and afforded the opportunity to submit any information, data, and agreements regarding the proposed plan.*

- (3) *The plan must receive the approval of both the Department and the appropriate local authority to become effective. This approval shall be in the form of a formal written agreement signed by the local authority and the Chief Engineer of the Department. **After an access control plan is in effect, modifications to the plan must receive the approval of the local authority and the Department.** Where an access control plan is in effect, all action taken in regard to access shall be in conformance with the plan and current Code design standards unless both the Department and the local authority approve a geometric design waiver under the waiver subsection of the Code.*

State Highway Access Code Section 3.7 **Category E-X – Expressway, Major Bypass**

Access Granting Criteria Including Category Related Access Location, Operations, and Design Standards

2. *Typical spacing of intersecting streets, roads and highways shall be planned on intervals of one mile and normally based upon section lines where appropriate. **One-half mile spacing of public ways may be permitted** to the highway only when no reasonable alternative access to the general street system exists.*
8. *Signals at intersections with major cross streets or roads of equal importance may be programmed to optimize traffic on both streets equally. Cross-streets of lesser importance need not be optimized equally. **Traffic signals on the highway should be programmed to allow a desirable highway bandwidth of at least 40 percent.** The efficiency of the signal system should be analyzed utilizing traffic volume, capacity, and level of service calculations. A study including all the relevant information listed in subsection 2.3(5) shall be completed. The analysis shall determine the optimum progression speed under both existing and proposed conditions.*

US Highway 24 Access Control Plan

- Recitals:
- C. *The coordinated regulation of vehicular access to public highways is necessary to maintain the efficient and smooth flow of traffic, to reduce the potential for traffic accidents, to protect the functional level and optimize the traffic capacity, to provide an deficient spacing of traffic signals;*
- EXHIBIT A US Highway 24 Access Control Plan:

IV. **Access Locations**

- B. ***Any access*** described in Section IV, which requires changes or closure as part of this agreement or if significant public safety concerns develop, ***may be*** closed, ***relocated***, or consolidated, or turning movements may be restricted, or the access may be brought into conformance with this ACP, when in the opinion of the City and County with Department concurrence, or in the opinion of the Department, and any of the following conditions occur: a) the access is determined to be detrimental to the public's health, safety and welfare, or b) the access has developed an accident history that is correctable by restricting the access, or c) the access restrictions are necessitated by a change in road or traffic conditions, or d) ***there is a change in the use of the property that would result in a change in the type of access operations*** or e) ***a highway reconstruction project provides the opportunity to make highway and access improvements in support of this ACP.*** Access construction shall be consistent with the design and specification of the Access Code.
- C. *All highway design and construction where practicable will be based on the assumption that the roadway will have a cross section for a minimum of two through lanes in each direction, right-turn auxiliary lanes, single and dual left-turn lanes, a non-traversable center median, and sufficient room to accommodate longitudinal installation of utilities.*
- D. **Access Point Descriptions:**
  - 69. Access 69 (Exhibit B, figure 9, MP 324.72): Rex Road, Existing private road with full-movement access on the southeast side of US HWY 24. Future public roadway extension on the northwest side of US HWY 24. Access will be changed to a full-movement signalized intersection.

## Justification

- Section 2.12 of the State Highway Access Control plan states, “The [Access Control] plan should achieve the optimum balance between state and local transportation planning objectives, and preserve and support the current and future functional integrity of the highway.” The requested change to the access control plan balances the desire of EPC to have Rex Road connected through the Grandview Site with the intersection spacing of 4,255 exceeding the ½ mile referenced as an alternative in the State Highway Access Code- Although the proposed location does not meet the typical intersection spacing of one-mile on highways classified as E-X Expressway, section 3.7.2 does allow for ½ mile spacing of access points when no reasonable alternative access to the general street system exists. Note that this amendment would not add an intersection, resulting in ½ mile spacing for two segments, rather it would shift the planned Rex intersection from one-mile spacing each direction to 4,255 (greater than half mile) from Elbert road and 6,407 feet (greater than one-mile) from Stapleton Drive.
- The attached Exhibit 4 shows the anticipated long term and buildout auxiliary turn lanes for US Hwy 24 at the proposed Rex Road intersection. This exhibit also includes potential auxiliary lanes for the Amendment subject section of US 24 (between Stapleton and Elbert Road) which also shows anticipated buildout auxiliary lanes which meet current Access Code criteria. Also, from the TIS report, a table of improvements for the proposed Rex Road intersection is provided. Please refer to a copy of this table shown in Exhibit 5.
- As shown in Exhibit 4, the proposed location for the Rex Road and US Hwy 24 intersection will accommodate the ultimate laneage needed on US Hwy 24 between Stapleton Drive and Elbert Road. All lanes are shown to meet the Colorado State Highway Access Code criteria for an EX Highway with a posted speed limit of 65 mph and less than three percent grade with **no overlap and no reduction in Code-prescribed lengths**.
- LSC measured the existing sight distance at the proposed location for Rex Road. The available sight distance (based on a passenger vehicle drivers’ eye height of 3.5 feet) is about 883 feet to the east and 1,895 feet to the west. Based on a posted speed limit of 65 mph and a grade of less than 3 percent, the entering sight distance required by the State Highway Access Code for a two-lane highway is 650 feet for passenger vehicles and pick-up trucks, 845 feet for single-unit trucks, and 1,105 feet for multi-unit vehicles. The available sight distance (measured based on a passenger vehicle drivers’ eye height of 3.5 feet) meets the criteria for both passenger vehicles and single unit trucks. The driver’s eye for multi-unit trucks would be significantly higher than 3.5 feet and considering that during the field sight distance measurement looking east (from a height of 3.5 feet), the roof of an approaching passenger vehicle was visible for a distance significantly greater than 1,105 feet, the entering sight distance for multi-unit trucks would also be met.

- Section 3.7.8 of the State Highway Access Code states that traffic signals on EX highways have a desirable bandwidth of 40%. As shown in the attached time-space diagram, the projected bandwidth through the future signalized intersections at Stapleton Drive, the proposed Rex Road and Elbert Road is at least 40 percent assuming a standard signal-timing plan with a leading eastbound left-turn phase at Rex Road. If lagging left phasing is allowed, the bandwidth could be improved to 62 percent northeast bound with 48 percent southwest bound.
- The proposed Amendment would allow Rex Road to be built in its “final location,” without the need for bridge reconstruction or a design waiver for substandard auxiliary turn lanes as would be the case absent this Amendment. CDOT has already indicated that a design waiver for substandard turn lanes would not be approved.
- It is our understanding that El Paso County and CDOT staff have indicated support for the proposed Rex Road location and this requested change to the ACP at meetings with the applicant. Based on those meetings and support, the applicant has updated the Grandview Reserve Sketch Plan and the TIS and drainage reports have been updated.

#### Associated Modifications to the ACP document

- Modify the description of Intersection 69, which currently indicates “*Future public roadway extension on the northwest side of US HWY 24*” and “*Access will be changed to a full-movement signalized intersection*” should be removed from the intersection 69 description. This description of Intersection 69, *existing private road shown in alignment with Rex Road (full-movement access on the south side of US Hwy 24)* will, as part of this request, likely need to be programmed for “restriction to right-in/right-out or closure (if/when alternate local road connections become available).”
- Exhibit 2 of this memo is a copy of Exhibit B Figure 9 from the 2005 ACP is attached **with the approximate new intersection location marked**. The reference to Rex Road, “Future Rex Rd.” on the north side of US HWY 24 at intersection 69 should be shifted east to the proposed new location. A symbol indicating future right-in/right-out or closure for Intersection 69 would likely need to be added.
- This Amendment to the ACP, once approved and adopted, should also be added to Table 4 of the ***US Highway 24 PEL Study*** (page attached for reference).

\* \* \* \* \*

Please contact me with any questions regarding this report

JCH

Attachments: Exhibits  
Time/Space Diagrams (signal progression analysis)  
Table 4 from the PEL Study  
TIS Report for Grandview Reserve  
Drainage Report for Grandview Reserve

## Exhibit 1 - Subject Section of Highway 24 & Grandview Reserve Location

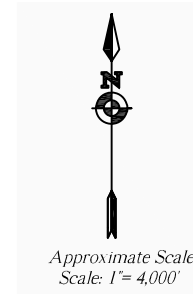


Figure 1  
Vicinity  
Map

Grandview Reserve (LSC #184840)





US HWY 24  
ACCESS CONTROL PLAN  
PETERSON BLVD. to ELBERT HWY.



JAN  
2005  
Aerial Photo 2003

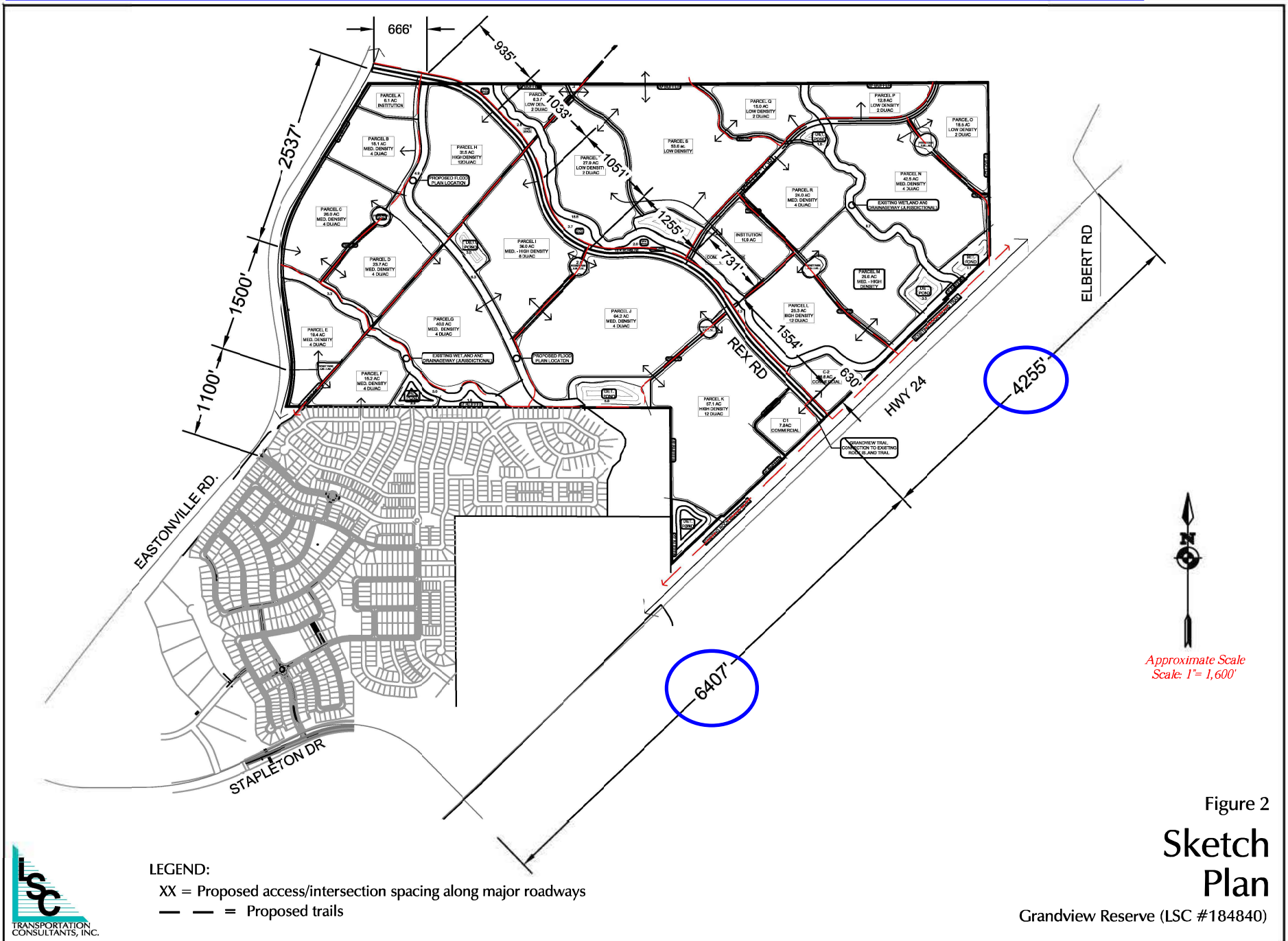
LEGEND	
	Current Signalized, Full Movement
	Future Signalized, Full Movement
	RIRO (right-in-right-out only)
	Access I.D. Number
	Access Closed
	Future Roadway
	Median Barrier
	Combined Access
	Possible Access

URS

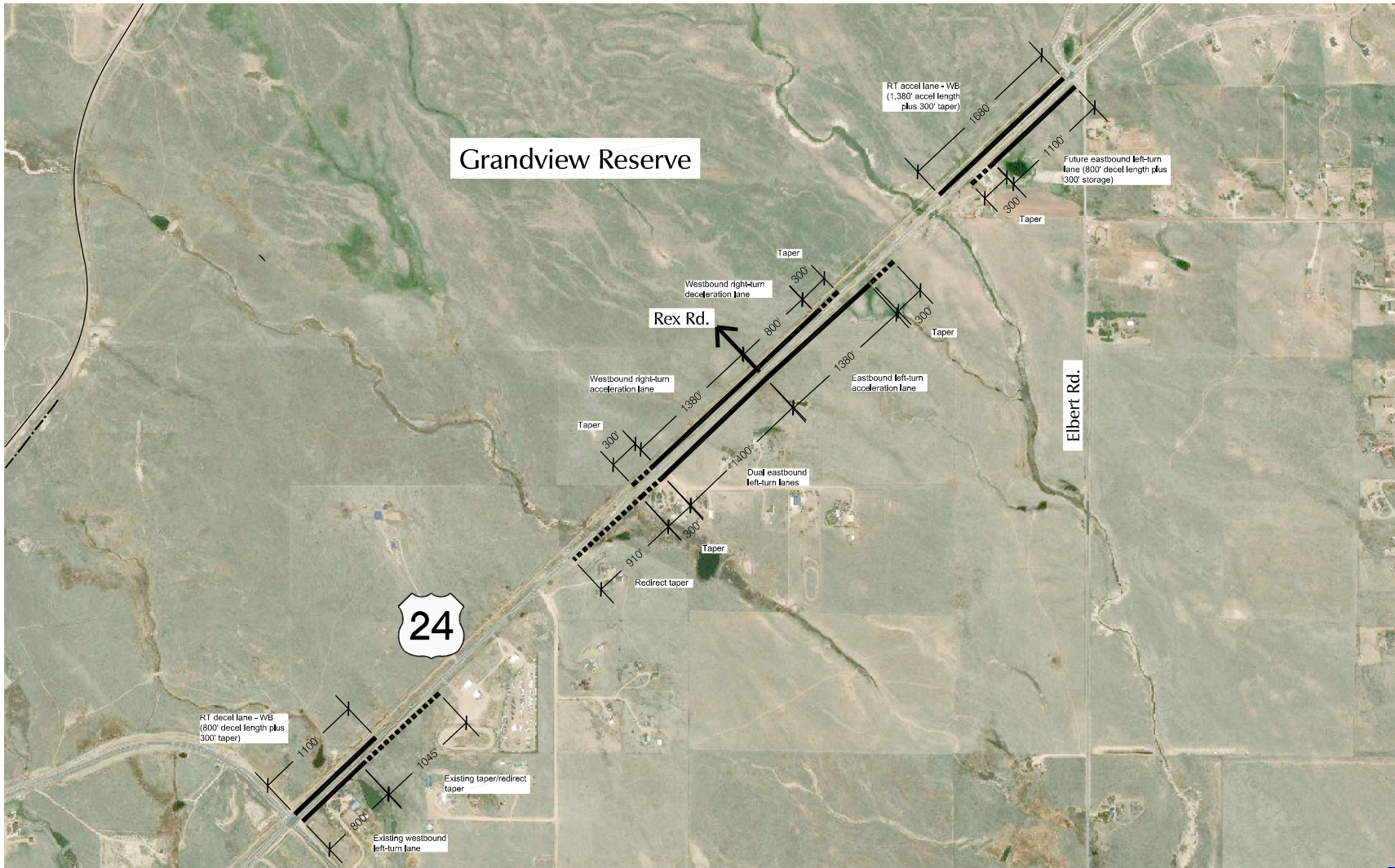
EXHIBIT B  
FIGURE 9



Exhibit 3 - Figure 2 from the Grandview Reserve TIS Report  
Proposed Rex Road Intersection Spacing along US Highway 24



from Figure 2 of the Grandview Reserve TIS Report



Approximate Scale  
1" = 1000'



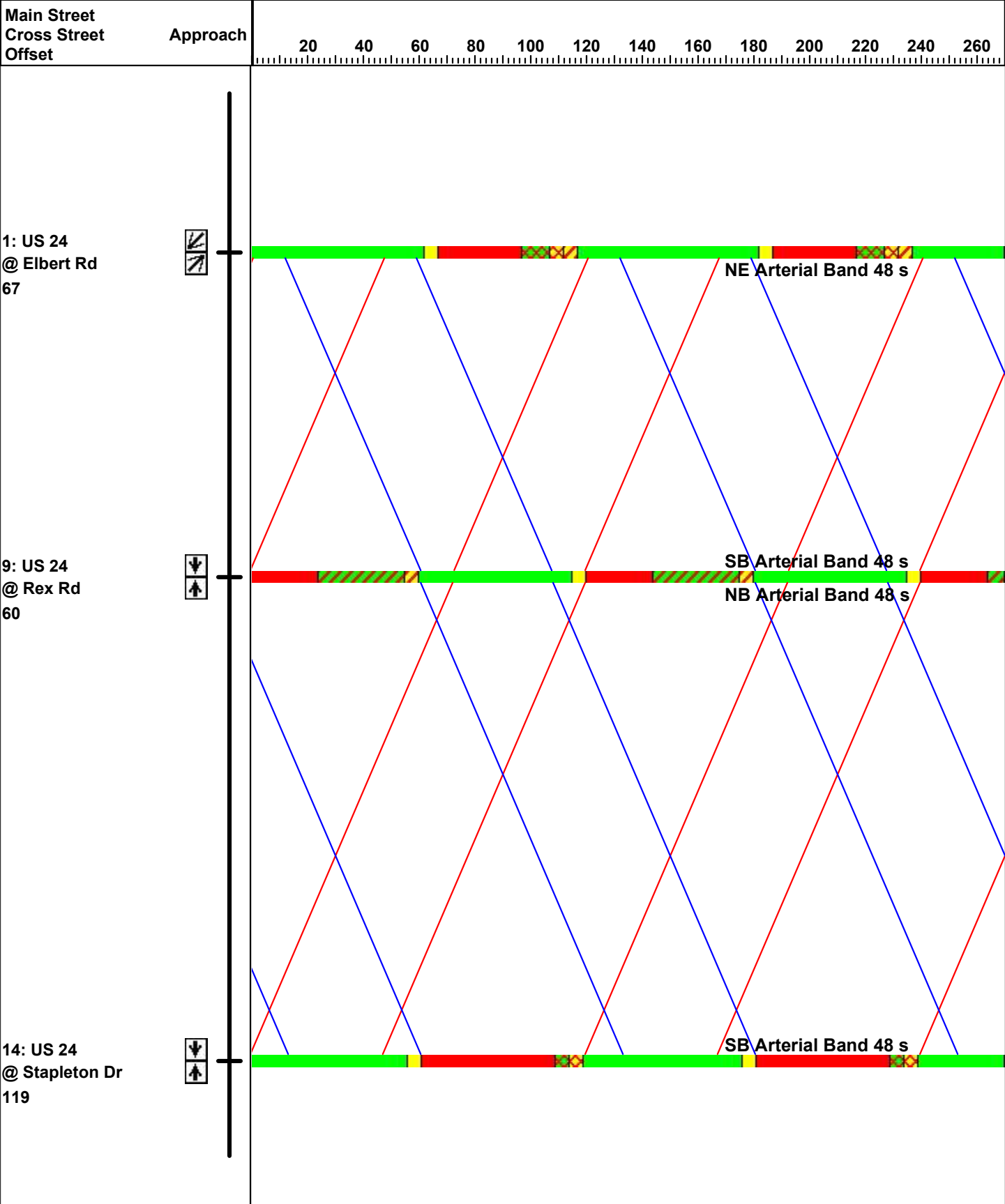
# US Highway 24 Intersection Spacing and Future Auxiliary Turn Lane Requirements

Grandview Reserve (LSC #184840)

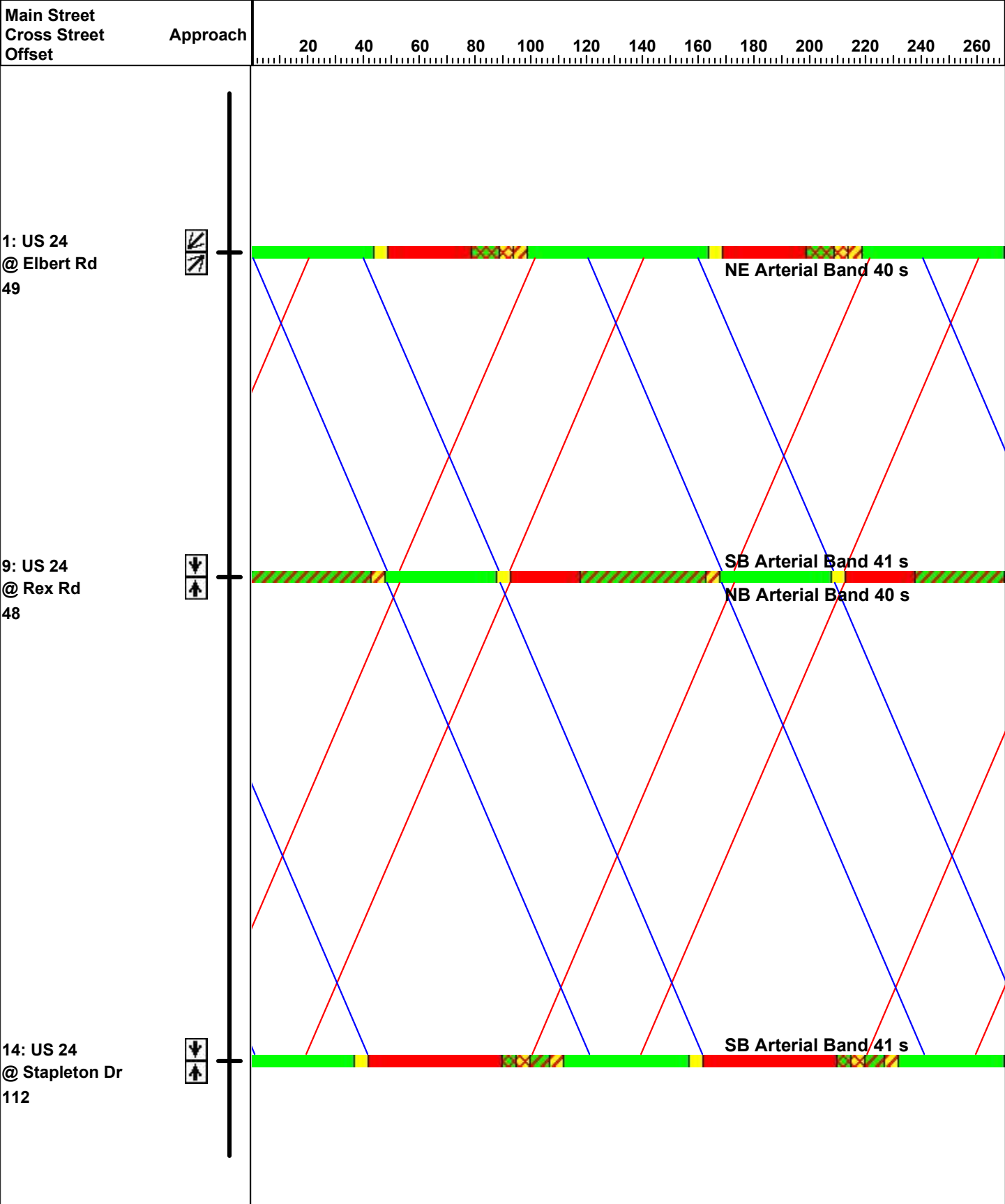
Exhibit 4

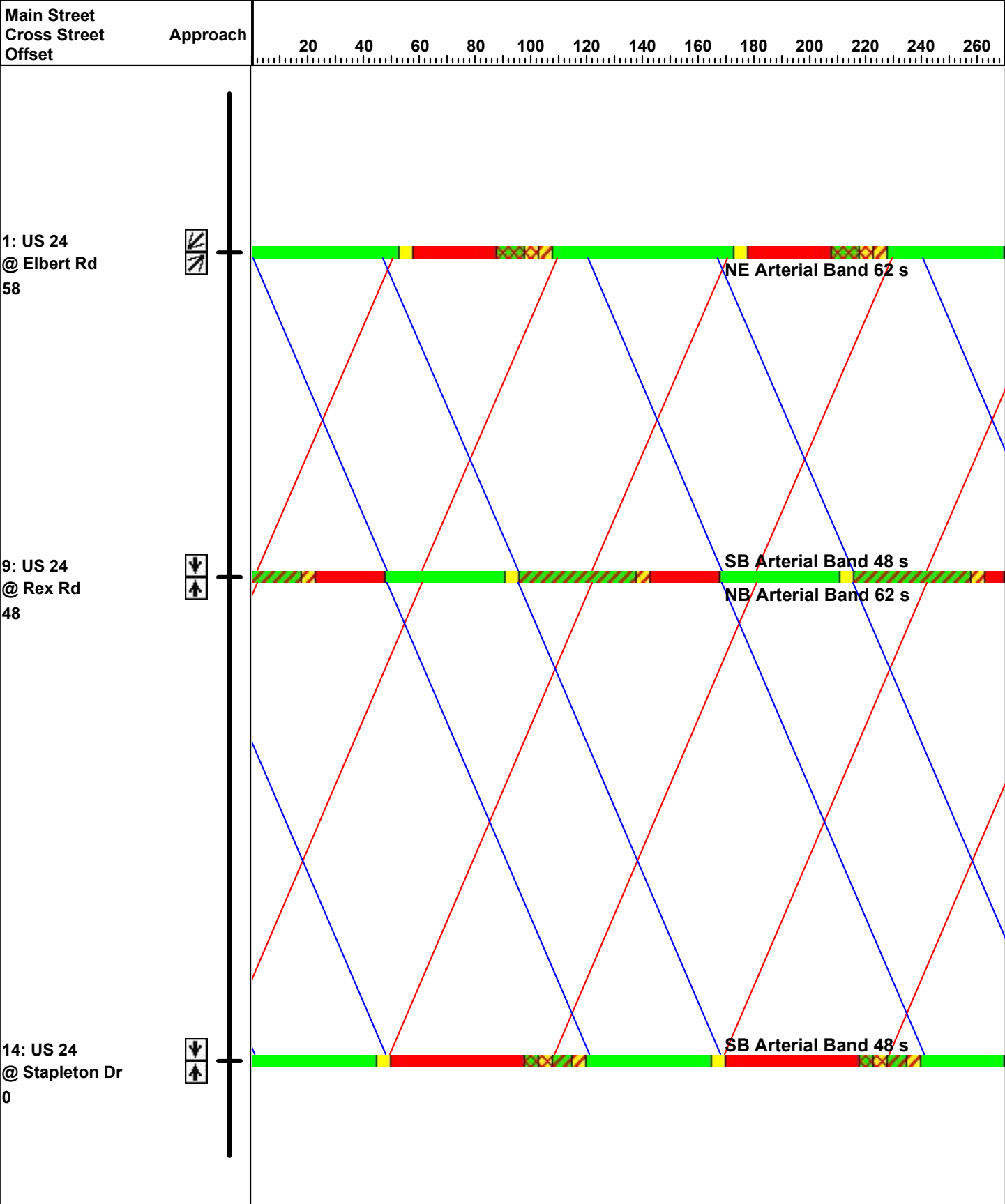
**Exhibit 5 - Improvements Table 5 from the Grandview Reserve TIS Report - with US Highway 24 related improvements highlighted.**

Table 5 Grandview Reserve Roadway Improvements				
Item #	Improvement	Trigger	Timing	Responsibility
Roadway Segment Improvements				
1	Eastonville - Stapleton to Latigo final grading and paving	dependent on PPRTA funding priorities	TBD by EPC; PPRTA "A-List" Project	PPRTA
2	Eastonville - Stapleton to Londonderry upgrade to Rural Minor Arterial (per MUTCD)	average daily traffic > 6,000 vehicles per day	dependent on PPRTA funding priorities	PPRTA
3	Eastonville - Londonderry to Latigo upgrade from unimproved roadway to Rural Minor Arterial (per MUTCD)	average daily traffic > 300 vehicles per day	With initial Grandview Reserve filing	PPRTA
4	Eastonville - Stapleton to Grandview Reserve south boundary upgrade to 4-Lane Rural Minor Arterial (per MUTCD)	average daily traffic > 20,000 vehicles per day	dependent on PPRTA funding priorities	PPRTA
5	Construct Rex from Eastonville to US Hwy 24 Adequate right-of-way should be reserved to allow for the construction of left-turn and right-turn deceleration lanes at all potential future access points	With Grandview Reserve development	With initial Grandview Reserve filing	Grandview Reserve
6	Construct Rex from Sunrise Ridge to Eastonville	With adjacent Meridian Ranch development	With future Meridian Ranch filings	Meridian Ranch
7	Stapleton Drive - US Hwy 24 to Eastonville Road complete southern (eastbound) half	average daily traffic > 18,000 vehicles per day	Shown in 2040 MTCP	El Paso County west of Eastonville Road; Waterbury Metro District east of Eastonville Road.
8	Widen US Hwy 24 to provide two lanes in each direction west of Stapleton.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
9	Widen US Hwy 24 to provide two lanes in each direction between Stapleton and Rex.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
10	Widen US Hwy 24 to provide two lanes in each direction east of Rex.	dependent on CDOT funding priorities	Shown in US Highway 24 PEL Study; 2040 MTCP	CDOT
<b>Stapleton/US Hwy 24 Intersection</b>				
11	Convert from Two-Way, Stop-Sign Control to Signal Control	When Traffic Signal Warrant(s) are met. The decision on timing of traffic signal installation rests with the Colorado Department of Transportation	anticipated in the short-term	CDOT; along with any available escrow collected from area developments through the access permitting process.
12	Potential long-term capacity upgrades (jughandle, a Jr interchange, etc.)	When level of service degrades below acceptable levels	Shown in US Highway 24 PEL Study;	CDOT; along with any available escrow collected from area developments through the access permitting process.
<b>Eastonville/Stapleton</b>				
13	Construct northbound and southbound left-turn lanes on Eastonville Rd. approaching Stapleton Dr.	---	Short-Term	PPRTA/El Paso County <sup>(1)</sup>
14	Signalization of the intersection of Stapleton/Eastonville.	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	anticipated in the short-term	eligible intersection under the free impact program
<b>US Hwy 24/Rex Intersection</b>				
15	Construct a northeastbound left-turn deceleration lane on US Hwy 24 approaching Rex	With the opening of the access	With initial Grandview Reserve filing	Grandview Reserve
16	Construct a second northeastbound left-turn deceleration lane on US Hwy 24 approaching Rex	Once the intersection is traffic signal controlled and level of service and/or queueing issues arise	Future	Grandview Reserve
17	Construct a southwestbound right-turn deceleration lane on US Hwy 24 approaching Rex	southwestbound right-turn volume > 10 vph	With initial Grandview Reserve filing	Grandview Reserve
18	Construct a southwestbound right-turn acceleration lane on US Hwy 24 at Rex	southeastbound right-turn volume >10 vph	With initial Grandview Reserve filing	Grandview Reserve
19	Signalization of the intersection of US Hwy 24/Rex	When Traffic Signal Warrant(s) are met. The decision on timing of traffic signal installation rests with the Colorado Department of Transportation	Long-Term Future (to be evaluated with each filing)	Grandview Reserve
<b>Eastonville/Rex Intersection</b>				
20	Construct a northbound right-turn deceleration lane on Eastonville approaching Rex Road (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 1 development	Grandview Reserve
21	Construct a southbound left-turn deceleration lane on Eastonville approaching Rex Road (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	NOT REQUIRED but will be needed once Eastonville is constructed to the west by Meridian Ranch to match a northbound left-turn lane that will be required	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
22	Convert to traffic signal control (not needed if constructed as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	With Phase 2 development	likely to be considered an "eligible intersection" under the free impact program
<b>Eastonville/Meridian Ranch/Judge Orr Intersection</b>				
23	Convert to traffic signal control (or reconstruct as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Future	likely to be considered an "eligible intersection" under the free impact program
<b>Eastonville/McLaughlin Intersection</b>				
24	Convert to traffic signal control (or reconstruct as a modern roundabout)	Once warrants are met. The decision on timing of traffic signal installation rests with El Paso County Public Works.	Future	likely to be considered an "eligible intersection" under the free impact program
<b>Eastonville/North Site Access Intersection</b>				
25	Construct a northbound right-turn deceleration lane on Eastonville approaching the north site access (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 2 development	Grandview Reserve
26	Construct a southbound left-turn deceleration lane on Eastonville approaching the north site access (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	With Phase 2 development or potentially in conjunction with the Eastonville PPRTA project.	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
<b>Eastonville/South Site Access Intersection</b>				
27	Construct a northbound right-turn deceleration lane on Eastonville approaching the south site access (not needed if constructed as a modern roundabout)	northbound right-turn volume > 50 vph	With Phase 2 development	Grandview Reserve
28	Construct a southbound left-turn deceleration lane on Eastonville approaching the south site access (not needed if constructed as a modern roundabout)	southbound left-turn volume > 25 vph	With Phase 2 development or potentially in conjunction with the Eastonville PPRTA project.	Potentially included as part of the PPRTA design of Eastonville Road OR Grandview Reserve
Notes:				
(1) The design of Eastonville Road will be performed by the Meridian Ranch developer. LSC anticipates that these turn lanes will be included in the project design. The project will be constructed by El Paso County as PPRTA project.				
Source: LSC Transportation Consultants, Inc. (1-11-19)				











## US 24 Access Control Plan Recommendations

In January 2005, CDOT, El Paso County, and the City of Colorado Springs created the US 24 Access Control Plan, which regulates access to US 24 between Peterson Boulevard and Elbert Road. It was officially approved on June 1, 2006. **Table 4** summarizes the minor modifications recommended to the existing Access Control Plan in order to reflect the PEL Study recommendations for roadway and intersection configurations. No changes are proposed to the number or types of accesses shown in the Access Control Plan.

**Table 4. Access Control Plan Recommended Revisions**

MILEPOST	SIDE	DESCRIPTION	ACCESS CONTROL PLAN RECOMMENDATION	PEL STUDY RECOMMENDATION
MP 313.23	North/South	Marksheffel Road	Signalized, full movement	Signalized, full movement with future interchange, when warranted
MP 313.92	North	Claremont Ranch neighborhood, Right-in, right-out	May be closed when Constitution interchange constructed	May be closed with highway and/or Constitution or Marksheffel intersection improvements
MP 320.81	North	Old Meridian Road	Right-in, right-out with mountable curb for Falcon Fire emergency vehicles when new Meridian Road constructed (not available for use by any other property owner)	Mountable curb access conditional for Falcon Fire Department on adjacent property
MP 322.50	South	Bluegill Road	Future signalized, full movement	Access closed with road realignment to Judge Orr Road
MP 322.54	North/South	Judge Orr Road	Access closed with realignment to Blue Gill Road	Signalized, full movement

Following recommendations from this study, CDOT will work with El Paso County to establish a new Access Control Plan along US 24 from Elbert Road to the County line. CDOT will also work with El Paso County and the City of Colorado Springs to complete the recommended modifications to the existing Access Control Plan between Peterson Boulevard and Elbert Road. Only the changes outlined in Table 4 will be made to the existing Access Control Plan.

## Bicycle and Pedestrian Accommodations

Construction of crosswalks at intersections and appropriate sidewalk connections and bike route signing/stripping on area streets is recommended in conjunction with the corresponding area roadway improvements. Construction of a parallel adjacent multi-use path connection between Peterson Boulevard and Falcon and extension of the Rock Island Trail east of Falcon is also recommended in conjunction with the highway improvements along US 24.

As described with the Roadway Elements, an assumed impact area of 25 feet from the edge of pavement was established and included on both sides of the roadway in the proposed typical



**NOTE:**

TIS and Drainage Study attachments have been removed from this copy to reduce PDF file size.